

# EARNING A LIVING

## A History of Real Wage Studies in Twentieth-Century Mexico<sup>1</sup>

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*Abstract: Real wages describe changes in the material standard of living of wage earners. This article reviews the national experience of Mexico through the twentieth century, surveying more than thirty studies from the late Porfiriato to the opening of the twenty-first century. The data suggest that real wages follow a long-term cyclical pattern of alternate periods of declining and rising wages. As a consequence, twentieth-century Mexico was not kind to workers because the gains of one period seem to be offset by falls in the next. Wage trends in Mexico and the rest of Latin America seemed to follow similar paths, except during the years following Mexico's revolution, when a new labor regime especially benefited the country's wage earners. Following a significant downturn in the 1940s, workers in Mexico and Latin America experienced a favorable period of income growth during the postwar boom. The debt crisis of the 1980s induced a long decline that continued through the early years of globalization.*

### INTRODUCTION

This article describes the evolution of real wage studies in twentieth-century Mexico. These studies began to emerge shortly after the revolution and have continued to evolve to the present. As might be expected, the early investigations were relatively primitive and the latest, quite sophisticated. What these accounts had in common, however, is that most looked at shorter periods. We have traced those studies chronologically in order to show the progress made in the technical issues of measuring wages and prices in what has mostly been a poor country by European and U.S. standards. More important, however, we wish to indicate what these studies suggest about the changes in the standard of living through the course of the twentieth century under the impact

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of revolution, development and modernization, and to ask whether these processes benefited most Mexicans. With regard to poverty in Latin America, Rosemary Thorp concludes that “balancing the progress and setbacks of the (twentieth) century . . . the evidence shows poverty and exclusion remained extensive and deeply rooted, and inequality persisted.”<sup>2</sup> Here we ask if the same can be said for wage earners, and whether Mexico was an exception in Latin America.

Money wages or nominal wages are the amount of money earned for a given period of work.<sup>3</sup> Real wages are the money wage divided by a price index. Because the value of money rarely stays constant, analysts calculate the real wage in order to measure changes in purchasing power. Historians and economists have found the analysis of real wages important because they are the main determinant of wage earners’ standard of living. In a society of wage earners, the rise or fall in the real wage is the most direct way to measure growth or decline in the standard of living.<sup>4</sup>

Most historians have consequently used real wages to document increases or decreases in the standard of living. In this regard, the industrial revolution particularly attracted the attention of scholars. “Very few questions . . . have been the focus of such prominent and persistent attention as the controversy about the impact of early industrialization and capitalism on the standard of living of the British working class.”<sup>5</sup> The author of this quote followed a long tradition of employing real wages to study the impact of early industrialization on British workers. Other scholars have applied the methodology to other periods and countries. American scholars have often used real wage studies to examine economic relationships such as that between wage rates and employment, the business cycle, productivity, institutional impacts and the standard of living.

2. Rosemary Thorp, *Progress, Poverty and Exclusion. An Economic History of Latin America in the Twentieth Century* (Baltimore: John Hopkins University Press, 1998), 281. In the back cover of her study, she commented, “What did the Latin American economies achieve in the course of one hundred years? Per capita income increased five fold, yet today it is lower in proportion to the industrial countries than it was a century ago. Modern infrastructure was built and industry grew to 25 percent of GDP, but the region’s share of the world trade was halved. Social indicators such as life expectancy and literacy improved dramatically, but poverty did not.” Neither did wages, we might add.

3. In Mexico, the number of pesos for a day’s labor is called *la jornada*.

4. Other factors also influence the standard of living, such as number of hours worked or employment shifts.

5. Charles H. Feinstein, “Pessimism Perpetuated: Real Wages and the Standard of Living in Britain during and after the Industrial Revolution,” *The Journal of Economic History* 58, no. 3 (1998): 625. Perspectives on work, housing, food, drink, nutrition, leisure and culture are in F. M. I. Thompson, ed., *People and Their Environment. The Cambridge Social History of Britain, 1750–1950* (Cambridge: Cambridge University Press, 1990).

Although the concepts appear simple, carrying out historical measurement can entail complications. A valid wage comparison over time requires relatively constant definitions of monetary wages and the group of workers earning that wage. Even with a constant wage definition, the monetary wage is often only part of a total remuneration package that can include other items such as rental incomes. The components of the remuneration package may move in different directions. Similarly, although there may be an overall trend of real wage movement, particular groups of workers may see their real wages behave differently. Finally, a family's income can include wage and nonwage sources.

Measuring prices also poses a set of problems. The most notorious is the selection of a representative basket of goods and services whose prices constitute the index. First, different individuals, families, and groups will have different patterns of consumption, so that no one basket of goods and services, neither items nor relative weights, adequately represents all of them. Secondly, as the structure of production shifts over time, so does the structure of consumption, leading to the quality problem. Not only do goods change in quality, but, also, new goods appear and old goods lose their appeal and disappear from common usage. Lastly, the reliability of the raw data is always a concern. As a consequence of these problems, the real wage is not a perfect measure of standard of living. Other data sets, on inflation, job mobility, minimum wages, family incomes, and the total compensation package, also play a role in helping researchers understand the changing standard of living. Nonetheless, the evolution of the real wage is an important, indeed critical, part of the puzzle.

There has been greater use of real wage studies in Europe and the United States than in Latin America. Within the region, however, there have been more studies on Mexico, in part because of the political impact of the Mexican Revolution and in part because Mexico has the largest Spanish-speaking population in Latin America. Since the revolution, first government analysts and then scholars began to look at the evolution of wages and the standard of living. A hundred years ago, most Mexicans lived and worked in the countryside. More than anything else, access to land seemed to define their lives. When the revolution erupted in 1910, land tenure dominated revolutionary discourse. Nonetheless, enough Mexicans were concerned about their wages that the government included Article 123 in the Constitution of 1917, using the minimum wage clause to help pacify the country.<sup>6</sup> In the years after the

6. On the politics of industrial wages during the revolution, see Jeffrey Bortz, "The Revolution, the Labor Regime, and Conditions of Work in the Cotton Textile Industry in Mexico, 1910–1927," *Journal of Latin American Studies* 32, no. 3 (October 2000): 671–703. Bortz argues that the workers' revolution within the revolution was an important and

revolution, modernization brought urbanization, industrialization, and a dramatic increase in the number of Mexicans who earned a living from wages and salaries. As a consequence, wages became an important, sometimes explosive, issue in the country, particularly because the governments of the revolution promised a better life to Mexican wage earners.

#### THE FIRST STEPS

In an article that appeared shortly after the fall of Porfirio Díaz, *El Economista Mexicano* noted

Eminent sociologists have seen in economic phenomenon an explanation of all other phenomena that the life of societies present. A famous doctrine, that of historical materialism, has been structured on the basis that all the manifestations of men in society are totally dominated by causes of economic character. . . . But among all the economic problems there is one more important still . . . one on whose solution depends the internal peace among peoples . . . the problem of the distribution of wealth, designated also with the name of the social question . . . in all parts there is a search for the manner of gaining an agreement between capital and labor.<sup>7</sup>

In the explosive days following the collapse of the old regime, Mexican textile workers demonstrated the veracity of this assertion. In December 1911, just weeks after Francisco Madero took office as president of the republic, 30,000 textile workers went on strike for a pay raise.<sup>8</sup> This “first labor action of great importance in the Republic” partially achieved its wage goals with the signing of the country’s first industry-wide labor agreements, precursors of a collective contract, in July 1912.<sup>9</sup> Mill hands continued their activism with numerous strike actions in late 1912 and early 1913 to enforce their wage conquests. Workers in other industries followed suit, including the mining, railroad, oil, communications, transportation and electrical industries.

Workers and their families understood that to live better, they needed wage increases greater than the rise in prices. This relationship remained a matter of concern not only to them but also to the governments that emerged from the revolution, anxious to legitimate their rule among a rebellious working class. From 1914 to 1916, regional military commanders issued decrees establishing minimum and overtime wages in areas

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often overlooked element of Mexico’s upheaval. See, by the same author, “Authority Re-seated: Control Struggles in the Textile Industry during the Mexican Revolution,” *Labor History* 44, no. 2 (May 2003): 171–188.

7. “Importancia del estudio de la economía mejicana,” *El Economista Mexicano*, October 21, 1911.

8. *El Imparcial*, December 23, 1911, 1.

9. *El Imparcial*, January 21, 1912, 1; “Tarifa Mínima Uniforme,” 31 July 1912, box 17, file 6, Archivo General de la Nación (AGN), Departamento del Trabajo (DT), Mexico City.

under their control. The 1917 constitution set a new legal basis for national minimum and overtime wages as well as profit sharing. The state labor codes that implemented Article 123 usually carried wage provisions.<sup>10</sup> As Jonathan Brown notes, “Politicians wrote the demands of workers into the constitution.”<sup>11</sup> Political leaders understood that worker discontent over salaries had played a role in the country’s recent social upheaval.

However, actually measuring real wages was not an easy or scientific task at that time. As late as 1923, Manuel Aparicio Güido reported that “we don’t know the data necessary to establish which has been the direction and intensity of the movement of wages in the Republic.”<sup>12</sup> Scientific measurements required systematic nominal wage series and consumer price data, and estimates of typical consumer buying patterns. Before Mexico’s revolution, these simply did not exist. The Dirección General de Estadística (DGE), founded in 1882, had published some price data, though mostly wholesale prices. Consumer surveys and consumer price indexes were wholly lacking. Although individual companies maintained current wage data for their own workers, there were no agencies to collect and compare such data, let alone create time series.

The lack of data did not prevent government officials from trying to understand the wage problem. Towards the end of the nineteenth century, Matías Romero, Díaz’s foreign minister, wrote a study of Mexican society that included a chapter on wages. Although Romero affirmed that in Mexico “the rate of wages keeps moving upwards” and “there is no sign that it has reached its limit,” he employed anecdotal rather than scientific evidence. He concluded that “our peons are not starving, and are, for the most part, a quiet and philosophic people . . . complaining very little, while a Patriotic government has their interests at heart.”<sup>13</sup>

10. A legal perspective is in Graciela Bensusán Areis, “Institucionalización laboral en México. Los años de la institucionalización jurídica (1917–1931)” (PhD Diss., Universidad Nacional Autónoma de México, 1992). She offers an updated version in *El modelo mexicano de regulación laboral* (Mexico: Plaza y Valdés, 2000). For state government legislation, see Felipe Remolina Roqueñi, *El Artículo 123 Constitucional* (Mexico: Secretaría del Trabajo y Previsión Social, 2000); and Remolina, *Evolución de las instituciones del derecho del trabajo en México* (Mexico: Secretaría del Trabajo y Previsión Social, 1976). For the case of Veracruz, see R. Jorge Ortiz Escobar, *Legislación laboral veracruzana*, vol. 1 (Xalapa: Universidad Veracruzana, 1999). The section on wages in the 1918 law drafted by Cándido Aguilar was the basis for the wording of the 1931 federal law, which is still in place.

11. Jonathan Brown, *Oil and Revolution in Mexico* (Berkeley: University of California Press, 1993), 364.

12. Manuel Aparicio Güido, *Resúmenes de Sociología y de Economía Social* (Xalapa: Editora de Gobierno, 1923), 126.

13. Matías Romero, “Labor and Wages in México,” in *Mexico and the United States. A Study of Subjects affecting their Political, Comercial, and Social Relations, Made With a View to their Promotion* (New York: G. P. Putnam, 1898), 501–558.

He shared the beliefs of wealthy Mexican and foreign investors who saw a contented underclass and were thus unprepared for the revolution that would shortly devour them.

When it came, the revolution changed much in Mexico, not least of which were the perceptions of the governing classes. Widespread social violence and a workers' revolution within the revolution convinced them that the Mexican people were less "quiet and philosophic" than they had believed, that poverty and low wages were indeed a problem, and that government lacked the necessary instruments to treat this problem. Thus, interim president Francisco León de la Barra proposed the establishment of the Labor Office in 1911, which Francisco Madero implemented later that year. The law that created the department declared that its first task would be to "gather, organize, and publish data and information related to labor through-out the Republic."<sup>14</sup> In its first years, it reported on wages and the cost of a typical *canasta obrera*.<sup>15</sup> It did not, however, construct price or wage series. By the early 1920s, when Aparicio Güido wrote his *Resúmenes de sociología y de economía social*, the country still lacked systematic wage and price data, although Güido commented that wages were the "principal manifestation of contemporary industrial organization."<sup>16</sup>

With reports from the Comisión Monetaria, he noted that "wages and salaries, with a few exceptions, were in 1902 almost the same as in 1870."<sup>17</sup> Aparicio Güido was a solid researcher who tried to systematize price information, a first step towards a consumer basket and price index. When he compared historic price levels for Mexico's basic foodstuffs with the income of a day laborer, he concluded that a worker "in 1792 could buy 23 measures of 100 kilos of wheat; in 1891 he could only buy 9.71 measures and in 1908 only 5.25."<sup>18</sup> He summarized his view by saying that Mexican economic growth generally did not benefit workers.

A decade later, the head of the Office of Economic Studies of the Reorganization Committee of Ferrocarriles Nacionales de México, Jesús Silva Herzog, led a group whose goal was to compare the consumption patterns of railroad workers to other industrial workers. Labor problems prevented them from carrying out intended field interviews. They therefore limited their field work to federal employees in the capital

14. Secretaría de Fomento, Colonización e Industria, Departamento del Trabajo de los Estados Unidos Mexicanos, *Iniciativa y decreto para su creación* (México: Departamento del Trabajo, 1912).

15. See, for example, "Canasta Obrera," 1914, box 68, file 1, AGN, DT.

16. Manuel Aparicio Güido, *Resúmenes de sociología y de economía social* (Xalapa: Editora de Gobierno, 1923), 198.

17. *Ibid.*, 127.

18. *Ibid.*, 128.

and a few other cities, which left them with 2,000 completed questionnaires out of a planned 11,000.<sup>19</sup> They used the new data to establish income ranks and determine spending and consumption patterns for each rank.<sup>20</sup> Their research suggested that railroad employees had spending patterns closer to the middle than the working class. The portion of expenses destined to food was approximately one-third, whereas most working-class families tended to spend half their income on foodstuffs.<sup>21</sup> It also measured significant regional price differentials, a potentially important problem because of the spreading use of national labor contracts with unified wage rates for occupational categories. Mexico City employees required 20 percent higher wages than those in Matamoros and 25 percent higher than those in Piedras Negras.<sup>22</sup> Despite its limited scope, Silva Herzog's study led the way in the use of new primary sources and quantitative data to address price and wage issues.

In 1932, Benito Contreras García wrote a law school thesis for the Universidad Nacional Autónoma de México (UNAM) that he dedicated to Juan de Dios Bojórquez, head of the Departamento de Estadística Nacional.<sup>23</sup> The thesis notably referenced a workers' cost-of-living index based on a consumer basket for a family of five. Attributing the index to the Departamento de la Estadística Nacional,<sup>24</sup> he compared the change in the cost of living with the average wage of an *obrero fabril*. Without actually deflating his wage series, he concluded that "the nominal wage, and with greater reason the effective wage, is inferior to the real wage."<sup>25</sup>

19. Jesús Silva Herzog, *Un estudio del costo de la vida en México* (Mexico: UNAM, 1989), 41.

20. *Ibid.*, 50–72.

21. For various estimates, see Aurora Gómez-Galvarriato, "The Impact of Revolution: Business and Labor in the Mexican Textile Industry, Orizaba, Veracruz 1900–1930" (PhD diss., Harvard University, 1999), 685; Federico Bach and Margarita Reyna, "El nuevo índice de precios al mayoreo en la Ciudad de México de la Secretaría de la Economía Nacional," *El Trimestre Económico* 10, no. 37 (1943); Marcos Tonatiuh Aguila M., "Pequeñas grandes victorias: Los mineros de la Real del Monte entre la Gran Depresión y el Cardenismo," Marcos Tonatiuh Aguila M. and Alberto Enríquez Perea, editors, *Perspectivas sobre el Cardenismo. Ensayos sobre economía, trabajo, política y cultura en los años treinta* (Mexico: UAM-Azcapotzalco, 1996), 145; Guadalupe Rivera Marín, *El mercado de trabajo: Relaciones obrero-patronales* (Mexico: FCE, 1955), 141; Antonio Prado Vértiz, "El problema económico de la alimentación infantil en México," *El Trimestre Económico* 17, no. 4 (1951).

22. Silva Herzog, *Un estudio del costo de la vida*, 75.

23. Juan de Dios Bojórquez, a leading member of the *familia revolucionaria*, served on the Congreso Constituyente in 1916, wrote one of the early *novelas indigenistas*, was a minister of labor and then minister of government with President Lázaro Cárdenas, and still later, president of the Sociedad Mexicana de Geografía y Estadística.

24. Benito Contreras García, "El salario en México" (BA thesis, UNAM, 1932), table 7.

25. *Ibid.*, 37.



Three years later Alberto Bremauntz, one-time congressman from Michoacán and later author of the influential *La educación socialista en México*, published a study to demonstrate the feasibility and importance of implementing profit sharing, mandated by the 1917 constitution but left to the states to implement. While Michoacán, Coahuila, Campeche, Chihuahua, Guanajuato, Oaxaca, Puebla, Tabasco, and Veracruz had put into practice profit-sharing mechanisms, the federalization of labor law in 1931 superseded state efforts and made this a national issue. Bremauntz commented that the Secretaría de la Economía Nacional collected the best available price and wage data, which he said would allow scholars to deflate nominal wages to arrive at real wages. He criticized the practice of earlier analysts, like Aparicio Güido, which involved comparing wages with the prices of a just few basic goods. He remarked that since 1934 the Dirección General de Estadística had developed a Workers Cost of Living Index (WCLI) based on observations of 281 working-class families in Mexico City, which would make the wage deflator more representative. Technical developments reflected increased demand for more accurate wage and price data.

The 1917 constitution mandated a minimum wage that “will be considered sufficient, attending to the conditions in each region, to satisfy the normal necessities of the life of a worker, his education and his honest pleasures, considering him the head of family.” Labor law reform in 1933 established special minimum wage commissions under the authority of state labor boards to determine regional minimum wages. That year, pressured by the impact of the depression, President Abelardo Rodríguez also established a national minimum wage commission to coordinate the municipal commissions. This federalization of the minimum wage offered the possibility of a new and systematic nominal wage set.<sup>26</sup> With a focus on profit sharing, Bremauntz did not take advantage of either the new price or wage series, but did comment that “Comparing nominal wages in different periods with the cost of living charts, the inferiority of the real wage stands out.”<sup>27</sup>

26. Minimum wage legislation in Latin America did not conform to a single pattern. For instance, it was forced downwards as a result of the Great Depression in Argentina, where the government resisted labor’s demands. Laura Randall, *An Economic History of Argentina in the Twentieth Century* (New York: Columbia University Press, 1978), 132. Broadly speaking, however, the Great Depression brought state intervention and labor reforms in most of the region, from the Estado Novo in Brazil to Cardenismo in Mexico. Ian Roxborough, “The Urban Working Class and the Labor Movements in Latin America,” in Leslie Bethell, ed., *The Cambridge History of Latin America*, vol. 4 (Cambridge: Cambridge University Press, 1984), 219–290.

27. Alberto Bremauntz, *La participación en las utilidades y el salario en México* (Mexico: n.p., 1935), 39.



Other analysts looked at wage issues in the labor-turbulent 1930s, but they did even less with the new price and wage data than Bremauntz. Typical of industrial studies, albeit more scholarly, was *La industria textil en México*, published by Moisés T. de la Peña and the Secretaría de la Economía Nacional in 1934. De la Peña, father of the well-respected economic historian, Sergio de la Peña, authored some of Mexico's finest economic analyses in the 1930s and 1940s. Textile industrialists confronted a problem of regionally unequal wage levels established by law and contract, which created unfair competition. De la Peña addressed this concern by accentuating the impact of regionally distinct wages on factory competition but mostly ignoring inflation and real wage levels.

Later, during the 1938 oil conflict which ended with the nationalization of the foreign oil companies, Silva Herzog and his team analyzed Mexico's wealthiest industries: mining, railroads and oil.<sup>28</sup> Herzog noted the large wage differences within the oil industry itself, both according to occupation and by region (Tuxpan, Tampico, Itsmus of Tehuantepec, and Tabasco). The study identified similar occupations among the three industries, and then took the average nominal wage by occupation in the different companies and zones of operation. It also analyzed the price trends of a limited number of basic foodstuffs (coffee, meat, corn, beans, lard, milk, and molasses) available in the mining and railroad centers and oil camps between 1934 and 1936. Deflating the nominal wages by the new price index, the study concluded that oil wages lagged behind the other two sectors for the three-year period. In 1937, average oil-worker wages ranked below the average wage for rail workers but above mining wages. Herzog also presented an interesting international wage comparison between the Mexican and the U.S. oil industries based on comparable occupations. He demonstrated not only the predictably large wage differential but also an increase in the wage gap. The average hourly U.S. oil wage in 1934 was 2.79 pesos (converted to 1934 pesos), against 0.745 pesos in Mexico. The Mexican wage represented only 26.7 percent of the U.S. counterpart. By 1937, the gap had increased significantly. While real wages had grown 8.75 percent in the U.S. industry, the Mexican wage had decreased 22.82 percent. Instead of one-fourth of the U.S. wage, the Mexican wage had dropped to only 15 percent of its U.S. counterpart.

Like his earlier study, this project by Silva Herzog contained firm-level data and international comparisons, elements more common in later research. The data show that prices fell during the depression, so that real wages rose from the mid-1920s through 1932, when the depression reached bottom. In the textile industry, Stephen Haber estimates an astonishing 43 percent increase in real wages between 1925 and 1929. Favorable trends

28. Silva Herzog, *El petróleo en México* (Mexico: PEMEX, 1940).

in real wages in the early 1930s were perhaps offset by the rise in unemployment. Under President Cárdenas, the implementation of the recently approved national labor code resulted in improved working conditions for some workers. In his 1938 annual report, the general manager of the El Potosí Mining Company stated, "Innumerable strikes were called in which in every case of those settled the workmen gained additional advantages of economic importance (. . .) The Cananea, Fresnillo, Real del Monte and Rosita coal mining unit of the American Smelting and Refining Company . . . all passed . . . new collective contracts, which in every case granted heavy concessions to the unions."<sup>29</sup>

While Silva Herzog's data suggest a real wage decline during 1934–37, it is possible that the inclusion of considerable increases in recently introduced social benefits might alter this conclusion. According to an estimate based on census data by Carlos Salas and Teresa Rendón, real industrial wages increased 26 percent between 1935 and 1940.<sup>30</sup> Enrique Cárdenas has also suggested real wage improvements during the period 1936–1939, after which real wages started to decline. A report of the General Motors Company for Mexico, written in 1942, argued that real wages grew considerably between 1935 and 1940, with a 44 percent improvement in base salary and benefits measured in dollars. The preponderance of data suggests rising real wages through the depression, a period in which Mexican government research continued to advance the field. Roxborough asserts that Mexico compared favorably to other Latin American countries during the second half of the 1930s with positive real wage movement, because "the Mexican Revolution had dramatically shifted political power to those with access to the new state."<sup>31</sup>

Between the outbreak of the revolution in 1910 and the beginning of the Avila Camacho government in 1940, the country made enormous strides in understanding the real wage problem. The social upheaval convinced many Mexicans that there was a wage problem and that it needed to be understood and dealt with. Towards this end, Madero established the Labor Office and Abelardo Rodríguez, the National Minimum Wage Commission. Most importantly, both the Dirección General de Estadística and the Banco de México began to publish systematic

29. El Potosí Mining Company, *1938 Annual Report to Mr. W. J. Quigly, President, Howe Sound Company, New York* (Chihuahua, January 1939), 17–21. Among the items involved in the complaints by company officials were the increasing costs of vacation days, rentals, bath operations, obligatory rest days and hospital benefits.

30. Carlos Salas and Teresa Rendón, "La distribución del ingreso," Agustín Herrera y Lorea San Martín, editors, *México a cincuenta años de la expropiación petrolera* (Mexico: UNAM, 1989), 223.

31. Enrique Cárdenas, *La industrialización mexicana durante la Gran Depresión* (Mexico: Colmex, 1986), 151–3. Cárdenas estimates an increase of real wages between 7 to 20 percent depending on the sector. See also Roxborough, "Urban Labour Movement," 233–34.

priced indexes dating to 1929. During this period, early studies suggested stagnant wages before the revolution, rising wages in the 1920s and through the 1930s, with some contradictory data for the late 1930s.

#### FIRST NATIONAL ESTIMATES

In 1942, the Ministry of Labor's Pedro Merla published a study closer to modern real wage analyses.<sup>32</sup> Merla used the three existing price indices, the WCLI, the wholesale price index (WPI), and the retail price index (RPI), to show the striking inflation that began to grip Mexico during the early war years. He then compared changes in the WCLI and average industrial wages.<sup>33</sup> His data suggest that real wages fell sharply through 1941. From a high standard in 1936, Merla measured lowered wages in subsequent years: 13 percent lower in 1937, 37 percent lower in 1938, 39 percent lower in 1939, 28 percent lower in 1940, and 50 percent lower in 1941, all with regard to 1936.<sup>34</sup> Struck by the apparent impact of sharply rising price levels, Merla supplemented the real wage indicators with data listing wages as a percent of final product value for the country's most important industries. He argued that final product value grew more than costs, suggesting increased profits. Nonetheless the data he presented was contradictory. In cotton textiles, the total wage bill as a percent of final product value increased from 25.4 percent in 1935 to 29.3 percent in 1941, strengthening the argument for rising real wages in at least some industries during the 1930s.<sup>35</sup>

Despite his data, Merla refrained from presenting a straightforward real wage table, as did Francisco Macín, a member of the filmmakers union who published *Los salarios en México* in 1947.<sup>36</sup> An avid unionist, Macín argued that "good wages signify: better food, health care, healthful and comfortable living quarters, cultural improvement, a strong and healthy race, an expansion of established industries, creation of new ones, better agricultural prices, modern tools for agricultural and increased production. A people that has sufficient means to satisfy its needs, is necessarily a consuming people."<sup>37</sup> Macín presented arguments to raise the minimum wage but did not generate new real wage series. He did however present

32. Pedro Merla, *Estadística de salarios* (Mexico: Talleres Gráficos, 1942).

33. The WPI was not a retail index and the RPI did not adjust values according to consumer spending patterns, so that the WCLI seemed the most reasonable alternative. Although the three indexes show similar overall trends, each has a different percent change for each year.

34. Merla used the difference between the rise in the WCLI and wage rates but does not make clear the wage source.

35. Merla, *Estadística de salarios*, 10–11.

36. Francisco Macín, *Los salarios en México* (Mexico: FCE, 1947), 160.

37. *Ibid.*, 12.

a table for the wholesale price index, 1900–1946, and the workers cost of living index, 1934–1946, in order to show that Mexico experienced two periods of severe inflation, 1914–1917 and 1941–1946. As a consequence, “even though the nominal wage increased, not only did the real wage not stabilize but instead it decreased.”<sup>38</sup> The culprit was that “the purchasing power of our money has decreased so much that the data from 1945 show a 45.3 level with a base of 1939=100.”<sup>39</sup> Macín followed Merla and Bremauntz in suggesting declining real wages through the early 1940s. These analysts were among the first to use the most modern price indexes, and when they compared wage and price data, they saw declining wages in the 1940s amidst some contradictory data.

#### MODERN REAL WAGE APPROACHES

The major breakthrough in real wage studies in Mexico came in 1951 with an article by Juan F. Noyola Vázquez and Diego G. López Rosado.<sup>40</sup> Until their article, real wage analysis suffered from limited price indexes, inconsistent wage data, and some estimates of yearly wage change without a nominal wage series deflated by a consumer price index. Noyola Vázquez and López Rosado remade the field. They were the first to systematically employ the government’s industrial wage survey, *Trabajo y salarios industriales*, which they deflated with the workers cost of living index, and the first to present a straightforward real wage table.

In 1938, the Dirección General de Estadística began surveying industrial establishments in Mexico City and then expanded its coverage the following year to seven industrial districts: Atlixco, the Federal District, Guadalajara, Monterrey, Orizaba, Puebla, and Torreón. The coverage included 600 industrial establishments with about 60,000 workers. Noyola Vázquez and López Rosado were the first to use this systematic wage source, which published average hourly and daily wages actually earned by workers from Mexico’s most important industries. Using that and other sources, they concluded that, “from the comparison among diverse wage series and the cost of living index, the result is that the purchasing power of the agricultural minimum wage dropped 39%, the average wage of 35 industries, 27% [until 1947, although it probably improved in the following two years]; and that of public federal employees dropped 35%.”<sup>41</sup>

The 1940s began a period of strong economic growth for Mexico that later historians labeled the “Mexican miracle.” The government actively

38. *Ibid.*, 63.

39. *Ibid.*, 52, 63.

40. Juan F. Noyola Vázquez and Diego G. López Rosado, “Los salarios reales en México, 1939–1950,” in Leopoldo Solís, ed., *Economía mexicana* (Mexico: FCE, 1983), 343–350.

41. *Ibid.*, 347.

supported private investment by foreign and national capital. From 1940 to 1950, GDP (in constant pesos) almost doubled, with manufacturing growth outpacing the rest of the economy. Clark Reynolds calculated that the economy grew at 6.7 percent annually and the manufacturing sector at 8.1 percent.<sup>42</sup> Because many argued that high growth rates would filter down to lift up Mexico's poor and workers, it was not easy to accept data that suggested the opposite conclusion. It almost seemed treasonous to the Mexican Revolution, whose official party was still in power. In any case, Noyola Vázquez and López Rosado added, without any quantitative proof, that "as a consequence of occupational shifts from lower-paying to higher-paying jobs as well as job mobility to higher-paying categories, the real mean wage (weighted) of the entire working population has grown although in almost every specific work category it has diminished."<sup>43</sup>

Later authors would return to this line of reasoning. In the 1980s, Peter Gregory advanced a sophisticated argument with respect to this apparent paradox of rapid economic growth accompanied by a strong decline of real wages, which he labeled an anomaly.<sup>44</sup> He suggested a number of factors that would indicate that wages increased, although the data for some workers, as measured by the survey, decreased. These factors included a possible increase in the weight of skilled labor in the employment structure, a possible increase of hours and days worked (which would account for higher monthly payments), an improvement in fringe benefits and social services provided to workers (not accounted for in daily or hourly wages), and limitations in the wage sources (biased towards large and traditional establishments). He also argued that a significant increase of per capita consumption of items such as beef, beer, shoes and radios during the 1940s suggested wage increases.<sup>45</sup> Without conclusive evidence, however, it is difficult to answer the question of real wage trends, in part because of the quality problem. Price indexes and real wage studies cannot evaluate a change in the structure of supply; they can only measure the change in the price of an existing consumer basket. Quantitatively, however, the data was clear: there was high inflation and falling wages in the 1940s.

For Latin America, the picture is similar. Despite more favorable labor market conditions during the early forties, unions adopted pro-war policies, supporting wage austerity. Guided by Communist parties that adopted popular front, class conciliation policies, and under pressure from

42. Clark Reynolds, *The Mexican Economy* (New Haven: Yale University Press, 1970), 22.

43. Noyola Vázquez and López Rosado, "Los salarios reales en México," 348.

44. Peter Gregory, *The Myth of the Market Failure. Employment and the Labor Market in Mexico* (Baltimore: John Hopkins University Press, 1986), 222.

45. *Ibid.*, 222–3, 228.

nationalistic governments that sought to restrain strikes, labor leaders throughout Latin America accepted the high inflation that led to declining real wages—at least until the end of the war.<sup>46</sup> Even the early Peronist movement, which had rapidly pushed real wages up in the second half of the 1940s, presided over a reversal of that trend in the early 1950s.<sup>47</sup>

Of course there is ample evidence of upward labor mobility in the 1940s in Mexico as in Latin America. For instance, an analysis of the wage payrolls of the *Compañía Real del Monte y Pachuca* between 1934 and 1944 showed that approximately one-third of the workers who remained in the La Purísima mine and could be identified by name, had increased their individual real wage by 10 percent despite rising inflation between 1941–1944.<sup>48</sup> However, it was not uncommon for some individuals to advance their careers while real incomes to specific occupations declined because of inflation. Another revealing example is *Ferrocarriles Nacionales* between 1937 and 1950. The total wage bill in *Ferrocarriles Nacionales* increased by 20 percent between 1937 and 1950. At the same time the number of workers in the company more than doubled, from 39,000 to over 83,000, so that average wages fell by nearly 40 percent. Total demand grew, yet real wages declined for some workers, though not necessarily for all.<sup>49</sup>

Government policy during the late 1940s clearly restricted real wages. Carlos Márquez, for instance, makes the point that in two of the biannual minimum-wage legal determinations (1948 and 1950), the Federal District's minimum remained fixed despite persistent inflation, a cumulative 41.1 percent for 1946–47 and 1948–49.<sup>50</sup> During Miguel Alemán's administration (1946–52), the number of strikes dropped radically to 26, from 245 during the previous administration of Manuel Avila Camacho.<sup>51</sup> The annual percentage of rejected petitions for new unions, 11 percent during the Avila Camacho government, reached a peak of 48 percent in 1947, just before the *charrazo*<sup>52</sup> against the leadership of the rail unions. Alemán legislated criminal sanctions against strikers, contributing to the harsh labor climate.

46. Roxborough, "Urban Labour Movement," 238.

47. *Ibid.*, 250–1, 267.

48. Marcos Tonatiuh Aguila, *Economía y trabajo en la minería mexicana. La emergencia de un nuevo pacto laboral entre la Gran Depresión y el Cardenismo* (Mexico: UAM-Xochimilco, 2004), 133–4.

49. Based on Kevin J. Middlebrook, *The Paradox of Revolution. Labor, the State and Authoritarianism in Mexico* (Baltimore: John Hopkins University, 1995), 126, Table 4.1.

50. Carlos Márquez Padilla y Ma. Amparo Casar, "La política de salarios mínimos legales: 1934–1982", *Economía Mexicana*, no. 5, (1983), 241–2.

51. Middlebrook, *The Paradox of Revolution*, 164.

52. In 1948 the government deposed the independent leadership of the railroad unions, an event known as the *charrazo* because of the nickname of the leader of the government-imposed faction, Jesús Díaz de León, El Charro.



In 1967, an American scholar, Mike Everett, wrote "The Evolution of the Mexican Wage Structure, 1939–1963," which he later included in his PhD dissertation on Mexican trade unions.<sup>53</sup> Following Noyola Vázquez and López Rosado, he used actual rather than minimum wages, employing *Trabajo y salarios industriales*, the annual publication of the DGE wage survey. He not only generated longer time series than Noyola Vázquez and López Rosado but also included series for the average weekly and hourly wages in thirty-three branches of industry and included industrial, geographical, and occupational wage differentials. He argued that the WCLI underestimated inflation whereas the RPI overestimated, so he averaged the two for his deflator. Applying it to average weekly wages, he shows that, in 1939 pesos, earnings declined from 26.9 in 1939 to 18.53 in 1944, and then to 16.48 in 1955. Not until 1963 did real wages exceed the 1939 level, when the average stood at 27.62 pesos, just above 1939.<sup>54</sup>

Although the DGE continued to publish *Trabajo y salarios industriales* after 1963, it changed the definition of some of the industries that it surveyed, so that researchers could use the data for national time series but not for industrial branch averages. Jeffrey Bortz, in *Los salarios industriales en la Ciudad de México, 1939–1975*, addresses this problem by using the firm-level data from the DGE archives. He also modifies the price index with additional price information. Bortz's study corroborates the earlier finding of the previous authors on the movement of average industrial real wages. Merla measured a decline from 1939 to 1942, Macín from 1939 to 1945, Noyola Vázquez and López Rosado from 1939 to 1947, and Everett, to 1952. According to Bortz, Mexican real industrial wages fell sharply after 1939, reached a low point in 1946, remained exceedingly low until 1952, and did not recover their 1939 level until 1968.<sup>55</sup>

Bortz also examines wage groups, in which branch productivity appeared to be the major determinant of wage differentials. Since the high productivity/high wage industries employed mostly men, while the low productivity/low wage industries tended to employ women, he also finds a significant cause of male/female wage differences.<sup>56</sup> In a later study with Edur Velasco that carried the wage data to 1986, the two authors posited the idea of a Mexican real wage cycle related to productivity shifts.<sup>57</sup>

53. Mike Everett, "The Evolution of the Mexican Wage Structure, 1939–1963," (mimeograph, El Colegio de México, 1967) and "The Role of Mexican Trade Unions, 1950–1963" (PhD Diss., Washington University, 1967).

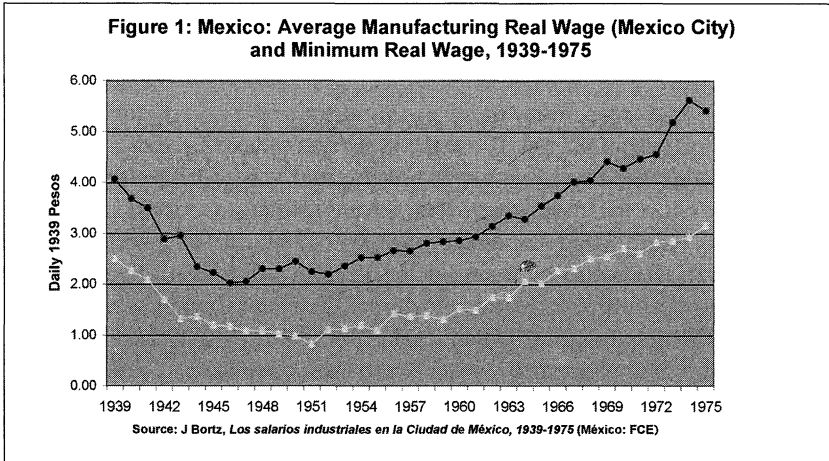
54. Everett, "The Evolution of Wage Structure," 1967a, 11–12, 47.

55. Jeffrey Bortz, *Los salarios industriales en la Ciudad de México, 1939–1975* (México: FCE 1988), 270.

56. *Ibid.*; see also Jeffrey Bortz, et al., *La estructura de salarios en México* (Mexico: Secretaría del Trabajo y Previsión Social, 1985), chapter 4.

57. Jeffrey Bortz and Edur Velasco, "El ciclo del salario en México 1940–1986," in Jesús





The long wage cycle suggests underlying economic causes of wage movement that were not based on short-term policies. In any case, the long downswing ended in the mid-1950s, when substantial devaluations of the peso took place following two decades of exchange rate stability. The devaluations triggered inflation which impacted relative prices. What followed was a long upswing of real wages, which Bortz measured until 1975. Later studies indicate that wages rose in 1976 and then rose until 1982 after some irregular movement. Real wages in 1982 were higher than in 1976 because of state policy based on Mexico's oil recovery. By the middle of 1982, a collapse in oil revenues set off new devaluations that shattered real wages, with a long-term impact on income distribution. Thereafter, neoliberal economic policies privileged export growth and business-friendly fiscal policy, while government implemented restrictive wage and labor practices.<sup>58</sup>

When Carlos Márquez Padilla wrote his wage studies between 1981 and 1983, the coming wage collapse was not yet visible. Two articles by Márquez focus on industrial wage differentials, measuring the relationship between average and minimum industrial branch wages. He

Lechuca Montenegro, editor, *El dilema de la economía mexicana* (México: Universidad Autónoma Metropolitana, 1987), 143-156.

58. A useful study on the impact of the neoliberal economic policy since the 1980s is in Kevin J. Middlebrook and Eduardo Zepeda, editors, *Confronting Development: Assessing Mexico's Economic and Social Policy Challenges* (San Diego: University of California Press, 2003), 31-36.

utilizes modern statistical techniques to establish the inverse relationship between the increase of the intra- and inter-industry wage gap and the fall of the average real wage of industry. He also noted the opposite; a reduction in intra- and inter-industrial wage gaps is accompanied by an increase in average industrial wages. These two tendencies are historically located, the first during the depressive cycle of the real wage (1939–1953), when wage dispersion increased, and the second during a period of growth (1954–1975), when wage dispersion narrowed.<sup>59</sup> Márquez highlighted two institutional factors in this process: 1) the state's determination of minimum wages through the National Minimum Wage Commission, which influences the minimum wages of unskilled workers in many branches of industry; and 2) the varying capacity of Mexican unions in different sectors to gain higher wages in some cases, or resist wage declines in others.

Márquez's 1982 study suggested that firm size, degree of concentration of capital, and rate of unionization were the factors most responsible for explaining increasing wage differentials among industry branches. One of the article's policy conclusions was the need to increase unionization in order to increase wage equality.<sup>60</sup> His third article, with María Amparo Casar, explored the impact of administration policies from Cárdenas (1934–1940) to López Portillo (1976–1982) on minimum wages. They show an association between the ideological leanings of each administration and their minimum wage policies, which in turn affect real wage trends, indicating the considerable influence of the Mexican state on wage determination. Typical of the most modern studies, Márquez makes ample use of a number of published sources, including the official minimum wage regional data and the *Censos Industriales*.<sup>61</sup>

In 1986 Peter Gregory published *The Myth of the Market Failure*.<sup>62</sup> To demonstrate that free markets had served Mexico well, it was important to show that economic growth improved employment, wages and the standard of living. He argues that the market did not fail, that the wage decline in the 1940s was an aberration in a country in which real wages mostly grew from the 1950s to the late 1970s.<sup>63</sup> It is a rich account

59. Carlos Márquez Padilla, "Nivel del salario y dispersión de la estructura salarial (1939–1977)," *Economía Mexicana*, no. 3 (1981): 53–54.

60. Carlos Márquez Padilla, "Las diferencias salariales interindustriales, 1965, 1970 y 1975," *Economía Mexicana*, no. 4 (1982): 157–165.

61. Carlo Márquez Padilla, "La política de salarios mínimos legales: 1939–1982," *Economía Mexicana*, no. 5 (1983): 221–260.

62. Gregory, *The Myth of the Market Failure*.

63. Gregory's faith in markets has been part of his contributions to the field since his *Industrial Wages in Chile* (New York: Cornell University, 1967), where he states "a wage system will fulfill its incentive and allocative functions better, the greater the proportion of the local compensation that is a function of the level or quality of workers' performance on the job." Among the "distortions" analyzed by Gregory were the social security benefits (102–3).

that includes household income surveys and the service sector as well as manufacturing. Gregory recognizes that economic conditions in Mexico deteriorated after 1981, and he cannot be faulted for emphasizing the postwar economic boom wage growth. Nonetheless, his data does not contradict either the 1940s wage decline previous scholars noted or the post-1981 wage declines. He describes an optimistic, albeit long interregnum in an otherwise dreary wage cycle.

Comparable studies of the long-run wage cycles in Argentina and Brazil suggest similar patterns. John Wells documents an annual real wage growth of 1.5 percent in industrial São Paulo between 1930 and 1970, despite stagnation in the early 1950s and a 20 percent decline between 1964 and 1967.<sup>64</sup> Sebastián Galiani and Pablo Gerchunoff argue that Argentine workers made “large gains” in real wages during the 1943–75 period they label the “modern, institutional market,” but have suffered sharp setbacks during more recent decades.<sup>65</sup> With abundant resources and historically scarce labor, Argentina had the most favorable labor market in Latin America, yet market forces seemed to create, along with rising productivity, another economy with an unlimited supply of unskilled labor. These tentative conclusions suggest that more research is needed on the comparability of wage cycles in twentieth-century Latin America.

In the three decades following 1950, a number of scholars and analysts published real wage studies based on new government wage surveys and the price indexes developed in the 1930s that had now acquired some degree of maturity. Scholars refined their measurements and seem to arrive at a consensus. All the studies measure a sharp wage decline, as much as 50 percent, between the late 1930s and the mid-1940s. Second, the studies suggest that real wages did not recover their late 1930s level until the 1960s. While many analysts argue that the wage decline may have been offset by shifts in the structure of employment, most have to agree that Mexican economic growth through the mid-1950s accompanied falling wages and perhaps stagnating living standards. Both the decline of that period and the subsequent period of real wage growth seemed representative of wage movement in Latin America at that time, unlike the 1920s and 1930s, when real wage growth seemed more associated with the impact of the Mexican Revolution.

64. John Wells, “Industrial Accumulation and Living Standards in the Long-Run: The São Paulo Industrial Working Class, 1930–1975,” *The Journal of Development Studies* 19, no. 2 (January 1983): 145–170; and *The Journal of Development Studies* 19, no. 3 (April 1983): 297–328, 301.

65. Sebastián Galiani and Pablo Gerchunoff, “The Labor Market,” in *A New Economic History of Argentina*, Gerardo Dellapaolera and Alan M. Taylor, eds. (Cambridge: Cambridge University Press, 2003), 124.

## WAGE DECLINE IN THE 1980S AND 1990S

If the postwar boom began with a long real wage decline that affected a generation of Mexican workers and their families, so did the neoliberal opening of the Mexican economy after the travails of the early 1980s. Alejandro Valle Baeza and Gloria Martínez provide an early analytical approach to this in *Los salarios de la crisis*,<sup>66</sup> which includes several essays on the long-term Mexican wage curve, especially the average industrial wage. Utilizing the DGE publication, *Trabajo y salarios industriales*, and the *Encuesta industrial mensual*, Valle and Martínez show a persistent decline of Mexican real wages from 1982 to the 1995 crisis. They also provide comparisons between the Mexican and U.S. wage cycles, as well as estimates of productivity and profit trends in both countries, showing the synchronization of the brief periods of wage increases and the differences in their declines, increasingly more pronounced for Mexico.

More recently, Carlos Salas and Eduardo Zepeda published a chapter on wages in *Confronting Development: Assessing Mexico's Economic and Social Policy Challenges*.<sup>67</sup> Their work utilizes a variety of published sources available for the last two or three decades: national household surveys, surveys on formal and informal employment and labor costs for several cities, and maquiladora data. They argue that the results of the opening of the Mexican economy during the 1990s remain "openly disappointing" in generating employment opportunities and wage recovery.<sup>68</sup> Mexico's record shows an accumulated decrease of real wages in formal employment, including a deep fall at the beginning of the 1980s, a recovery in sectors of higher labor skills between 1987 and 1994, with gains rapidly lost after the 1995 devaluation, and little improvement during the last years of the century. The overall pattern of declining wages was somewhat less dramatic for some professional and highly technical occupations for workers in some large corporations, as well as those employed in some exporting businesses in cities like Monterrey or Mexico City. With respect to benefits, there was a general decline in every item such as *aguinaldo* (end of year bonus), profit sharing, vacations, and health services.<sup>69</sup> Even the

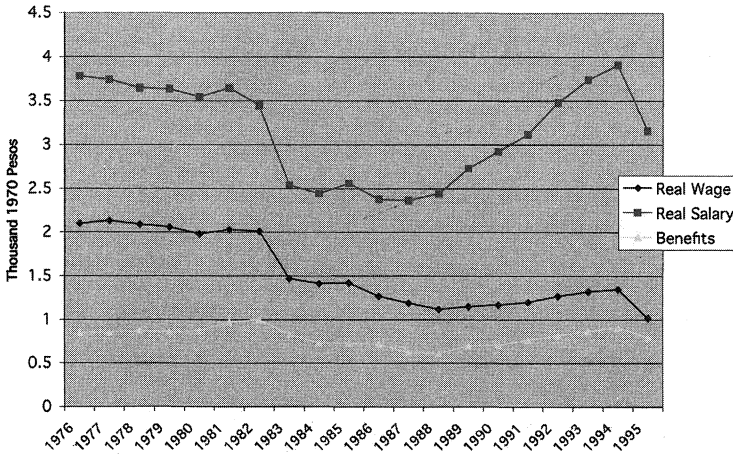
66. Alejandro Valle Baeza and Gloria Martínez González, *Los salarios de la crisis* (Mexico: UNAM, 1996).

67. Carlos Salas y Eduardo Zepeda, "Employment and Wages: Enduring the Costs of Liberalization and Economic Reform," in Middlebrook y Zepeda, eds., *Confronting Development*, 522–558. A second article by both authors is "Empleo y salarios en el México contemporáneo," Enrique de la Garza and Carlos Salas, coordinadores, *La situación del trabajo en México* (Mexico: Plaza y Valdés, 2003), 55–75.

68. Salas and Zepeda, "Employment and Wages," 553.

69. Hernández Laos, Garro, and Llamas have estimated a proportional increase of the nonwage labor cost of firms relative to the workers total remunerations from 40.6 percent in 1980 to 46.8 percent in 1990 and 49 percent in 1995. Figures were significantly

Figure 2: Mexico: Wages, Salaries and Benefits, 1976-1995



Source: A. Valle & G. Martínez, *Los salarios de la crisis* (México: UNAM & La Jornada Editores 1996), Appendix 2

maquiladora boom suffered its first severe employment decline after 2000 and continued to lag behind the manufacturing sector in wages and labor standards. The authors contend that "Mexico's economic reform process has negatively affected wages and living conditions for a sizable proportion of the working population. During the 1980s average real wage decreased dramatically . . . wages as a proportion of the national income collapsed . . . and the number of people in wage earning positions decreased."<sup>70</sup> A recovery did not take place during the very first years of the twenty-first century. With modest variations among countries, and with the possible exception of Chile, this has been the picture in most of the region during the last twenty-five years. Globalization and the politics of export-led growth accompanied the downward flexibility of wages, the increasing inequality of incomes, and growing wage differentials.

Julio Boltvinik, a scholar who has written extensively about poverty and its economic and moral implications, wrote a long essay on Mexican real wages in 2000, comparing and stressing the fundamental continuities in the wage policies of the three presidential administrations between 1982 and 2000.<sup>71</sup> Boltvinik reported the well known plummeting

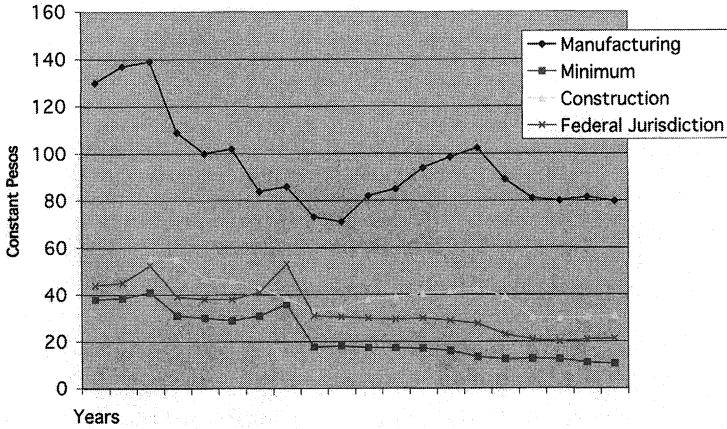
higher in Brazil for 1995 (58.2 percent), but lower for Chile (44.5 percent). Enrique Hernández Laos, Nora N. Garro Bordonaro, and Ignacio Llamas Huitrón, *Productividad y mercado de trabajo en México* (Mexico: Plaza y Valdés, 2000), 64–5, 267.

70. *Ibid.*, 543.

71. Julio Boltvinik, "Nada qué festejar," *La Jornada*, May 5, 2000.



Figure 3: Mexico: Average Wage by Categories, 1980-1999



J. Boltvinik "Nada qué festejar",  
*La Jornada*, May 5 2000

of the legal minimum wage, a true anchor of Mexican wages during the period; it dropped 75 percent in two decades. He describes the decline in real wages in industries of federal jurisdiction, 60 percent between 1982 and 2000. Finally, he shows that real manufacturing wages lost 42 percent during this period and maquiladora wages, 26 percent. Among Boltvinik's wage categories (minimum, federal jurisdiction, manufacturing, maquiladora, formal construction and retail trade), the manufacturing sector showed the greatest fluctuations. Manufacturing real wages fell 46 percent between 1982–1988 (Miguel de la Madrid), gained 40.3 percent between 1988 and 1994 (Carlos Salinas), and lost 22 percent between 1994 and 1999 (Ernesto Zedillo), with a net loss of 41 percent from 1982–2000.<sup>72</sup>

During the 1980s and 1990s, scholars continued trends begun in the earlier period, incorporating household income surveys, minimum wage data, and government wage policies. These studies corroborates that following a long period of real wage increases, from the mid 1950s to the mid 1970s, and some irregular movement in the late 1970s, real wages collapsed after 1982. Indeed, the real wage trend after 1982 looks remarkably like the real wage trend after 1939 except longer.

72. *Ibid.*, table 2.

## SOME RECENT TRENDS

The Mexican government has become less interested in wage studies, letting the traditional DGE wage survey and its publication, *Trabajo y salarios industriales*, lapse. Monthly and yearly industrial surveys, with a somewhat different focus, have replaced the wage survey, as have family income questionnaires. The government has argued that family incomes are a more meaningful measure of well-being and that they have declined less than wages.

Even without *Trabajo y salarios industriales*, Mexico continues to generate a variety of wage sources, including data from the Instituto Mexicano de Seguro Social (IMSS), the Instituto Nacional de Estadística, Geografía e Informática (INEGI) and other institutions. In recent years scholars have utilized these sources to look at other wage problems. Eduardo Zepeda and Ranjeeta Ghiara (1999),<sup>73</sup> Liliana Meza González (1999),<sup>74</sup> and Enrique Hernández Laos, Ignacio Llamas and Nora Garro (2000)<sup>75</sup> have produced informative studies looking at the relationship between wages and education, most using the INEGI's *Encuesta Nacional de Empleo Urbano* (ENEU). The studies indicate a correlation between education and wage increases at the upper levels of the employment structure, but little evidence of this correlation at the lower levels, where most job openings occur.

Other works have concentrated more on wage dispersion, including González and Mariña (1995),<sup>76</sup> Alarcón and McKinley (1998),<sup>77</sup> and Liliana Meza (1999). These studies employed the INEGI's *Monthly Industrial Surveys* and income/spending surveys. They suggest an unprecedented increase in wage dispersion that linked education and skills gaps on the one hand, and weakened unions, on the other. A growing literature on this topic in other Latin American countries suggests similar outcomes: increasing wage differentials accompanying trade liberalization, increasing precariousness of employment, and increasing inequality in the distribution of income.<sup>78</sup>

73. Eduardo Zepeda y Ranjeeta Ghiara, "Determinación del salario y capital humano: 1987-1993", *Economía, sociedad y territorio* 2, no. 5 (1999): 67-116.

74. Liliana Meza González, "Cambios en la estructura salarial de México en el periodo 1988-1993 y el aumento en el rendimiento de la educación superior," *El Trimestre Económico* 67, no. 262 (April-June 1999): 189-226.

75. Hernández Laos, Garro, and Llamas, *Productividad y mercado*.

76. Jaime González Martínez y Abelardo Mariña, "Reestructuración de salarios en la industria manufacturera, 1982-1991," *Economía, Teoría y Práctica. Nueva Epoca*, no. 4 (1995), 53-67.

77. Diana Alarcón and Terry McKinley, "Increasing Wage Inequality and Trade Liberalization in Mexico," in Albert Berry, editor, *Poverty, Economic Reform, and Income Distribution in Latin America* (Boulder: Lynne Rienner, 1998), 137-154.

78. See Oscar Altamir, "Income Distribution and Poverty through Crisis and Adjustment," in Berry, op. cit., 43-78. A useful collection of articles is in Mauricio Cárdenas,



Finally, there is a relatively recent historical study by Aurora Gómez-Galvarriato, who carried out measurements of real wages from 1900 to 1929.<sup>79</sup> Although a study of the Porfiriato, her work belongs with the modern study in its use of primary sources based on business records, and willingness to construct new price indexes that combine archival data with modern techniques. She used company wage data (the records of CIVSA for the Santa Rosa textile mill in Veracruz) and a new workers cost of living index, utilizing consumer surveys carried out in 1914 and the 1930s. Gómez-Galvarriato demonstrates that real wages in the mill did not decline during most of the Porfiriato, but only fell after 1907. Real wages in Santa Rosa in 1913 were 23 percent below 1907 wages.<sup>80</sup> A sharp decline followed, then a recovery to 1917, then a small decline to 1920 and a significant improvement through the rest of the 1920s.<sup>81</sup>

Gómez-Galvarriato comments on the relationship between the Mexican Revolution and the strengthening of the labor movement, noting that "it is impossible to separate their effects as independent processes. The revolution certainly contributed to the growth of the labor movement and the speed and depth of its gains."<sup>82</sup> She claims that inflation probably strengthened the labor movement during the revolution

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editor, *Empleo y distribución del ingreso en América Latina. ¿Hemos avanzado?* (Bogotá, 1997). For the Chilean case, Sebastian Edwards and Alejandra Cox Edwards, "Economic Reforms and Labor Markets: Policy Issues and Lessons from Chile," *Economic Policy* 15, no. 30 (April 2000), 183–231. An interesting comparison between Mexico and Chile during the 1980s is Raphael Bergoing, Patrick J. Kehoe, Timothy J. Kehoe and Raimundo Soto, "A Decade Lost and Found: Mexico and Chile in the 1980s," *Review of Economic Dynamics* 5, no 1 (January 2002), 166–206. While this article stresses the difference between Mexico and Chile, there were strong similarities with Brazil, for which, Paulo Du Pin Calmon, James K. Galbraith, Vidal Garza Canto, and Abel Hibert, "The Evolution of Industrial Earnings Inequality in Mexico and Brazil," in *Review of Development Economics* 4, no 2 (June 2000), 194–204. Also on Brazil, José Paulo Zeetano Chahad, "Population, Labor Force, and Labor Market in Brazil, 1960–1990," in Maria J.F., Willumsen, and Eduardo Giannetti da Fonseca, eds., *The Brazilian Economy: Structure and Performance in Recent Decades*, 167–191 (Miami: North-South Center Press, 1997).

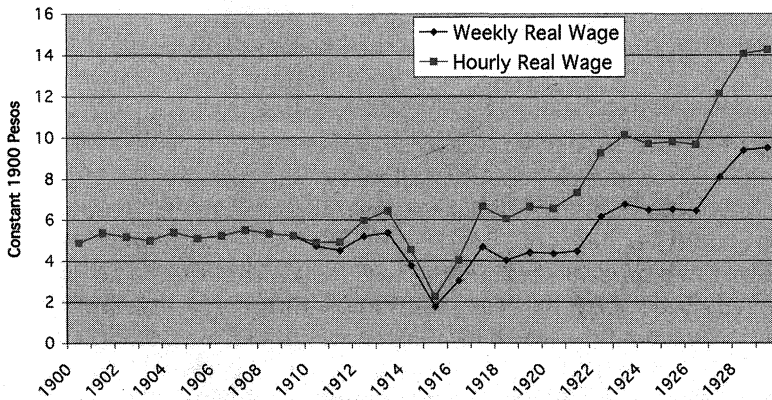
79. Gómez-Galvarriato, "The Impact of Revolution ." She also published "The Evolution of Prices and Real Wages in Mexico from the Porfiriato to the Revolution," in John Coatsworth and A.M. Taylor, eds., *Latin America and the World Economy since 1800* (Cambridge: Harvard University Press, 1998), 347–67; with Aldo Mussachio, "Un nuevo índice de precios para México, 1886–1930," *El Trimestre Económico*, FCE, (México, 2001); and "Measuring the Impact of Institutional Change on Capital Labor Relations in the Mexican Textile Industry, 1900–1930," in *The Mexican Economy, 1870–1930: Essays on the Economic History of Institutions, Revolution and Growth*, ed. Jeffrey L. Bortz and Stephen Haber (Stanford: Stanford University Press, 2002), 289–323.

80. Gómez-Galvarriato, "The Impact of Revolution," 349–51.

81. *Ibid.*

82. *Ibid.*, 367. She also cautiously added, "Yet, by no means can we conclude that if the Revolution had not taken place, these gains would not have taken place anyway."

**CIVSA, Santa Rosa Mill, Veracruz:  
Average Real Wage, 1900-1929**



Source: A. Gómez Galvarratio, "The Impact of Revolution: Business and Labor in the Mexican Textile Industry, Orizaba, Veracruz, 1900-1930", PhD Thesis (University of Harvard, 1999), 399.

because it provided workers with an additional need to organize, reporting that most strikes during the period were successful.<sup>83</sup> In some cases, economic difficulties may actually strengthen rather than weaken labor unions and workers, depending on the overall social and political conditions at the time. A similar case can be made for the impact of the Great Depression in Mexico, which caused unemployment in the short run but may have strengthened labor organization and favored other gains in the middle term.<sup>84</sup> On the other hand, the 1980s and 1990s offered a completely different story.

## CONCLUSIONS

One of the trends in real wage research has been a partial shift from government offices to universities. With the possible exception of Aparicio Güido, government and union officials carried out the bulk of the work in the field during the early period, rather than academicians. Among the former, the presence of distinguished figures like Silva

83. *Ibid.*, 366. Appendix A3.9 details recorded strikes' outcomes at CIVSA from 1899 to 1928. Motives of successful strikes range from wage increments to reduction of working hours and prevention of firing of "agitators."

84. Marcos Tonatiuh Aguila, *Economía y trabajo*, chapter 3. See also, Marcos Tonatiuh Aguila, "La Gran Depresión, en la raíz del Cardenismo," in *Lázaro Cárdenas: Modelo y legado* (Mexico: INEHRM, forthcoming).

Herzog, Bremauntz, Merla, and de la Peña points to the politically sensitive nature of wages in post-revolutionary Mexico. It also suggests that economists found more or better work in government than in universities. The situation began to shift with Everett's study in the 1960s, when scholars begin to take over the field. Through the 1980s and 1990s, most wage research in Mexico took place in universities.<sup>85</sup>

Not surprisingly, at the beginning of the twentieth century, the Mexican government lacked the technical expertise to understand the wage problem. Nonetheless, post-revolutionary modernization brought improvements to the government's technical departments. Through the 1920s and 1930s there was a concerted effort to generate modern price indexes. Over time, the indexes improved and scholars and analysts increasingly used them to measure inflation and real wages. In 1938 the Dirección General de Estadística began to publish a systematic industrial wage survey, *Trabajo y Salarios Industriales*. The government's principal wage survey from the late 1940s to the early 1980s, it provided a stable operational definition of wages as well as a consistent dataset. The analysts who studied wages during the postwar industrial boom made ample use of the survey, beginning in the 1950s with the Noyola Vázquez and López Rosado study, the first true real wage index.

By the 1960s, scholars like Everett had enough confidence in the official data to add important modifications. In the last few years, economic historians have combined primary sources with sophisticated quantitative analysis, as with the Gómez-Galvarriato study.<sup>86</sup> The study of Mexico's labor economy and economic history became more quantitative. As a consequence, we know much more about wages than we did in the early twentieth century. The studies suggest that twentieth-century Mexico was not kind to workers.

The end of the Porfiriato saw a wage decline. The best study is limited to a single textile mill but the Gómez-Galvarriato study suggests a 23 percent decline between 1907 and 1913. Her study also suggests that real wages increased through most of the 1920s, which is consistent with nonwage labor data, including unionization, labor law reforms, and political trends. Haber also registered a real wage increase in the late 1920s. Real wage

85. Of those mentioned here, this would include include Gómez-Galvarriato, Zepeda, Aguila, Alarcón, Meza, Mariña, Valle, Hernández Laos, Garro, and Llamas. Most studied in the United States, then developed their careers in Mexican universities.

86. See Stephen Haber, Noel Maurer, and Armando Razo, *The Politics of Property Rights: Political Instability, Credible Commitments, and Economic Growth in Mexico, 1876–1929* (Cambridge: Cambridge University Press, 2003); Bortz and Haber, *The Mexican Economy, 1870–1930*; Coatsworth and Taylor, *Latin America and the World Economy since 1800*; and Carlos Marichal and Mario Cerruti, editors, *Historia de las grandes empresas en México, 1850–1930* (México: FCE, 1997), among recent works.

studies on the 1930s covering Cardenismo suggest an improvement in the standard of living through 1938 and a decline thereafter.

From the end of the 1930s to the early 1950s, there is a scholarly consensus on sharply declining or flat real wages from 1939 to 1952. While Merla, Noyola Vázquez, López Rosado, Everett, and Bortz disagree on the specific numbers, they all argue that Mexico's early industrialization was accompanied by a real wage decline in industry, as much as 50 percent. These authors also show that later industrialization, from 1952 to the early 1970s, witnessed a significant and sustained real wage increase. Although the average real industrial wage increased 150 percent between 1952 and 1975, the latter wage level was only a third higher than in 1939.

The most recent studies (Valle, Zepeda, Salas, Boltvinik and others) suggest another sharp turn downwards in recent decades, particularly in the 1980s and 1990s. Boltvinik indicates real wages fell between 40 and 60 percent in the last two decades of the century. In short, Mexican workers experienced two periods of rising wages in the twentieth century, the 1920s and early 1930s, and 1952–1976. During other periods, real wages fell. Since the declines were mostly more dramatic than the increases, industrialization did not favor many of the workers who participated in it.

The real wage studies we have reviewed suggest the following:

- 1) The major determinants in long-run real wage change in Mexico have been productivity and the labor market. The incapacity of the labor market to absorb increasing quantities of unskilled labor weighed heavily on wage change.
- 2) During shorter periods, government policy either helped or hindered workers. After the revolution, a pro-worker labor regime considerably strengthened workers' incomes and job security. For a limited time, perhaps a quarter of a century, the revolution made a difference. Yet, revolutions and their effects do not last forever.
- 3) Mexico saw two major historical shifts in the labor regime, in opposite directions. After the revolution, a pro-worker labor regime strengthened wages and benefits. During the 1980s and 1990s, an anti-worker labor regime contributed to declining real wages. In between, from the late 1930s to the late 1970s, Mexican real wages followed trends in the world economy, a period of high inflation and real wage declines during the 1940s, then a significant and prolonged increase during the postwar boom. Overall, a cyclical pattern of nearly a century emerged, of declining wages followed by rising wages, then repeated.

Ultimately, however, there is a limit to understanding long real wage trends because of the "quality problem."<sup>87</sup> The structures of supply and

87. Jack Triplett, "Measuring Prices and Wages," *The American Economic Review* 67, no. 1 (February 1977). See also Christopher Hanes, "Changes in the Cyclical Behavior of Real Wage Rates, 1870–1990," *Journal of Economic History* 56, no. 4 (December 1996), 837–861.

demand change qualitatively over time, so that the typical consumer basket and its weightings are no longer typical. In the long run, this constrains the utility of the quantitative data.<sup>88</sup> Despite this problem, long periods of sharply rising or falling real wages seem to suggest long periods of rising or falling standards of living for wage earners. Without doubt, changes in technology inherent in market economies transform the nature of employment, the size and structure of the typical workers' household income, and indeed the living and working conditions of most people. But the question remains, have modernization and industrialization, which have increased per capita GDP, also increased the standard of living of industrial and other workers? In Mexico, perhaps not much.

It is not clear that any generation of Mexican industrial workers can experience a sustained increase in the standard of living—apart from the modernization of supply and demand for labor—under conditions of sustained underdevelopment. Whether globalization will remedy the problem remains an open question at this point.

88. For instance, the percentage of consumption expenditure devoted to food in the United States decreased from 57.4 percent in 1875 to 23 percent in 1952 and to 11.3 percent in 1986. Hanes, "Changes in the Cyclical Behavior of Real Wage Rates," 842.