

“Real Wage Evolution in São Paulo, Brazil (1891-1930)”<sup>1</sup>  
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Abstract

We know remarkably little about how people actually lived and what standards of living were in the city of São Paulo during a period of nearly unprecedented transition. During the Old Republic (1891-1930), rapid industrialization accompanied exponential population growth as the city grew from 64,000 inhabitants in 1890 to over one million in 1933. There is no systematic knowledge of wages or the evolution of such wages during this period. This paper helps fill the void by creating and introducing a homogenized wage series for the period using firm-level data. The evidence shows decreasing real wages over the majority of the period but no systematic increase in wage premiums. Given the depressed wages, it is surprising that labor organization in São Paulo did not strengthen more over the Old Republic. The potential applications of this wages series for Brazilian and development history are vast.

INTRODUCTION

New immigrant arrivals, first generation Brazilians and older Brazilians flooded the São Paulo labor market throughout the Old Republic. Skilled Germans, unskilled Portuguese, Paulista Brazilians and Northeastern Brazilians, men, women, children and adults: the rapidly industrializing city did not want for labor.<sup>2</sup> Even with decreasing salaries and deplorable housing conditions, individuals continued to flock to the metropolis.<sup>3</sup> But, whether the city was an equal opportunity employer remains to be determined. A wage series for the city of São Paulo during the Old Republic is necessary to answer such questions about inequality. I use this paper to develop a wage series for the city of São Paulo during the Old Republic.

The state of São Paulo’s population increased dramatically with the immigrant subsidization program. The city’s increased even more dramatically, and every new Paulistano resident demanded more goods and services, which in turn, attracted even more labor. (Paulistano refers to residents of the city of São Paulo and in this paper is an adjective to describe wage observations in the city.) To meet the demands, individuals set

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<sup>2</sup> Arquivo Público do Estado de São Paulo (AESP), Secretária da Agricultura, Inspetoria de Imigração Santos C09858 comments on the lack of work in the city.

<sup>3</sup> *Light Annual Report* 1919. Estimates that the cost of living in 1919 was twice as high as in 1915. Later in this paper I show evidence of decreasing real wages.

up businesses in their homes and itinerant salesmen sold any number of goods, from lottery tickets to newspapers.<sup>4</sup> Even with these informal outlets, unemployment was a constant concern. A letter about the city's *Hospedaria dos Imigrantes* advocated encouraging single males in the city to use to *Hospedaria* to find industrial and agricultural work in the state's interior due to the lack of work in the city.<sup>5</sup> Nevertheless, immigrants and Brazilians continued to flock to the city of São Paulo with its growing industrial capacity. By 1900, the Braz neighborhood alone housed at least nine factories.<sup>6</sup> The 1918 Commercial Almanac records the growth in the early twentieth century, documenting an even greater variety and number of establishments in the city.<sup>7</sup>

Despite the importance of the early twentieth century in São Paulo and Brazilian industrialization and growth, there is a dearth of statistics and data on basic information, such as wages and cost of living. The lack of this data is unfortunate because social scientists often use such information as measures of development, growth and productivity. Industrialists and officials complained about the lack of reliable data and scholars of the period have done little to fill this void.<sup>8</sup> The little reliable information available for the period is often restricted to the then capital city of Rio de Janeiro. Given the explosive nature of São Paulo's growth and its more ethnically and industrially diverse composition, it is presumptive to assume that Rio and São Paulo wages were comparable during the period. Knowledge about wages in the city of São Paulo during its impressive Old Republic growth is restricted to a 1912 and 1917 study on wages in select industries;

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<sup>4</sup> For home businesses, see Emílio Caputo de Bruno Alves, who asks for a license to mark beer in his home for consumption (Arquivo Municipal Washington Luís [AMWL], FIM, Polícia e Higiene, box 5). As early as 1899, there are complaints about itinerant salesmen selling lottery tickets. Most were young Italians between 12 and 14 who were former newsboys. "As Loterias," *O Rebate* 23 aug 1899, ano3 n62, p1

<sup>5</sup> AESP, Sec da Ag, Inspetoria de Imigração Santos, C09858.

<sup>6</sup> We have detailed information on these nine firms due to Moreira Pinto's detailed survey of the neighborhood and city, pp 208-222. The factories he surveyed in 1900 included Alvares Penteadó (wool textiles, coffee sacks), Cia Industrial (textiles), Cia Fabril Industrial (textiles), Fab. De Sedas Guilherme & Poletti & Co (silk factory), Cia Mechanica e Importadora (coffee machinery and imported machinery storehouse), Fab Cerveja Bavaria (beer factory), Fab de Barra Funda (cord and jute factory), Fab de Cortumes (leather factory), Fab de Vidros (bottle factory).

<sup>7</sup> *Almanach Comercial Brasileiro 1918*, dsc7607-71, pp448-52.

<sup>8</sup> See *Revista Comércio e Indústria* v15 nov1919, p 278 and *ibid* yr4 n45, sep 1918, p308. Ribeiro *Carestia* (~1925) also notes the need to improve statistics as a way of addressing the high cost of living. Even the 1920 Census, which is considered 'reliable' had sporadic participation for some states. Fortunately for my research, the statistics for the state of São Paulo were considered the most reliable by Census officials.

to the state-aggregated data from the 1920 Census; and to anecdotal observations.<sup>9</sup> The paper that follows helps fill the void by introducing a wage series for the city of São Paulo for the majority of the Old Republic (1891-1930). I proceed by first introducing the sources and then the methodologies used to create the São Paulo Old Republic (SPOR) wage series. I conclude by presenting the complete wage series and a short analysis of the trends depicted in the data.

#### PART I: WAGE SERIES SOURCES

Since official statistics on wages are minimal and unreliable for the city of São Paulo I derive the wage data from four individual firms to construct the SPOR wage series: the *Companhia Paulista de Estrados de Ferro* railway company (Paulista), the *Fiação, Tecelagem e Estamparia Ypiranga Jafet* (Jafet) textile factory, the *São Paulo Tramway, Light and Power Company* (Light) public works firm, and the *Loja Mappin* (Mappin) department store.<sup>10</sup> Other studies have utilized these data, but none have evaluated wage differences in detail and none have aggregated one homogenous series to study the labor market.<sup>11</sup> The wage series can only report the hourly wages recorded and unfortunately cannot account for bonuses awarded and fines charged, but the series will be able to provide a much-needed measure of inequality for the city's early industrialization period.<sup>12</sup> Few industrial and commercial firms operating in early twentieth century São Paulo remain active and the number of surviving archives that contain early employment data are even fewer. These four firms provide the detailed worker and wage information necessary to create the SPOR

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<sup>9</sup> *Boletim de Departamento Estadual de Trabalho*, 1917 study and 1920 Census. For an anecdotal reference, see *O Internacional* 1 nov 1927, yr7 and *Penteado Belenzinho*, p102-3, 219(midwife).

<sup>10</sup> No author has compiled a continuous wage series for the city of São Paulo for the pre-1945 period.

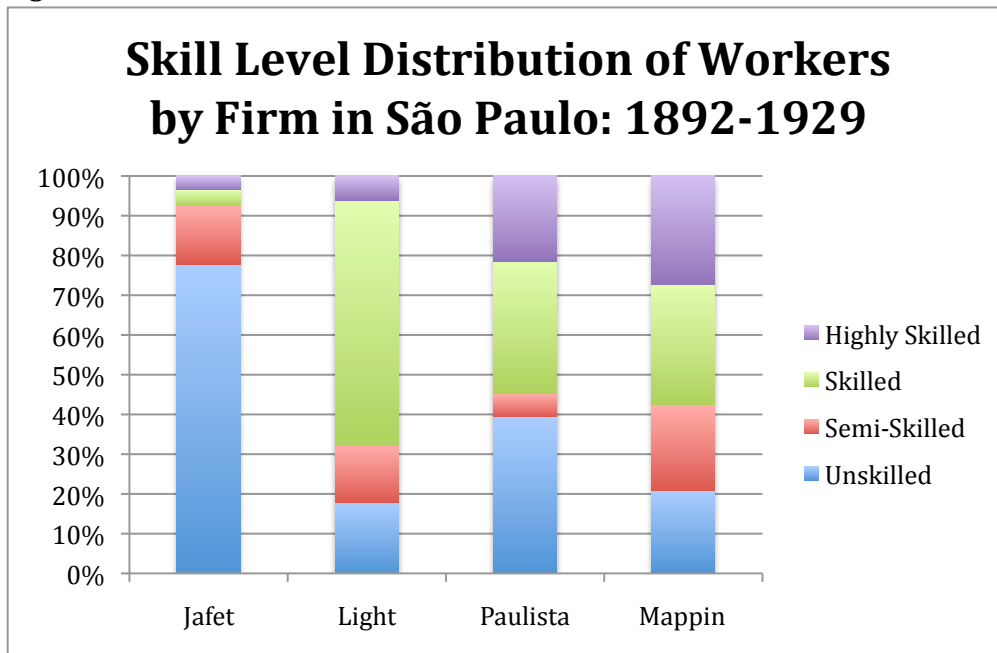
<sup>11</sup> George Reid Andrews used the Light and Jafet *fichas* in his study on race in São Paulo *Blacks and White in São Paulo, Brazil, 1888-1988*. The Paulista data were compiled by Ana Lúcia Duarte Anna in her 2000 USP architectural doctoral dissertation *Ferrovias, Cidade e Trabalhadores: A Conquista do oeste (1850-1920)*. The Mappin wages were originally in the now defunct Casa Anglo-Brasileira S/A archive. They were used in the making of the book *Mappin 70 Anos* and the notes for the book, which include wage tables, are available for consultation at the *Museu Paulista*.

<sup>12</sup> Maria Alice Rosa Ribeiro's research highlights the unfair practices of the piece rate and fine system, whereby managers could play favorites. A number of factors, including the type of cloth, number of machines, fines, and medical costs could vary wages. For example, in 1908, workers at Mariangela with one type of loom could earn 80\$000 per month (working four looms) and with another they could earn 116\$000 per month. Fines could mean one individual earning 190\$000 per month and another 70\$000. Finally, a weaver earned 63\$000 for a month's labor in 1908 but after fines and doctors fees, just received 40\$300. *Condições e Trabalho na Indústria Têxtil Paulista (1870-1930)*, 1988, (pp176-185). Specific fines at the Cia de Juta included 1\$000 per broken pieces, but since pieces broke easily, fines were easily 5\$-6\$ per month. Also, the fine for showing up late or leaving one's post for any reason was 2\$000. (*Guerra Social*, 10 apr 1917).

wage series. By using wages from these four firms, the SPOR wage series includes workers in all skill levels. Below I show the skill level distribution in the firms and how they are representative of the Paulistano wage structure. I use the 1920 Brazilian Census, the 1912 *Boletim de Departamento de Trabalho*, information from the state’s Secretary of Agriculture and anecdotal evidence to compare the wages and labor structure of these firms to the rest of the city and confirm their representativeness.

Figure 1 below shows the skill level distribution across the four firms. The next section contains a detailed explanation of how these skill levels were assigned. As is evident below, unskilled and semi-skilled labor predominated at Jafet. Light recorded a high share of skilled laborers and Paulista and Mappin recorded high shares of highly skilled labor. Thus, the firms provide wage observations for all skill levels in the Paulistano labor market.

Figure 1



These companies not only employed workers of all skill levels and, but they also paid competitive wages. The Paulista railway company was one of several major rail companies to service the state of São Paulo. Founded in 1872, the company was formed by Brazilians in the city of Campinas and linked towns in the state’s coffee interior to the capital city of São Paulo. Although the transportation of coffee was an important service of

the railway, the link between the two cities made Paulista much more of a passenger train than its largest competitors, the Mogiana and Sorocabana.<sup>13</sup> In 1928, the company employed 4550 individuals in the traffic department and 12,406 individuals in all. Paulista was representative of other railway companies of the era in terms of efficiency and personnel costs.<sup>14</sup> Moving from rail transport to urban transport, the next company used in the series is the São Paulo Tramway, Light and Power Company. Light started off as a transportation company in 1898 and put São Paulo's first electric streetcar into operation in 1900. By 1901 the company's main streetcar competitor, Viação Paulista, was liquidated and Light became the city's sole transport company in 1907. By 1911, the company signed a contract to provide all private electricity service to the city.<sup>15</sup> In 1901, the company employed over 1,100 individuals and in 1930 the company had over 6,400 employees.<sup>16</sup> A comparison between Light employee salaries and the average Paulistano construction worker wages in 1912 provide evidence of the company's representativeness. The average Paulistano carpenter made 5\$500 mil-réis per day and the average blacksmith, 7\$000. At Light, carpenters and blacksmiths made 5\$861 and 6\$593 per day, respectively, during the same period.<sup>17</sup> Although Light was the sole transportation company and private power provider, the wages for Light employees are representative of the energy and public works

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<sup>13</sup> In the 1926-1930 period, 338.83 thousand ton/km per year per line kilometer were passenger transport for Paulista, while Mogiana just registered 125.52 and Sorocabana 261.81 (Saes *As Ferrovias*, p143). In 1890, Paulista accounted for just over 10% of São Paulo's kilometers of rail, but by 1905 that percentage peaked at 27.5%. By 1930, the company still controlled 20.1% of the state's rail kilometers. Saes, *As Ferrovias*, p76-8, 29. In addition to transporting coffee, the company provided free immigrant passage to the interior between 1882 and 1917 transporting over 700,000 individuals (*ibid*, p42).

<sup>14</sup> In general, Paulista was slightly more efficient than Mogiana and Sorocabana (number of employees per million ton/km) and more profitable (share of costs per income); however, when looking at the personnel costs as a percentage of total costs, Paulista and Sorocabana both averaged around 60% through 1925. The personnel share of total costs data is only available for Mogiana starting in 1921. The data that are available show personnel costs being a smaller share, around 45% (Saes, tables III.3 and III.4, pp137, 139. Data on costs/income are found in table III.8, p146. Saes attributes the lower share of costs/income as a feature of Paulista being more of a passenger line and less influenced by coffee fluctuations.

<sup>15</sup> Gerald Greenfield, (1975) chap 2-3.

<sup>16</sup> In 1901, Light employed 1106 individuals; by 1910, 1215 individuals; by 1920, 1648; and by 1930, 6428 employees. The largest number of employees were recorded in 1929 with 7420. (São Paulo, *Anuário Estatístico de São Paulo, 1901, 1910, 1920*) and (Light *Annual Reports 1929 & 1930*).

<sup>17</sup> The 1912 average construction salaries in the city appear in AESP, Sec da Ag, C07393. Average Light wages include joiners, individuals employed before 1915 and calculate the average workday as 9.5 hours per day. Firm average based on *fichas*. *Ibid*. AESP, Sec da Ag, C07393. Firm average based on *fichas*.

sector. Private letters and company reports even show that Light employees may have averaged lower salaries than the city norm.<sup>18</sup>

Whereas Light was the sole transportation and energy provider in the city, the Jafet factory was just one of many textile factories. Counting just knit and cotton factories in the city in 1920, the *Boletim de Directoria de Industria e Comercio* collected statistics on sixty-two factories.<sup>19</sup> The textile industry was by far the largest industrial sector in the state's economy in 1920: over 40% of the state's 57,756 industrial workers were in the textile industry.<sup>20</sup> Given the importance of the textile industry in São Paulo's Old Republic economy it is important that the Jafet wage data be representative of the sector. First I compare Ipiranga to other factories to determine whether it was a large or small employer in the textile industry. Then I compare Jafet wages and worker composition to other reported wages and employment records.

Evaluating Jafet along with nine other cotton factories in the city in 1911 reveals that while the Jafet factory was by no means the largest factory, it was above average in both size and production. A more comprehensive comparison with twenty textile-manufacturing firms (see table 1) registered in the *Boletim da Directoria de Industria e Comercio* (BDIC) for 1917 reveals the same relative size and production capabilities.

Table 1: Cotton firms in São Paulo, SP 1911 and 1917

	1911 cotton firms			1917 cotton firms		
	Average	Jafet	Max <sup>21</sup>	Average	Jafet	Max
Capital (contos de réis)	1989	4000	6000	2124	5500	15500
Laborers	691	785	1903	486	1200	2000
K/L ratio	2.88	5.10	3.15	4.37	4.58	7.75
Looms	362	444	1200	326	660	1465
Spools	9470	14000	30000	12391	18000	40000
Spools/worker	13.71	17.83	15.76	25.50	15	20
Horsepower	515	600	1200	539	1200	2000

Source: BDIC 1912, p124-5 and BDIC 1919, p120

More important than size is whether the labor force in this relatively large factory was representative of the entire industry. Evidence on select textile wages throughout the

<sup>18</sup> Light *Annual Reports*. 1917, p 2; 1918, p2. In 1927, regarding the company's high labor turnover, the report cedes that "...the Company cannot expect to go on paying the same salaries and retain the good workers; a more equitable adjustment to present conditions of living must be made...", p109.

<sup>19</sup> See *BDIC* 1922, pp60-65 for 1920 statistics.

<sup>20</sup> 1920 Recenseamento v5p2 pp386-417.

<sup>21</sup> The two largest firms in 1911 were Cotonificio Crespi, in terms of capital, and Mariangela, in terms of labor, looms, spools and horsepower. By 1917, Crespi was the largest firm in terms of capital and labor, while Mariangela remained the largest in terms of looms, spools and horsepower.

period shows the Jafet *fichas* to be so. In April 1922, the Centro de Industriais de Fiação e Tecelagem de São Paulo (CIFTSP) sent out a circular to its members asking for the average warper (*uridor*) wage. Five companies responded, with the average pay being 5\$701 per day.<sup>22</sup> The 1920 Census recorded the average Paulista salary for the position at 5\$098 per day.<sup>23</sup> In the same period, Jafet warpers received 4\$920 per day.<sup>24</sup> A similar survey of carders' wages reveals more variability in this position, but still records Jafet within the range. The *Lanifício Jose Mortan* recorded the average salary at 6\$150 per day; *Fabril Pinotti Gamba* recorded 8\$148 per day and the 1920 Census recorded an average of just 4\$567 per day. Jafet carders received 5\$690 per day during the comparable period.<sup>25</sup>

Jafet was not only representative in terms of wages, but also in terms of labor shares. Table 2 demonstrates how the factory's child and female labor shares compared closely to the rest of the industry. The adult female share of the Jafet workforce in the 1920's based on the *fichas* sample is compared to the gender breakdown recorded both in the 1911 BDET and the 1920 Brazilian Census for the state of São Paulo. Given the poor quality of statistical data in Brazil during this period, I underscore the validity and comprehensiveness of the 1920 Census for the state of São Paulo as I use it as a comparison point for the data.<sup>26</sup>

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<sup>22</sup> CIFTSP Circular 93 (12/apr/1922) was sent out to members asking for the average wage for cotton *uridores*. The answers recorded on 2/may/1922 included the following responses: Cia Taubaté \$375 per hour; Ignácio & Cia 200\$000 per month; Pinotti Gamba 150\$000 per month, 27 days per month; S/A Votorantim 130\$000-140\$000 per month; IRFM 140\$000-150\$000 per month, 8 hours per day. Unless otherwise notes day wages are calculated with ten hours per day and 25 days per month. The Pinotti Gamba wage was for the average worker; a good worker was reported to receive between 280\$000 and 300\$000 per month. The IRFM uses the reported daily worker's wage, not the contract workers' wages.

<sup>23</sup> Brazil, *1920 Recenseamento* (1920 Censo), v5, p2, pp386-417

<sup>24</sup> The Jafet average is calculated using wages before 1924, before factory-wide wage increases were implemented. The average, based on five observations was \$515 mile-réis per hour, calculated at a ten-hour workday.

<sup>25</sup> Information on *cardadores* wages is found in circular 92 (19/apr/1922). *1920 Censo* v5p2 pp386-417. Jafet wages based on 7 observations of *cardadores* in the pre-1924 period.

<sup>26</sup> The São Paulo state data "was one of the most perfect" collected, (*1920 Censo*, vol 1, p514). Over 4,000 industrial establishments turned in data for the state, which included over 15,000 mini-industrial questionnaires; over 15,500 laborer salary questionnaires and over 1,600 factory reports *Ibid*, p490-91, 500, 514-16. The Census, if anything, had an urban bias (Stolz, Baten and Botelho 2010).

Table 2: Textile Labor Share Percentage in SP, SP

Position	Child Labor			Adult Female Labor		
	1911 SP	Jafet 1920's	1920 SP	1911 SP	Jafet 1920's	1920 SP
Batter	35.71	0.00	5.08	18.37	14.28	1.27
Carder	44.44	0.00	5.40	44.44	31.82	9.60
<i>Passador</i>	0.00	6.45	2.19	96.77	80.65	91.23
Rover	50.92	1.10	3.65	49.08	82.42	78.30
<i>Carreteleiro</i>	64.77	8.43	24.98	35.00	80.72	70.54
Weaver	27.67	1.32	4.29	58.44	77.25	67.94
Dyer/Bleacher	20.36	0.00	11.64	9.05	0.00	1.16
Starcher	0.00	0.00	5.75	38.46	0.00	3.45

Sources: Ribeiro, *Condições*, table 8 p133 and Jafet *fichas* sample (1920-1930)<sup>27</sup>

The final company records I use to create the wage series come from the Mappin department store. The British company Mappin & Webb opened its São Paulo store, known as Mappin Stores, in the city's center triangle on November 29, 1913 with forty employees in eleven departments.<sup>28</sup> Although there were some British nationals in management positions, the majority of the company's management was Brazilian. By 1919, the company had grown to employ 200 individuals in 35 departments and opened a larger store in another central city plaza. Growth continued throughout the 1920's as the store expanded to include a furniture store, shoe department and even a tourism agency.<sup>29</sup> The Mappin stores targeted São Paulo's elite female clientele (only one of the original departments, raincoats and umbrellas, targeted male clientele) and competed directly with the city's other main department store, Casa Alemã, as well as with French boutiques and small Syrian and Lebanese stores throughout the city.<sup>30</sup> As for the company's employees, upper lower class, middle class and lower upper class individuals with strong recommendations or family connections could aspire to work at the department store. Many female graduates of the Bráz professional school would go and work in the Mappin Stores as seamstresses or in shop positions.<sup>31</sup> A comparison between seamstress wages in the state and those at

<sup>27</sup> An adult refers to individuals aged fourteen or older. This definition is to maintain the same "adult" definition as the 1911 BDET study and 1920 Census. The sample is based on 1317 wage observations of Jafet employees during the 1920's.

<sup>28</sup> The company had been already been established in Buenos Aires by the end of the 19<sup>th</sup> Century (*Mappin 70 Anos*, p21-2).

<sup>29</sup> *Mappin 70 Anos*, pp25-8, 47-8, 56-8, 80-82.

<sup>30</sup> *Ibid.*, p40-41.

<sup>31</sup> For more on hiring practices, see chapter 5 of this dissertation. On the professional schools, see Maria Luiza Marcílio, *História da Escola em São Paulo e no Brasil*, 2005, p197.



Mappin suggest why the positions were so sought after: while an average seamstress made just 3\$341 mil-réis per day, a seamstress at Mappin could make 5\$870 per day, more than 1.75 times more than the average. In other words, although the Mappin portion of the wage series may not represent the lower class reality, it will provide important wage data for upper level commercial positions in São Paulo during the Old Republic.

#### METHODOLOGY: CREATING A WAGE SERIES

This section details the creation of the database by looking at the particular characteristics of the SPOR wage series sources described above and by studying the methods used for homogenizing the data. In particular, it looks at 1) the individual data sources; 2) the process of reporting all salary and wage information into hourly wages; 3) how skill levels were assigned to the listed occupations and 4) how nominal wages were standardized to real wages. The compiled information is then utilized to create wage series and wage premiums for the city of São Paulo during the Old Republic. In another chapter of my dissertation, I look more closely at the importance of gender, nationality, experience and age in wage determination.

The Paulista portion of the analysis was created using a database developed from Paulista employee entry cards (*fichas*) for Anna Lúcia Duarte Lanna's doctoral thesis. In order to utilize the information, I combined the series on worker demographics with the series on workers' employment. The resulting database included information such as an employee's entry and exit dates, wage, raises, nationality, civil status, level of schooling, residence type, occupation, promotions, resident city and race. Although the Paulista data is rich, only 58% have information for a worker's nationality and 41.5% for race. Since many of the workers did not leave the company until the 1940's, I include salary increases or decreases prior to 1930 in the wage series.

Another feature of the Paulista data is that it includes individuals working in sixty-six different cities throughout the state of São Paulo. Since the wage series I construct is restricted to the city of São Paulo, I only include those individuals who worked in Campinas, Valinhos and Jundiaí. These cities were within a commutable distance from São Paulo, and by far, the largest share of workers lived in Jundiaí, less than 60km from São

Paulo with a direct train route to the majority of the city's factories.<sup>32</sup> As a result, the Paulista portion of the SPOR wage series is based on the 790 wage observations of 227 individuals.<sup>33</sup>

The São Paulo Tramway and Light Company (Light) portion of the SPOR database is based on employee entry cards of individuals hired during the Old Republic in the car-house and mechanics departments. To sample the entry cards, which were organized alphabetically by the workers' first names, I recorded every fifth entry card, creating a sample of 1999 individuals. There were two sets of entry cards and those with the most information revealed an employee's literacy, nationality, civil status, age prior employer, address, position, entry, entry wage and raises.<sup>34</sup> All available information was recorded and included in the SPOR wage series, giving wages observations for 1389 individuals.<sup>35</sup>

Data for Jafet was also recorded on a variety of entry cards.<sup>36</sup> Many of these cards for Old Republic employees survive on a set of four microfilm rolls.<sup>37</sup> To sample the employees, I recorded information on every fifth card with detailed information. All cards contained an employee's name, age, nationality, civil status, entry and exit date, position, whether the worker was a piece rate worker, wage, prior employer and raises. Some contained information on literacy, race, number of machines worked, and parentage.<sup>38</sup> This process omitted *fichas* that only included an individual's name, age, wage, entry and exit dates. Because the company rehired individuals under different employee numbers in different years, there are likely some duplicated individuals in the sample; however, I treat

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<sup>32</sup> Most regression results show that living in the São Paulo area did not have a significant impact on wages; therefore, in the chapter of my dissertation that looks at wage determination, I include all 1953 workers with observations in my analysis.

<sup>33</sup> These calculations do not include apprentices. If they are included, then there were 1095 observations for 321 employees.

<sup>34</sup> The more detailed entry cards appear for workers hired in the second half of the 1920's.

<sup>35</sup> Again, apprentices and helpers are excluded. Including those individuals gives observations for 1893 employees.

<sup>36</sup> George Reid Andrews provides a description of the Jafet entry cards, *fichas*, in *Blacks and Whites in São Paulo, Brazil, 1888-1988*, p259-262.

<sup>37</sup> Entry cards for employees whose first names began with the letters A, C, D, E, R, G, Q, U and X are not available. These rolls are available at CEDIC at the PUC-SP campus.

<sup>38</sup> Gender was inferred from workers' names.

each record as a unique hire. The Jafet sample yields wage observations for 551 employees.<sup>39</sup>

The final firm included in the SPOR wage series is the Mappin department store. The dataset is derived from the archived book notes for the company's 1985 anniversary book compiled by Zuleika Alvim and Solange Peirão, *Mappin: 70 Anos*. Although much of the archived material consists of company advertisements and propaganda, some valuable interviews and wage spreadsheet compiled between July 1983 and December 1984 provide a unique window into the working world for middle class men and women in an elite department store. The Mappin data contained information on an individual's gender; age; entry month, year, job and wage; exit month and year; address and nationality. No information was available on civil status, raises and promotions, and anecdotal evidence was used to infer literacy. Therefore, wage data for the 139 Mappin employees only factor into the entry wage analysis.<sup>40</sup>

Two caveats of the Mappin data relate to nationality and literacy. First, the original researcher differentiated between those nationalities for which she was certain and for those for which she thought probably. Without the aid of employees' names, I choose to accept both the certain and probable nationalities that the wage sheet provided. Second, the Mappin data had no observations regarding literacy. However, in addition to cashiers and office workers, the interviews reveal that vendors were literate.<sup>41</sup> Therefore, all workers in these positions, as well as all of the department heads (except for the kitchen and cleaning department heads) were coded as literate. Since there was no available information on illiteracy, this variable is only relevant to the citywide wage series when all four firms are considered.

The next step after compiling the data was converting all wages into the same denomination. Since most wages were reported in hourly figures, I decided to compare hourly wages. However, some workers received daily wages or monthly salaries, so to

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<sup>39</sup> Weavers and bobbin workers, positions registering large shares of workers, were piece rate positions and were not included in the wage series. Including apprentices and helpers in the analysis give observations for 551 employees.

<sup>40</sup> There were more Mappin employees; however, helpers and apprentices were excluded (5 individuals), as were commission employees.

<sup>41</sup> I infer this because vendors had to come from good families and have solid recommendations (Leonor Perrone, interview with notes by Solange Peirão, 1984, box2 doc 52, *Mappin*, Museu Paulista, SP, Brazil.)

create a single wage series, I convert those daily and monthly workers' wages and salaries into hourly figures. The conversions were done on a firm-by-firm basis since the length of the workweek was not uniform across the city's labor market or even within certain sectors.<sup>42</sup> At Paulista, I use the English workweek (a nine-hour workday and twenty-seven working days in a month) to convert daily and monthly observations into hourly wages. For Light workers, daily workers were assumed to work 9.5 hours per day and monthly workers 27 days per month. Jafet textile workers had the most grueling workweek laboring 10 hour days, 28 days per week.<sup>43</sup> The Mappin employee wages, for the most part, were reported in monthly salaries. Since the company followed the English workweek, I calculate employees worked nine-hour days 5.5 days per week. Although the reported work schedule shows that individuals worked only eight-hour days, interviews reveal that employees worked nine-hour days.<sup>44</sup> Unfortunately, most of the Mappin vendors worked on a 1% commission. Although there is one salary observation that equates the commission with 650\$000 mil-réis per month (around 3\$030 mil-réis per hour), I choose not to include these "salaries" in my analysis as the variance between vendors in different departments entering in different years would have been very high.

The next and one of the most challenging tasks in homogenizing the data was assigning each worker a skill level for the entry-level job and for subsequent jobs in the event of a promotion. Determining skill level is important for determining inequality measures related to skill premiums.<sup>45</sup> I use two different data sets reporting wages for the early twentieth century to create proxies for skill levels. The first is the Preston-Haines (P-H) wage series that compiles occupational codes reported in the 1910 Census and wages from a 1903 United States Commissioner of Labor cost of living report. The second is the São Paulo state wage data as reported in the 1920 Brazilian Census. If agricultural jobs are not included, the P-H dataset includes 287 different occupational codes, each with available

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<sup>42</sup> French, *The Brazilian Workers' ABC*, 1992, 30-35.

<sup>43</sup> The workweek conversions were chosen based on *ficha* evidence, when available (Light and Jafet), and based on stated company policy in the case of Paulista.

<sup>44</sup> Nelly Colson, interview by Solange Perião, 1984, doc 32 box 2, *Mappin*, Museu Paulista, SP, Brazil, reveals that she worked from 8 – 18h with a one-hour lunch break.

<sup>45</sup> In chapter four of my dissertation, I calculate the importance of worker characteristics in determining the probability that an individual would be hired into an unskilled or skilled position as another measure of inequality.

wage data. The latter, 315 different occupations with 231 recording wage observations.<sup>46</sup> I do not rely solely on the Brazilian Census because the wage observations are restricted to the industrial sector and omit many of the occupations reported on the firm entry cards (bookkeeper, messenger, cleaning positions, watchman, etc.). In general, the Preston-Haines series includes a much more diverse set of occupations and provides a more accurate depiction of the range of wages, and therefore skills, across the economy. The textile sector, however, is oversimplified in the P-H series; therefore, my skill level analysis of this sector relies exclusively on the Brazilian Census dataset. The assumption that the structure of pay in Old Republic São Paulo, SP was similar to that in the 1900 United States is substantiated by the correlation between quartiles as reported in the two datasets.<sup>47</sup>

To determine a worker's skill level, I assign each worker the occupational code reported in the P-H and Brazil Census for the individual's entry job. If an individual changed jobs over his or her tenure, I also record those respective occupational codes. To create the skill level proxies, I calculate the wage quartiles for both the P-H and Brazil Census and determine which occupations are in each of the wage quartiles. I equate workers in quartile 1 as being unskilled, workers in quartile 2 as semi-skilled, workers in quartile 3 as skilled and workers in quartile 4 as highly skilled.

Assigning hourly wages and skill level dummy variables were only the first steps toward standardizing wages. Given the different entry years, I had to standardize wages in order to determine real wages. Since no deflationary index is available for the city of São Paulo during these years, I use two alternative deflators to approximate the real wages in

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<sup>46</sup> For the P-H series, 254 occupations record average wages based on five or more observations. The average number of observations was 89 when considering all professions. For the Brazil Census, only 190 occupations record five or more wage observations, but the each occupation averaged 218 observations.

<sup>47</sup> Of the occupations in the SPOR wage series, seventeen appear in both datasets and are directly comparable. Of those, over 62% of the top two quartile wage earners in the P-H database are also top two quartile wage earners as reported in the Census. Machinists are reported in the Census as being low wage earners; however, firm wages show that these individuals made well above average salaries. If these machinists are considered top half wage earners, then the correlation jumps to over 82%. Further support of the similarity is the share of day laborers. In the SPOR wage series, day laborers comprised 8.63% of the entering workforce. In the P-H series, when omitting farmers, inmates, students, housewives and individuals with no profession, day laborers were 11.27% of the population.

the city of São Paulo between 1891 and 1930. The two use competing deflationary indices that Eulália Lobo developed for the city of Rio de Janeiro between 1820 and 1930.<sup>48</sup>

Ideally I would use a Paulistano cost-of-living index to deflate the wages; however, such a series is not yet available. Therefore, I look to the only complete cost-of-living index compiled for Brazil for the entirety of the Old Republic.<sup>49</sup> Lobo used weekly and bi-weekly price data from Rio de Janeiro published in the *Jornal de Comercio* to construct a price index for the following items: black beans, rice, jerked beef, manioc flour, wheat flour, brown sugar, coffee, codfish, bacon, beer and butter.<sup>50</sup> After compiling the price data, Lobo uses three alternative consumption basket shares to estimate inflation between 1820 and 1930. In order to choose which deflationary index to use, I look at the consumption basket shares in comparison to a survey of São Paulo working class household consumption and cost of living conducted in 1935.<sup>51</sup> I find the 1949 FGV price deflator to be the best match with four of the six comparable food groups. Since the 1919 index matches two food groups better, I also decide to use this index as a lower bound, leaving the 1949 index as an upper bound.<sup>52</sup> I deflate the entry wages for each individual in the SPOR wage series based on the individual's entry year using these two indices and find that they move very closely together. Given the similitude between the two series, I only report the 1949 index because it best approximates the São Paulo reality.

#### WAGE SERIES RESULTS

The results report Paulistano wages from various approaches including nominal wages, real wages and skill premiums. In most instances firm analyses complement the citywide analysis. Six alternate citywide wage series are reported: nominal entry wages, nominal wages, real entry wages and real wages. The remaining two series consider entry

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<sup>48</sup> Eulália Maria Lahmeyer Lobo, et al "Evolução dos preços e do padrão de vida no Rio de Janeiro, 1820-1930—Resultados Preliminares" in *RBE* v25n4 (Oct Dec 1971): 235-265. This was the first in a two part article, the second of which "Estudo das categorias socioprofissionais, dos salários e do custo da alimentação no Rio de Janeiro de 1980 a 1930," appeared in *RBE* v27n4: 129-176.

<sup>49</sup> The Catão index is usually preferred by most scholars, but the last year of the index is 1914.

<sup>50</sup> Rents, shoes and clothes are not included in Lobo's analysis.

<sup>51</sup> H.B. Davis, "Padrão de Vida Dos Operários da Cidade de São Paulo," *Revista do Arquivo Municipal*, 1935.

<sup>52</sup> The 1949 index is based on a study published by the FGV in *Conjuntura Econômica* 3(3) Mar (1949). The 1919 index is based on the consumption basket reported by Leo Affonseca Junior *O custo de vida na cidade do Rio da Janeiro*, Rio de Janeiro 1920. The 1949 index is a best match to the 1935 survey for vegetables and fruit (including beans), fats, sugars and alcohol. The 1919 index is the best match for breads and grains and lean meat and eggs.

wages but exclude wage observations from the Mappin firm due to the anomalous trend the firm's nominal wages display. The best permutations are those that consider all available wage observations and omit the Mappin workers. When these series are compared to state-aggregated evidence available for São Paulo in the 1920 Census, the average wages, average textile wages and average construction wages correlate.<sup>53</sup> These series reveal that wages decreased for the majority of the Old Republic, but preliminary results show no significant increase in inequality as measured by skill premiums.

The nominal wage series are reported in figures 2 through 4 and in table 3. As inflation increased over the period, I expected to find increasing nominal wages in the city and in each of the firms. Figure 3 shows an increasing nominal wages in the city and figure 2 reveals that, in general, wages at Jafet, Light and Paulista did increase. Results on firm-level wages, however, reveal surprising results. Nominal entry wages at Light steadily increase over the period, but entry wages at Paulista and Jafet remain relatively stagnant. In the case of Jafet, they even decreased during certain years in the 1920's. The nominal entry wage trend for Mappin shows significant decreases.<sup>54</sup> In comparison to world price trends, Brazil price trends and wages at the other three firms in my analysis, this trend is atypical.<sup>55</sup>

There are several possible explanations for the decreasing wage. One possible explanation could be a higher number of foreign employees hired early on at the department store. Evidence on nationalities and entry years, however, show hiring practices did not differ greatly between 1914 and 1930 when it came to hiring different nationalities. Another competing explanation could be that omitting commissions from wage calculations could greatly underestimate these wages. However, since most salespeople are omitted from the analysis and since this downward trend applies to non-commissioned positions, I find the most plausible hypothesis to be that high initial salaries were awarded to employees as a premium for working at a new firm. There was no

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<sup>53</sup> The average adult industrial wage in São Paulo was 6\$833 mil-réis/day. The average textile wages ranged between 5\$400 and 6\$130/day. The Paulistano wage series, which underestimates wages by including some child wages reports an average of 6\$894 (+/- 30) for the series, 4\$900 (+/- 60) for textile workers. (I assume a nine-hour day for the citywide series and a ten-hour workday for textiles.)

<sup>54</sup> I look at this trend more closely for Mappin by plotting hourly wages for workers at each skill level. The data reveal decreasing nominal wages during the 1920's in all positions.

<sup>55</sup> See graph 2 and table 3 for the contrast of Mappin average wages to the other three firms.

guarantee that Mappin would succeed and higher salaries would have been an enticing offer.<sup>56</sup> Although a logical question is why people sought out jobs when the wages offered were declining, the relative wage compared to even Paulista and Light and the perks offered to employees guaranteed that Mappin remained a competitive employer.

Somewhat more informative than nominal wages are the trends in the real wages and the comparison of those wages to those found in Brazil's capital at the time, Rio de Janeiro. Figure 5 and table 4 report real wage results for São Paulo and the different firms and figure 6 compares those results to Rio de Janeiro. I do not report the real entry wages graphically, but the results do appear in table 4. There are four distinct real wage trends in the city of São Paulo during the Old Republic, but the majority of the period was one of steady decreasing real wages and short, minimal recoveries. Figure 5 shows that the sharpest decline in real wages occurred from 1892 to 1897. Then the years 1897 to 1913 showed annual volatility, but overall, few significant real wage increases or decreases. Entry wages during this period did recover slightly, but still never reached their early Old Republic level. Except for 1921, the period from 1913 to 1924 was categorized by steady declining wages. Paulistano real wages reached their nadir in 1924 when workers made 43% of the hourly wage that they had made at the turn of the century and just 15% of their wage at the beginning of the period.

Given such low wages, it is not surprising that Brazilian worker movements and labor strikes gained strength during this period. Large-scale strikes occurred in the city in 1917 and 1919 and labor tensions increased greatly as "the high cost of living, combined with the fact that many of the mills had made reductions in wages the year before [1916], when conditions were bad, and did not increase [wages] when conditions improved" led to

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<sup>56</sup> One alternative hypothesis is a practice of paying British workers higher wages and hiring these workers early on. Hiring practices and wage evidence, however, disprove this hypothesis. Another alternative is that the department store was in decline during the 1920's. However, that the company expanded both in terms of number of departments and in actual store locations makes this hypothesis improbable (*Mappin 70 Anos*). Interviews also show that it was not until 1938 that the store began experiencing difficulties (doc 62) and was not sold until 1950 (doc48, box 2 *Mappin*). An interview with Luis Sequeira (doc62, box2, *Mappin*) supports my preferred hypothesis. He notes that Mappin asked him to come work two other times before he finally accepted in 1924 because of a better salary and better working conditions.



the 1917 General Strike in July.<sup>57</sup> Strikers and employers came to a resolution that theoretically granted pardon to the strikers, gave workers the right to organize, provided some labor regulations for children and women, increased salaries, adopted the English workweek (8 hours a day with a 36 hour weekend), increased overtime pay, and reduced the prices of both primary goods and worker housing.<sup>58</sup> The peace, however, was short-lived, and another set of General Strikes struck the city in 1919.<sup>59</sup> How successful were these strikes in raising workers' real wages? The evidence shows that although there was very little recovery in terms of real wages, at least the trend for falling wages tapered off by the mid-1920's.

Finally, the last six years of the 1920's showed some recovery in terms of real wages. This trend is interesting given the "Industrial Crisis" that plagued the city in 1926 and 1927. During 1926 and 1927 most factories enacted reduced workweeks in both São Paulo and Rio de Janeiro.<sup>60</sup> Figure 5 somewhat reflects the crisis through a citywide decrease in real wages in 1927 and a decrease in 1926-7 at Jafet and in 1928 at Light. However, even though "most of the mills worked on short hours and made no profits during the year," hourly wages did not decrease dramatically.<sup>61</sup> This is not to suggest that factory employees did not suffer. While employees receiving a monthly salary were not affected by decreased production, most laborers were paid daily and hourly and would have experienced a sizeable decrease in weekly wages.<sup>62</sup> Furthermore, workers were making just 35% of what they had been making at the beginning of the Old Republic and 83% of what they had been making at the turn of the century.

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<sup>57</sup> Light *Relatorio* 1917, p2. Light employees were also the only employees not to receive a raise after the strike, although drivers were given a bonus for working through the chaos. A general raise was given to employees in 1918, however, due to the cost-of-living increase. 1918 Light *Relatorio*, p2

<sup>58</sup> These resolutions are recorded by Pinheiro and Hall (1979) on pp232-4. Various other documents related to the 1917 General Strike are also included in their book.

<sup>59</sup> Even given the significant mobilization in 1917 and 1919, by 1920, the labor movement in the city was virtually defeated and would only really resurge after 1930 (French *Brazilian Workers*, pp30-35).

<sup>60</sup> For more on the industrial crisis see Ribeiro *Condições*, p71-4; Font *Coffee, Contention and Change* p45-50; Dean *Industrialization* p128-135

<sup>61</sup> Light *Annual Report 1928*, p10. Reports from Rio confirm that textile factories in the capital also had to shut down in 1927. The CIFTA decisions caused the Cia Fab de Tecidos S Pedro de Alcantara to only work four days a week between July and November 1926. (Cia Fab de Tecidos S Pedro de Alcantara *Relatorio 1926*, p8; *Relatorio 1927*, p7)

<sup>62</sup> CIFTSP circ 596, 603, 605, 606 and Acta da CIFTSP General Assembly (6/Jul/1926)

To compare the Paulistano wage series with real wages in Rio de Janeiro, figure 1.x reports real wages with 1913 as the benchmark year to analyze these data alongside Williamson and Bértola's work for the Southern Cone region.<sup>63</sup> The graph shows that in São Paulo's early industrial phase, Paulistano workers made less than their Rio de Janeiro counterparts. The two cities' real wages are then relatively close until 1925, when São Paulo wages outpace Rio wages. These results are encouraging because they show that on a whole, São Paulo's wages moved in similar patterns to Rio wages. However, the results also confirm the need for this separate São Paulo wage series: during the early industrialization phase and in the end of the Old Republic the labor markets in Brazil's two largest cities were not fully integrated. Future scholars should factor in São Paulo real wages when evaluating Brazilian real wages for a more accurate measure

Although these real wage figures are an important contribution to the historiography, they do not directly speak to the nature of inequality in the city during the Old Republic. In order to look at the question of inequality, I use the nominal wage series to look at the nature of skill premiums over the course of the period. In other words, did unskilled workers lose out more than skilled workers during this period of falling wages? The evidence reported in figure 7 compares the average wages of workers employed in unskilled positions with those employed in skilled and highly skilled positions.<sup>64</sup> The analysis omits Mappin workers because these workers, on average, made significantly more than workers at the other three firms and since most employees were in skilled positions, including these workers could artificially inflate the wage premium.

Preliminary evidence on skill premiums shows that, although there was constant and sometimes volatile variation from 1900 to 1920, for the most part, the skill premium remained around 1.5. It was only in the first years of the Old Republic and in the last decade that the premium noticeably widened.<sup>65</sup> More wage ratios and a firm-by-firm

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<sup>63</sup> Williamson (2009, 1998) Bértola (2003). The Rio de Janeiro wages use the nominal wages reported by Williamson in his study on real wages in Latin America; however, I deflate the reported nominal wages with the Lobo index so that they are comparable to the São Paulo wages.

<sup>64</sup> Skill levels are determined by assigning Preston-Haines occupational codes to each worker and then using the P-H data on wages to sort each profession into a quartile. Thus, unskilled workers were in quartile 1, skilled workers in quartile 3 and highly skilled workers in quartile 4. For more on this methodology, see chapter 4 of this dissertation.

<sup>65</sup> For this analysis, I look at skill premiums for entry wages only.

analysis need to be explored to better understand the nature of skill premiums and inequality in the Old Republic, but that there was no sustained increase in skill premiums over the period suggests that in terms of skill premiums, there was no sustained increase in inequality over the period. These data, however, do not include many of the wealthiest Brazilians such as industrialists, politicians and exporters. Therefore, even if skill premiums remained steady, if the wealth of the top income earners continued to grow over the period, the income inequality could have been increasing while wage differentials remained constant.

#### CONCLUSION

The Old Republic was a time of poor working conditions and labor abuses where the São Paulo labor force continually dealt with declining real wages. However, in terms of inequality, the evidence suggests that no skill group of the working population was hit harder than the other. Skilled and unskilled workers alike suffered as rents and food prices rose and wages stayed the same. What is surprising is that the worker movements and labor strikes in the city were not a more prominent feature during the Old Republic.

I do not propose that these real wage estimates are perfect; however, they are the best approximation available for real wages in the city of São Paulo during this period.<sup>66</sup> The fact that the deflationary index does not consider housing costs at a time when exponential population growth put exorbitant stress on the city's housing market may inflate these estimates; however, sporadic data on rent inflation suggests that rent prices did not increase faster than food prices.<sup>67</sup> These real wages are not only important to understanding how industrialization translated for laborers in the city, but also provide the necessary data to study wage inequality in Old Republic São Paulo, SP. In my dissertation I use the SPOR wage series to further study inequality, analyzing the importance of certain worker characteristics, such as gender, age and immigration status, in determining wages during the period and in evaluating the presence of a dual labor market.

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<sup>66</sup> Ideally the deflationary index would be for the city of São Paulo and would include prices for both clothes and rents; however, constructing such an index lies outside of the scope of this dissertation.

<sup>67</sup> A municipal construction contract in 1908 reveals that rent for a 5 to 6 person dwelling in a worker villa would rent for 30\$000 per month. (AMWL, Fundo Intendência Municipal, Obras, cx5) Davis found that the average family (of 5 persons) in a worker villa lived in a 2.5 room dwelling and paid 84\$000 per month in 1935. (Davis, table 17 p164 and table 12, 157). This results in a 2.8 increase in rent. From 1908 to 1930, Lobo's inflation estimates for food prices in Rio de Janeiro reveal a 3.6 increase (Lobo v25)

Figure 2

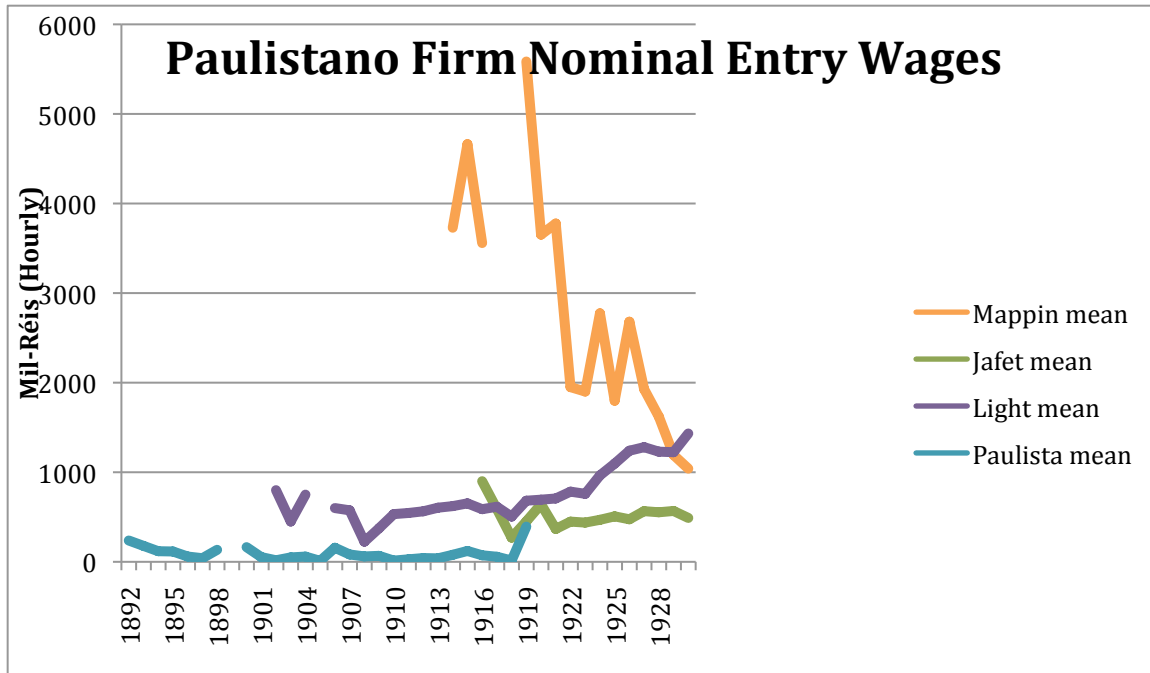


Figure 3

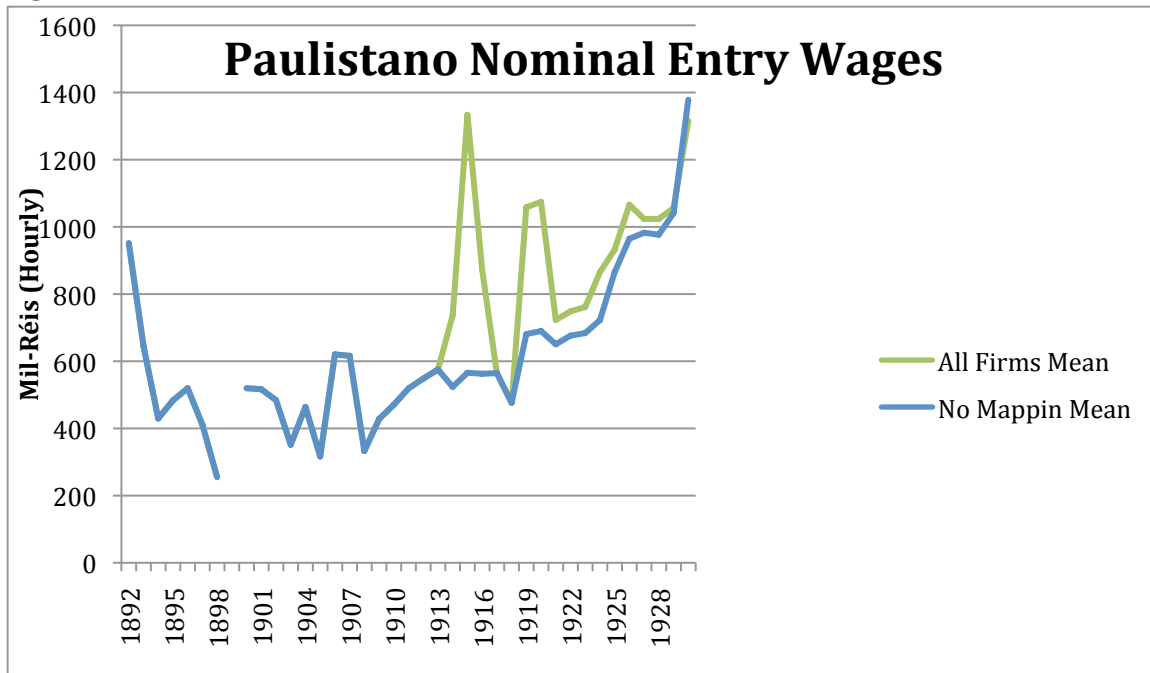


Figure 4

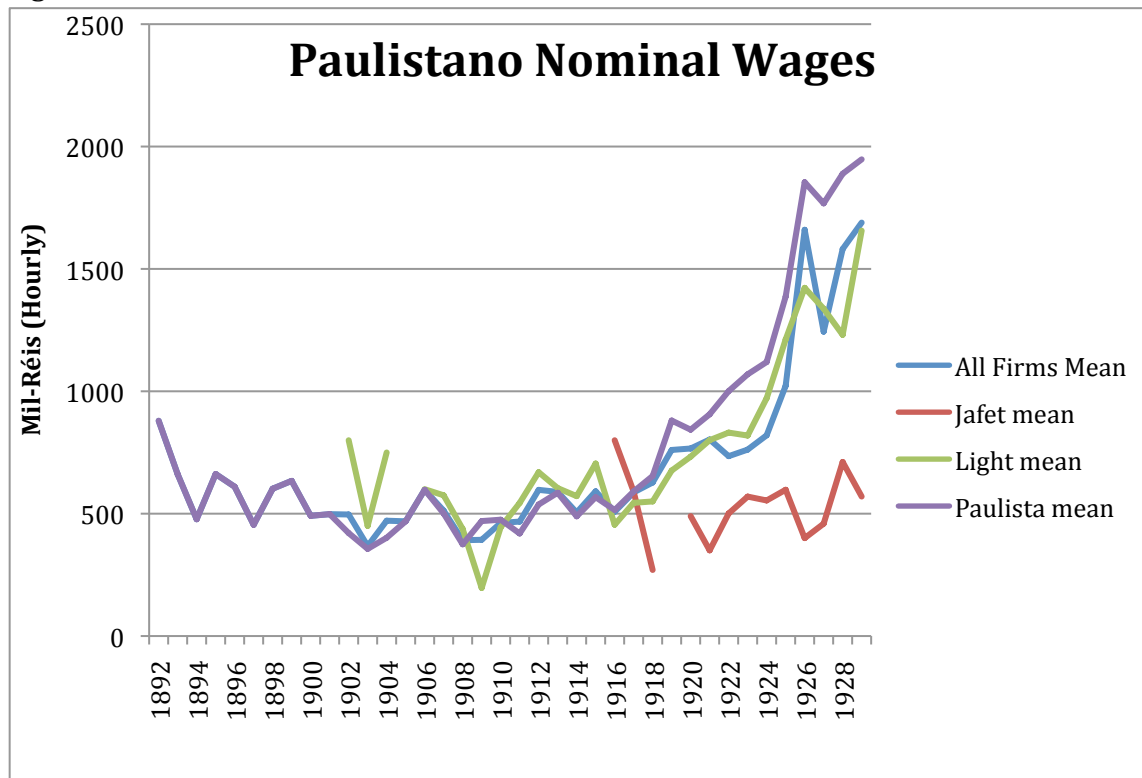


Figure 5

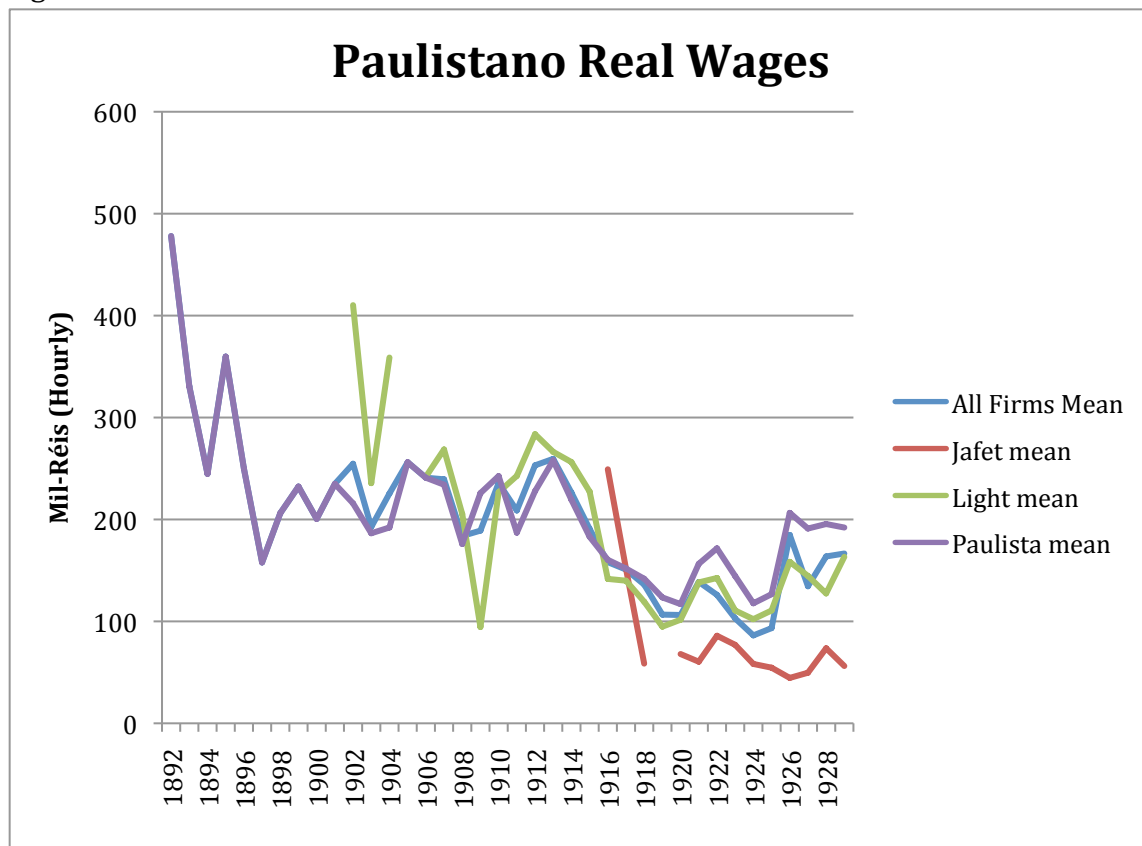


Figure 6

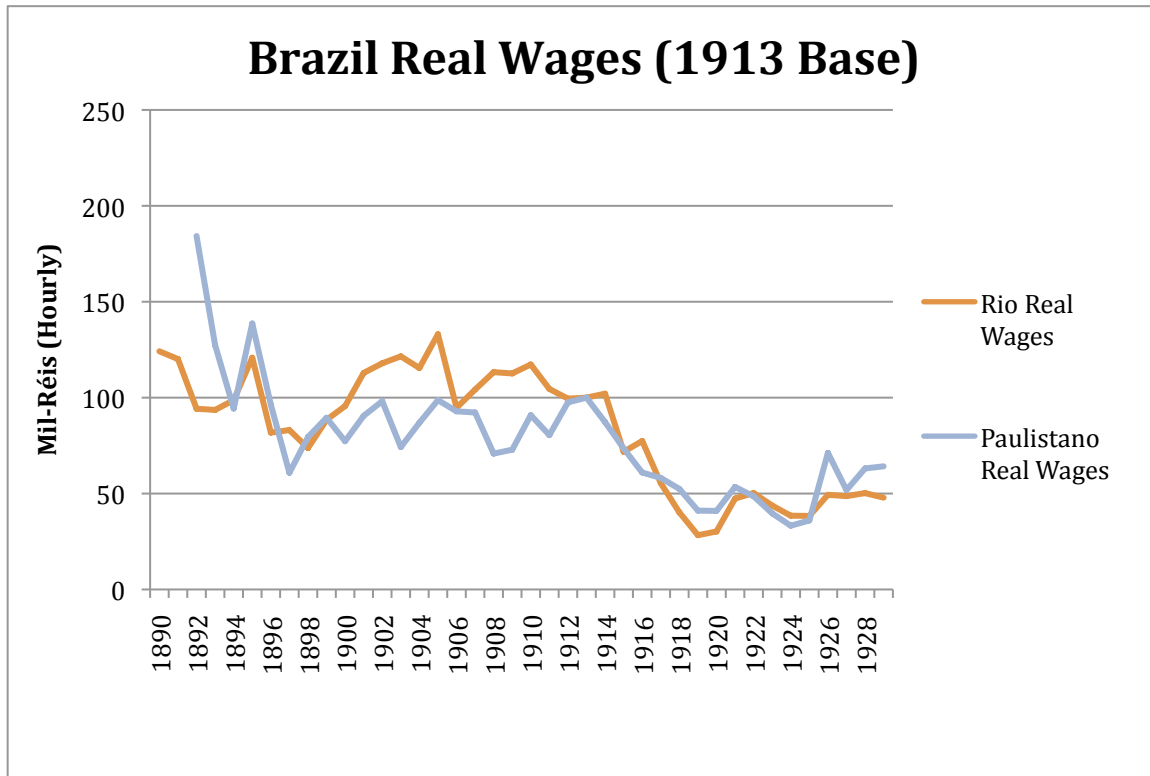
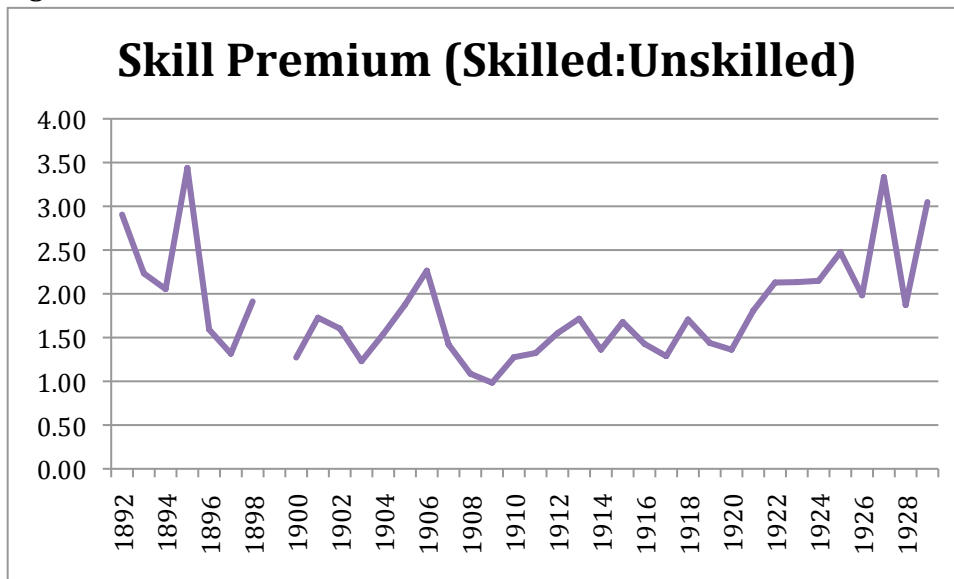


Figure 7



Year	Nominal Wages				Nominal Entry Wages					
	All Firms Mean	Jafet mean	Light mean	Paulista mean	All Firms Mean	No Mappin Mean	Jafet mean	Light mean	Paulista mean	Mappin mean
1892	222.2			222.2	222.2	222.2			222.2	
1893	661.1			661.1	645.2	645.2			645.2	
1894	477.2			477.2	429.6	429.6			429.6	
1895	662.0			662.0	483.3	483.3			483.3	
1896	610.1			610.1	519.7	519.7			519.7	
1897	454.5			454.5	410.9	410.9			410.9	
1898	601.9			601.9	254.8	254.8			254.8	
1899	634.1			634.1						
1900	491.3			491.3	519.7	519.7			519.7	
1901	498.0			498.0	516.7	516.7			516.7	
1902	496.6		800.0	420.8	484.2	484.2		800.0	421.1	
1903	367.8		450.0	356.1	351.7	351.7		450.0	339.4	
1904	471.3		750.0	401.6	464.1	464.1		750.0	368.8	
1905	468.8			468.8	316.7	316.7			316.7	
1906	597.6		600.0	597.5	620.2	620.2		600.0	621.9	
1907	512.3		575.0	500.9	616.2	616.2	1428.6	575.0	251.2	
1908	391.5		437.5	374.7	332.7	332.7		225.0	363.5	
1909	393.2		196.4	469.7	427.9	427.9		375.0	441.1	
1910	462.2		444.4	475.4	470.6	470.6	550.0	532.6	355.6	
1911	467.7		543.8	419.0	519.1	519.1		545.2	412.4	
1912	597.3		669.4	537.4	548.4	548.4		564.0	475.8	
1913	589.0		604.5	585.5	575.4	575.4		604.2	513.9	
1914	504.8		571.6	489.1	737.3	523.6		621.8	425.4	3729.6
1915	591.3		704.9	567.4	1333.8	565.8		652.4	427.1	4662.0
1916	507.6	800.0	454.8	514.9	872.7	562.8	900.0	587.5	508.3	3558.7
1917	586.8	590.0	544.3	590.8	564.6	564.6	590.0	614.6	523.7	
1918	627.3	270.0	550.0	653.9	476.1	476.1	270.0	504.9	419.4	
1919	760.3		676.1	880.6	1058.2	680.9	451.0	682.3	809.2	5585.1
1920	766.3	490.0	732.9	843.1	1074.7	689.9	642.3	693.7		3652.7
1921	803.0	350.0	800.4	906.1	723.2	650.5	367.1	707.1		3776.2
1922	734.9	500.8	831.2	1000.9	748.4	676.3	448.8	783.4		1950.3
1923	761.7	569.8	819.1	1069.4	761.5	683.8	438.1	759.2		1901.1
1924	820.2	553.9	971.8	1119.6	865.1	722.5	468.9	964.7		2773.9
1925	1022.4	597.7	1211.9	1387.0	932.5	865.3	507.5	1096.2		1798.8
1926	1660.0	400.0	1422.8	1854.3	1066.1	964.7	474.8	1240.2		2680.7
1927	1243.7	459.1	1337.3	1767.7	1023.4	982.5	565.5	1279.9		1927.7
1928	1581.3	711.3	1230.7	1888.8	1023.9	976.8	553.1	1229.6		1620.8
1929	1689.3	570.0	1656.4	1947.7	1056.5	1040.9	567.8	1223.8		1192.4
1929	700.0	700.0			1315.7	1378.6	490.0	1432.5		1040.2

Source: Firm-level employee entry cards from Light and Paulista. Wage database for Paulista and wage worksheet for Mappin. See section on sources for detailed information on sources.

<sup>68</sup> For more complete tables that include standard errors, please write the author ([mollyball@ucla.edu](mailto:mollyball@ucla.edu), [mollycball@gmail.com](mailto:mollycball@gmail.com))

Table 4: Real Paulistano Wages, 1892-1929

Year	Real Wages				Real Entry Wages					
	All Firms Mean	Jafet mean	Light mean	Paulista mean	All Firms Mean	No Mappin Mean	Jafet mean	Light mean	Paulista mean	Mappin mean
1892	478.0			478.0	517.2	517.2			517.2	
1893	330.6			330.6	322.6	322.6			322.6	
1894	244.7			244.7	220.3	220.3			220.3	
1895	359.8			359.8	262.7	262.7			262.7	
1896	250.0			250.0	213.0	213.0			213.0	
1897	157.8			157.8	142.7	142.7			142.7	
1898	206.1			206.1	87.3	87.3			87.3	
1899	232.3			232.3						
1900	200.5			200.5	212.1	212.1			212.1	
1901	234.9			234.9	243.7	243.7			243.7	
1902	254.7		410.3	215.8	248.3	248.3		410.3	215.9	
1903	192.6		235.6	186.4	184.1	184.1		235.6	177.7	
1904	225.5		358.9	192.1	222.0	222.0		358.9	176.4	
1905	256.2			256.2	173.0	173.0			173.0	
1906	241.0		241.9	240.9	250.1	250.1		241.9	250.8	
1907	239.4		268.7	234.1	287.9	287.9	667.6	268.7	117.4	
1908	183.8		205.4	175.9	156.2	156.2		105.6	170.7	
1909	189.0		94.4	225.8	205.7	205.7		180.3	212.0	
1910	235.8		226.8	242.6	240.1	240.1	280.6	271.7	181.4	
1911	208.8		242.7	187.0	231.7	231.7		243.4	184.1	
1912	253.1		283.6	227.7	232.4	232.4		239.0	201.6	
1913	259.5		266.3	257.9	253.5	253.5		266.1	226.4	
1914	226.4		256.3	219.3	330.6	234.8		278.8	190.8	1672.5
1915	190.8		227.4	183.0	430.3	182.5		210.5	137.8	1503.9
1916	158.1	249.2	141.7	160.4	271.9	175.3	280.4	183.0	158.3	1108.6
1917	150.9	151.7	139.9	151.9	145.2	145.2	151.7	158.0	134.6	
1918	136.1	58.6	119.3	141.8	103.3	103.3	58.6	109.5	91.0	
1919	106.6		94.8	123.5	148.4	95.5	63.3	95.7	113.5	783.3
1920	106.3	68.0	101.7	116.9	149.1	95.7	89.1	96.2		506.6
1921	138.7	60.4	138.2	156.5	124.9	112.3	63.4	122.1		652.2
1922	126.1	85.9	142.6	171.7	128.4	116.0	77.0	134.4		334.5
1923	102.9	77.0	110.7	144.5	102.9	92.4	59.2	102.6		256.9
1924	86.2	58.2	102.2	117.7	91.0	76.0	49.3	101.4		291.7
1925	93.4	54.6	110.7	126.7	85.2	79.0	46.4	100.1		164.3
1926	184.9	44.5	158.4	206.5	118.7	107.4	52.9	138.1		298.5
1927	134.4	49.6	144.6	191.1	110.6	106.2	61.1	138.4		208.4
1928	163.7	73.6	127.4	195.5	106.0	101.1	57.3	127.3		167.8
1929	166.6	56.2	163.4	192.1	104.2	102.7	56.0	120.7		117.6

Source: Firm-level employee entry cards from Light and Paulista. Wage database for Paulista and wage worksheet for Mappin. See section on sources for detailed information on sources.