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IZA DP No. 16788

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## ABSTRACT

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# The Political Economy of Minimum Wage Setting: The Factories and Shops Act of Victoria (Australia), 1896-1913\*

The Victorian Factories and Shops Act of 1896, the second minimum wage law in the world, empowered administrative agencies (“Special Boards”) to set trade-specific minimum rates based on age, sex, and occupation. Much like modern debates, Victorian supporters of minimum wages argued that they would protect vulnerable workers while opponents argued that they would increase employers’ costs, resulting in unintended consequences for workers. Evidence from the actual minimum wages passed under the Act suggests that Boards were loosely constrained by market factors, but also that they had some discretion in minimum wage setting. This discretion was used differently by individual Boards; some essentially followed the market for their trades while others set minimum rates that were binding for at least some workers. To the extent that rates were binding, they tended to reduce inequality among adult male workers, particularly after a 1907 Federal ruling established a living wage for employers with operations in multiple states. However, minimum wages also increased inequality across groups, increasing wages of adult men relative to those of women and youths. The Act formally institutionalised gender-based pay differences, a practice that continued in Australian minimum wage setting for over 70 years.

**JEL Classification:** N47, N37, J88

**Keywords:** minimum wages, Australia, protective legislation

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## Introduction

Minimum wages are among the most widely debated labour market policies. There exists an enormous literature on the effects of minimum wages on employment, the distribution of income, and other labour market outcomes (Card and Krueger 1997; Brown 1999; Neumark and Wascher 2008; Manning 2021; Clemens 2021). An important related question is the extent to which these potential effects are considered by policy makers when setting minimum wages. This second question has to some degree been addressed in American and British contexts, which currently both have national minimum wages set by elected officials (Seltzer 1995; Metcalf 1999; Neumark and Wascher 2008; Zavodny 2020; Fishback and Seltzer 2021). However, the institutional context in which these minimum wages are set is something of an historical anomaly. Earlier minimum wage laws in New Zealand, Australia, the United Kingdom, and the United States created administrative agencies to set minimum rates on an industry-by-industry basis.<sup>1</sup> Even today, countries including Denmark, Germany, Italy, Sweden, and several others continue to set minimum wages on this basis (Dickens 2023). It is thus an important, but largely open, question as to the extent to which labour market institutions lead to different minimum wage policy outcomes.

This paper examines early minimum wage setting in the Australian state (previously colony) of Victoria. Victoria has one of the longest histories of protective labour legislation in the world, dating back to 1873. In 1896, the *Factories and Shops Act* (henceforth FSA) was amended to establish trade-specific minimum wages. Minimum wages were to be set by Special Boards, comprising an equal number of representatives of employers and employees. The Boards set multiple minimum rates for their trades, with individual rates linked to workers' occupation, age, experience, location, and gender. Special Boards were initially established for only six trades which were perceived to be particularly prone to "sweating" – boots, bread and bakeries, clothing, furniture, shirts, and underclothing.<sup>2</sup> However, later amendments to the FSA extended potential coverage to any factory-based trade and then to virtually all trades. By 1913, there were 125 Special Boards, covering over 150,000 workers, approximately 26 percent of the Victorian workforce reported in the *1911 Census* (Victoria 1901-1914; Vamplew 1987).<sup>3</sup>

The original legislation was almost completely silent about how Special Boards should set minimum wages, specifying only a lowest minimum rate well below the wages of all but a handful of child workers. The legislation also mentioned a very general set of factors that

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<sup>1</sup> In New Zealand, the *Industrial Conciliation and Arbitration Act* of 1894 established Conciliation Boards to set minimum rates (Rankin 1916). In the United Kingdom, the *Trade Board Act* of 1909 created Trade Boards for this purpose. In the United States, the first federal law, the *National Industrial Recovery Act* of 1933, created the National Recovery Administration to oversee labour standards on an industry-by-industry basis. The modern American minimum wage law, the *Fair Labor Standards Act* of 1938, initially created Industry Committees to raise industry-specific minimum wage from the legislated \$0.30 to rates up to \$0.40 (Seltzer 1995).

<sup>2</sup> "Sweating" is broadly defined as poor, socially unacceptable working conditions. It may consist of low pay, long hours of work, lack of extra pay for overtime work, insufficient break time, poor ventilation or lighting, etc.

<sup>3</sup> Excluding professional, domestic, agricultural, and self-employed workers, who were not covered by minimum wages at this time, increases this figure to 47 percent.

Special boards were meant to consider factors, such as age and sex of workers, but did not provide any guidance as to how these should be incorporated into minimum rates. Contemporary discussions and later academic literature have emphasised two broad factors that governed minimum wage setting: competitive market wages and protection of vulnerable and under-represented workers. Competitive market wages were perhaps the most discussed issue in the early Special Board hearings. Employers expressed concerns that proposed minimum rates were well above market levels and would lead to unemployment in their trade or other adverse labour market outcomes, such as employers leaving Victoria; “speeding up” of work; and reduced employment of older, slower, and disabled workers (Victoria 1896-1913: Boot Board 1897, Brewers Board 1901, Cigar Makers Board 1900; Furniture Board 1897; Rankin 1916). A 1902 Royal Commission exploring the early years of minimum wages setting under the FSA concluded that some Special Boards followed the labour market for their trade but that others set rates above market levels. Later scholars have been divided on whether minimum wages under the FSA led or followed the market, with Rankin (1916) arguing that rates in several trades were above market levels and Forster (1985) arguing that prior to 1930 minimum wage setting in Australia largely followed the market. In an article closely related to the current paper, Seltzer and Borland (2018) find little evidence that minimum wages under the FSA systematically created unemployment or had other unintended labour market consequences; suggesting that minimum wages were not set “too far” above the market level.

The other main point of early discussions was whether minimum wages should be egalitarian, designed to help less well-off groups of workers, such as women, children, and unskilled adult men. Advocates of minimum wages argued that their very purpose was to ensure that workers could meet the cost of living and to prevent exploitation of the most vulnerable (Victoria 1896-1913: Aerated Water Board 1902; *The Argus* 8/2/1898; *The Age* 22/6/1898; Hammond 1913, 1915). It is clear from the expressed views of contemporaries and the initial coverage that the original intent of the *Act* was protective (Victoria, 1896; Victoria 1902-03; Hammond 1915; Rankin 1916). However, public choice theory suggests that the institutional structures which set minimum rates may have been “captured” by well-organised groups, such as trade unions and larger employers, who sought to use the law for their own advantage. Scholars such as M.T. Rankin (1916) and Jenny Lee (1987) have argued that minimum wages promoted the interests of these well-organised groups, who were better represented on the Special Boards.

As the law itself provided little direct guidance, understanding the underlying factors behind minimum wage policy requires an examination of the actual minimum wages implemented by the Boards. To analyse minimum wage setting more formally, I use the papers of the Special Boards and data drawn from the *Annual Reports of the Factory Inspector* to create an extensive panel data set of occupation-level minimum wages and trade-level employment and average wages between 1900 and 1913. The data set contains over 19,000 separate minimum wage observations covering over 700,000 employees.

I use these data to test for the importance of market-related factors in minimum wage setting, whether minimum wages advantaged some groups of workers relative to others, and differences across Special Boards. The evidence suggests that Special Boards had a few simple over-riding objectives when setting minimum wages. Most Special Boards adjusted minimum rates relatively infrequently and maintained relatively constant real minimum rates over the entire period of this study. Minimum rates were broadly constrained by market factors, but Special Boards had some discretion. Some Boards essentially followed the market for their trade, while others acted as “market leaders”, setting rates above market levels. Adjustments to minimum rates responded more to changes in the broader national economy than to trade-specific conditions. Minimum wages reduced inequality across adult male occupations. Lower-paid occupations tended to receive larger annual percentage increases resulting in convergence between low and high paid occupations over the period of this study. Minimum wage setting for adult men became even more egalitarian after a 1907 Federal law established a living wage of 42/ per week for employers with operations in multiple states.<sup>4</sup> Although minimum wage policy tended to reduce inequality *within groups of workers*, it also tended to increase inequality *across groups of workers*. Men’s minimum rates were higher than those of women and youths beginning with the first decrees passed in the late-1890s. Men also experienced more frequent and larger average minimum wage increases. There is some evidence to suggest that these gender-based differences went beyond what would have happened in an unregulated labour market. Institutionalised gender-based differences in minimum wages continued to be a feature of Australian minimum wage policy until the “equal pay” decisions of 1969 and 1972.

## **II. Background to the *Factory and Shops Act***

The first permanent European settlement of what would become the colony (and later state) of Victoria occurred in 1835. Victoria was initially part of New South Wales but became a separate colony following the first gold rush in 1851. The gold rushes attracted immigrants, causing the population to surge from 77,345 in 1851 to 538,628 a decade later (Vamplew 1987, series POP18). In the following decades, Victoria (and the rest of Australia) experienced a period of sustained economic growth known as the “Long Boom”, which continued through the late-1880s. During the Long Boom, Victoria, and specifically Melbourne, emerged as the main manufacturing centre in Australia, primarily due to higher tariffs than neighbouring New South Wales (Coghlan 1918; Lloyd 2017). Victoria’s manufacturing output and employment exceeded that of the other Australian colonies/states both in absolute terms and as a percentage of GDP and total employment well into the twentieth century (Vamplew 1987; Sinclair 1996). Labour scarcity was the defining characteristic of the Victorian and broader Australian economies throughout the nineteenth century, particularly during the Long Boom (Coghlan 1918; Seltzer 2014). This led to strong bargaining power for workers, and, as a result, Australia possessed among the highest living

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<sup>4</sup> All monetary values in this paper are expressed in shillings (/) and pence (d). In 1910, the currency technically changed from the British to the Australia pound; however, as the exchange rate was fixed at one-to-one, I do not make any distinction in this paper.

standards in the world for unskilled workers (Allen 1994; Maddison 2009; Panza and Williamson 2020, 2021).

The Long Boom came to an end in the late-1880s with a series of roughly simultaneous internal and external shocks. Australia suffered a major financial crisis with the collapse of a speculative property bubble in the major cities and a sharp decline in overseas investment following the Barings crisis.<sup>5</sup> These shocks led to the largest banking crisis in Australian history. Over 40 building societies and land banks in Melbourne and Sydney failed between July 1891 and March 1892. Between 1890 and 1893, 7 of the Australian colonies' 31 trading banks permanently closed their doors. In 1893, 13 of the 24 surviving trading banks suspended operations for between 30 and 128 days (Coghlan 1918; Butlin 1986; Sinclair 1976). Depression in the real sector followed the financial crises. Residential and rural construction and public investment in urban infrastructure and railways experienced dramatic declines. Simultaneously, the demand for rural exports declined due to a depressed world economy. Victorian nominal GDP declined by 34 percent between 1890 and 1894 (Merrett 2013). The depression had substantial effects on labour markets. Nominal wages declined by nearly 20 percent and did not reach 1890 levels again until 1909 (MaCarthy 1970). A series of strikes over pay and working conditions by maritime workers, shearers, and coal miners in 1890 and 1891 were decisively defeated, leading to lockouts and further pay cuts. One in three trade union members was unemployed in 1893 (Vamplew 1987).

Following the strike defeats, the Australian labour movement increasingly turned away from collective bargaining and towards protective legislation as their primary means of improving pay and conditions (Hancock 1979). Even in the 1890s, Victoria already had a relatively long history of protective labour legislation. Its first law, the *1873 Factory Act*, was the first in the Australian colonies and one of the first in the world.<sup>6</sup> The *Act* initially established an eight-hour day for most women in factories with at least ten workers, prohibited employment of young children, created a board which could further regulate health and safety conditions, and allowed inspectors to enter workplaces to enforce the decrees (Hagan 1964). An 1885 amendment to the *Act* increased coverage to include shops, reduced the minimum establishment size from ten to six workers, and increased the number of inspection staff. This amendment also required the Chief Inspector to produce an annual report of workplace conditions, employment, wages, and enforcement of the *Act*. Most of the data used in this article are drawn from these reports.

For the purpose of this paper, the most important amendment to the *Factory and Shops Act* occurred in 1896. This amendment established the principle of minimum wages set by trade-specific Special Boards. The FSA was only the second minimum which wage law in the

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<sup>5</sup> Barings Bank collapsed in 1890, largely due to risky investments in Latin America. Although the Australian economy had few direct connections to Barings, after the crisis British investors shied away from overseas investments and capital flows into Australia dwindled substantially (Coghlan 1918; McLean 2007).

<sup>6</sup> The *1873 Factory Act* was the first protective labour law in the new world, following only laws in the United Kingdom (1833) and Germany (1853) (Huberman and Meissner 2010).

world, following an 1894 New Zealand law, which covered far fewer workers. Under the terms of the FSA, the Special Boards were to comprise 2-5 employers; an equal number of employees; and, for most of the period of this study, an independent chair drawn from the general public.<sup>7</sup> Convening a Special Board had to follow a request by either employers or employees; although in practice, almost always the latter (Rankin 1916, p. 28). The Boards would hold hearings and prepare a schedule of minimum wages based on workers' occupation, gender, and either age or experience. Boards also set standards for full-time hours in a working week; the ratio of apprentices and improvers to adults; and pay rates for working overtime, Sundays, and holidays. The Board's decree would become legally binding for employers upon publication in the *Government Gazette* (Hammond 1913).

Special Boards were initially established for only six trades specifically mentioned in the 1896 amendment: boots, bakeries and bread-making, clothing, shirts, underclothing, and furniture (Victoria 1896). The initial coverage strongly suggests that the framers of the law intended it to be protective. The six trades employed a substantially larger share of young workers than trades covered later.<sup>8</sup> The boot, clothing, underclothing, and shirt trades were among the largest employers of women in Victoria. In 1913, women and girls comprised 70.4 of employment in these four trades, compared to 25.0 percent of employment in trades first covered between 1900 and 1913 (Victoria 1901-14). The furniture trade was almost entirely male but employed large numbers of Chinese workers, typically working longer hours at much lower wages than their white counterparts (Gibson 2019). The bakery and bread-making trade required early morning work and was essential to public health.

The FSA was further amended in 1900, 1903, 1905, 1907, 1909, and 1910. These amendments established the permanence of Special Boards and expanded coverage. From 1900, minimum wages could be set for any factory-based trade. Following this amendment, 28 new Boards were established in 1901 and 1902. The principle of minimum wages was dealt a setback in 1902 with the election of Liberal leader William Irvine to state premier. Irvine was generally against state intervention and believed that Special Boards and the minimum wages they set were "oppressive to the people of Victoria" and were "practically strangling industries which were in a very flourishing condition before the *Act* was passed" (Victoria 1902, p. 19). The 1903 amendment made it more difficult to convene new Boards and increased the power of employers on existing Boards. Only nine new Special Boards were established and less than five percent of existing minimum rates were increased between 1903 and 1906. In 1904 Irvine left the Premiership and was replaced by the more interventionist Thomas Bent. Bent supported progressive legislation on public health, education, old age pensions and expansion of minimum wages. The 1905 amendment restored the neutral chair, reducing employers' power on the Boards. Following a 1907 amendment which extended potential coverage to virtually all trades, coverage under the *Act* increased substantially. Figure 1 shows the increase in coverage between 1898 and 1913.

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<sup>7</sup> Between 1902 and 1905 the chair was selected by employers. This gave employers effective veto power over any proposed minimum wage schedule.

<sup>8</sup> Data from Victoria (1901-14), *Special Board Trade Appendix* show that in 1913 16.2 percent of workers in the original 6 trades were under age 18, compared to 10.1 percent for trades first covered after 1900.

Over the period, the number of Boards increased from 6 to 125 and the total number of covered workers increased tenfold.

Midway through the period of this study, the Federal Government also began regulating minimum wages. The *Excise Tariff Act* of 1906 granted employers tariff protection, on the condition that they paid “fair and reasonable” wages to their employees. In the *Sunshine Harvester Judgement*, the Commonwealth Court of Conciliation and Arbitration (CCCA) decided that fair and reasonable meant that employees had to pay enough to meet “the normal needs of an average employee” (Commonwealth Conciliation and Arbitration Court 1907). This was determined to be 42/ per week for an adult male, based primarily on evidence on the cost of living and household budgets in Melbourne (Isaac 2008). Adult females were covered by a base rate of 22/4d from 1912. Federal coverage only applied to firms with operations in multiple states. The FSA only covered firms operating exclusively in Victoria and, thus, none of the minimum wages in my data set were directly impacted by the Harvester decision. However, both contemporaries and later scholars have argued that the Special Boards used the Harvester standard as a benchmark in making wage determinations after 1907, with Boards prioritising raising the wages of the lowest-paid men to at least 36/ and typically 42/ (Hammond 1913; Macarthy 1968).

Special Boards differed considerably in the way they set minimum rates. Some Boards – such as bread, cigars, coopers, dressmaking, saddlery, shirt-making, and underclothing – set a single minimum rate covering all adult workers in their trade for at least part of the period of this study. Others set many separate adult rates based on gender, occupation, or location. Most trades which employed both men and women segregated workers by gender; with men’s occupations typically receiving higher minimum rates.<sup>9</sup> However, trades in which men and women performed at least some tasks in common – such as furniture, pastry cooks, tinsmithing, cigar-making, shirt-making, underclothing, and brush-making – often had heated discussions about whether the same minimum rates should be paid to adult women and men (Victoria 1901-14; Lee 1987, p. 361-2). Uniform minimum rates for men and women were ultimately established in a few trades, such as shirt-making and underclothing, for some or all of the period of this study. However, typically, higher rates were set for men. Adult minimum wages also varied based on location for some trades; for example, gold mining had different rates for different gold fields; agricultural implements, shop assistants, flour, saddlery, and woodworkers had higher rates for urban areas; and painting and plumbing had higher rates for working away from a central location.<sup>10</sup> Because there were separate minimum rates depending on a variety of factors, the number of separate minimum rates within a trade could be quite large. In an extreme example, the gold mining trade in 1913 had separate minimum wage rates for 28 occupations in 6 districts for quartz mining, plus a further 48 separate rates

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<sup>9</sup> Most trades were single sexed. In 1913, 58.1 percent of trades employed only men and one trade (millinery) employed only women. The Duncan’s D index of occupational segregation across trades for 1913 is 0.748, where 1.0 indicates complete segregation. There was also considerable within-trade occupational segregation, thus it was fairly rare for men and women to work side-by-side.

<sup>10</sup> Special Boards were also heterogeneous in their approach to other labour market terms, such as apprentice rates and periods, length of the standard workweek, overtime and holiday pay, and the permitted number of apprentices/improvers per adult worker. It is beyond the scope of this paper to examine these terms in detail.

for occupations in alluvial mining, cyanide mining, and pyrites mining and for apprentices and improvers – a total of 216 separate minimum rates covering only 4,464 workers.

### III. Data

The data for this paper are drawn from several sources. The papers of the Special Boards, housed in the Victoria State Archives in North Melbourne, provide evidence on the role of competing interest groups in the process of minimum wage setting (Victoria 1896-1913). The *Annual Report of the Chief Inspector of Factories and Shops* contains three appendixes with data on wages, employment, and minimum wages. The appendix “Wages fixed by Special Boards” (henceforth WFSB) lists all minimum wages in operation at the time of the *Annual Report*. The appendix “Special Board trades” (henceforth SBT) lists employment and average wages by gender and age in the previous year for every covered trade. The appendix “Return for the year showing the average weekly wages” lists employment and average wages in the previous year by gender and age for trades not covered by minimum wages.

The content of papers of the Special Boards varies over time and across Boards. Typically, the records from each time a Board convened contain letters from interested parties and a summary of any resulting decree. Some records also include additional materials, such as lists of employers in the trade, samples of surveys conducted by FSA inspectors, newspaper clippings of articles related to the FSA, and transcripts of hearings before the Boards. There are separate records covering each time that a Board convened, although the initial meeting was almost always the most contentious and, consequently, produced more comprehensive records than subsequent meetings.

The SBT Appendix summarises the returns from annual surveys asking employers the name, gender, age, occupation, and earnings of each of their workers.<sup>11</sup> The summaries contain the number of workers and the average weekly wage for 20 age/gender pairs (male/female; age 13, 14, ..., 20, 21, adult) plus piece rate and “general” workers in each covered trade. The number of employees in individual age-gender cells is often very small, especially for the lower age groups. Thus, I have aggregated total employment and average wages into six age/gender pairs: males aged 13-18, males aged 19-adult, adult males, females aged 13-18, females aged 19-adult, and adult females. Relatively few trades employed large numbers of piece rate workers and thus I do not use these data except to determine total employment in each trade/year pair.

I have linked the gender and age-specific minimum wages for apprentices and improvers and the gender and occupation-level minimum wages for adults to trade-level average wages and employment for the corresponding group of workers. The resulting unbalanced panel data set

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<sup>11</sup> Only about a dozen of the tens of thousands of original surveys are contained in the papers of the Special Boards. As far as I am aware, most of the original surveys have not survived.

contains all occupations reported for the original six trades in 1900, every occupation listed in the first year that a Special Board was convened for other trades, and every new occupation for which it was possible to reliably ascertain prior minimum rates.<sup>12</sup> The data cover virtually all minimum rates between 1900 and 1913. I do not record data after 1913 because War-related disruptions led to reduced reporting in the *Chief Inspector's Reports*. In total, the data set contains 1,025 adult male occupations and 127 adult female occupations. There are minimum wages for 12,077 adult male occupation-years, 4,588 male apprentice and improver-years, 1,198 adult female occupation-years, and 1,285 female apprentice and improver-years. I have converted the nominal wages reported in the *Annual Reports* to real wages using McLean and Woodland (1992), series X-5 as the price deflator. This series has been constructed using Melbourne prices and thus probably reflects prices faced by Victorian workers better than available national price series.

Figure 2 provides an example of a minimum wage scale over the period of this study, showing minimum rates for the jewellery trade.<sup>13</sup> The left-hand figure shows nominal minimum wages for male occupations and the right-hand figure, for female occupations. Each individual dot in Figure 2 represents the minimum wage for a group of workers. There are several patterns evident from Figure 2 which will be further explored later in the paper. First, wages were adjusted infrequently. The Jewellery Board convened three times over the period of this study: in 1900, 1909, and 1912. In the latter two years, only some minimum rates were adjusted. Some rates remained unchanged for the entire period. Secondly, minimum rates for two occupations (female presswork and fifth-year apprenticeships) were reduced in 1912 following larger increases in 1909. Thirdly, minimum rates for men were substantially higher than those for women. Year-on-year, women's rates averaged between 57 and 80 percent of those of men across all adult occupations. There is a smaller gender gap for apprentices with five years of experience, 20/ vs 15/ per week for most of the period, although between 1909 and 1912 both had minimum rates of 20/. There is no gender gap for apprentices with two years of experience.

Figure 3 shows the year-on-year average real minimum wage between 1900 and 1913 for six age/gender pairs across all occupations recorded in 1901. The data in Figure 3 are not *ceteris paribus*, as the number of workers employed in each occupation changed from year to year,

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<sup>12</sup> Decrees often split existing occupations. In some cases, it is easy to ascertain the minimum wage history of a "new" occupation: e.g., if a single minimum rate covered all persons in 1910 and the following year there were separate rates for "Occupation A" and "Occupation B". In such cases, I have coded the lagged minimum rate for Occupations A and B in 1911 as the all-persons rate in 1910. In other cases, it was unclear; for example, if there were separate rates for Occupations A and B in 1910 and rates for Occupations A, B, and C in 1911. Occupation C likely was a sub-group of A or B in 1910, but it is not always possible to ascertain which. In these cases, I have omitted the new occupation from the sample. Newly covered occupations were likely to have employed relatively few workers, otherwise they would have been covered by a separate minimum in the initial decree.

<sup>13</sup> The jewellery trade was chosen because it employed adult men, adult women, and apprentice/improvers of both genders, and thus neatly illustrates several principles of minimum wage setting. In addition, the relatively small number of adult occupations in the trade facilitates visualisation of the underlying data. The jewellery trade was not perfectly representative of all covered trades; most notably because jewellery workers earned relatively high wages. No adult male rates were ever below the 42/ Harvester standard.

so any conclusions based on this figure should be regarded as only suggestive.<sup>14</sup> The average real minimum wage for each group remained relatively constant over the full period, although there was some year-on-year variation. Across all occupations, the median cumulative change in the average real minimum wage was only 2.5 percent. The gender pay gap, evident for the jewellery trade in Figure 2, is even more evident in Figure 3. Adult women's minimum wages averaged only 49.2 percent of those of men in 1913.

Table 1 shows summary statistics on annual occupation-level nominal minimum changes wages by age and gender. As suggested by Figure 2, a substantial majority of minimum wages did not change year-on-year. Rates for men were adjusted more frequently than those of women or youth apprentices/improvers. Nominal minimum wage cuts comprised about one percent of year-on-year changes. Cuts typically occurred either during the early years of a Special Board or, as in the case of the jewellery trade, following especially large increases for a particular occupation. Although nominal minimum wage cuts were rare, persistent, albeit low, inflation coupled with infrequent adjustment of minimum rates meant that real minimum wage declines were common, occurring in about half of all observations. Declining real minimum wages were more common for women and youths than men.

#### **IV. The Political Economy of Minimum Wage Policy**

The *Factories and Shops Act* is extremely detailed about some aspects of labour standards, such as health and safety, but provides little direct guidance on the principles of minimum wage setting (Victoria 1896, 1900, 1903, 1907, 1909, 1910). For example, the 1896 and 1907 amendments specified only that "consideration must be given to the age and sex of worker, nature of work, etc." (Victoria 1896).<sup>15</sup> The only specific guidance on minimum wages in the law itself was that any person employed in a factory or workroom must be paid at least 2/6d per week (Victoria 1896, p. 9). This rate was so low that it was *de facto* more a ban on unpaid apprenticeships rather than an actual minimum wage, and it is likely that only a handful of child workers were paid this rate.<sup>16</sup> Because the law itself contains virtually no guidance on minimum wage setting, the underlying principles of minimum wages were established by the individual decisions of the Special Boards.

Early debates on minimum wage policy focussed on two issues: whether minimum wages should be set above market rates and whether they should protect comparatively

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<sup>14</sup> I have reconstructed Figure 3 reweighting earnings by total employment in each trade. The ratio of male to female average minimum wages is almost exactly the same as shown in Figure 3.

<sup>15</sup> Other amendments to the FSA were no more specific. The 1903 amendment stated that minimum wage determinations were to be based "on the average 'prices or rates of payment' paid by 'reputable employers' to employees of average capacity" (Victoria 1903). However, neither "reputable employers" nor "employees of average capacity" were defined in the law.

<sup>16</sup> Over the entire period of this study, the age-specific average wage was 2/6d for only a few groups of child workers. In the SBT Appendix it is possible to identify only 23 workers in 9 trades who were earning 2/6d, although it is possible that there were others paid this rate but were pooled with higher earners in the data.

disadvantaged workers. In this section, I focus on how these two issues shaped minimum wage policy, examining support and opposition to minimum wages and how competing interests before the Special Boards influenced their decisions. I use descriptive evidence from the papers of the Special Boards and other contemporary sources to describe the political battles underlying minimum wage policy. I then use data compiled from the *Annual Reports of the Chief Inspector* to undertake an econometric analysis of the role of market factors, inequality across groups of workers, and differences across individual Special Boards in shaping the actual minimum wage outcomes.

### *Support and Opposition to Minimum Wages*

Support for minimum wages originated in the reformist “anti-sweating” movement (*The Argus* 8/2/1898; *The Age* 31/1/1902; Reeves 1901; Hammond 1915; Rankin 1916). Their main argument, as with advocates today, was that minimum wages should protect the most vulnerable workers and help raise workers’ standard of living. Hammond (1915, p. 498) noted, “The legal minimum wage is intended primarily for the benefit of workers who are not strong enough to secure a living wage by means of voluntary collective agreement with their employers.” The initial restriction of the law to six trades which employed disproportionate numbers of women and children and in which sweating was believed to be widespread further suggests that the law was originally intended to be protective. Assessing nearly two decades of the operation of minimum wages, he concluded that the *Act* had been successful in this intent, stating “It is generally admitted that sweating no longer exists .... in Melbourne or other Victorian industrial centres” (Hammond, 1915, p. 498).

Opponents of minimum wages argued that employers would face higher cost of production. In response, they would modify their labour practices with unintended adverse consequences for workers (Victoria 1896-1913: Boot Board 1897, Brewers Board 1900; *The Age* 30/1/1902; Victoria 1902-03). Rankin (1916, p. 66-8) noted, “[W]ithout the aid of the Board wages of workers within the Factories [probably would not] have risen to the same level ... but the workers would not have been subjected to the excessive speeding-up of which there was such bitter complaint. ... Any increase of wages, which the Board brought, beyond that which economic forces were bringing must be balanced against the injustice to those whose means of subsistence was taken from them, by the action of the Board.” The Boards were often receptive to arguments about unintended consequences. For example, the first meeting of the Boot Board, decided in early 1897 to set a lowest daily minimum rate of 7/6d for adult men (Victoria 1896-1914; Hammond 1913). Employers almost immediately complained that these rates would create hardship for the industry and the rate was lowered to 6/ a few months later. Mr. Keogh, the Chair of the Board, stated that he “was convinced from the evidence given that if the higher rate was adhered to, it would have the effect of forcing a large number of men out of the factories; more machinery would be introduced; and the intercolonial trade would be crippled if not lost altogether, thus further reducing the number of men employed.” (Victoria 1896-1913: Boot Board 4/11/1897). As can be seen in Table 1, there were several

other instances where Special Boards lowered minimum wages, usually following complaints that existing rates were causing economic hardship for employers.<sup>17</sup>

The second objection of opponents of minimum wages was that the Special Boards were subject to “regulatory capture” by better represented interest groups. Although the public position of high-wage employers and trade unions was protective, opponents believed that their actual intent was to advance their own interests. Trade unions stood to benefit from either raising the wages of their members or pricing non-members out of employment. Lee (1987) argues that almost all employee representatives pushing for higher minimum wages were adult men chosen by the trade unions and that several Special Boards were captured by the interests of these workers.<sup>18</sup> She states that although “the labour representatives invariably couched their arguments in terms of equity, their clear intention was to exclude women” (Lee 1987, p. 361). Similarly, she argues that workers’ representatives on the Furniture Board “hope[d] that the enforcement of minimum wages and standard hours would drive the Chinese out of the trade” (Lee 1987, p. 359). Similarly, high-wage employers stood to benefit from minimum rates that would raise the wages of their lower-wage competitors (Victoria 1896-1913: Brass Board 2/11/1900, Brewers Board 1900, Cigar Board 31/8/1900). For example, in the brewing industry larger firms such as Carlton, Castlemaine, and Fosters Brewery all supported minimum wages above the prevailing rate. Their representative, the Maltsters Association, stated in a letter to the Board in 1900, “The wages prevailing in the trade are of a sweating nature. ... This we believe to be manifestly unfair to the Employer that will not descend to the depth of his fellow sweating competitor in the business.” (Victoria 1896-1913: Brewers Board 9/1900). Rankin (1916, pp. 25-8) argues that the interests of high-wage employers and workers ultimately prevailed and after the 1900 amendment most Boards were setting minimum rates primarily for skilled men. The data from the WFSB appendix provides some support for this argument. Adult men comprised only 27.0 percent of workers in covered trades in 1900, but 51.0 percent by 1913.<sup>19</sup> In 1906, the last year before the Harvester Judgement, the minimum wage for almost three quarters of covered adult male occupations exceeded the Harvester standard of 42/ (Victoria 1901-14).

Although the early Special Boards were contentious, by the mid-1900s the discussion was briefer and more sedate, as the general principle of minimum wages gained widespread acceptance. Contemporary sources emphasise that Boards generally worked cooperatively (Hammond 1915). Unanimous agreement among Special Board members became commonplace (Victoria 1896-1913: Pastry Cooks Board, 25/6/1907 and 7/1911, Tinsmiths

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<sup>17</sup> The Fellmongers Board and Wood Workers Board cut minimum rates for most occupations in 1903 and 1904, respectively. A total of 43 Boards cut at least one minimum rate at some point during the period of this study.

<sup>18</sup> The papers of the Special Boards do not systematically identify the gender of testifying witnesses or of board members. To the extent that it is possible to determine gender (using either individuals’ titles or first names), it seems that almost all were men.

<sup>19</sup> The arguments made before the Boards became increasingly focussed on men over time. Workers’ representatives argued that adult men should have sufficient wages to maintain a family and sufficient leisure time to maintain a presence in the household (Victoria 1896-1913: Aerated Water Board 25/8/1902, Boot Board 4/11/1897; Lee 1987). By the early twentieth century, the anti-sweating arguments had largely been replaced by arguments which clearly advantaged skilled adult men, such as preventing “unfair” competition and reducing “excessive” employment of juvenile labour (Rankin 1916, p. 27).

Board 1906). Both employers' and employees' submissions and Boards' decisions were often based on precedents established by previously implemented decrees rather than deeper arguments about the impact of minimum wages. In an early example, a 1901 employers' submission to the Furniture Board does not mention increased costs or creation of unemployment, rather it argues against increasing minimum rates for wire weavers because the new rates would be out of line with rates in other trades (Victoria 1896-1913: Furniture Board, 23/7/1901).<sup>20</sup>

### *The Role of Markets: Were Minimum Wages Binding?*

Scholars have been divided on whether minimum wages under the FSA simply followed the prevailing labour market rates. Based on evidence from a 1902-3 Royal Commission, Rankin argues that the original minimum rates for the boot and furniture trades were above the market (Victorian 1902-03; Rankin 1916). She also argues that there was an immediate increase in wages following the first minimum wage decree for the clothing trade, but that the market caught up to these rates by 1907 and that minimum wages were set below market rates for the shirt and underclothing trades (Rankin 1916, p. 82, 105-7). Conversely, Forster (1985) argues that Victorian Special Boards and other Australian minimum wage setting bodies were largely guided by market forces prior to 1930.

A fundamental difficulty in assessing whether minimum wages were binding is that market wages are not directly observable. The *Annual Reports* only provide occupation-specific minimum wages and trade-level average wages. Any proxy for market wages must be constructed with this limited information. Following a long minimum wage literature, I test the impact of minimum wages using the “bite” – the ratio of the minimum to the average wage – as a proxy for unobservable market factors (Dickens, et al. 1999; Neumark and Wascher 2008; Gregory and Zierahn 2022; OECD 2023). I construct the bite for each trade/year pair and group of workers for which average wages are observable (e.g., adult males, adult females, males aged 19-21, etc.). The numerator is the lowest (or median) minimum wage for each trade/year pair and group of workers. The denominator is the average wage for the same group of workers.<sup>21</sup>

Much of literature using the bite as an indicator of bindingness considers minimum wages covering a large share of the workforce.<sup>22</sup> The underlying assumption in this literature is that

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<sup>20</sup> In this instance, the employers compared the proposed 32/ minimum for female weavers to lower existing rates for women in the boot, clothing, shirt, underclothing, confectionery, and jam trades. Ultimately, the higher minimum wage was passed by the Furniture Board. However, within a year several of the abovementioned trades followed this precedent and raised minimum rates for adult women to levels at or near 32/.

<sup>21</sup> Although minimum wages are observable at the level of the individual occupation, I do not examine the occupation-specific bite because there is no corresponding data on occupation-level average wages.

<sup>22</sup> For example, the American national minimum wage has covered approximately 90 percent of the workforce since the 1970s, although recently it has effectively been superseded by state or local minimum wages for a large share of workers (Fishback and Seltzer 2021).

there will be a distribution of wages across covered workers, and, for most distributions, a higher bite implies that more workers will be affected by the minimum rate. However, in the context of “locally” set minimum wages under the FSA, a bite close to one may be indicative of minimum rates set based on the market which were not binding.<sup>23</sup> Given that the extent to which minimum wages were binding cannot be answered simply based on whether the measured bite is “high” relative to an essentially arbitrary benchmark, I address this question using an empirical approach similar to that of Seltzer and Borland (2019). The underlying logic of the approach is that if minimum wages were binding, increased minimum rates would have flowed through to average wages. The extent of the flow-through will be larger for workers whose wages were initially at or close to the minimum rate than those whose wages were considerably higher than the minimum rate.

To implement this test, I calculate the lagged bite of the lowest minimum wage for each group of workers by year and trade. I then split each sample into high and low lag-bite subsamples, with the split point at roughly the median lagged bite.<sup>24</sup> I then run regressions on the percentage change in the average wage on the percentage change in the lowest minimum wage and the lagged percentage change in the lowest minimum wage for each subsample. The lagged change in the minimum wage is included as an independent variable because of ambiguity surrounding the timing of the wage surveys and because there may have been delays in flow-through effects, for example if over time firms hired more skilled workers or substituted capital for labour following a minimum wage increase.<sup>25</sup> The regressions also include trade and year fixed effects.

The results of the regressions are shown in Table 2. As a robustness check, the Appendix, Table A1 shows results of analogous regressions for adult workers, splitting the data based on the lagged bite of the median minimum wage.<sup>26</sup> Results are shown for separate regressions on the high-bite and low-bite subsamples for adult men, adult women, men aged 19 to adult, women aged 19 to adult, men aged 13-18, and women aged 13-18. Overall, the results strongly suggest that minimum wages were binding for some adults, but not youths. For both adult men and women, the coefficients on percentage change in the real minimum wage and lagged real minimum wage are positive and statistically significant for the high-bite subsample. The coefficients for the high-bite subsample are substantially larger than those for

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<sup>23</sup> The average bite of the lowest minimum wage across all trade/year pairs is 0.799 for men and 0.868 for women. For the median minimum wage, these figures are 0.931 and 0.992, respectively. For youths these figures are 0.869, 1.059, 0.789, and 0.914 for men aged 19-adult, men aged 13-18, women aged 19-adult, and women aged 13-18, respectively. These figures are much higher than the economy-wide bites reported in OECD (2023), which range from 0.191 to 0.694 for 32 member nations in 2022.

<sup>24</sup> The split points are set to approximately the median lagged bite across all trade-years. In practice, this was 0.824, 0.892, 0.875, 1.074, 0.774, and 0.904 for adult men, adult women, men aged 19-adult, women aged 19-adult, men aged 13-18, and women aged 13-18, respectively.

<sup>25</sup> The SBT Appendix does not provide information on the dates of the wage surveys, thus it is not possible to be certain whether minimum wage increases occurred prior or subsequent to the surveys.

<sup>26</sup> Because the bite is constructed using the lowest minimum wage in each trade, it can be assumed to be indicative of the impact of minimum wages on unskilled workers. By contrast, the bite of the median minimum wage may be indicative of the impact on skilled, semi-skilled, or unskilled workers, depending on the trade. Because of this, the interpretation of the bite of the median minimum rate is less straight-forward than that of the lowest minimum. Thus, I only use the bite of the median minimum in robustness checks.

the for the low-bite subsample, which are near zero and statistically insignificant in most specifications. The estimated flow-through of minimum to average wages for the high-bite sub-sample is quite large; for example, the second row implies that a 10 percent increase in the adult male minimum wage results in an approximately 3.5 percent increase in average wages over a two-year period. The results for youth workers are less significant and are not consistent across different groups of workers. Women aged 19 to adult are the only group of youth workers for whom the estimated effect is large, although it is similar for the high-bite and low-bite subsamples. From a political economy perspective, it is perhaps not surprising that the Special Boards did not attempt to use minimum wages to control the labour market for youth workers, given that they could directly control their employment through imposing a maximum apprentice/improver to adult worker ratio.

### *Annual Changes in Minimum Wages*

Because minimum wages were binding for a subset of workers, the process of setting minimum wages and differences across Special Boards likely had direct consequences for the Victorian labour market. In this section, I explore the process of wage setting by Special Boards, examining the year-on-year changes in nominal minimum wages. I examine minimum wage changes, rather than levels, for the simple reason that wage levels will be determined in part by unobservable occupation-specific market factors as well as Board-specific actions. In the previous analysis, market factors are isolated by looking only at minimum rates for unskilled workers. However, this approach will not identify how the Special Boards approached setting rates for workers with different characteristics, and thus does not address whether minimum wages reduced or increased inequality. Alternatively, redefining the bite as the ratio of the occupation-level minimum to the trade-level average wage, would make it possible to make comparisons across groups of workers but would be unlikely to adequately control for the full range of market factors affecting individual occupations within the same trade. By first differencing minimum wages, I eliminate market-based factors which are constant over time for a given occupation, such as the skill level. Market-based factors which change over time, such as overall or trade-specific demand, can be controlled for in regressions as I outline below.

The main approach I use to examine minimum wage policy consists of running a series of regressions on year-on-year changes in minimum rates. Adjusting minimum rates was the main policy tool of the Special Boards, and thus is an appropriate dependent variable for a regression examining minimum wage policy. The data in these regressions are pooled across all reported groups of workers (adult male, adult female, males aged 19 to adult, etc.). In the baseline specification, the dependent variable is the annual percentage change in nominal occupation-level nominal minimum wages.<sup>27</sup> As a robustness test, I also run a probit

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<sup>27</sup> I use the nominal change in minimum wages as the dependent variable because this was under the direct control of the Special Boards. Real minimum wages also depended on the price level, which was outside the control of the Boards. Moreover, short-run price changes were likely to be imperfectly observable to the Boards,

specification with the dependent variable taking on a value of one if the occupation-level nominal minimum wage changed from the previous year. In the baseline specification, the percentage change in the nominal minimum rate in occupation  $i$ , age/gender pair  $A$ , trade  $S$ , and year  $t$  is regressed on a vector of independent variables as follows:<sup>28</sup>

$$\begin{aligned} \% \Delta \text{MinWage}_{i,t} = & \alpha + \beta_1 \text{NC}_{i,t-1} + \beta_2 \text{NC}_{i,t-2} + \beta_3 \text{RealMinWage}_{i,t-1} + \\ & \beta_4 \% \Delta \text{Employment}_{A,t-1} + \beta_5 \% \Delta \text{Employment}_{S,t-1} + \beta_6 \text{HarvesterMen}_{i,t} + \\ & \beta_7 \text{HarvesterWomen} + \beta_8 \text{Adult}_{i,t} + \beta_9 \text{Male}_{i,t} + \beta_{10} \text{Adult}_{i,t} * \text{Male}_{i,t} + \\ & \sum_{j=11}^{21} \beta_j \text{Year}_t + \sum_{k=22}^{96} \beta_k \text{SpecialBoard}_S + \varepsilon_{i,t} \end{aligned}$$

Where:

$\text{NC}_{i,t-1}$  and  $\text{NC}_{i,t-2}$ : dummy variables, 1 if no change in the nominal minimum wage in the previous year (or two years prior), 0 otherwise,

$\text{RealMinWage}_{i,t-1}$ : the real value of the occupation-specific minimum wage in the previous year,

$\% \Delta \text{Employment}_{A,t-1}$ : Lagged percentage change in employment for all workers of type A (adult male, males aged 19 to adult, etc.) in trade  $S$ ,

$\% \Delta \text{Employment}_{S,t-1}$ : Lagged percentage change in employment for all workers in trade  $S$ ,

$\text{HarvesterMen}_{i,t} = \begin{cases} 42 - \text{MinWage}_{i,t-1} & \text{for adult male occupations if year} > 1906 \text{ \& } \text{MinWage}_{i,t-1} < 42 \\ 0 & \text{otherwise,} \end{cases}$

$\text{HarvesterWomen}_{i,t} = \begin{cases} 22.33 - \text{MinWage}_{i,t-1} & \text{for adult female occupations if year} > 1911 \text{ \& } \text{MinWage}_{i,t-1} < 22.33 \\ 0 & \text{otherwise,} \end{cases}$

$\text{Adult}_{i,t}$ : dummy variable, 1 if the observation is for adult workers, 0 otherwise,

$\text{Male}_{i,t}$ : dummy variable, 1 if the observation is for male workers, 0 otherwise,

$\text{Adult}_{i,t} * \text{Male}_{i,t}$ : interaction of adult and male,

$\text{Year}_t$ : dummy variables, 1 if in year  $t$  (1903, 1904, ...), 0 otherwise,

$\text{SpecialBoard}_S$ : dummy variables, 1 if in Special Board  $S$  ( $S$  = aerated water, agricultural implements, etc.), 0 otherwise.

The independent variables in the regression have been selected to test the main hypotheses discussed in previous sections and are constructed using either the data from the *Chief Inspector's Reports* or Vamplew (1987). The lag structure of the economic independent variables is designed to reduce concerns about endogeneity. Contemporaneous trade-level employment or real wages might potentially be an outcome, rather than cause, of minimum

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as the then-available price series, such as the Commonwealth Bureau of Census and Statistics A-Series, were published infrequently and contained a limited basket of goods (Australian Bureau of Statistics 2023).

<sup>28</sup> In the interest of parsimony, the  $A$  and  $S$  subscripts have been dropped where the variable is recorded at the age/gender pair level and the  $S$  subscript is dropped where the variable is recorded at the trade level.

wage changes.<sup>29</sup> A second reason for using lagged economic variables is that they correspond to the information that would have been available to Special Board members. It is likely that Board members would have had fairly complete information about trade-specific employment conditions in previous years, but incomplete information for the current year. By including only information that would have been directly available to the Special Boards, I am making the *de facto* assumption that the Boards were backwards-looking and did not attempt to forecast future conditions that might affect the optimal minimum wage.<sup>30</sup> The only economic variable for which I use contemporaneous data is the national trade union unemployment rate (Vamplew, series LAB100). National economic conditions are likely to have been at least partially observable to the Boards, and, unlike trade-specific changes in employment, there can be no question of reverse causality, as the employment in any individual Victorian trade comprised a tiny percentage of overall Australian employment.

The little guidance provided in the FSA itself indicated that Special Boards were meant to explicitly consider labour market factors (Victoria 1896, p. 7; Victoria 1900, p. 4). The economic variables in the regression control for market conditions. In addition, these variables make it possible to determine whether there were differences in the response of the Boards to different types of market conditions; e.g. those at the national level (captured by year dummies and national unemployment rate), the trade-level (captured by lagged change in employment for the entire trade); or the employee group-level (captured by lagged change in employment for the specific type of worker in the trade). If the Special Boards responded to market forces, one would expect the estimated coefficients  $\beta_4$  and  $\beta_5$  to be positive and the vector of coefficients on the year dummy variables to be jointly significant. One would also expect the coefficient on the national unemployment (which is absent from the baseline specification) rate to be negative.

As noted previously, the text of the FSA and much of the rhetoric of minimum wage advocates addressed protecting the most vulnerable workers, particularly women and children. After 1900, when coverage under the FSA was increasingly extended to male-dominated trades, the main argument of supporters changed to the need for lower-wage adult males to support their families (Victoria 1896-1913: Aerated Water Board 25/8/1902; Jam Board 8/1/1900; Victoria 1902-03; Lee 1987). The hypothesis that the minimum wages were protective can be tested using the variables for worker characteristics (adult, male, adult \* male), *HarvesterMen*, *HarvesterWomen*, and the lagged real minimum wage. If minimum wages were generally protective – advantaging women, children, and low-paid men as intended by the framers of the FSA – one would expect the estimated coefficients  $\beta_3$ ,  $\beta_8$ ,  $\beta_9$ , and  $\beta_{10}$  to be negative and  $\beta_{10}$  to be larger in absolute value than either  $\beta_8$  or  $\beta_9$ . If Special

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<sup>29</sup> The SBT and WFSB appendixes do not provide information on the exact timing of annual surveys of firms. Thus, it is likely that some surveys from the same calendar year in which a Special Board convened were completed prior to the Board meeting. I take a conservative approach and treat contemporaneous wages and employment as potentially endogenous in the regressions. Robustness checks in the Appendix, Table A2 show that the results of specifications using contemporaneous wages and employment as independent variables are not substantially different to those shown in Table 3.

<sup>30</sup> Dickens, et. al (1999) argue based on interviews with UK Wage Council members that this was how similar agencies set minimum wages much later, when better data and forecasting methods would have been available.

Boards became increasingly protective of lower wage adult men following the initial Harvester decision in 1907, one would expect the coefficient  $\beta_6$  to be positive. Similarly, if they became increasingly protective of lower wage adult women following the extension of Federal minimum wages to women in 1912, one would expect the coefficient  $\beta_7$  to be positive. Alternatively, if Special Boards were largely captured by more powerful worker groups (e.g., trade unions and adult males) as has been speculated by Rankin (1916) and Lee (1987), one would expect the coefficients  $\beta_3$ ,  $\beta_8$ ,  $\beta_9$ , and  $\beta_{10}$  to be positive and  $\beta_{10}$  to be larger than either  $\beta_8$  or  $\beta_9$ .

As shown in Table 1 and Figure 2, Special Boards tended to meet infrequently because of fixed costs incurred by convening a Board, suggesting that they may have been less likely to meet if minimum rates had been recently adjusted. This, in turn, implies that recent changes in a minimum wage would result in lower expected changes in the same minimum wage (or a higher probability that it will be left unchanged). Thus, one would expect the coefficients on the dummy variables for whether rates had recently been adjusted,  $\beta_1$  and  $\beta_2$ , to be negative. It is also likely that (in absolute value)  $\beta_1 > \beta_2$ , in other words, Boards were more likely to meet two years after a previous meeting than one year. Finally, the Special Board dummies capture whether there remained differences across Boards after controlling for these other factors. If these dummies are collectively significant, it is suggestive of Boards exercising discretion in their approach to minimum wage setting, although it is also of course possible that the regression imperfectly controls for other factors that were common across Boards and thus the significance of trade dummies is due to omitted variable bias.

Table 3 shows the regression results. Column 1 shows the baseline ordinary least squares (OLS) regression as described above. In column 2, the year dummies are replaced by the national trade union unemployment rate from Vamplew (1987), series LAB100. This specification addresses whether broader, Australia-wide economic conditions explain the estimated year effects and, thus, were an important driver of minimum wage policy. In column 3, the observations are reweighted by the number of employees covered by individual minimum rates.<sup>31</sup> This reweighting essentially changes the unit of observation from the individual minimum wage to each worker covered by a minimum wage, and thus will address whether any of the results in column 1 are driven by minimum wages which covered very few workers. In column 4, the variable  $NC_{i,t-2}$  is dropped to increase the number of observations.<sup>32</sup> In column 5, the regression is run as a probit with the dependent variable being a dummy for a non-zero change in the nominal minimum wage. This specification

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<sup>31</sup> In the case of apprentices and learners, it is possible to obtain exact employment figures by summing up employment in the relevant age/gender pairs, e.g. the number of junior male apprentices = male apprentices aged 13 + aged 14 + aged 15 + aged 16 + aged 17 + aged 18. In the case of adult workers, it is only possible to assign exact employment figures for trades in which there was a single minimum rate covering all workers of either gender. In cases where the employment data covers multiple occupations, I assign a weight of number of adult males (females) employed in the trade divided by the number of adult male (female) occupations in the trade; in other words, evenly divide employment between occupations.

<sup>32</sup> Construction of the variable  $NC_{i,t-2}$  uses data going back three years prior to the observation, whereas the other regression variables use data from at most two years prior. Dropping  $NC_{i,t-2}$  adds an additional year of data to the regression sample and increases the sample size from 6,846 to 7,246.

examines whether the same factors influenced the convening of a Board and their decision of how much to change minimum rates. The results are fairly consistent across specifications; thus, I summarise the results collectively below.

As with Table 2, the results in Table 3 suggest that Special Boards were responsive to market factors. The year dummies in the regressions shown in columns 1, 3-6 likely capture a range of political and economic conditions. Several of the coefficients on the year dummy variables are strongly significant and an F-test shows that they are jointly significant at all standard levels. To isolate the effects of economic conditions, in column 2 the year dummies have been replaced with the national unemployment rate (Vamplew 1987, series LAB100). The coefficient on the unemployment rate is large and strongly significant. A one percentage point increase in the unemployment rate reduces the change in the minimum wage by about 0.80 percentage points, about 26.5 percent of its mean value (3.04). Although there is fairly strong evidence that the Special Boards responded to broader supply/demand conditions, there is much weaker evidence that Boards considered localised employment conditions. In most specifications, the coefficients  $\beta_4$  and  $\beta_5$  are insignificant and small in magnitude. Both coefficients are significant in column 3 and trade-level employment changes are significant in columns 2 and 5, but two of these coefficients have the “wrong” sign and their overall magnitude is relatively small.<sup>33</sup>

The second important set of results pertain to whether, in practice, minimum wage policy was designed to reduce inequality (in line with the public interest model) or, conversely, to support relatively better off workers (in line with the public choice model). As can be seen in Table 3, the findings on minimum wage policy and inequality are mixed. On the one hand, the significant negative coefficient on  $\beta_3$  suggests a policy objective of increasing minimum rates of lower-paid adult men more often (column 5) and by a larger amount (columns 1-4) than their higher-paid colleagues. Consistent with the arguments made by Hammond (1913) and Macarthy (1968), the coefficient on  $\beta_6$  is significantly positive in columns 1-4, implying that minimum wages reduced inequality across adult male occupations by an even greater extent after the Harvester Judgement. This coefficient is insignificant in the final specification, suggesting that the Special Boards were no more likely to convene from 1907 onwards if rates were below the Harvester standard, but when they did convene, they increased their focus on the lowest paid men. By contrast, the coefficient on  $\beta_7$  is insignificant in four specifications and significantly *negative* in one specification. In other words, there is no evidence to suggest that the Special Boards used the Federal female minimum wage as a benchmark when setting rates for the lowest paid women.

The results in Table 3 also generally confirm the impression from Table 1 that minimum wages tended to increase inequality across groups, advantaging adult men relative to women

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<sup>33</sup> One possible explanation for lack of impact of lagged employment changes is that any such changes might have prompted Special Boards to quickly convene to adjust wages. However, Appendix, Table A2 shows that replacing the lagged change in employment variables with the contemporaneous variables  $\% \Delta Employment_{A,t}$  and  $\% \Delta Employment_{S,t}$  makes little difference to the regression results.

and youths. The coefficient  $\beta_{10}$  is significantly greater than zero in all specifications, implying that adult males received more frequent and larger average minimum wage increases than did other groups. There are no significant coefficients for other groups of workers. The positive and statistically significant estimate for  $\beta_{10}$  suggests that, rather than being protective, minimum wages under the FSA may have contributed to the gender pay gap shown in Figure 3. However, male wages would have almost certainly been substantially higher than female wages in the absence of minimum wages and neither Figure 3 nor Table 3 directly address what the counterfactual gender pay gap would have been in an unregulated labour market. As a simple test, I compare relative wages in the original six trades to those in 23 trades that were not covered by minimum rates over the period of this study and were recorded consistently in the appendix “Return for the Year”.<sup>34</sup> Figure 4 shows the ratio of the weighted average adult female wages to weighted average adult male wages. The series for the original six covered trades and 23 uncovered trades track each other closely through 1904. From 1905 and especially from 1908, the relative earnings of men in the covered sector exceeded those in the uncovered sector. The timing of the divergence of the two series coincides with amendments strengthening the FSA; in 1905 the power of workers on the Board was increased by the restoration of the neutral chair and in 1907 potential coverage under minimum rates was extended to all trades. The *Harvester Decision* also occurred in 1907. These legal changes resulted in a sharp increase in the activities of the Special Boards. As shown in Figure 1, the number of Boards increased sharply from 1907. In addition, existing Special Boards met more frequently from this time. Between 1900 and 1906, only 4.61 percent of minimum rates were adjusted per year. This figure increased to 21.7 percent between 1907 and 1913. A simple interpretation of these results is that minimum wage adjustment tended to favour adult men, thus, when the Boards convened more frequently the gender gap increased.

Finally, as would be expected based on Figure 2 and Table 1, the coefficients  $\beta_1$  and  $\beta_2$  are significantly negative (positive) in the OLS (probit) regressions and the magnitude of  $\beta_1$  is greater than that of  $\beta_2$ .

### *Differences across Special Boards*

The approach of delegating minimum wage setting to special Boards was costly. Board members received a daily rate plus reimbursement of expenses for their work (Rankin 1916, pp. 23-4). Because of these costs, the Victorian Parliament must have believed that there were compensating benefits for decentralisation, rather than having a single agency or legislating minimum rates directly. The likely primary benefit to setting minimum wages on a trade-by-trade basis would have been that decentralised administrative bodies could tailor rates to trade-specific conditions. Although the reasoning is not specifically mentioned in the text of the FSA, this was clearly the intention of its framers, as Boards members apart from

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<sup>34</sup> The trades in the uncovered sector are distilleries, marble and masons work, cement, tents, stone crushing, paper patterns, ink, hats, modelling, photography, chemicals, tobacco and cigarettes, cutlery, eucalyptus oil, lenses, furriers, blinds, florists and manufacturing bouquets, umbrellas, biscuits, flock, corsets, and hosiery.

the chair were *required* to be insiders to the trade. This section addresses whether the Special Boards pursued different approaches to minimum wage setting. The existing literature on this question is thin, although both the 1902-03 Royal Commission and Rankin (1916) conclude that there were some differences in approach across the original six trades.

In Table 2 (and Appendix Table A1), the sample is split based on the value of the lagged bite of the lowest minimum wage of different groups of workers. If Special Boards pursued different approaches to minimum wage setting, one would expect that individual trades would consistently be in either the top half or bottom half of the distribution. This is, in fact, observed. Among 58 adult male trades with at least five observations, 33 are in either the top or bottom half of the distribution in every year in which they were covered a decree. A further 13 are in the top or bottom half in at least 80 percent of years. Among 30 adult female trades with at least five observations, these figures are 15 in every year and 5 in at least 80 percent. This pattern does not simply reflect differences across trades in skill levels or other market-related factors, as Table 2 shows that minimum wage increases had substantially more effect on high-bite trades.

The regression results in Table 3 sheds further light on differences in the short-run approach to minimum wage setting across trades. As discussed above, Table 3 shows the importance of factors common across Boards, such as the gender and age of employees and national economic conditions. However, Table 3 suggests that “local” conditions did not have much impact on nominal wage changes, as the estimated coefficients  $\beta_4$  and  $\beta_5$  are small and statistically insignificant in most specifications. The 75 trade dummies in these regressions also suggest only a relatively minor importance of trade-specific factors. In each specification with trade dummies, the dummies are collectively significant at a one percent level. However, the F-statistic for their collective significance is far lower than that for the year dummies. Furthermore, only five of the 75 trade dummies are individually significant at the one percent level and a further six are significant at the ten percent level in the baseline specification.<sup>35</sup> These results collectively suggest that trade-specific factors had only a limited influence on year-on-year minimum wage changes.

Although the year-on-year impacts of trade-specific factors was limited, over a longer period these may have had a cumulative effect. To examine this possibility, I examine wage changes over the full period of this study. I run regressions on the change in the real minimum wage between 1901 and 1913 using all occupations first covered in 1901 or earlier. Unlike in Table 3, I use the real minimum wage in these regressions for two reasons. First, the Special Boards would have had much more control over real wages over a 12-year period than year-on-year, although they would still have faced some uncertainty surrounding prices in the final year of the period. Secondly, the pattern of virtually no long-term change in real wages shown in Figure 3 suggests that maintaining a roughly constant real rate over time may have been a

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<sup>35</sup> Even this modest result should be interpreted as an upper-bound of the importance of trade-specific factors in year-on-year minimum wage adjustment, as it is possible that the significance of trade dummies in Table 3 is due to omitted control variables in the regressions.

policy objective of the Special Boards. The regressions control for *Male*, *Adult*, *Adult\*Male*, and trade. I do not include any controls for employment in this regression, as the concerns about reverse causality are even stronger than in the year-on-year regressions. I have run the regressions using OLS and weighted least squares (WLS), using 1913 employment as the weights.<sup>36</sup>

Figure 5 shows the estimated coefficients and 99 percent confidence intervals for 23 trade dummies. Full regression results are shown in the Appendix, Table A3. Panel A shows the coefficients from the OLS regression and Panel B shows the coefficients after reweighting observations by 1913 employment. In the OLS regression, the coefficients for 10 of 23 trade dummies are significant at a five percent level. However, only four of these coefficients are significantly different from zero in the weighted regression, suggesting that the larger increases in minimum rates tended to occur in occupations with few employees. This is confirmed by inspection of individual cases with particularly large increases. The clear outliers in Figure 5 are the shirt and cigar trades. In both cases, the large increase in minimum wages is driven by occupations which employed relatively few workers.<sup>37</sup>

A second observation concerning Figure 5 is that the trades with above average long-run minimum wage growth tended to have lower initial minimum rates. The ten trades with statistically significant coefficients in the OLS regression had an average 1900 minimum rate of 24/7d whereas those with insignificant coefficients had an average of 34/6d. This is consistent with the result from Table 3 showing that occupations with lower real wages tended to receive more frequent and larger minimum wage increases. An alternative, but not mutually exclusive, explanation is that higher minimum wage growth largely reflected initially low-rate trades bringing their minimum wages in line with other trades. In other words, the role of precedent from previous decisions resulted in considerable convergence of minimum rates across trades.

## VI. Discussion and Conclusions

The *Factories and Shops Act* was the second minimum wage law in the world. From 1896 until the expansion of coverage under Federal Australian legislation and under the British *Trade Board Act* in the 1920s, the FSA probably covered more workers than any other

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<sup>36</sup> As with the weighted regression on the annual percentage change, I have defined employment for individual occupations as total employment divided by the number of occupations in the trade.

<sup>37</sup> The initial 1897 decree for the shirt trade set a minimum wage of 16/ for all adults, which was raised to 20/ in 1908. In 1912 separate gender-specific and occupation-specific rates were established. The lowest minimum rate for men increased from 20/ to 60/ overnight. However, men comprised only 53 of 1,483 adults in the trade and most earned well over 20/ prior to 1912. Women's rates increased substantially as well, from 20/ to 22/5d, 30/, 35/, or 50/, although the relatively small increase in average wages (from 21/2 in 1911 to 22/8 in 1912 and 26/3 in 1913) suggests few earned the higher rates. Similarly, in the cigar trade the minimum wage of improvers in their second year increased from 12/6d to 40/ in 1904. The average wages in the SBT Appendix lump apprentices and improvers together; however, this average wage was close to the apprentice rate for each age group, implying that there were relatively few improvers affected by the new rates.

minimum wage law worldwide. As such, it likely set precedents for minimum wage setting in Australia and beyond. Many of the most prominent supporters of minimum wages of the era, such as the British social reformer Sydney Webb and the American social reformer and future United States Supreme Court Justice Louis Brandeis, drew from the experience of Victoria in their advocacy of minimum wages (Webb 1912; Brandeis 1915). Mathew Hammond, who spent several months in Australia and wrote extensively about the FSA, later worked for the Ohio State Bureau of Labor and was responsible for drafting the state's first minimum wage law. Even a generation later, official United States government publications still discussed the FSA when evaluating American legislation (Women's Bureau. US Department of Labor 1928, 1942). Early minimum wage laws at the Federal level in Australia and in the USA and UK directly copied aspects of the FSA, with administrative agencies playing a key role in the setting of minimum rates.

Given the importance of the FSA to later minimum wage laws, it is perhaps surprising that there exists so little research on how minimum wages were actually set under the Act. The results from this paper suggest a relatively simple policy that is largely consistent with observations by earlier scholars (Hammond 1913 & 1915; Rankin 1916; Lee 1987). Special Boards were broadly constrained by market factors and precedents established by previous rulings when setting minimum wages. Nevertheless, the Boards had some discretion, which they exercised in different ways. Some essentially followed the market for their trade, setting minimum rates at or below the prevailing wages. Others acted as "market leaders" and set minimum rates above market levels. Boards which acted as market leaders often influenced the relative wages of different groups of workers.

There is considerable evidence for this interpretation. The wording of the law itself and in the minimum rates set by Boards both suggest that the underlying labour market broadly constrained the actions of Boards. The law (Victoria 1896, 1900) dictates that Special Boards were to base minimum rates largely on the productivity of workers, stating that they should consider "the nature kind and class of the work and the mode and manner in which the work is to be done." (Victoria 1900, p. 4). Early hearings typically contained lengthy discussions and debate about market-level wages, cost of living, firm-profitability, and the appropriate minimum wages given these factors. However, over time these debates gave way to acceptance of precedents set by earlier decisions, which were often themselves guided by the broader labour market. Special Boards were responsive to market-based complaints by employers and regularly lowered proposed minimum rates or even cut existing rates in response to employers' claims that existing or proposed rates would have adverse consequences (Victoria 1896-1913). Further evidence that the Boards were broadly following the markets comes from the pattern of adjustment of minimum rates. Over time, real minimum wages tended to be fairly constant in most trades. The few trades which experienced real minimum wage increases over the entire period tended to be low-wage and low-bite at the start of the period, suggesting that increases were designed to catch up with the market. The papers of the Special Boards show that from about 1900 onwards both employer and employee representatives tended to be fairly satisfied with this outcome, further suggesting that minimum rates were likely near the market equilibrium.

Although Special Boards broadly considered labour market conditions for their trade when setting minimum wages, they were not fully constrained by the market. The composition of the Special Boards, with equal employer and employee representation, meant that it would in principle be straight forward to set minimum rates to benefit higher-wage workers in trades where both unions and high-wage employers were well-represented on the Boards. There is evidence to suggest that minimum wages in some trades were consistently set above market rates. This difference across Boards had an impact on actual wages, as increases in minimum rates flowed through to average wages to a much greater extent in high-bite trades.

Given that rates were consistently set above market levels in some trades, minimum wage policy had the potential to advantage some workers relative to others. The rhetoric of minimum wage supporters emphasised the protection of workers with less bargaining power, initially women and youths but later extended to lower-wage men. Whether the lofty rhetoric of protection ultimately motivated minimum wage setting or Special Boards were captured by the interests of high-paid workers or larger employers is ultimately an empirical question that has not been satisfactorily answered by previous research. The evidence from this paper is mixed, suggesting that minimum wages reduced some dimensions of inequality but increased others. Minimum wages under the FSA increased the wages of low-wage men relative to high-wage men, but also increased wages of men relative to women and children. There is some evidence to suggest that the gender gap was larger than would have occurred in an unrestricted labour market.

Gendered minimum wage gaps became *institutionalised* as Special Boards typically followed precedents established by earlier rulings. Lower rates for women became the norm, even in trades where men and women worked in the same occupations. Institutionalised gender pay gaps continued to be a feature of Australia minimum wage policy for most of the twentieth century. Minimum wages for women were first addressed at a Federal level in 1912, when the CCCA decided that the female equivalent to the Harvester standard would be 22/9d or 54 percent of the male rate. This gap was based on perceived differences in living costs rather than on productivity or other labour market factors, assuming that a male worker had to support his family whereas a female worker had to “[support] herself by her own exertion but has no dependants” (Isaac 2008, p. 294). The Federal minimum wage for unskilled women was raised to 75 percent of men’s rate in 1950 but inequality of minimum wages persisted until the “equal pay for equal work” decisions in 1969 and 1972 (Isaac 2008). Scholars examining the equal pay cases have concluded that Federal agencies were acting as “market leaders” in these cases (Norris 1986; Hatton and Withers 2014). Following the equal pay rulings, the female to male wage ratio increased sharply from 0.71 in 1968 to 0.93 in 1978. Conversely, the evidence here suggests that under the FSA, the Special Boards may have been acting as market leaders in the opposite direction, contributing to a slightly wider gender pay gap than would have occurred in an unregulated labour market.

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**Table 1**  
**Summary Statistics on Annual Minimum Wage Changes, 1900-13**

	Adult men	Male apprentices & improvers	Adult women	Female apprentices & improvers
Nominal wage cut	46 (0.88%)	19 (1.48%)	18 (1.75%)	2 (0.53%)
No nominal change	4226 (80.96%)	1123 (87.67%)	863 (83.87%)	331 (87.57%)
Nominal increase 0.1%-10.0%	660 (12.64%)	61 (4.76%)	72 (7.00%)	13 (3.70%)
Nominal increase 10.1%-25.0%	306 (5.86%)	61 (4.76%)	56 (5.44%)	21 (5.56%)
Nominal increase >25.0%	28 (0.54%)	36 (2.81%)	20 (1.94%)	11 (2.65%)
Real wage cut	2540 (48.43%)	673 (51.77%)	550 (53.45%)	199 (52.65%)

Notes: Figures in parentheses are the percentage of all observations of the group of workers. Figures for apprentices and improvers are for the second and fifth year of employment or ages 16 and 19.

**Table 2**  
**Effects of Minimum Wage Increases on Average Wages**

Sample	Lagged bite	%Δ real minimum	%Δ lagged real minimum	Adj. R <sup>2</sup>	F	N
Adult men	High	0.116*** (2.63)	0.233*** (5.24)	0.893	33.22***	297
Adult men	Low	0.077** (2.34)	0.028 (0.40)	0.734	13.03***	306
Adult women	High	0.388*** (2.63)	0.211** (2.13)	0.777	8.96***	126
Adult women	Low	0.83 (0.70)	-0.073 (0.40)	0.393	3.31***	122
Men aged 19	High	0.111 (0.77)	0.009 (0.18)	0.445	3.85***	275
Men aged 19	Low	0.022 (0.63)	-0.214* (1.88)	0.301	2.70***	273
Men aged 16	High	0.127 (0.67)	0.062 (0.70)	0.275	2.36***	299
Men aged 16	Low	0.021 (0.33)	-0.150 (0.81)	0.084	1.32*	287
Women aged 19	High	0.40* (1.96)	-0.030 (0.12)	0.530	4.06***	77
Women aged 19	Low	0.388* (1.84)	-0.217 (0.97)	0.364	2.53***	73
Women aged 16	High	0.059 (0.17)	0.057 (0.40)	0.231	1.92***	123
Women aged 16	Low	0.143** (2.59)	0.032 (0.39)	0.449	3.37***	126

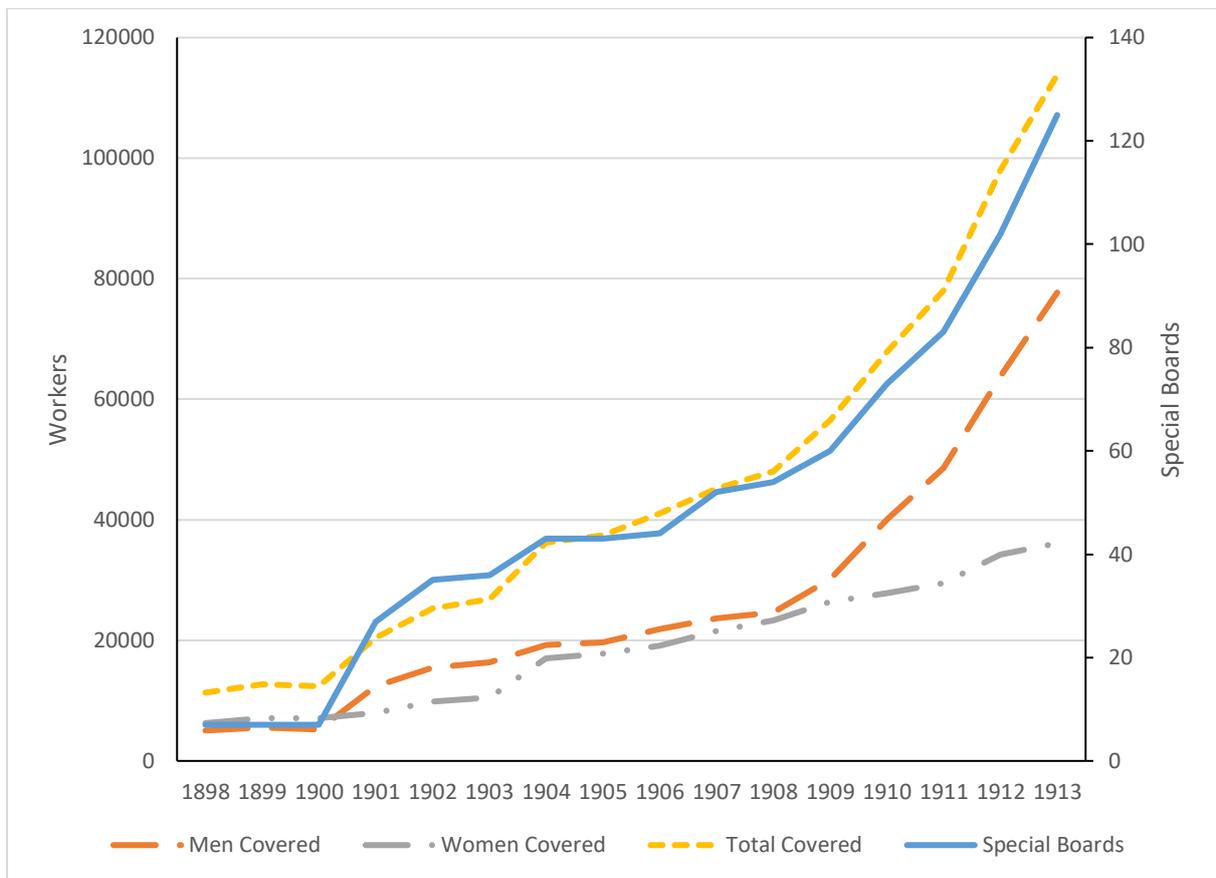
Notes: The dependent variable is the percentage change in the average real wage. Absolute value of t-statistics in parentheses, \*\*\* indicates significance at a 1% level, \*\* indicates significance at a 5% level, \* indicates significance at a 10% level.

**Table 3**  
**Regressions on Annual Changes in Minimum Wages**

	(1)	(2)	(3)	(4)	(5)
Regression technique	OLS	OLS	WLS	OLS	Probit
Sample	ALL	ALL	ALL	ALL	ALL
Dependent variable	% $\Delta$ MW	% $\Delta$ MW	% $\Delta$ MW	% $\Delta$ MW	Non-zero change
$NC_{i,t-1}$	4.857*** (11.46)	4.238*** (10.35)	10.033*** (16.35)	4.138*** (10.51)	1.324*** (19.24)
$NC_{i,t-2}$	2.849*** (6.34)	2.448*** (5.74)	4.832*** (7.60)		0.379*** (6.30)
$RealMinWage_{i,t-1}$	-0.128*** (6.40)	-0.154*** (7.89)	-0.234*** (7.27)	-0.132*** (6.96)	-0.008*** (2.73)
% $\Delta$ Employment $_{A,t-1}$	-0.001 (0.27)	0.000 (0.10)	-0.024*** (4.72)	0.000 (0.11)	-0.000 (0.76)
% $\Delta$ Employment $_{S,t-1}$	0.016 (1.56)	0.017* (1.64)	-0.055*** (2.85)	0.015 (1.57)	0.007*** (4.30)
$Harvester(male)_{i,t}$	0.319*** (4.30)	0.262*** (3.54)	0.283* (1.76)	0.347*** (4.81)	-0.004 (0.37)
$Harvester(female)_{i,t}$	-0.124 (0.23)	0.095 (0.17)	-1.174** (2.50)	-0.417 (0.82)	-0.115 (1.46)
$Adult_{i,t}$	0.010 (0.01)	0.220 (0.32)	0.407 (0.52)	-0.024 (0.04)	0.342*** (3.47)
$Male_{i,t}$	-0.481 (0.85)	-0.295 (0.52)	-1.421 (1.19)	-0.566 (1.05)	-0.211** (2.51)
$Adult_{i,t} * Male_{i,t}$	2.589*** (3.20)	3.009*** (3.70)	5.593*** (4.67)	2.608*** (3.42)	0.413*** (3.54)
$Unemployment_t$		-0.804*** (10.27)			
Constant	-5.121*** (2.82)	1.820 (1.11)	-8.838*** (2.75)	-3.274 (1.64)	-3.221*** (11.43)
Year dummies	YES	NO	YES	YES	YES
Special Board dummies	YES	YES	YES	YES	YES
Year dummies F ( $\chi^2$ )	24.80***		125.45***	23.49***	657.83***
Special Board dummies F ( $\chi^2$ )	3.62***	3.48***	3.44***		393.28***
F	8.13***	7.20***	20.08***	7.41***	
$\chi^2$					1601.96***
Adjusted R <sup>2</sup> /pseudo R <sup>2</sup>	0.090	0.072	0.212	0.082	0.237
N	6,846	6,846	6,756	7,246	6,695

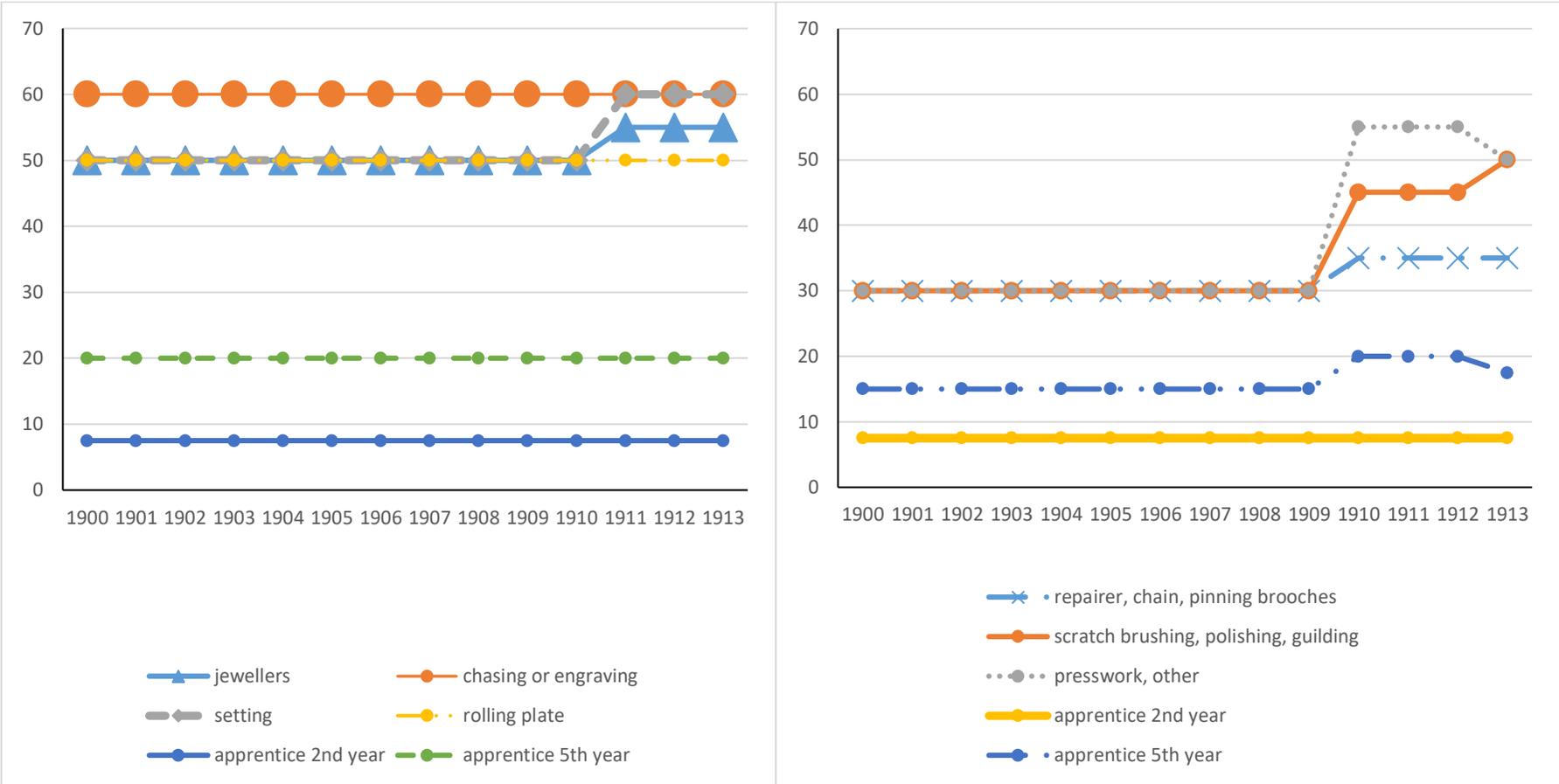
Notes: Absolute value of t-statistics in parentheses, \*\*\* indicates significance at a 1% level, \*\* indicates significance at a 5% level, \* indicates significance at a 10% level.

**Figure 1**  
**Number of Special Boards and Covered Workers, 1900-13**



Source: Victoria (1901-14).

**Figure 2**  
**Male and Female Minimum Wages in the Jewellery Trade, 1900-13**

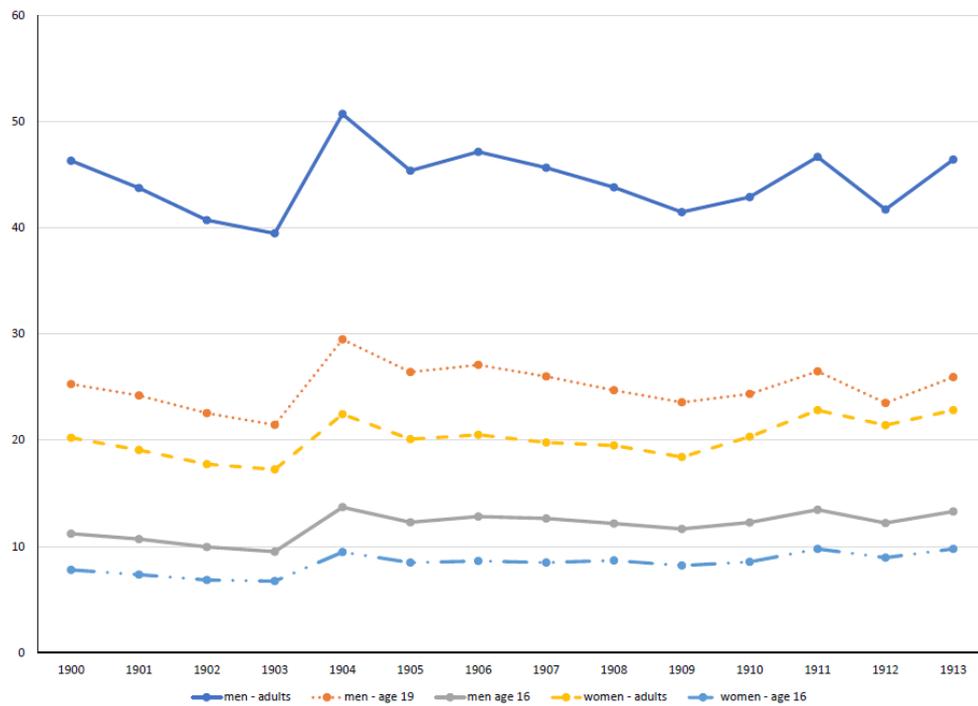


**A. Men**

**B. Women**

Source: Victoria (1901-14), "Wages fixed by Special Boards".

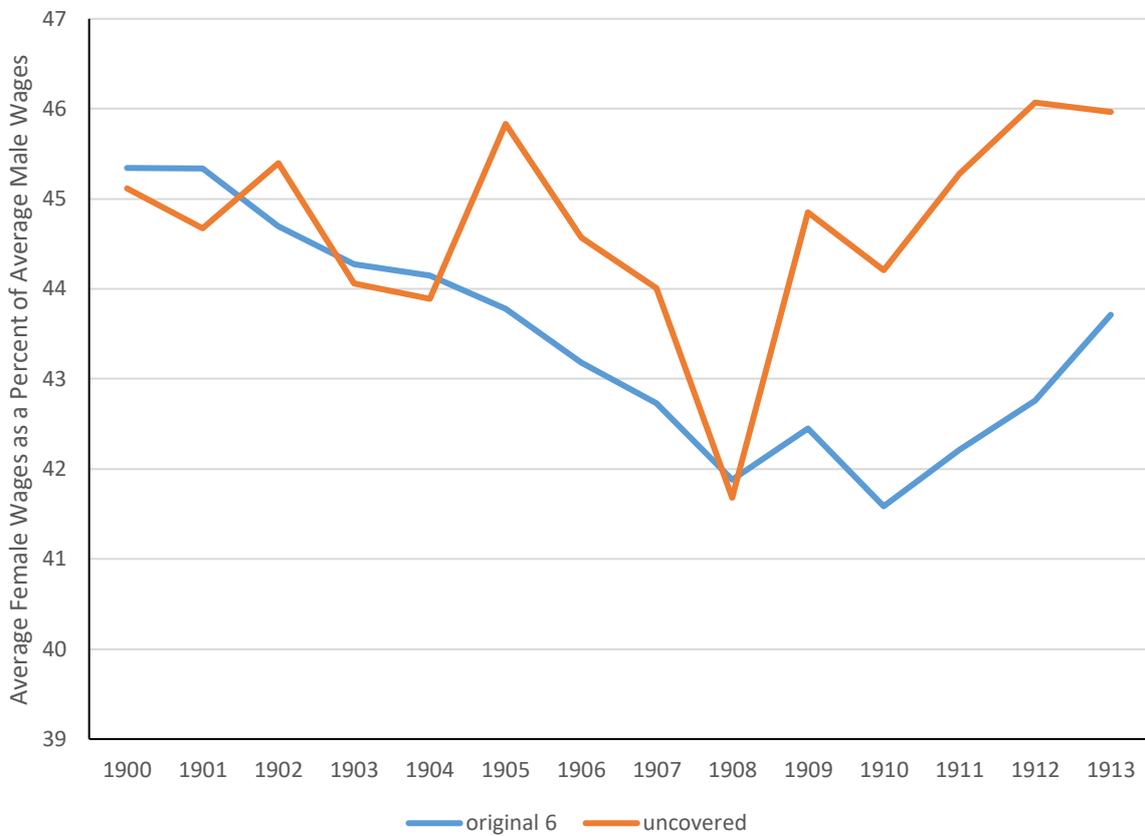
**Figure 3**  
**Average Real Minimum Wage Rates by Age and Gender, 1900-13**



Notes: The figures shown are averages across all occupations covered in each year of the entire period.

Source: Victoria (1901-14), "Wages fixed by Special Boards."

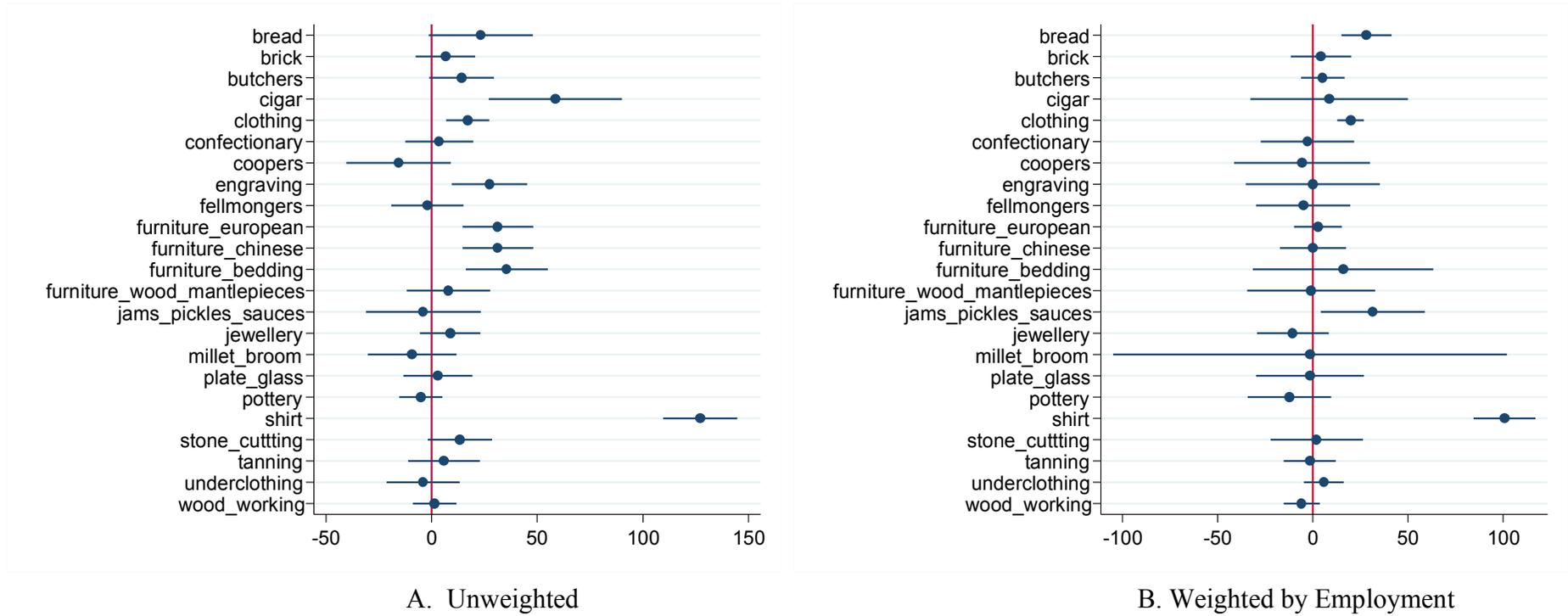
**Figure 4**  
**Average Gender Pay Ratios in Covered and Uncovered Trades, 1900-13**



Notes: These figures show weighted average wage for covered and uncovered trades. The weights are the total number of adults employed in each trade.

Source: Victoria (1901-14), “Wages fixed by Special Boards” and “Return for the year showing average weekly wages.”

**Figure 5**  
**Differences in Real Minimum Wage Increases Across Special Boards**



Notes: The graphs show the coefficients and 99 percent confidence intervals on trade dummy variables from regressions on the percentage change in real minimum wages. The full regressions are shown in the Appendix, Table A3.

## Appendix, Additional Regression Results

**Table A1**  
**Effects of the Median Trade-Level Minimum Wage on Average Trade-Level Wages**

Sample	Lagged bite	%Δ real minimum	%Δ lagged real minimum	Adj. R <sup>2</sup>	F	N
Adult men	High	0.098* (1.80)	0.319*** (7.42)	0.918	40.11***	298
Adult men	Low	0.052* (1.84)	-0.067 (0.80)	0.744	13.27***	305
Adult women	High	0.018 (0.41)	0.057 (1.54)	0.637	6.42***	137
Adult women	Low	-0.048 (0.54)	0.216 (0.62)	0.477	4.36***	130

Notes: The dependent variable is the percentage change in the average real wage. Absolute value of t-statistics in parentheses, \*\*\* indicates significance at a 1% level, \*\* indicates significance at a 5% level, \* indicates significance at a 10% level. The regressions are the same as in Table 2, except the sample is split based upon the bite of the median (rather than lowest) minimum wage.

**Table A2**  
**Additional Regressions on Annual Changes in Minimum Wages**

	(1)	(2)	(3)	(4)	(5)
Regression technique	OLS	OLS	WLS	OLS	Probit
Sample	ALL	ALL	ALL	ALL	ALL
Dependent variable	% $\Delta$ MW	% $\Delta$ MW	% $\Delta$ MW	% $\Delta$ MW	Non-zero change
$NC_{i,t-1}$	4.915*** (11.56)	4.355*** (10.58)	9.723*** (15.82)	4.091*** (11.28)	1.352*** (19.58)
$NC_{i,t-2}$	2.960*** (6.65)	2.602*** (6.21)	4.370*** (6.85)		0.413*** (6.89)
$RealMinWage_{i,t-1}$	-0.128*** (6.40)	-0.152*** (7.78)	-0.259*** (8.05)	-0.123*** (7.21)	-0.008*** (2.66)
% $\Delta$ Employment <sub>A,t</sub>	0.000 (0.14)	0.001 (0.31)	0.037** (7.57)	0.000 (0.07)	-0.001* (1.80)
% $\Delta$ Employment <sub>S,t</sub>	-0.008 (0.80)	-0.168 (1.59)	0.022 (1.08)	-0.008 (0.94)	-0.004** (2.35)
$Harvester (male)_{i,t}$	0.316*** (4.23)	0.262*** (3.51)	0.242 (1.52)	0.334*** (4.98)	-0.008 (0.80)
$Harvester (female)_{i,t}$	-0.114 (0.21)	0.099 (0.18)	-1.310*** (2.79)	-0.376 (0.79)	-0.110 (1.41)
$Adult_{i,t}$	-0.013 (0.02)	0.180 (0.26)	1.110 (1.42)	-0.024 (0.04)	0.349*** (3.53)
$Male_{i,t}$	-0.40 (0.70)	-0.214 (0.37)	-0.546 (0.46)	-0.329 (0.67)	-0.194** (2.30)
$Adult_{i,t} * Male_{i,t}$	2.598*** (3.21)	3.022*** (3.72)	5.488*** (4.59)	2.413*** (3.48)	0.404*** (3.46)
$Unemployment_t$		-0.829*** (10.77)			
Constant	-5.390*** (2.93)	1.758 (1.05)	-9.678*** (3.01)	-1.937 (1.23)	3.197*** (11.57)
Year dummies	YES	NO	YES	YES	YES
Special Board dummies	YES	YES	YES	YES	YES
F	8.10***	7.16***	20.45***	7.75***	
$\chi^2$					1589.6***
Adjusted R <sup>2</sup>	0.090	0.072	0.215	0.086	0.24
N	6,850	6,850	6,746	8,154	6,699

Notes: Absolute value of t-statistics in parentheses, \*\*\* indicates significance at a 1% level, \*\* indicates significance at a 5% level, \* indicates significance at a 10% level. The regressions are the same as in Table 3, except the variables % $\Delta$ Employment<sub>A</sub> and % $\Delta$ Employment<sub>S</sub> are contemporaneous rather than lagged.

**Table A3**  
**Full Regressions on Long-Term Changes in Minimum Wages, 1901-1913**

	Unweighted	Weighted
Adult	1.61 (0.35)	-4.74 (1.46)
Male	8.02** (2.62)	14.41*** (3.21)
Adult*Male	-7.73 (-1.40)	-5.46 (1.01)
Bread	23.22* (1.85)	32.35*** (6.18)
Brick	6.49 (0.90)	8.60 (1.23)
Butchers	14.11* (1.81)	9.56 (1.57)
Cigar	58.58*** (3.65)	12.91 (0.76)
Clothing	16.98*** (3.25)	21.56*** (6.79)
Confectionary	3.59 (0.44)	1.58 (0.16)
Coopers	-15.72 (1.25)	-1.56 (0.11)
Engraving	27.37*** (3.02)	4.42 (0.31)
Fellmongers	-2.09 (0.24)	-0.82 (0.08)
Furniture (European)	31.28*** (3.67)	6.99 (1.40)
Furniture (Chinese)	31.28*** (3.67)	4.12 (0.59)
Furniture (bedding)	35.50*** (3.59)	19.53 (1.00)
Furniture (wood mantlepieces)	7.87 (0.78)	3.51 (0.26)
Jams, pickles & sauces	-4.00 (0.29)	34.67*** (3.14)
Jewellery	8.73 (1.19)	-6.30 (0.83)
Millet broom	-9.34 (0.87)	3.64 (0.08)
Plate glass	2.90 (0.35)	2.74 (0.24)
Pottery	-5.18 (1.01)	-7.27 (0.84)
Shirt	127.32*** (14.24)	103.58*** (15.30)
Stone cutting	13.32 (1.72)	6.19 (0.63)
Tanning	5.75 (0.66)	2.64 (0.49)
Underclothing	-4.11 (0.47)	8.55 (1.85)
Woodworking	1.36 (0.26)	-1.46 (0.40)
N	442	426
F	13.83***	17.62***

$R^2$	0.43	0.50
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Notes: Absolute value of t-statistics in parentheses, \*\*\* indicates significance at a 1% level, \*\* indicates significance at a 5% level, \* indicates significance at a 10% level.