

# Women's wages and the gender wage gap: The impact of Dutch industrialization mirrored in Britain, 1750-1914

By Corinne Boter

## 1. Introduction

The impact of structural change on economic development is much debated. Although understanding the trajectory of women's work is vital for a full and correct narrative of economic development, for a long time the role of women has not been adequately studied. In the past decades, an increasing body of literature has focussed on the quantification of various dimensions of women's economic activities including women's remuneration and their changing position in the labour market as a result of industrialization.<sup>1</sup> However, the majority of these studies have focussed on the British case and have concluded that overall, women's position worsened. The question this paper seeks to answer is whether we can find similar effects of industrialization on women's labour market opportunities in the Netherlands compared to Britain, even though the timing and pace of industrialization were different. To this end, I compose the first nineteenth-century Dutch women's wage series and trace the development of the gender wage gap (GWG, henceforth). The key finding is that during industrialization, women's relative position in the casual agricultural and industrial wage labour markets deteriorated whereas servants working on annual contracts saw their relative position remain stable and even slightly improve. This development closely resembled the British experience.

Jane Humphries and Jacob Weisdorf have composed the first long-term series of unskilled women's wages in England for the period 1260-1850 and compared them to the well-known series of men's wages.<sup>2</sup> Based on their findings, they consider, among other things, the impact of industrialization on women's welfare and their opportunities in the

---

<sup>1</sup> Among others: Humphries and Weisdorf, 'The wages of women'; Verdon, 'The rural labour market'; Burnette, *Gender, work and wages*.

<sup>2</sup> Humphries and Weisdorf, 'The wages of women'. NB: men's nominal and real wages in industrial economies have been extensively investigated: Allen, 'The great divergence' (Europe); Vermaas, 'Real industrial wages' (the Netherlands); Frankema and van Waijenburg, 'Structural impediments' (British Africa); Clark, 'The condition' (England).

labour market. They conclude that in the long run, “[i]t was largely [...] single women free from family responsibilities who could profit from the momentous economic changes of the era of industrialization”<sup>3</sup>, because women’s *annual* contracts became, relatively speaking, better paid.<sup>4</sup> In contrast, married women became more dependent on men because women’s *casual* wages could not keep up with men’s wages.

Former research on the Dutch GWG has focussed on specific regions and industries. Richard Paping has shown that in the province of Groningen, the GWG in agriculture closed from 1790 onwards until the agricultural crisis of 1818, after which the GWG started to widen.<sup>5</sup> Peter Priester has likewise found a widening GWG in Groningen: around 1810 women’s wage had been circa 65% of men’s wages, around 1860 circa 45%, and in 1906 only 37%.<sup>6</sup> For the industrial sector, Gertjan de Groot found that in almost all the industries he surveyed<sup>7</sup>, the GWG widened during the second half of the nineteenth and first half of the twentieth century. In the paper industry in 1871, women earned 65% of men’s wages and in 1938 this share had fallen to 51%. In the cotton industry the GWG fluctuated and was, according to De Groot, a direct consequence of mechanization. In 1881 women’s wages were 70% of men’s, in 1917 52%, and in 1930 68%.<sup>8</sup>

Because research on Dutch women’s wages is scattered, the long-term development of the GWG has hitherto remained unclear. We know more about men’s wages: they remained stable during the eighteenth and first half of the nineteenth century and thereafter started to rise rapidly. This was followed by a period of stagnation during the last two decades of the nineteenth century and wages recovered during the 1900s.<sup>9</sup> The Netherlands provides an important case to investigate the Dutch GWG. First, the Dutch economy industrialized relatively late. By the beginning of the twentieth century, 30 percent of the total Dutch labour force still worked in agriculture compared to 23 percent in Belgium and 12 percent in England.<sup>10</sup> Second, officially registered FLFP rates in the Netherlands decreased during the nineteenth century and were low compared to neighbouring countries such as Britain and

---

<sup>3</sup> Humphries and Weisdorf, 'The wages of women', p. 430.

<sup>4</sup> Recently, Humphries and Weisdorf have published a follow-up paper in which they present the long-term development of men’s *annual* wages. They show that after 1700, men’s annual real wages became better paid than men’s casual real wages: Humphries and Weisdorf, 'Unreal wages?', p. 23.

<sup>5</sup> Paping, *Voor een handvol stuivers*, pp. 194-197.

<sup>6</sup> Priester, *De economische ontwikkeling*, pp. 196-197.

<sup>7</sup> Most importantly: pottery, paper, and textile enterprises.

<sup>8</sup> de Groot, *Fabricage van verschillen*.

<sup>9</sup> Vermaas, 'Real industrial wages'.

<sup>10</sup> van Zanden and van Riel, *The strictures of inheritance*, p. 192; Feinstein, *Statistical tables*, p. T131; Mitchell, *British historical statistics*, p. 104.

Belgium.<sup>11</sup> A better understanding of women's changing position in the labour market will provide new insights into why nineteenth-century Dutch FLFP rates were so low.

This paper is structured as follows. Section 2 provides an overview of the research on the impact of industrialization on women's work and the GWG in Britain. Furthermore, it considers the differences and similarities between changes in agriculture and industry in Britain and the Netherlands. Section 3 considers my sources and methodology. Section 4 shows the developments of Dutch men's, women's, and children's nominal wages and the GWG in the agricultural and the industrial sectors. Section 5 contemplates the differences and similarities between the British and the Dutch experience. Section 6 concludes.

## 2. Learning from the British case

### *The gender wage gap and the opportunity costs of labour*

During the early modern period and the era of industrialization women earned between one-third and one-half of men's wages.<sup>12</sup> The existence of this GWG is undisputed, but its causes are all the more debated. Part of the explanations are based on neoclassical economic theories, arguing that women earned 'market wages', that is, wages that were determined by market forces of supply and demand.<sup>13</sup> In this line of reasoning, wage rates were not influenced by gender, but merely by the labourer's productivity and the desire of employers to maximize profits. Other studies have argued that the GWG was principally caused by social values and prejudices against women's skills and that women were thus paid 'customary wages' that were determined by their sex.<sup>14</sup>

A gap between men's and women's wages for the same type of work is not necessarily the result of wage discrimination. First, women were usually less productive than men. Despite the increasing use of machinery in many industrial branches, physical strength remained important which gave men an advantage. Thus, if piece rates were the same, women's total earnings were usually lower.<sup>15</sup> Second, women generally worked shorter days

---

<sup>11</sup> Pott-Buter, *Facts and fairy tales*, p. 21.

<sup>12</sup> Simonton, *A history*, p. 170; Ogilvie, 'How does social capital', p. 341; Burnette, *Gender, work and wages*, p. 72; van Nederveen Meerkerk, 'Market wage', p. 165; Stanfors et al., 'Gender, productivity', p. 48.

<sup>13</sup> Burnette, 'An investigation', p. 257.

<sup>14</sup> de Groot, *Fabricage van verschillen*.

<sup>15</sup> Burnette, *Gender, work and wages*. Timothy Leunig has argued for the case of New England that piece wages provided married women with the possibility to combine domestic labour with wage labour because working hours were flexible (Leunig, 'Piece rates and learning').

because they normally had a household and children to take care of. Third, combined earnings of a husband together with his wife are often mistaken for the earnings of one individual man.<sup>16</sup> Finally, payments in kind could be substantial, especially for women, but are usually not included in research on wages. Still, whether market wages or customary wages were the norm, in any case *indirect* discrimination played an important role: “[w]omen were ‘statistically discriminated’ against because as a group they were unlikely, for instance, to remain in the workforce for very long after marriage, and as a group they may have been pleased with jobs that involved a minimum of training.”<sup>17</sup> Furthermore, women’s educational attainment was usually lower than men’s. Consequently, women were excluded from most higher-skilled – and higher-paid – occupations.

The GWG is an indicator of women’s position in the labour market relative to men’s. Even though the causes of the gap varied between sectors and periods, it gives us an idea about what men and women *could* earn and how attractive it was for women to engage in wage labour. As such, the GWG is a crucial piece of information for determining how the supply and opportunity costs of women’s labour affected FLFP rates. The theory of the allocation of time developed within the movement of the New Household Economics (NHE), helps to better understand this mechanism: an increasing wage rate of the husband normally results in a decrease of time spent on market work by the wife who then redeploys her time to domestic work. If women’s wage rates do not increase as much as men’s, this is all the more reason for women to withdraw from the labour market. The opportunity costs of women’s labour increase when the GWG widens.<sup>18</sup>

### *The effects of industrialization on the gender wage gap in Britain*

During the period 1500-1850, open fields were enclosed and small farms were amalgamated into large estates. This enclosure movement instigated a process of proletarianization because landownership became increasingly concentrated into the hands of a relatively small group of people. Furthermore, these landowners reduced farm employment by investing in modern cultivation techniques and by the end of the eighteenth century, British agricultural productivity had become exceptionally high.<sup>19</sup> The mainstream literature argues that the

---

<sup>16</sup> Burnette, 'An investigation'.

<sup>17</sup> Goldin, *Understanding*, p. 214.

<sup>18</sup> Becker, 'A theory'; Mincer, 'Labor-force participation of married women'.

<sup>19</sup> Allen, *Enclosure and the yeoman*, p. 1.

labour surplus that originated was employed in manufacturing in the growing cities and that this development resulted in the industrial revolution.<sup>20</sup>

The effects of the enclosure movement on women's agricultural labour are much debated. Robert Allen has argued that as farms grew in size, the number of (especially female) labourers per acre decreased.<sup>21</sup> Joyce Burnette has stated that although she also finds a decreasing demand for female labourers between 1750 and 1850, this was not caused by increasing farm-size. Burnette points out that Allen has only included female live in farm servants in his analysis. While she acknowledges the decreasing demand for these particular women when farms expanded, this was not the case for female *day* labourers. Instead, she suggests that the Poor Law was an incentive for farmers to hire more male instead of female labourers because in times of severe unemployment in their parish, landowners were obliged to support men either by employing them or through the poor rates.<sup>22</sup>

The demand for female farm labourers in regions where factories arose became more pressing because here, many women moved away from agricultural to industrial work. Furthermore, the factory system eventually destroyed manual spinning at home. In regions where this type of home industry had been omnipresent, the supply of female agricultural wage labourers increased. Jane Humphries has stressed that men and women were affected differently by proletarianization and emphasizes that there has been a long transition period during which wage labourers still had access to other resources besides wages.<sup>23</sup> All in all, notwithstanding the debate about the causes, the demand for female agricultural day labourers decreased from the 1750s onwards.<sup>24</sup>

The mechanization of the textile industry impacted on the demand for and supply of female labour in both the agricultural and the industrial sector. Weaving and spinning mechanized at a different pace. During the 1760s, the flying-shuttle came into general use.<sup>25</sup> This manually driven device could be operated at home and increased weavers' productivity.

---

<sup>20</sup> There is debate among scholars about the direct link between the enclosure movement, increasing productivity, and the development of the industrial sector: Allen, *Enclosure and the yeoman*, pp. 1-21; Overton, *Agricultural revolution*, pp. 1-9; Hudson, *The industrial revolution*, pp. 64-97.

<sup>21</sup> Robert Allen distinguishes two agricultural revolutions: the yeoman's and the landlords. The former took place during the seventeenth century and consisted of doubling corn yields. The latter took place during the eighteenth century and was marked by enclosure, farm amalgamation, and reduced farm employment, not by increasing yields. Allen refutes the idea that "[...] released labourers were re-employed in manufacturing". Allen, *Enclosure and the yeoman*, p. 21.

<sup>22</sup> Burnette, 'The wages and employment', p. 685.

<sup>23</sup> Humphries, 'Enclosures'.

<sup>24</sup> See also more regional studies that come to the same conclusion: Speechley, *Female and child*; Lane, *Women in the regional economy*.

<sup>25</sup> The flying-shuttle was invented in the 1730s by John Kay.

Consequently, the demand for yarn increased and this was an incentive to mechanize the spinning process as well: around 1765 the Spinning Jenny was invented and soon after, the water-frame and the mule were introduced in 1775 and 1779 respectively. While the Spinning Jenny could be operated at home, this was not the case with the spinning mules that were driven by water or steam power.<sup>26</sup> Around 1790, spinning and the preparatory tasks had become largely factory-based.<sup>27</sup> However, only with the introduction of the steam-driven *selfactor* around 1830, spinning at home died out entirely. Weaving became factory-based around 1820 when the first power looms were introduced. Until the 1850s, handloom weaving at home and power loom weaving in the factory had coexisted.<sup>28</sup>

The early factory system relied heavily on cheap female and child labourers.<sup>29</sup> However, the transfer to the factory system made textile labour less amenable for *married* women because it was harder to combine with domestic chores. Mechanization further affected the demand for female labour through occupational gender segregation. Weaving had traditionally been a male task, but with the introduction of the flying-shuttle women increasingly engaged in this type of work. Spinning had been women's work before mechanization but became dominated by men when it was transferred to the factories and became geographically concentrated.<sup>30</sup> Paul Minoletti concludes his thesis on the transition to the factory system as follows: "[t]hus, the evidence strongly suggests that the changes that occurred in textile production and employment over the course of the Industrial Revolution not only decreased the availability of textile work to women across Britain, but also decreased the utility to women of the textile work that was available and weakened their position in the labour market relative to that of men."<sup>31</sup>

The changing economic structure profoundly influenced wages. Men's agricultural wages started to rise rapidly from the mid-eighteenth century onwards. In the 1810s, wages dropped sharply and only started to recover during the 1830s. Women's wages followed the same pattern but did not increase as much.<sup>32</sup> Thus, the GWG in agriculture widened during

---

<sup>26</sup> The very first spinning-mules were manually driven. Later on, they were driven by either water or steam power: Boot, 'Handspinnen van katoen (deel 1)', p. 68; Lintsen and Bakker, *Geschiedenis van de techniek (deel 3)*, p. 24.

<sup>27</sup> Lazonick, 'Industrial relations', p. 233; Minoletti, *The importance*, p. 43.

<sup>28</sup> Minoletti, *The importance*, pp. 3-9.

<sup>29</sup> Fowler, 'Great Britain', p. 236; Horrell and Humphries, 'The exploitation'.

<sup>30</sup> Minoletti, *The importance*, pp. 7-8.

<sup>31</sup> Minoletti, *The importance*, p. 221.

<sup>32</sup> Clark, 'Farm wages'; Burnette, 'The wages and employment'; Clark, 'The long march'; Feinstein, 'Pessimism perpetuated'; Burnette, 'Labourers at the oaks'; Sharpe, 'The female labour market';

the period 1770-1860. However, in regions where the cottage industry was prevalent and where factories arose, the GWG narrowed because many women moved from agricultural to industrial work causing a pressing demand for female labourers in agriculture.

In the industrial sector, the GWG likewise widened. Although in the early textile factories both men's and women's wages were higher than they had been in the home industry, the GWG was larger in the factories. According to Paul Minoletti the GWG widened due to the transition to the factory system because of women's lesser physical strength, women's lower level of human capital formation, and, most importantly, the hostility against women workers based on gender ideology.<sup>33</sup> The GWG differed considerably between age groups. For instance, in 1833 in the Lancashire factory cotton production, girls earned more than boys until the age of 11, but afterwards the GWG widened rapidly. After the age of 40, the GWG slightly closed again.<sup>34</sup>

The study by Humphries and Weisdorf discussed in the introduction is the first to analyse the long-term development of the GWG.<sup>35</sup> Their dataset includes casual and annual payments for unskilled agricultural work, industrial work, as well as service work. The casual wage series consists of wages for, among others, agricultural labourers, garden labourers, "cleaners, scourers, laundresses, messengers, construction workers, and transport workers."<sup>36</sup> Most payments to annual workers were paid for agricultural work, domestic service, or a combination of the two.

British men's wages remained stable during the first half of the eighteenth century and thereafter began to rise until 1914, albeit with small setbacks during the early nineteenth and early twentieth centuries.<sup>37</sup> Women's casual day wages remained stable during the eighteenth century, slightly rose around the turn of the nineteenth century, and thereafter decreased until 1850 to the same level as in 1780. Women's annual wages started to rise simultaneously with women's casual wages but from the 1800s onwards they continued to rise significantly

---

Burnette, 'The wages and employment'; Verdon, *Changing patterns*, p. 153; Sharpe, *Adapting to capitalism*, p. 80; Speechley, *Female and child*, p. 131.

<sup>33</sup> Minoletti, *The importance*, pp. 215-218. See for older work on the effects of industrialization on women's labour for instance: Jordan, 'The exclusion'. Jordan argued that women in industrializing England were principally employed in those branches that had known a long history of home industry.

<sup>34</sup> Minoletti, *The importance*, pp. 62-63. See for the GWG in the cotton industry for a later period: Boot and Maingonald, 'New estimates'.

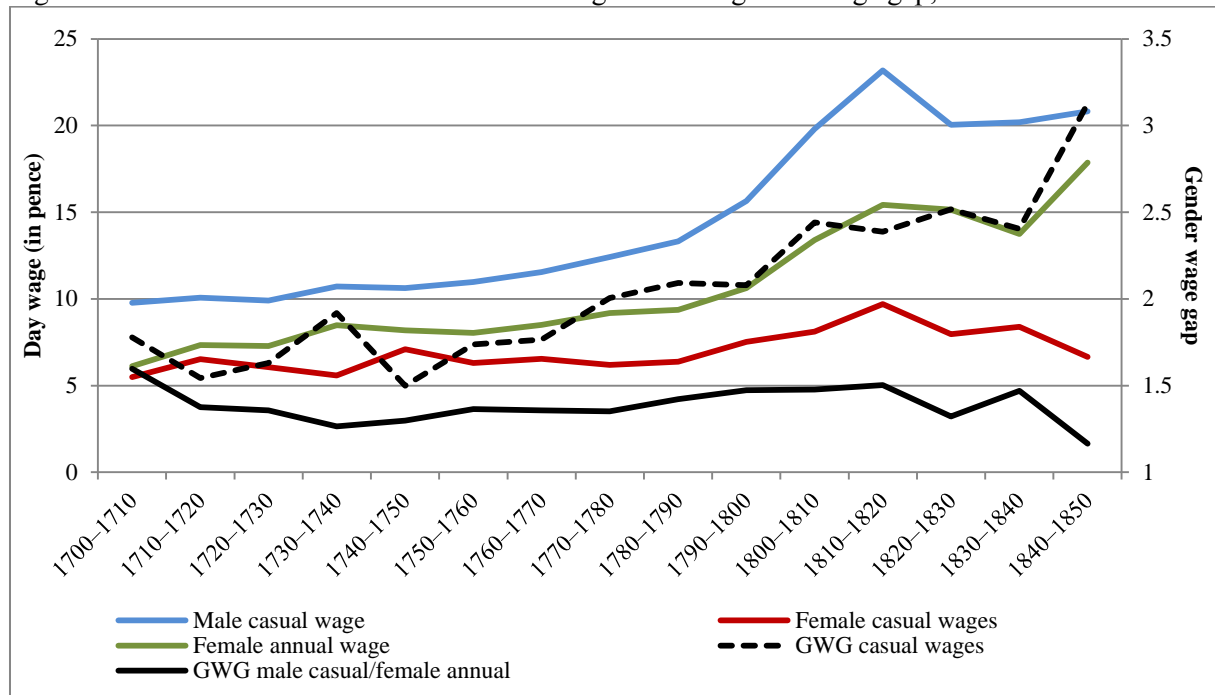
<sup>35</sup> Since the present research is concerned with the changes that occurred during industrialization, I leave out their research results in the period 1260-1700.

<sup>36</sup> Humphries and Weisdorf, 'The wages of women', p. 410. NB: they excluded spinners' wages. Nevertheless, as I will further discuss in section 5, based on their findings, Humphries and Weisdorf do draw conclusions about the effects of the mechanization of spinning.

<sup>37</sup> Allen et al., 'Wages, prices and living standards', pp. 19-20.

(Figure 1). Thus, the GWG in casual wages widened after 1750, which made women's relative position in the labour market worse, whereas the GWG in annual wages closed and women's position improved.

Figure 1. British men's and women's nominal wages and the gender wage gap, 1700-1850<sup>a</sup>



<sup>a</sup> Humphries and Weisdorf have converted the female annual wages into daily wages.  
Source: Humphries and Weisdorf, 'The Wages of Women', p. 432.

### *Women and industrialization in the Netherlands*

During the first half of the nineteenth century, a process of proletarianization started in Dutch agriculture and the absolute number of women listed with an occupation in the census increased. After 1880, this development reversed: the demand for wage labourers decreased because small-scale farms became more important compared to the large estates. Several reasons can be given for this shift. First, during the period 1878-1895, the Dutch agricultural sector suffered a crisis that was principally caused by the massive import of cheap grain causing grain prices – and prices of other crops such as madder – to drop. Furthermore, the price of butter dropped due to competition from Britain and the introduction of margarine, an inexpensive substitute for butter. Farmers in both arable and cattle farming therefore needed to cut their expenses on wage labour and were motivated to invest in labour-saving and more lucrative production methods such as artificial fertilisers.<sup>38</sup> Second, the demand for products

<sup>38</sup> van Zanden, *De economische ontwikkeling*, p. 332-333; Bieleman, *Boeren in Nederland*, pp. 280-281.



that were typically cultivated in small-scale farms (such as eggs, vegetables, and fruit) increased.<sup>39</sup> The result of the decreasing demand for wage labour was that many agricultural wage workers started their own business or migrated to the cities to find employment in the growing industrial sector. This development is fundamentally different from agriculture in Britain where the process of proletarianization persisted throughout the nineteenth century.

As a result of de-proletarianization, agricultural FLFP rates in the census decreased from 152,600 in 1849 to 66,800 in 1899 (respectively 44% and 15% of the total registered agricultural labour force).<sup>40</sup> However, the censuses usually did not record women working in their own business. Jan Luiten van Zanden has adjusted the outcomes of several censuses by estimating the number of women working in a private enterprise (Table 1).<sup>41</sup> His estimates show that indeed, these women constituted the largest of the three groups, especially around the turn of the twentieth century. Thus, from the end of the nineteenth century onwards, agricultural women workers moved away from the type of work that was usually registered in censuses to unregistered work that was performed on a family farm.

Table 1. Estimates of the female labour force in agriculture, 1810-1910 (in thousands)<sup>ab</sup>

	1810	1850	1880	1910
Women working in their own business	73.5	86.5	101.1	118.9
Farm servants	37.2	42.2	33.0	28.5
Day labourers	31.0	46.5	37.6	28.7
<b>Total</b>	<b>141.7</b>	<b>175.2</b>	<b>171.7</b>	<b>176.1</b>
<i>According to census</i>	-	152.6	-	105.5
Total as % of the male agrarian labour force	57.8	51.0	41.3	36.7
Share of women working in their own business as % of total agrarian female labour force	51.9	49.4	58.9	67.5

<sup>a</sup> Women older than 16.

<sup>b</sup> Including horticulture and forestry.

Source: van Zanden, *De Economische Ontwikkeling*, p. 75.

While the demand for casual wage labourers decreased after 1880, the demand for live in domestic and farm servants increased. This 'Servant Question', as it was called by

<sup>39</sup> van Zanden, *De economische ontwikkeling*, p. 336.

<sup>40</sup> van Zanden, *De economische ontwikkeling*, p. 68. See section 1.3 for more information about the changing structure of the Dutch agricultural sector.

<sup>41</sup> See also: Schmidt and van Nederveen Meerkerk, 'Reconsidering', pp. 88-89; van Nederveen Meerkerk and Paping, 'Beyond the census'.

contemporaries, was caused by an increasing demand for domestic servants of a growing middle class that could afford this kind of luxury. Furthermore, the supply of servants decreased because young unmarried women presumably preferred factory labour as it was better paid and gave them more freedom from both their employer and their parents.<sup>42</sup> Arguably, the Servant Question hit the countryside even harder than the cities because domestic service in urban households was usually preferred over work as a farm servant.<sup>43</sup>

The mechanization of the Dutch textile industry lagged behind the rapid changes in Britain but followed a similar pattern. As in Britain, before mechanization spinning had been a female task whereas weaving was mostly performed by men. Around 1800, the Spinning Jenny – or rather, an improved version of this machine – was introduced and 30 years later the throstle-frame was introduced.<sup>44</sup> These machines – at the time primitive compared to the machines in use in Britain – were operated at home or in small workshops by women and children.<sup>45</sup> In Britain, already by the late eighteenth century an enhanced version of the Spinning Jenny was introduced that could be connected to either waterwheels or steam engines. In the Netherlands, and especially in Twente, waterpower was largely absent and steam power was not yet lucrative.<sup>46</sup> Spinning at home only disappeared in the 1860s when the steam-driven ‘selfactor’ came into general use which was exclusively operated by men. As in Britain, the masculinization of spinning became irreversible with the switch from manually-driven to steam-driven machines.

For weaving, the flying-shuttle was introduced in Twente in the 1830s, almost 70 years after it came into general use in Britain. Both men and women learned how to operate these machines at home. The integration of male and female weavers was maintained when the first power-looms were introduced in the 1860s and the production process was

---

<sup>42</sup> Poelstra, *Luiden van een andere beweging*, pp. 137-189. However, according to Jannie Poelstra this was only true for regions where there was industrial work for women in the first place (such as the textile industry in Twente and the pottery industry in Maastricht).

<sup>43</sup> Bras, *Zeeuwse meiden*; Bras, ‘Maids to the city’.

<sup>44</sup> van Nederveen Meerkerk, Heerma van Voss, and Hiemstra-Kuperus, ‘De Nederlandse textielnijverheid’, p. 21. See for an English version of this article: van Nederveen Meerkerk, Heerma van Voss, and Hiemstra-Kuperus, ‘The Netherlands’; Lintsen and Bakker, *Geschiedenis van de techniek (deel 3)*, pp. 27-42. NB: Other parts of the spinning process, such as cleaning the cotton and preparing the cotton for spinning, were likewise mechanized from this period onwards.

<sup>45</sup> Boot, ‘Handspinnen van katoen (deel 2)’, p. 40.

<sup>46</sup> Boot, ‘Handspinnen van katoen (deel 1)’, p. 71. See section 1.3 in the introduction of this dissertation for a more extensive overview of the mechanization of the Dutch textile industry.

transferred from the home to the factories.<sup>47</sup> However, women were normally assigned fewer looms to operate than men. Furthermore, most female factory weavers were unmarried because married women were often unable to combine factory labour with domestic work. In the period 1860-1891, the number of handlooms in use in Twente decreased from 8,500 to 375, while the number of power-looms increased from 2,000 to 15,472.<sup>48</sup>

A brief overview of the timing of the introduction of machinery in the British and Dutch textile industries is provided in Table 2 below. Note that the transition period from manually-driven to steam-driven machines was much shorter in Britain than in the Netherlands, especially in spinning. The reason that it took so long was because in Twente, the heart of Dutch textile production, labourers usually combined textile work with farming. Therefore, they did not demand high wages since they partly relied on other resources. Furthermore, until 1860 the infrastructure in Twente was not adequate to transport coal in large quantities.

Table 2. Weaving and spinning machinery in Britain and the Netherlands, 1760-1880

	<b>Machines</b>		<b>Approximate year of introduction</b>	
	<i>Type</i>	<i>Power</i>	<i>Britain</i>	<i>Netherlands</i>
Weaving	Flying-shuttle	Manual	1760	1830
	Power loom	Steam	1820	1880
Spinning	Spinning Jenny	Manual	1765	
	Variants of the Spinning Jenny <sup>a</sup>	Water/steam/manual	1790	1800-1830
	Self-actor	Steam	1830	1860

<sup>a</sup> In Britain, the ‘mules’ were already connected to water and steam power during the 1790s whereas most spinning machines in use in the Netherlands remained manually driven for much longer.

Sources: see text.

### 3. Sources and methodology

#### *The composition of the wage series*

My database consists of a great variety of primary sources: several surveys on women’s and children’s labour, surveys on the state of the agricultural sector, and reports from the Dutch Central Bureau of Statistics among others. Furthermore, I have included the research results

<sup>47</sup> This development regards the weaving of unicolour cloth. Weaving multicolour cloth was yet another story: this remained a mainly male profession because it was mechanized much later than the weaving of unicolour cloth. See: de Groot, *Fabricage van verschillen*, pp. 162-174.

<sup>48</sup> Lintsen and Bakker, *Geschiedenis van de techniek (deel 3)*, p. 52.

from previous studies on women's wages.<sup>49</sup> The collection of these data has resulted in a database that contains thousands of observations from the period 1800-1924.<sup>50</sup> Most of the primary and secondary sources reported average wages based on a large quantity of observations.<sup>51</sup> This means that one observation in my database is actually an average of the wages of an extensive group of labourers and that the total number of 7,876 wages represents many more individual wages.

Both daily and weekly wages are considered to be casual wages and will be analysed on a daily level. To this end, I have converted the week wages into day wages by dividing them by 6, assuming that labourers worked six days a week.<sup>52</sup> Annual wages were paid once a year to workers on fixed contracts. For industry, the dataset contains observations from men's, women's, and children's casual contracts. For agriculture, children are excluded and for men and women both casual and annual contracts are included.

In the sources, children were usually classified into age groups or their age was not specified at all. In total, I found 46 different ways of referring to a child. Out of the 1,018 children's wages included in the database, 27.9% had an unknown age, 22.2% was aged 14-18, 12.6% was 'younger than 17', 12.0% was 17-21, and 11.1% was 'younger than 14'. The rest was either defined differently or belonged to a younger age group.<sup>53</sup> Almost half of the wages were earned by boys (47.6%), 25% by girls, and of the rest the sex was unknown.

---

<sup>49</sup> **Primary sources:** Anonymous, *Arbeidsloonen en levensbehoeften*; Arbeidsinspectie, *Verslag van de tweede afdeling*; Arbeidsinspectie, *Verslag van de eerste afdeling*; Arbeidsinspectie, *Verslag van de derde afdeling*; Bultman, 'Verslagen'; Centraal Bureau voor de Statistiek, 'Opgaven (1902)'; Centraal Bureau voor de Statistiek, 'Opgaven (1903)'; Centraal Bureau voor de Statistiek, 'Statistiek (textiel industry)'; Centraal Bureau voor de Statistiek, 'Statistiek (schoenfabrieken)'; Centraal Bureau voor de Statistiek, 'Statistiek van loon en arbeidsduur'; Dam, 'De officiële loonstatistiek (1913)'; Dam, 'De officiële loonstatistiek (1915)'; Dam, 'De officiële loonstatistiek (1917)'; Dam, 'De officiële loonstatistiek (1921)'; Departement van Landbouw Nijverheid en Handel, *Onderzoek naar den fabrieksarbeid van gehuwde vrouwen*; Directie van den Arbeid, *Onderzoekingen (part I)*; Directie van den Arbeid, *Onderzoekingen (part II)*; Directie van den Arbeid, *Onderzoekingen (part III)*; Landbouwcommissie, *Uitkomsten*; Posthumus, *Huisindustrie in Nederland*; Staatscommissie voor den Landbouw, *Algemeen overzicht*; Staatscommissie voor den Landbouw, *Groningen-Gelderland*; Staatscommissie voor den Landbouw, *Utrecht-Limburg*. **Secondary literature:** Addens, *Arbeid en loon*; Brugmans, *De arbeidende klasse*; Gorter and de Vries, *Gegevens omtrent den kinderarbeid*; de Groot, *Fabricage van verschillen*; Jansen, *De industriële ontwikkeling*; Lubbers, *De statistiek van het arbeidsloon*; Paping, *Voor een handvol stuivers*; Priester, *De economische ontwikkeling*; van Zanden, *De economische ontwikkeling*; van Zanden, 'Lonen en arbeidsmarkt'.

<sup>50</sup> For this paper, the data from the period after 1914 will be excluded from the analysis. Table A1 shows the total number of observations per 5-year period.

<sup>51</sup> For the individual wages I found, I have calculated the weighted averages.

<sup>52</sup> From qualitative sources, I know that six-day working weeks in factories were no exception. Monday to Friday were full time working days and Saturday afternoon was usually meant for cleaning and organizing the work floor. (Arbeidsinspectie, *Twente*).

<sup>53</sup> The number of children younger than 12 is negligible.

The data will be used to investigate both sectoral and economy-wide developments of nominal wages and the GWG. To facilitate a sectoral analysis, I assigned each observation the corresponding HISCO code and the industrial branch in which the occupation was categorized in the 1889 census.<sup>54</sup> To link every observation to HISCO, at times, my own interpretation of occupational titles was necessary. For instance, I gave labourers working in a factory where beans were preserved the same code as labourers working in other types of foodstuff factories.<sup>55</sup> Finally, I determined the skill level of each occupation using the HISCLASS classification scheme.<sup>56</sup> The vast majority of the observations were either unskilled or lower-skilled occupations (Table A2).

### *Making sense of the sources*

There are several data problems worth mentioning. First, in-kind payments took many forms and shapes and are often not specified in the sources. Humphries and Weisdorf added the market value of in-kind payments to the monetary wage to overcome this problem.<sup>57</sup> Where possible, I adopt this method. I have distinguished between two types of in-kind payments: (1) food, and (2) food and shelter. This method does lead to a loss of detail since smaller in-kind payments such as the use of land or an occasional tip are not accounted for. To determine the value of in-kind payments, I use Robert Allen's consumption baskets.<sup>58</sup> I assume that food and shelter for one male worker equalled the price of one man's bare bones consumption basket in that specific year whereas female workers consumed 0.9 of such a basket.<sup>59</sup> To determine the value of food alone, I add half the value of one bare bones consumption basket to the monetary wage for men, and 0.45 for women. For day wages I simply use 1/365 and for week wages 1/52 of one year's basket.<sup>60</sup>

Second, a comparison of daily, weekly, and annual wages is tricky since our knowledge about the number of days worked per year is scarce. The general consensus is that

---

<sup>54</sup> van Leeuwen, Maas, and Miles, *HISCO*; van Leeuwen, Maas, and Miles, 'Creating'.

<sup>55</sup> Although it was rare, some occupational titles were too vague to link to a HISCO code.

<sup>56</sup> van Leeuwen and Maas, *HISCLASS*.

<sup>57</sup> Humphries and Weisdorf, 'The wages of women', p. 417. See also: Boter, 'Marriages are made in kitchens'.

<sup>58</sup> Allen, *Amsterdam*; Allen et al., 'Wages, prices and living standards'.

<sup>59</sup> The 0.9 for women is based on the assumption that women on average consumed less calories than men and that, therefore, their bare bones consumption basket is smaller and cheaper. Among others: Allen, 'The great divergence'.

<sup>60</sup> Using bare bones consumption baskets may be an underestimation of actual consumption and the value of in-kind payments. Jane Humphries has recently argued that these baskets did not contain sufficient calories to feed a labourer performing physical work (Humphries, 'The lure of aggregates'). Robert Allen has accepted her critiques regarding the amount of calories (Allen, 'The high wage economy').

during the early modern period, labourers worked circa 260-270 days annually.<sup>61</sup> However, the amount and length of work days presumably increased during industrialization.<sup>62</sup> In the Netherlands, only in 1919 a law was implemented that legally limited the length of male labourers' working days (women's and children's working days were already restricted by previous legislation in the late-nineteenth century).<sup>63</sup> To overcome these uncertainties, I will analyse the casual and annual wages separately.

Third, it often remains unclear whether wages were paid to unmarried or married women. Humphries and Weisdorf assume that unmarried women worked on annual contracts whereas married women performed casual labour. They reason that married women could find casual work through their husbands, either by assisting him in his work or by being 'officially' hired by the same employer.<sup>64</sup> Furthermore, casual employment could easily be combined with domestic chores. Unmarried women were encouraged by the authorities to perform annual work because casual work would give them too much freedom.<sup>65</sup> For the annual wages in my series, I roughly follow the same kind of reasoning. Indeed, married women were unlikely to work on annual contracts since they usually had households to take care of and were therefore not able to work full time, let alone live in with their employer. However, casual employment – represented by daily and weekly wages – could be performed by both married and unmarried women. We know that, for instance, Dutch textile factories employed large numbers of unmarried women that received weekly wages. Some factories even excluded married women entirely, usually after they had had their first baby.<sup>66</sup> In general though, casual work will be considered as work that *could be* performed by married women.

Finally, the number of hours worked to receive a certain wage was almost never specified in the sources. A related issue is that both piece wages and time wages are included in the database. Piece wages were usually recorded as daily or weekly wages, i.e. the wage labourers received for their average output. Consequently, as I will further explain below, a comparison between men's and women's wages gives a distorted picture of wage discrimination because usually women worked fewer hours and were less productive than men.<sup>67</sup>

---

<sup>61</sup> de Vries and van der Woude, *The first modern economy*, p. 709; Humphries and Weisdorf, 'The wages of women', p. 412.

<sup>62</sup> Voth, *Time and work*; Voth, 'Living standards', p. 223.

<sup>63</sup> Heerma van Voss, *De doodsklok*.

<sup>64</sup> Humphries and Weisdorf, 'The wages of women', p. 411.

<sup>65</sup> Humphries and Weisdorf, 'The wages of women', pp. 411-412.

<sup>66</sup> Among others: Janssens and Pelzer, 'Did factory girls'.

<sup>67</sup> Burnette, 'An investigation'.

### *Correcting for regional and sectoral differences*

Regional variation in wages was considerable within the Netherlands.<sup>68</sup> Since for most years not all provinces are represented in the dataset, I corrected the averages to compose a reliable, national wage trend. This was done as follows. First, I have calculated the ratio of each available wage (average per province per 5-year period) to the average wage of one reference province in that specific period.<sup>69</sup> Second, for the remaining periods I have interpolated these ratios.<sup>70</sup> Thus, for each 5-year period a ratio from the average wage per province to the average wage from the reference province was determined. Third, the gaps in the database, that is the provinces for which no wages were found in a specific period, were filled by multiplying the average wage from the reference province from that period, with the ratio for the province with no data, as calculated during step two. For instance, for the period 1880-1884, I only found female farm servants' wages for Groningen. In the subsequent period 1885-1889, servants' wages are known for all the provinces. The wage in, say, Zuid-Holland in the former period was estimated by using the ratio from the Zuid-Holland wage to the Groningen wage in the latter period.

Next, I determined the national average by calculating a weighted average of all the provinces based on the absolute number of male and female labourers in the agricultural and industrial sectors in each province in the 1899 census.<sup>71</sup> This method was used for several groups of wages: (1) male and female farm servants who received annual wages, (2) male annual farm labourers, (3) male and female casual agricultural labourers, (4) all male and female unskilled and lower skilled casual industrial labourers, and (5) male and female casual textile labourers separately.<sup>72</sup>

To aggregate the agricultural and industrial trends, the shares of the labour force working in agriculture and industry need to be accounted for. I have calculated the share of

---

<sup>68</sup> See for instance: Kint and van der Voort, 'Economische groei'.

<sup>69</sup> For most wage groups, Groningen was chosen as a point of reference because wages from nearly all 5-year periods from 1800-1914 are included. For women's and children's industrial wages and for all the textile wages, the province of Overijssel was used as the reference province.

<sup>70</sup> I did not use one specific formula to interpolate the ratios. If, for instance, for one period the ratio was 0.85 and for the subsequent period with data it was 0.9, I simply used the average of the two ratios for the intermediary periods. However, if the difference was larger, I let the ratios increase or decrease gradually.

<sup>71</sup> The weighted averages and the non-weighted averages of the provinces were usually not very different. Therefore, the assumption that the relative importance of the agricultural and industrial sectors did not change over time has not skewed the results.

<sup>72</sup> The (estimated) average wages and (estimated) ratios of each of these groups can be consulted in Appendix 4.1.

men's and women's employment in each sector based on various occupational censuses to compose a weighted average. Weighting the two trends was a simple procedure: imagine in a certain year 40 percent of the male labour force worked in agriculture, 30 percent in industry and 30 percent in services. The average agricultural wage will be multiplied by 0.4, the average industrial wage by 0.3 and the sum will be divided by 0.7 (because service wages are excluded from this research).<sup>73</sup>

#### 4. Dutch nominal wages and the gender wage gap, 1800-1914

##### *Agriculture*

Analysing casual agricultural wages requires caution because summer wages were higher than winter wages and developed differently.<sup>74</sup> Because there was more work during the summer months, labourers had a stronger bargaining position. Moreover, during the harvest period both men and women performing specific tasks such as binding corn and *vlastrekken* (harvesting flax) earned significantly more than regular day labourers.<sup>75</sup> To ensure that an overrepresentation of summer or winter wages in the database does not skew the results, I have calculated the unweighted average of men's and women's summer wages, winter wages, and 'other' wages (mostly annual averages or wages without specification of the season) for every individual province. However, this method has its own flaw: working days were longer and more numerous in the summer than in the winter meaning that the winter wages have too much weight in an unweighted average. This is especially true for women, who were unlikely to work during the winter because the demand for labour was much lower. Still, this method is worthwhile because it shows how much men and women *could* earn on an annual full time basis.

The annual wages were mainly live in farm servants' wages (72% of the men's and 98% of the women's wages). These were usually unmarried men and women who on top of their monetary salary received food and shelter from their employer.<sup>76</sup> Male servants performed farm work such as milking and feeding the cattle, and ploughing. As such, their work did not differ greatly from other casual wage labourers. Female servants performed both

---

<sup>73</sup> See Appendix 1, Table A16 for the male and female employment by sector 1807-1930.

<sup>74</sup> Priester, *De economische ontwikkeling*, p. 190.

<sup>75</sup> Priester, *De economische ontwikkeling*, p. 197.

<sup>76</sup> As explained in the methodological section of this paper, for the analysis I have added the (estimated) costs of food and shelter to the monetary wages.



domestic work and farm work such as raking hay and milking cows.<sup>77</sup> Although female farm tasks had for an important part been overtaken by machines by the first decade of the twentieth century, farm maids continued to combine domestic work with farm work, especially during the summer months when male and female servants worked alongside each other on the land.<sup>78</sup> The dominance of farm servants in the women's wage series does not skew the trend in women's annual wages since this was by far the most common way for unmarried women to work on annual contracts.

The remaining 28 percent of men's annual wages were earned by non-living in wage labourers. Unfortunately, the sources do not always specify whether they were employed on fixed annual contracts or on casual contracts – in which case the reported wage was simply what a casual labourer *could* earn in one year. Furthermore, it is likely that the reported annual wages accounted for the (part-time) help of the labourer's wife and/or children. The report on the labour conditions of agricultural wage labourers from 1909 stated that “[i]t regularly occurs that advertisements for agricultural wage labourers in local periodicals express a preference for labourers with large families. The men will be labourers on fixed contracts but their entire family will be obliged to work for the farmer if he so desires.”<sup>79</sup>

Figure 2 shows the evolution of casual agricultural wages and the GWG. After a brief period of decline during the 1820s, both men's and women's wages remained stable during the subsequent decades. From the 1860s onwards, men's and women's wages started to diverge dramatically. Men's casual wages began to rise until the agricultural crisis of 1878-1895 when wages dropped to the same level as twenty years before, but recovered during the first decade of the twentieth century. Women's wages remained rigid until circa 1900, followed by a modest increase.

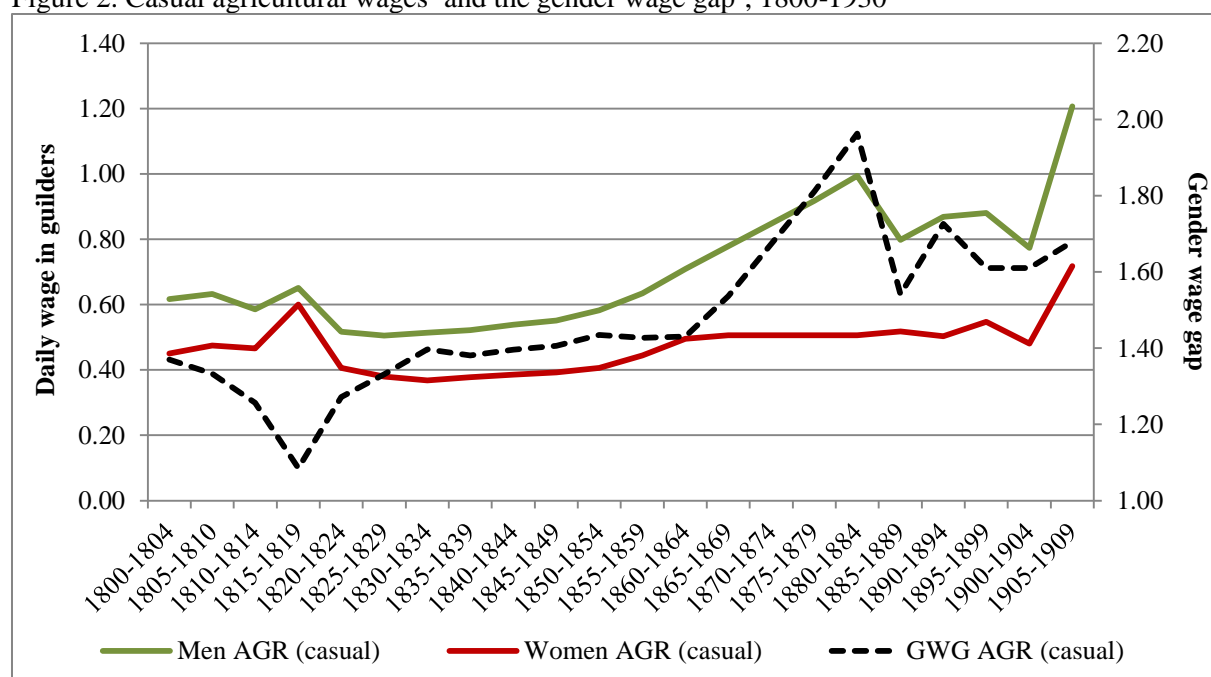
---

<sup>77</sup> This combination of farm work and domestic work was also characteristic for female farm servants in Britain: Verdon, *Changing patterns*, pp. 125-126.

<sup>78</sup> Sociaal Democratische Studieclub, *Landarbeiders*, pp. 11-12.

<sup>79</sup> Sociaal Democratische Studieclub, *Landarbeiders*, p. 18.

Figure 2. Casual agricultural wages<sup>a</sup> and the gender wage gap<sup>b</sup>, 1800-1930<sup>c</sup>



<sup>a</sup> For both men's and women's wages, the data from the period 1865-1879 have been interpolated.

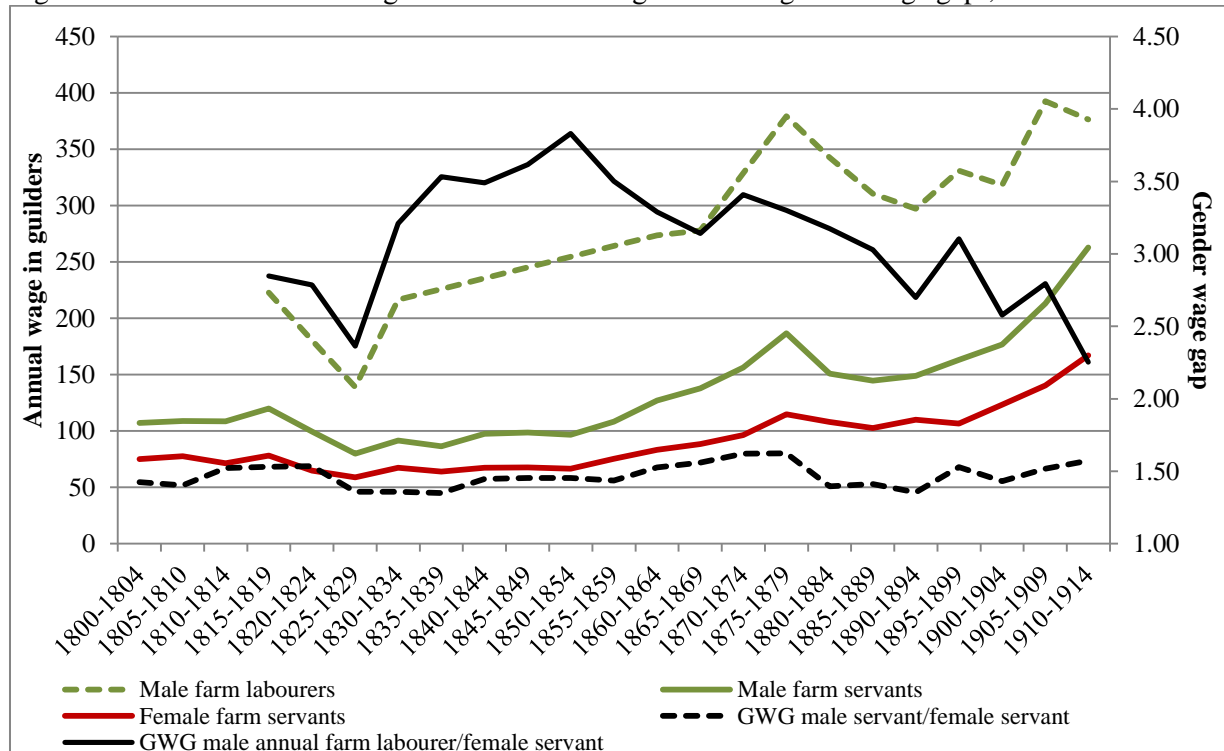
<sup>b</sup> The gender wage gap is the male wage divided by the female rate. NB: the higher the outcome, the larger the gap.

<sup>c</sup> See Tables A6 and A7 for the data

Source: Dutch wage series (Boter)

The developments of annual nominal wages and the GWG are displayed in Figure 3. The male and female servants' wages remained stable during the first half of the nineteenth century but from the 1860s onwards they started to improve rapidly until circa 1880 after which they briefly dropped to the same level as in 1870. From the 1890s to at least the 1910s, farm servants' wage increased faster than ever before. Farm labourers' wages were significantly higher than those of male farm servants (which may partially be explained by the unregistered help of women and children), but they followed more or less the same trend until the 1890s. Thereafter, they started to converge.

Figure 3. Men's and women's agricultural annual wages<sup>a</sup> and the gender wage gap<sup>b</sup>, 1800-1914<sup>c</sup>



<sup>a</sup> For the period 1835-1864, I have interpolated the male farm labourers' wages.

<sup>b</sup> The gender wage gap is the male wage divided by the female rate. NB: the higher the outcome, the larger the gap.

<sup>c</sup> See Tables A8, A9, and A10 for the data.

Source: Dutch wage series (Boter)

These findings largely chime with the studies on Dutch agriculture discussed in section 2. First, men's and women's casual and annual wages dropped during the crisis of 1818-1835.<sup>80</sup> Wages got back to the pre-crisis level only during the 1850s. Second, the sharp drop of casual wages after 1880 reflects the decreasing demand for wage labour following on from the agricultural crisis of 1878-1895. For a brief period, the GWG closed but soon after started to widen again as it had done before the crisis. Third, the 'Servant Question', that is the increasingly pressing demand for live in domestic and farm servants, is clearly reflected by the rapidly rising wages from the 1890s onwards (Figure 3). Indeed, the agricultural survey from 1909 reports that female farm servants "demand more than before, they prefer working for urban households instead of farmers' households and they migrate to the cities, or they stay with their parents when they start working the field."<sup>81</sup> However, this rise was preceded by decreasing wages of both male and female servants during the period 1875-1890. The

<sup>80</sup> This crisis was caused by failed grain harvests in Europe during the years 1816-1817. In the following years, a combination of British and French trade barriers, and a booming export of grain from southern Russia, caused the prices of Dutch grain to fall. See: van Zanden and van Riel, *The strictures of inheritance*, pp. 125-126.

<sup>81</sup> Staatscommissie voor den Landbouw, *Utrecht-Limburg*, p. 231.

shock of the agricultural crisis caused all wages to temporarily drop. The same is true for annual farm labourers' wages that likewise decreased during the crisis. They did, however, not recover as well as the servants' wages did after 1890s.

Now that we have a clear idea about the development of the male and female wage rates, we can further consider the implications of these developments for women's position in agricultural work based on the GWG.<sup>82</sup> The results shown in Figures 2 and 3 indicate that the relative position of women on annual contracts remained quite stable during the period 1880-1914. Over the nineteenth century, the GWG between male and female farm servants' wages widened from circa 1.4 to circa 1.6 and somewhat closed from the 1870s onwards to circa 1.5 during the first years of the twentieth century. Although the difference with male farm labourers on annual contracts was much larger, this gap likewise closed from circa 4.0 around 1850 to circa 2.2 around the turn of the twentieth century. The gap between men's and women's casual wages stayed more or less on par with the gap between male and female farm servants' wages during the period 1800-1850. However, whereas the GWG in the latter group subsequently narrowed, the GWG in the former group widened. Thus, the position of female casual labourers deteriorated while the position of female farm servants slightly improved relative to that of men.

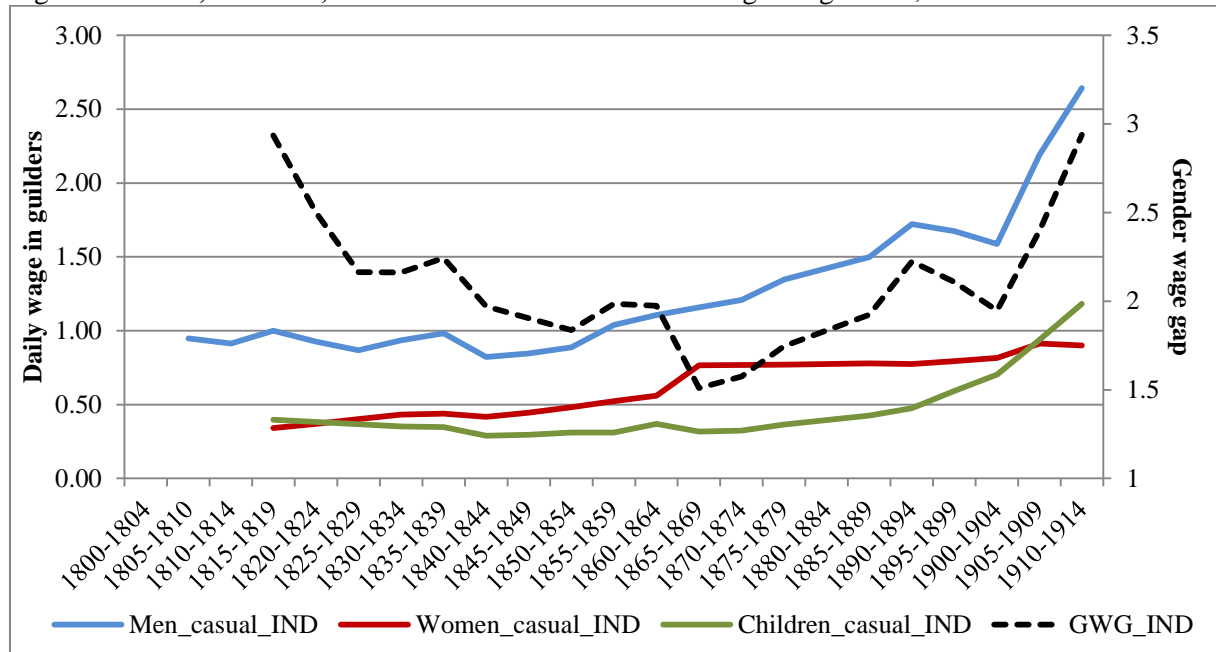
### *Industry*

Figure 4 shows the development of men's, women's, and children's daily industrial wages. Men's wages remained constant during the first half of the nineteenth century and started to rise from the 1850s onwards. Around the turn of the twentieth century, there was a small decrease but the rise continued afterwards and faster than ever before. Women's wages likewise remained stable during the period 1800-1850 but did not share the growing returns to labour enjoyed by their male colleagues during the subsequent period. Even during the first decades of the twentieth century women's wages had hardly increased compared to the 1860s. Children's wages were lower than women's but followed the same trend for the larger part of the research period and even surpassed women's wages during the first decade of the twentieth century. The development of the GWG in industry was considerably different from the more or less gradually increasing GWG in agriculture (Figure 2): in industry the GWG closed during the first half of the nineteenth century and widened after 1860.

---

<sup>82</sup> See Appendix 2 for the data.

Figure 4. Men's, women's, and children's casual industrial wages in guilders, 1800-1914<sup>ab</sup>



<sup>a</sup> For the following periods I interpolated the data. **Men:** 1865-1869; 1875-1889. **Women:** 1820-1834; 1845-1859; 1875-1889; 1895-1899. **Children:** 1820-1834; 1845-1854; 1875-1879; 1895-1899; 1905-1909.

<sup>b</sup> See Tables A11, A12, and A13 for the data.

Source: Dutch wage series (Boter)

The trends shown in Figure 4 encompass wages for multiple types of industry. For men, most wages (23.8%) were earned in ‘construction, public works and cleaning’, followed by ‘metal processing’ (17.2%), ‘textile industry’ (15.7%) and ‘leather, wax cloth and caoutchouc’ (7.5%). For women, the vast majority of the wages was earned in the ‘textile industry’ (48.6%), followed by ‘pottery-, glass-, chalk and stone production’ (14.9%) and the ‘apparel industry’ (12.8%).<sup>83</sup> To explore the impact of the mechanization of the textile industry on the GWG, it is worthwhile analysing the textile wages separately.

During the period 1840-1869, both men's and women's textile wages increased gradually. During the subsequent period, they started to diverge: women's wages hardly increased whereas men's wages, at least until the 1890s, increased dramatically. The data can be disaggregated even further by distinguishing between male and female spinners and weavers. Table 3 shows the average wages and the GWG for three 5-year periods.

<sup>83</sup> See Tables A3, A4, and A5 for the number of observations (men, women, and children) per industrial group (as used in the 1899 census) per 5-year period.

Table 3. The gap between male and female spinning and weaving wages (in guilders per day), 1840-1894

<i>Period</i>	<b>Spinners</b>			<b>Weavers</b>		
	<i>Average day wage men</i>	<i>Average day wage women</i>	<i>Gender wage gap</i>	<i>Average day wage men</i>	<i>Average day wage women</i>	<i>Gender wage gap</i>
1840-1844	0.61	0.36	1.70	0.46	0.40	1.16
1860-1864	0.76	0.54	1.41	0.60	0.54	1.10
1890-1894	1.72	0.95	1.80	1.30	0.91	1.44

Source: Dutch wage series (Boter)

The GWG in both occupations closed during the period 1830-1860 and widened thereafter. The mechanization of the textile industry and the corresponding gender segregation partly explain this development. First, the closing of the GWG in weavers' wages had probably already started in the 1830s with the introduction of the flying shuttle. As discussed in section 2, this manually-driven machine made weaving less burdensome with the result that weaving evolved from an exclusively male occupation to one that was performed by both sexes. Men and women operated the exact same machine at home and could therefore in theory generate the same output. Indeed, the gap between male and female weaving wages was only 1.10 in 1860. Later on, however, even though the steam-driven weaving looms were likewise operated by both men and women, the GWG had widened considerably by the 1890s because women normally operated fewer looms than men. This had not yet been the case with the flying-shuttle. Furthermore, it became harder for married women to find work as a weaver since after the transition to steam power the production was transferred from the home to the factory. Therefore, the weaving wages observed in 1890 probably were mostly unmarried women's wages. Thus, the rejuvenation of female weavers contributed to the widening GWG as well.

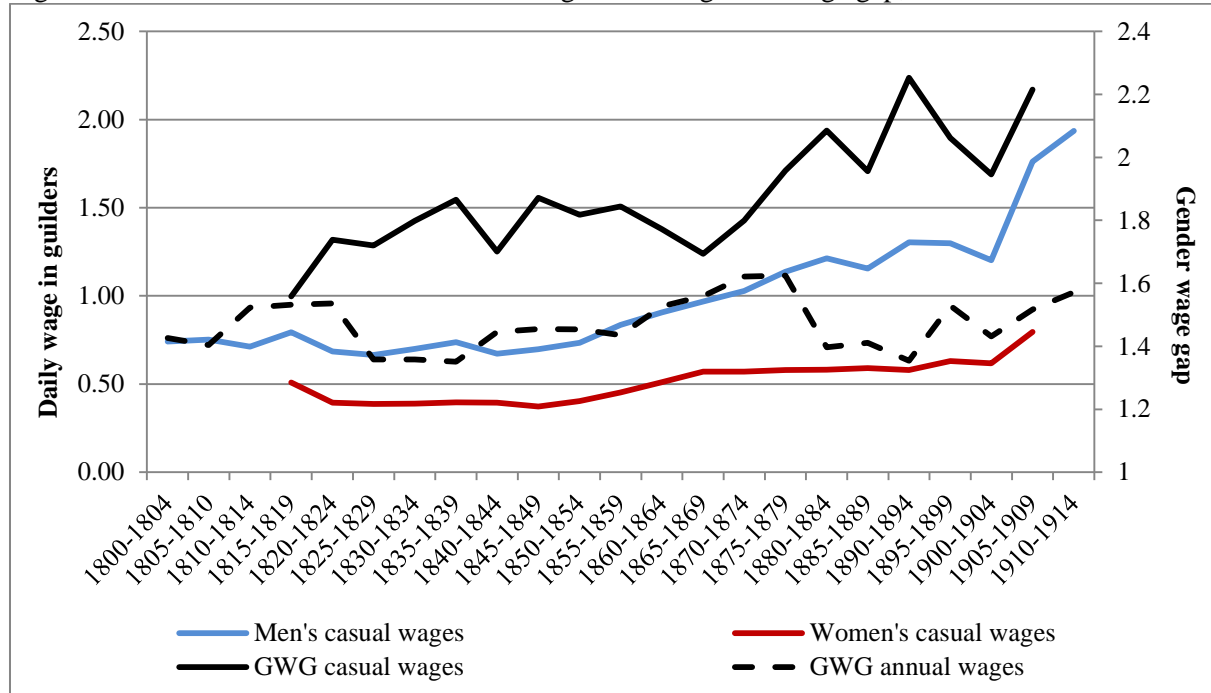
Two things stand out when comparing weaving with spinning wages: (1) the gap between male and female weavers' wages was much smaller than in the case of spinning and (2) the GWG in both occupations followed roughly the same trend over time. As discussed in section 2, spinning was mechanized earlier than weaving and consequently became less labour intensive. During the first half of the nineteenth century, therefore, the demand for weavers was much more pressing than the demand for spinners. Halfway through the nineteenth century, the steam-driven *selfactors* gained ground and were exclusively operated by men. Women, who had operated the more old-fashioned throstle-frames, were consequently pushed out of the spinning profession. Furthermore, spinning at home disappeared when steam power became commonly used. The masculinization of spinning is

an important explanation for the widening GWG in the textile industry during the second half of the nineteenth century. Here too, an increasing demand for young unmarried women and a decreasing supply of married women played a role in the widening GWG during the period 1860-1890.

## 5. The Dutch experience mirrored in Britain

On an aggregate sector-weighted level, Dutch men's wages remained stable during the first half of the nineteenth century and started to rise from the 1850s onwards (Figure 5). During the last decades of the nineteenth century this growth stagnated due to several economic crises and the decreasing demand for agricultural wage labourers, but wages continued to rise after 1900. Women's wages likewise remained stable during the period 1800-1850 but afterwards failed to keep up with men's wages. In contrast, their wages hardly increased until the turn of the twentieth century. We can thus conclude that the GWG in casual wages widened from circa 1.5 during the first decades of the nineteenth century to circa 2.2 during the first decade of the twentieth century. Figure 5 additionally includes the trend of the gap between male and female farm servants' wages which shows an adverse development. Whereas the GWG in casual wages widened, the GWG in annual wages likewise initially widened from 1.4 to 1.6 between 1820 and 1870 but thereafter closed to 1.5 in the 1900s.

Figure 5. Dutch men's and women's casual wages and the gender wage gap, 1800-1914<sup>b</sup>



<sup>a</sup> Only live in farm servants' wages.

<sup>b</sup> The GWG of the period 1900-1904 is interpolated.

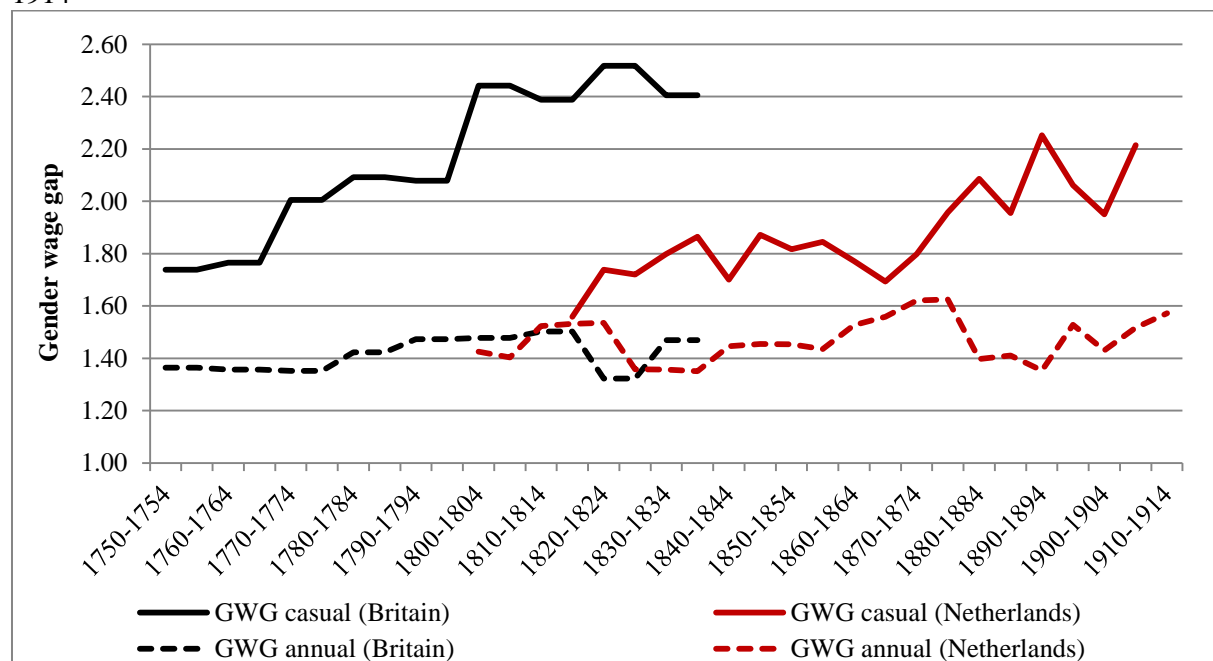
Source: Dutch wage series (Boter)

Let us now return to the central question of this paper: whether we can find the same effects of industrialization on the women's labour market position in the Netherlands as can be found in Britain. Figure 6 shows the trajectory of the GWG in casual and annual wages in both countries. Because the offset of industrialization happened at different moments in time, Figure 6 shows the British developments during the period 1750-1850 and the Dutch developments in 1800-1914. The two starting points approximately mark the offset of mechanization in the textile industry and the early transition of production from the home to the factory. The two ending points mark the moment when virtually the entire textile production process was carried out by steam-driven machines, and, most importantly, when this production process relocated from the home to the factories.<sup>84</sup>

<sup>84</sup> Work in the home industry in various industrial branches still existed in the first decade of the twentieth century and was for many households an important additional source of income. Thus, the home industry never *entirely* disappeared.



Figure 6. The gender wage gap in British and Dutch casual and annual wages, 1700-1850 and 1800-1914<sup>ab</sup>



<sup>a</sup> The British trend is based on decadal averages instead of five-year averages and includes wages from all three economic sectors.

<sup>b</sup> The final data point of the British series has been excluded because it was exceptionally high. This made it harder to interpret the differences and similarities between the Dutch and the British trends. Thus, keep in mind that the British casual GWG further widened after 1840.

Sources: Humphries and Weisdorf, 'The Wages of Women', p. 432; Dutch wage series (Boter).

On an aggregate level, the Dutch GWG in casual and annual wages developed in a similar way to Britain: the position of women working on casual contracts deteriorated whereas women on annual contracts saw their relative position remain stable. Furthermore, the *extent* of the GWG was comparable, although in Britain the casual GWG was generally somewhat larger than in the Netherlands. Humphries and Weisdorf have concluded that unmarried women's opportunities in the labour market improved, because they generally worked on annual contracts, and that married women became more dependent on men because they usually worked for casual wages that became relatively less rewarding. I support this line of reasoning in the case of married women who indeed rarely worked on annual contracts. However, unmarried women's contracts were certainly not always annual.<sup>85</sup> In fact, virtually the only annual payments I found were those to live in (farm) servants. Thus, the lion's share of both unmarried and married female wage workers was negatively affected by the structural change of the nineteenth century.

<sup>85</sup> Humphries and Weisdorf stress that the method of linking the type of contract to marital status has its flaws since there were exceptions to the rule: Humphries and Weisdorf, 'The wages of women', p. 412.

To understand the forces driving the development of the British and Dutch GWG's, we need to consider changes on a sectoral level as well. Figure 4 has shown that Dutch male and female casual industrial wages remained stable during the first half of the nineteenth century and started to increase from the 1850s onwards. Whereas this rise continued for male labourers until at least the 1910s (with a minor setback around the turn of the twentieth century), women's wages stagnated until the beginning of the twentieth century. The GWG narrowed during the period 1800-1860 and thereafter started to widen. I have further shown that the GWG in weaving and spinning followed a similar trend when isolated from the other wages.

Based on these findings, I can now proceed to contemplate to what extent Dutch developments in the textile industry mirrored the British experience. There were two pivotal moments in the development of the textile industries in both countries. First, the introduction of the first manually-driven machines in weaving and spinning which instigated the transition to the early factory system. In Britain, this era lasted from 1765-1790 in spinning and from 1760-1820 in weaving. In the Netherlands it was 1800-1860 and 1830-1880 respectively (see Table 2). The British and Dutch GWG's developed differently during these periods. Although Humphries and Weisdorf have not included spinners' wages in their analysis, they do conclude that "[t]he widening gender gap from around the 1760s coincides neatly with the onset of competition from spinning machinery and the catastrophic fall in spinners' potential earnings."<sup>86</sup> In contrast, Figure 4 and Table 3 show that in the Netherlands the GWG *narrowed* after the introduction of manually-driven machines in both spinning and weaving. A crucial part of the explanation for this difference is that in the Netherlands, the period in which manually-driven machines were used was much longer than in Britain, especially in spinning. Therefore, home industrial workers were not immediately out competed by factory workers.

The second turning point was marked by the replacement of manually-driven machines by steam-driven and water-driven machines and the concurrent disappearance of the home industry. In Britain, this process started in spinning around 1790. The GWG had already widened before this moment, but this development clearly accelerated after 1790 (Figure 6).<sup>87</sup> In the Netherlands, steam-power came into general use in 1860 after which the GWG in casual industrial wages widened from 1.5 in 1860 to almost 3 in 1910. In weaving it widened from 1.10 in 1840 and 1.44 in 1890, and in spinning from 1.41 to 1.80 during the same period

<sup>86</sup> Humphries and Weisdorf, 'The wages of women', p. 428.

<sup>87</sup> Note that this process started somewhat later in weaving (Table 2). NB: the home industry did not entirely disappear: in Tilburg, weaving at home was still done at the beginning of the twentieth century.

(Table 3). The explanation for this trend is twofold. First, because of the transition to the factory system, married women were increasingly excluded from textile work and a growing share of the female factory workers was unmarried. This rejuvenation of the female labour force prompted the widening of the GWG. Second, ideas about ‘men’s work’ and ‘women’s work’ were exported from Britain to the Netherlands which resulted in a similar gender segregation on the work floor.<sup>88</sup>

In Dutch agriculture, women’s casual wages were remarkably rigid throughout the entire research period whereas men’s casual wages increased over time. Only during the agricultural crisis of 1878-1895 men’s wages briefly decreased, but they started to rise again around the turn of the twentieth century. This stagnating growth can further be explained by the decreasing demand for agricultural wage labourers due to the growing importance of small-scale farms. Although both male and female agricultural wage labourers’ wages were negatively affected by the crisis and de-proletarianization, women were hit harder judged by the widening GWG in casual wages. Many men and women who previously worked as agricultural wage labourers switched back to work on their own farm or the industrial sector. Conversely, male and female farm servants’ annual wages both continued to rise gradually throughout the entire research period because of the increasing demand for live in farm servants. In this segment of the labour market, women’s relative position somewhat improved seeing that the GWG narrowed after 1880.

In Britain, wage labour remained important during the entire nineteenth century. Still, the GWG developed similarly to the Netherlands. In most regions the demand for female agricultural wage labourers decreased and the GWG widened. However, in Britain the large-scale farms – that had originated as a result of farm amalgamation and the enclosure movement – flourished whereas in the Netherlands large farms lost importance from the 1880s onwards and the opportunities to work in a private business expanded thanks to, among other things, farmers’ co-operations. Thus, looking beyond the development of the wage labour market shows that *married* women’s opportunities in Dutch agriculture probably did not deteriorate as much as wages suggest. However, we will have to learn more about women’s income and their (legal) position on a family farm in order to know more about whether this type of work was an improvement in comparison with wage labour. Unmarried women remained more dependent on wage labour – which could be lucrative in the case of (domestic) service – since they usually did not possess their own farm. Seeing that in Britain a

---

<sup>88</sup> Among others: de Groot, *Fabricage van verschillen*; de Groot, 'Aanlappers en drossters'.

larger share of the agricultural labour force depended on wage labour, women may have been worse off than in the Netherlands.

## 6. Conclusions

This paper has explored the changing position of Dutch women in the agricultural and industrial labour markets. To this end, I have constructed the first long-term women's wage series of the nineteenth- and early-twentieth century Netherlands. The most important question was whether we can find similar effects of industrialization on the women's labour market position as can be found in Britain, even though the timing and pace of industrialization were different.

The impact of mechanization of the textile industry on women's position in the Dutch and British labour markets was comparable due to the custom of gender segregation of the production process and the expansion of the factory system. In both economies, women's position deteriorated and the opportunity costs of women's labour increased after steam-driven machinery came into general use. The difference is that this shift to steam power was preceded by a narrowing GWG in the Netherlands after the introduction of manually-driven machinery, which was not the case in Britain where the GWG had widened from the very first signs of mechanization in 1760. In the agricultural wage labour markets in both countries, the women's position likewise deteriorated. However, in the Netherlands working in a private business became more feasible after 1880, most importantly for married women, whereas this was not the case in Britain. Agricultural women were therefore probably better off in the Netherlands.

## Appendices

### *Appendix 1. Number of observations*

Tables A1 to A5 show the number of observations in various ways: (1) in Table A1 per industry, gender, and period, (2) in Table A2 per industrial branch and skill level, (3) and in Tables A3 to A5 per industrial branch, gender, and period. The sources normally reported average wages of an extensive group of labourers and I have entered them in my database as such. This means that the actual number of individual wages that lay at the basis of these results is much higher than the 7,876 observations. NB: I have entered the weighted average of the few sources that reported individual wages.

As the tables show, some occupations are still underrepresented in the database or not included at all. Future research on women's wages will give a more comprehensive overview of the trajectory of women's wages.

Table A1. Number of observations per five-year period 1800-1924

	<b>Agriculture</b>		<b>Industry</b>			<b>Total</b>
<i>Period</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Children</i>	
1800-1804	21	15	10	0	0	46
1805-1810	21	12	10	0	0	43
1810-1814	23	12	10	0	0	45
1815-1819	36	11	63	9	2	121
1820-1824	22	10	10	0	0	42
1825-1829	23	14	19	0	0	56
1830-1834	22	13	10	0	0	45
1835-1839	22	17	20	2	1	62
1840-1844	23	17	103	57	185	385
1845-1849	21	16	28	6	0	71
1850-1854	22	18	27	0	0	67
1855-1859	25	20	14	0	1	60
1860-1864	11	10	154	112	346	633
1865-1869	7	7	11	3	3	31
1870-1874	8	9	3	0	3	23
1875-1879	16	11	0	0	0	27
1880-1884	16	9	0	0	0	25
1885-1889	229	132	0	0	0	361
1890-1894	13	9	178	74	38	312
1895-1899	1,635	1,387	0	0	0	3,022
1900-1904	17	7	323	25	144	516
1905-1909	685	187	0	14	0	886
1910-1914	103	69	32	43	9	256
1915-1919	5	0	119	75	286	485
1920-1924	5	0	251	0	0	256
<b>Total</b>	<b>3,031</b>	<b>2,012</b>	<b>1,395</b>	<b>420</b>	<b>1,018</b>	<b>7,876</b>

Sources: see text

Table A2. Number of observations per industry, sector and skill level (men's, women's, and children's wages)<sup>a</sup>

<b>I</b>	<b>N</b>	<b>%</b>	<b>I</b>	<b>N</b>	<b>%</b>	<b>I</b>	<b>N</b>	<b>%</b>	<b>Sector</b>	<b>N</b>	<b>%</b>
1	128	1.75%	12	64	0.87%	23	1	0.01%	<i>Agriculture</i>	5,106	63.55%
2	6	0.08%	13	7	0.10%	24	7	0.10%	<i>Industry</i>	2,929	36.45%
3	48	0.66%	14	21	0.29%	25	1	0.01%	<i>Total</i>	8,035	100.00%
4	327	4.47%	15	372	5.08%	26	1	0.01%			
5	31	0.42%	16	0	0.00%	27	3	0.04%			
6	75	1.02%	17	68	0.93%	28	1	0.01%	<b>Skill level</b>	<b>N</b>	<b>%</b>
7	168	2.29%	18	4,723	64.51%	29	1	0.01%	<i>Unskilled</i>	4,300	54.85%
8	1	0.01%	19	1	0.01%	30	1	0.01%	<i>Lower skilled</i>	2,956	37.70%
9	868	11.86%	20	1	0.01%	31	1	0.01%	<i>Medium skilled</i>	580	7.40%
10	0	0.00%	21	80	1.09%	32	1	0.01%	<i>Higher skilled</i>	4	0.05%
11	312	4.26%	22	1	0.01%	33	1	0.01%	<i>Total</i>	7,840 <sup>b</sup>	100.00%

<sup>a</sup> I = Number of occupational group according to the 1899 census (see Appendix 4.2).

<sup>b</sup> Excluding observations without a specified skill level.

Sources: Dutch wage series (Boter); 1899 census.

Table A3. Number of observations per industrial branch according to the 1899 census per 5-year period (men's industrial wages)

	Group 1899 census																	
Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
1800-1804	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1805-1810	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1810-1814	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1815-1819	1	0	1	22	0	4	0	2	3	2	6	0	2	0	3	0	7	53
1820-1824	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1825-1829	0	0	1	11	0	0	0	0	0	0	2	1	1	0	0	0	3	19
1830-1834	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1835-1839	0	0	1	12	0	0	0	0	0	0	0	1	0	0	3	1	2	20
1840-1844	12	1	0	10	0	0	0	0	0	0	5	0	0	3	70	0	2	103
1845-1849	10	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	28
1850-1854	0	0	0	21	0	0	0	0	0	0	1	1	1	0	0	1	2	27
1855-1859	0	0	0	10	0	0	0	0	0	0	1	0	0	0	1	0	2	14
1860-1864	40	1	2	3	0	0	3	0	0	0	7	2	2	8	70	2	14	154
1865-1869	0	0	0	10	0	0	0	0	0	0	0	0	0	1	0	0	0	11
1870-1874	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
1875-1879	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1880-1884	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1885-1889	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1890-1894	27	0	18	4	2	3	3	0	4	0	8	0	2	3	66	2	26	168
1895-1899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-1904	2	2	15	121	0	28	11	4	0	0	35	0	22	1	5	37	40	323
1905-1909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1910-1914	0	0	2	0	0	0	0	0	0	0	3	0	0	1	0	18	1	25
1915-1919	0	0	2	0	0	0	3	0	103	0	0	0	0	0	9	1	0	118
Total	92	4	42	292	2	35	20	6	110	2	68	5	30	17	230	62	99	1,116

Source: wage series

Table A4. Number of observations per industrial branch according to the 1899 census per 5-year period (women's industrial wages)

	Group 1899 census																	
Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
1800-1804	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1805-1810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1810-1814	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1815-1819	1	0	0	0	0	1	0	0	0	0	0	0	0	0	7	0	0	9
1820-1824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1825-1829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830-1834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1835-1839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
1840-1844	7	1	0	0	0	0	0	0	0	0	1	0	0	2	45	0	1	57
1845-1849	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1850-1854	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1855-1859	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1860-1864	28	0	0	0	0	0	3	0	0	0	1	0	0	5	69	0	6	112
1865-1869	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3
1870-1874	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1875-1879	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1880-1884	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1885-1889	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1890-1894	14	0	0	0	0	1	3	0	0	0	1	0	0	2	47	0	6	74
1895-1899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-1904	0	0	2	2	0	1	16	0	0	0	0	0	0	0	0	2	2	25
1905-1909	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13	0	0	14
1910-1914	3	1	1	0	2	1	0	0	0	0	8	0	0	1	18	0	6	41
1915-1919	0	0	2	0	0	0	33	0	30	0	0	0	0	0	10	0	0	75
Total	59	2	5	2	2	4	55	0	30	0	11	0	0	13	212	2	21	418

Source: wage series



Table A5. Number of observations per industrial branch according to the 1899 census per 5-year period (children's industrial wages)

	Group 1899 census																	
Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
1800-1804	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1805-1810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1810-1814	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1815-1819	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1820-1824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1825-1829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830-1834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1835-1839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
1840-1844	23	2	0	0	0	0	0	0	0	0	9	0	0	6	142	0	3	185
1845-1849	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1850-1854	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1855-1859	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
1860-1864	86	2	2	0	0	0	8	0	0	0	7	1	0	9	211	0	20	346
1865-1869	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3
1870-1874	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
1875-1879	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1880-1884	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1885-1889	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1890-1894	4	0	3	0	0	2	0	0	0	0	5	0	0	1	16	0	7	38
1895-1899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-1904	0	1	15	29	0	19	14	1	0	0	15	0	12	1	3	10	24	144
1905-1909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1910-1914	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9
1915-1919	0	0	0	0	0	0	32	0	250	0	0	0	0	0	4	0	0	286
Total	113	5	21	29	0	21	54	1	250	0	45	1	12	19	381	10	56	1,018

Source: wage series

*Appendix 2. Economic sectors as in the 1899 census*

<b>Group</b>	<b>Sector</b>
1	Pottery-, glass-, chalk- and stone production
2	Diamant- and other gemstone processing
3	Book- and lithography printing, printing of wood-, copper- and steel engraving, photography etc.
4	Construction, public works and cleaning
5	Chemical industry
6	Wood-, cork, straw processing, carving and turning of various fabrics
7	Apparel industry
8	Art industry
9	Leather, wax cloth and caoutchouc
10	Coal and peat
11	Metal processing
12	Steam- and other types of equipment, instruments and war material production
13	Shipbuilding and carriage production
14	Paper production
15	Textile industry
16	Gas industry
17	Food and tobacco industry
18	Agriculture
19	Fishing and hunting
20	Retail
21	Traffic
22	Credit- and banking
23	Insurance
24	Free professions
25	Education (excluding public and religious education)
26	Nursing and care of the poor
27	Domestic service
28	Day labourers
29	In service of the state
30	In service of the provinces
31	In service of a municipality
32	In service of a waterschap
33	In service of a religious community

### Appendix 3. Absolute number of male and female labourers in the 1899 census

The tables below show the absolute number of men, women, and children with a recorded occupation in the agricultural, industrial, and textile sectors in the 1899 census. They have been used to compute the weighted average of the wages from the eleven provinces.

Number of male and female labourers in the agricultural sector per province, 1899

Province	Male	Female	TOTAL
GR	35,203	4,798	40,001
ZH	60,000	4,911	64,911
ZL	31,748	8,724	40,472
FR	48,663	3,663	52,326
NH	43,567	2,511	46,078
UT	19,934	2,464	22,398
DR	23,545	2,737	26,282
NB	71,932	21,433	93,365
OV	40,026	7,592	47,618
LI	40,321	9,952	50,273
GL	75,755	10,797	86,552
TOTAL	490,694	79,582	570,276

Source: Centraal Bureau voor de Statistiek, 'Census 1899'.

Number of male and female labourers in the industrial sector per province, 1899

Province	Male	Female	TOTAL
GR	28,204	3,852	32,056
ZH	133,590	20,379	153,969
ZL	14,944	1,515	16,459
FR	26,585	3,616	30,201
NH	112,994	17,954	130,948
UT	28,125	3,811	31,936
DR	13,146	1,963	15,109
NB	71,169	11,095	82,264
OV	44,851	11,106	55,957
LI	30,729	5,281	36,010
GL	59,061	6,602	65,663
TOTAL	563,398	87,174	650,572

Source: Centraal Bureau voor de Statistiek, 'Census 1899'.

Number of male and female labourers in the textile industry per province, 1899

Province	Male	Female	TOTAL
GR	348	351	699
ZH	4,259	2,273	6,532
ZL	100	11	111
FR	264	116	380
NH	2,040	413	2,453
UT	1,092	466	1,558
DR	102	34	136
NB	9,276	2,311	11,587
OV	14,321	7,384	21,705
LI	1,109	402	1,511
GL	1,967	847	2,814
TOTAL	34,878	14,608	49,486

Source: Centraal Bureau voor de Statistiek, 'Census 1899'.

#### *Appendix 4. Average wages per 5-year period*

Tables A6 to A15 below show the average day wages of men, women, and children in the agricultural and industrial sectors per 5-year period. As briefly explained in the paper, I corrected for regional variation by calculating the ratio of a certain province to one reference province. In the tables, the black numbers represent wages based on actual data whereas the red numbers are based on interpolation. The unweighted average is a simple average of the eleven provinces, the weighted average takes the absolute number of labourers in both sectors in each province into consideration. The latter has been used in the analysis.

#### Legend

GR	Groningen	
ZH	Zuid-Holland	
ZL	Zeeland	
FR	Friesland	
NH	Noord-Holland	
UT	Utrecht	
DR	Drenthe	
NB	Noord-Brabant	
OV	Overijssel	
LI	Limburg	
GL	Gelderland	
Av.	Unweighted	national
	average	
W.Av.	Weighted national average	
	Period with no data at all	

Table A6. Male casual wages agriculture in guilders per day

Period	Wages													Ratios										
	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL
1800-1804	0.53	0.84	0.75	0.78	0.76	0.72	0.57	0.54	0.52	0.47	0.42	0.63	0.62	1.00	1.60	1.42	1.49	1.45	1.36	1.09	1.03	0.98	0.89	0.81
1805-1810	0.54	0.86	0.75	0.80	0.79	0.74	0.59	0.56	0.53	0.48	0.44	0.64	0.63	1.00	1.60	1.39	1.49	1.45	1.36	1.09	1.03	0.98	0.89	0.81
1810-1814	0.50	0.79	0.75	0.74	0.72	0.68	0.54	0.51	0.49	0.44	0.40	0.60	0.59	1.00	1.60	1.51	1.49	1.45	1.36	1.09	1.03	0.98	0.89	0.81
1815-1819	0.55	0.88	0.86	0.82	0.80	0.75	0.60	0.57	0.54	0.49	0.45	0.66	0.65	1.00	1.60	1.56	1.49	1.45	1.36	1.09	1.03	0.98	0.89	0.81
1820-1824	0.49	0.68	0.75	0.70	0.63	0.58	0.39	0.41	0.40	0.37	0.38	0.53	0.52	1.00	1.39	1.53	1.44	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1825-1829	0.48	0.67	0.75	0.67	0.62	0.57	0.38	0.40	0.39	0.37	0.37	0.52	0.51	1.00	1.39	1.56	1.39	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1830-1834	0.49	0.68	0.75	0.66	0.63	0.58	0.39	0.41	0.40	0.38	0.38	0.52	0.51	1.00	1.39	1.52	1.34	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1835-1839	0.50	0.70	0.75	0.65	0.65	0.59	0.40	0.42	0.41	0.39	0.39	0.53	0.52	1.00	1.39	1.49	1.29	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1840-1844	0.52	0.73	0.75	0.65	0.67	0.62	0.42	0.43	0.43	0.40	0.41	0.55	0.54	1.00	1.39	1.43	1.24	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1845-1849	0.54	0.75	0.75	0.64	0.70	0.64	0.43	0.45	0.44	0.41	0.42	0.56	0.55	1.00	1.39	1.38	1.19	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1850-1854	0.58	0.80	0.77	0.66	0.74	0.68	0.46	0.48	0.47	0.44	0.45	0.59	0.58	1.00	1.39	1.33	1.14	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1855-1859	0.63	0.88	0.81	0.69	0.81	0.75	0.51	0.52	0.52	0.48	0.49	0.64	0.63	1.00	1.39	1.28	1.09	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1860-1864	0.71	0.99	0.88	0.74	0.92	0.84	0.57	0.59	0.58	0.54	0.55	0.72	0.71	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1865-1869	0.78	1.09	0.96	0.81	1.01	0.92	0.63	0.65	0.64	0.60	0.61	0.79	0.78	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1870-1874	0.85	1.18	1.05	0.88	1.10	1.01	0.68	0.71	0.69	0.65	0.66	0.86	0.85	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1875-1879	0.92	1.28	1.13	0.96	1.19	1.09	0.74	0.76	0.75	0.71	0.71	0.93	0.92	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1880-1884	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77	1.01	0.99	1.00	1.39	1.23	1.04	1.29	1.18	0.80	0.83	0.81	0.76	0.77
1885-1889	0.96	1.14	0.84	0.80	1.08	0.96	0.49	0.60	0.63	0.61	0.71	0.80	0.80	1.00	1.18	0.87	0.83	1.12	1.00	0.51	0.62	0.65	0.64	0.74
1890-1894	0.88	1.17	0.88	0.88	1.21	1.00	0.62	0.72	0.74	0.73	0.74	0.87	0.87	1.00	1.34	1.00	1.00	1.38	1.15	0.71	0.82	0.85	0.84	0.85
1895-1899	0.76	1.14	0.87	0.90	1.25	0.99	0.69	0.78	0.80	0.79	0.73	0.88	0.88	1.00	1.50	1.14	1.18	1.64	1.29	0.90	1.02	1.05	1.03	0.96
1900-1904	0.69	0.94	0.74	0.91	1.06	0.70	0.67	0.74	0.71	0.72	0.58	0.77	0.77	1.00	1.37	1.08	1.33	1.54	1.02	0.98	1.08	1.04	1.05	0.85
1905-1909	1.13	1.40	1.17	1.32	1.62	0.85	1.19	1.30	1.16	1.20	0.83	1.20	1.21	1.00	1.24	1.03	1.17	1.43	0.75	1.05	1.15	1.02	1.06	0.73
1910-1914	0.92	1.14	0.95	1.08	1.33	0.69	0.97	1.06	0.95	0.98	0.68	0.98	0.99	1.00	1.24	1.03	1.17	1.43	0.75	1.05	1.15	1.02	1.06	0.73
1915-1919	1.59	1.97	1.63	1.85	2.28	1.19	1.67	1.82	1.63	1.68	1.16	1.68	1.69	1.00	1.24	1.03	1.17	1.43	0.75	1.05	1.15	1.02	1.06	0.73
1920-1924	2.19	2.71	2.25	2.56	3.14	1.64	2.30	2.51	2.24	2.32	1.61	2.32	2.33	1.00	1.24	1.03	1.17	1.43	0.75	1.05	1.15	1.02	1.06	0.73
1925-1929	1.97	2.44	2.03	2.30	2.83	1.48	2.07	2.26	2.02	2.09	1.44	2.08	2.10	1.00	1.24	1.03	1.17	1.43	0.75	1.05	1.15	1.02	1.06	0.73

Source: wage series

Table A7. Female casual wages agriculture in guilders per day

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804	0.41	0.56	0.43	0.37	0.64	0.41	0.35	0.48	0.41	0.40	0.48	0.45	0.45	1.00	1.36	1.04	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1805-1810	0.43	0.59	0.45	0.39	0.67	0.44	0.36	0.50	0.44	0.42	0.50	0.47	0.47	1.00	1.36	1.04	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1810-1814	0.42	0.57	0.50	0.38	0.65	0.42	0.35	0.48	0.42	0.41	0.48	0.46	0.47	1.00	1.36	1.19	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1815-1819	0.54	0.74	0.64	0.49	0.83	0.54	0.45	0.62	0.54	0.53	0.62	0.60	0.60	1.00	1.36	1.19	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1820-1824	0.37	0.50	0.43	0.33	0.56	0.37	0.31	0.42	0.37	0.36	0.42	0.40	0.41	1.00	1.36	1.19	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1825-1829	0.34	0.47	0.41	0.31	0.53	0.34	0.29	0.39	0.34	0.33	0.39	0.38	0.38	1.00	1.36	1.19	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1830-1834	0.33	0.45	0.39	0.30	0.51	0.33	0.28	0.38	0.33	0.32	0.38	0.37	0.37	1.00	1.36	1.19	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1835-1839	0.34	0.46	0.45	0.30	0.52	0.34	0.28	0.39	0.34	0.33	0.39	0.37	0.38	1.00	1.36	1.34	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1840-1844	0.34	0.47	0.44	0.31	0.53	0.35	0.29	0.40	0.35	0.33	0.40	0.38	0.39	1.00	1.36	1.29	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1845-1849	0.35	0.48	0.45	0.32	0.54	0.35	0.29	0.40	0.35	0.34	0.40	0.39	0.39	1.00	1.36	1.29	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1850-1854	0.36	0.50	0.45	0.33	0.56	0.37	0.31	0.42	0.37	0.35	0.42	0.40	0.41	1.00	1.36	1.24	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1855-1859	0.40	0.55	0.45	0.37	0.62	0.41	0.34	0.47	0.41	0.39	0.47	0.44	0.44	1.00	1.36	1.12	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1860-1864	0.44	0.60	0.57	0.40	0.68	0.44	0.37	0.51	0.45	0.43	0.51	0.49	0.50	1.00	1.36	1.28	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1865-1869	0.45	0.61	0.61	0.41	0.69	0.45	0.38	0.52	0.45	0.44	0.52	0.50	0.51	1.00	1.36	1.36	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1870-1874	0.45	0.61	0.61	0.41	0.69	0.45	0.38	0.52	0.45	0.44	0.52	0.50	0.51	1.00	1.36	1.36	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1875-1879	0.45	0.61	0.61	0.41	0.69	0.45	0.38	0.52	0.45	0.44	0.52	0.50	0.51	1.00	1.36	1.36	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1880-1884	0.45	0.61	0.61	0.41	0.69	0.45	0.38	0.52	0.45	0.44	0.52	0.50	0.51	1.00	1.36	1.36	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1885-1889	0.45	0.62	0.66	0.41	0.70	0.46	0.38	0.53	0.46	0.44	0.53	0.51	0.52	1.00	1.36	1.44	0.91	1.54	1.01	0.84	1.16	1.01	0.97	1.16	
1890-1894	0.46	0.63	0.61	0.42	0.68	0.46	0.41	0.50	0.46	0.45	0.49	0.51	0.50	1.00	1.37	1.32	0.91	1.48	1.01	0.90	1.08	1.01	0.97	1.06	
1895-1899	0.52	0.72	0.62	0.48	0.74	0.53	0.50	0.52	0.53	0.51	0.51	0.56	0.55	1.00	1.37	1.19	0.91	1.41	1.01	0.95	1.00	1.01	0.97	0.96	
1900-1904																									
1905-1909	0.71	0.77	0.84	0.64	1.00	0.71	0.81	0.64	0.68	0.76	0.68	0.75	0.72	1.00	1.09	1.19	0.91	1.41	1.01	1.15	0.91	0.97	1.07	0.96	

Source: wage series

Table A8. Male annual wages agriculture in guilders (farm servants)<sup>a</sup>

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804	123.57	146.28	110.64	89.37	124.80	107.89	92.15	93.08	88.44	101.41	99.43	107.01	107.20	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1805-1810	125.47	148.53	112.33	90.74	126.72	109.55	93.56	94.50	89.80	102.97	100.95	108.65	108.85	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1810-1814	125.20	148.20	112.09	90.54	126.44	109.31	93.36	94.30	89.61	102.74	100.73	108.41	108.61	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1815-1819	138.17	163.56	123.71	99.93	139.55	120.64	103.04	104.07	98.90	113.39	111.17	119.65	119.87	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1820-1824	114.67	135.74	102.66	82.93	115.81	100.12	85.51	86.37	82.07	94.10	92.26	99.29	99.48	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1825-1829	92.06	108.97	82.42	66.58	92.97	80.38	68.65	69.34	65.89	75.55	74.07	79.72	79.86	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1830-1834	105.56	124.95	94.51	76.34	106.61	92.16	78.71	79.51	75.55	86.63	84.93	91.40	91.57	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1835-1839	99.66	117.98	89.23	72.08	100.65	87.02	74.32	75.07	71.33	81.79	80.19	86.30	86.46	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1840-1844	112.45	133.12	100.68	81.33	113.57	98.19	83.86	84.70	80.49	92.29	90.48	97.38	97.55	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1845-1849	113.66	134.54	101.76	82.20	114.79	99.24	84.76	85.61	81.35	93.28	91.45	98.42	98.60	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1850-1854	111.43	131.90	99.76	80.59	112.53	97.29	83.09	83.93	79.75	91.44	89.65	96.49	96.66	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1855-1859	124.82	147.76	111.76	90.28	126.06	108.99	93.08	94.02	89.34	102.44	100.43	108.09	108.29	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1860-1864	146.52	173.44	131.18	105.97	147.97	127.93	109.26	110.36	104.87	120.24	117.89	126.87	127.10	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1865-1869	159.07	188.30	142.41	115.04	160.65	138.89	118.62	119.81	113.85	130.54	127.99	137.74	137.99	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1870-1874	180.13	213.23	161.27	130.28	181.92	157.28	134.33	135.68	128.93	147.83	144.93	155.98	156.27	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1875-1879	215.22	254.77	192.69	155.65	217.36	187.91	160.49	162.10	154.04	176.62	173.16	186.36	186.70	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1880-1884	173.86	205.81	155.66	125.74	175.59	151.80	129.65	130.95	124.44	142.68	139.89	150.55	150.83	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1885-1889	166.78	197.42	149.32	120.62	168.44	145.62	124.37	125.62	119.37	136.87	134.19	144.42	144.68	1.00	1.18	0.90	0.72	1.01	0.87	0.75	0.75	0.72	0.82	0.80	
1890-1894	161.97	192.75	159.79	137.18	165.30	148.89	125.22	132.95	127.33	152.05	134.90	148.94	149.06	1.00	1.19	0.99	0.85	1.02	0.92	0.77	0.82	0.79	0.94	0.83	
1895-1899	167.53	200.43	180.55	162.61	172.75	161.73	134.11	148.84	143.50	177.06	144.28	163.04	163.03	1.00	1.20	1.08	0.97	1.03	0.97	0.80	0.89	0.86	1.06	0.86	
1900-1904	184.23	204.48	168.85	193.18	212.33	153.68	154.38	160.96	153.47	201.30	150.60	176.13	176.71	1.00	1.11	0.92	1.05	1.15	0.83	0.84	0.87	0.83	1.09	0.82	
1905-1909	226.21	231.52	170.86	254.84	288.17	159.02	198.03	194.31	183.12	247.18	175.03	211.66	213.17	1.00	1.02	0.76	1.13	1.27	0.70	0.88	0.86	0.81	1.09	0.77	
1910-1914	230.23	278.29	244.26	289.23	426.29	250.80	219.14	244.14	230.37	259.80	214.92	262.50	262.69	1.00	1.21	1.06	1.26	1.85	1.09	0.95	1.06	1.00	1.13	0.93	

<sup>a</sup> Including in-kind payments (food and shelter)

Source: wage series

Table A9. Female annual wages agriculture in guilders (farm servants)<sup>a</sup>

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804	74.81	105.35	71.34	73.17	91.21	100.67	62.78	70.57	65.53	75.61	74.57	78.69	75.18	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1805-1810	77.16	108.66	73.57	75.47	94.07	103.83	64.75	72.79	67.59	77.99	76.91	81.16	77.54	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1810-1814	70.96	99.93	67.66	69.40	86.52	95.49	59.55	66.94	62.16	71.72	70.73	74.64	71.31	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1815-1819	77.86	109.65	74.24	76.15	94.93	104.77	65.34	73.45	68.20	78.70	77.61	81.90	78.25	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1820-1824	64.43	90.74	61.44	63.02	78.56	86.71	54.08	60.79	56.44	65.13	64.23	67.78	64.76	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1825-1829	58.50	82.39	55.79	57.22	71.33	78.72	49.10	55.19	51.25	59.13	58.31	61.54	58.80	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1830-1834	67.11	94.51	63.99	65.64	81.82	90.31	56.32	63.31	58.79	67.83	66.89	70.59	67.45	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1835-1839	63.68	89.68	60.73	62.29	77.64	85.69	53.44	60.07	55.78	64.37	63.47	66.99	64.00	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1840-1844	67.13	94.54	64.01	65.66	81.85	90.33	56.34	63.33	58.80	67.85	66.91	70.61	67.47	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1845-1849	67.46	95.00	64.33	65.98	82.25	90.77	56.61	63.64	59.09	68.18	67.24	70.96	67.79	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1850-1854	66.16	93.18	63.09	64.71	80.67	89.03	55.53	62.42	57.96	66.87	65.95	69.60	66.49	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1855-1859	75.07	105.72	71.59	73.42	91.53	101.02	63.00	70.82	65.76	75.88	74.83	78.97	75.45	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1860-1864	82.82	116.63	78.97	81.00	100.97	111.44	69.50	78.13	72.55	83.71	82.55	87.11	83.23	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1865-1869	88.07	124.03	83.98	86.14	107.38	118.51	73.91	83.08	77.15	89.02	87.78	92.64	88.51	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1870-1874	95.91	135.07	91.46	93.81	116.94	129.06	80.49	90.48	84.02	96.94	95.60	100.89	96.39	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1875-1879	114.33	161.02	109.03	111.83	139.40	153.86	95.95	107.86	100.16	115.57	113.96	120.27	114.91	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1880-1884	107.41	151.26	102.42	105.06	130.96	144.54	90.14	101.33	94.09	108.56	107.06	112.98	107.95	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1885-1889	102.02	143.67	97.28	99.78	124.39	137.28	85.62	96.24	89.37	103.12	101.69	107.32	102.53	1.00	1.41	0.95	0.98	1.22	1.35	0.84	0.94	0.88	1.01	1.00	
1890-1894	106.25	154.37	100.69	105.61	134.01	139.55	90.50	105.46	102.68	111.20	106.82	114.29	110.09	1.00	1.45	0.95	0.99	1.26	1.31	0.85	0.99	0.97	1.05	1.01	
1895-1899	99.93	149.64	94.11	100.92	130.23	128.03	86.36	104.10	105.61	108.16	101.32	109.85	106.65	1.00	1.50	0.94	1.01	1.30	1.28	0.86	1.04	1.06	1.08	1.01	
1900-1904	118.37	157.81	105.84	115.62	150.13	145.61	101.61	118.43	118.18	138.04	121.74	126.49	123.49	1.00	1.33	0.89	0.98	1.27	1.23	0.86	1.00	1.00	1.17	1.03	
1905-1909	137.84	161.14	116.70	130.08	170.02	162.53	117.53	132.22	129.58	172.30	143.78	143.07	140.50	1.00	1.17	0.85	0.94	1.23	1.18	0.85	0.96	0.94	1.25	1.04	
1910-1914	143.53	193.15	143.44	163.32	180.84	214.47	127.05	155.72	150.90	228.55	159.61	169.14	167.10	1.00	1.35	1.00	1.14	1.26	1.49	0.89	1.08	1.05	1.59	1.11	

<sup>a</sup> Including in-kind payments (food and shelter)

Source: wage series



Table A10. Male annual wages agriculture in guilders (farm labourers)

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804																									
1805-1810																									
1810-1814																									
1815-1819	210.00	263.22	207.95	191.55	295.40	251.70	207.79	210.77	202.86	206.51	209.13	223.3535	222.83	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1820-1824	170.00	213.08	168.34	155.07	239.14	203.76	168.21	170.63	164.22	167.17	169.30	180.81	180.38	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1825-1829	131.00	164.20	129.72	119.49	184.28	157.01	129.62	131.48	126.54	128.82	130.46	139.33	139.00	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1830-1834	204.00	255.70	202.01	186.08	286.96	244.51	201.86	204.75	197.06	200.61	203.16	216.972	216.46	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1835-1839	213.00	266.98	210.92	194.29	299.62	255.30	210.76	213.79	205.76	209.46	212.12	226.5442	226.01	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1840-1844	222.00	278.26	219.83	202.50	312.28	266.08	219.67	222.82	214.45	218.31	221.08	236.1165	235.56	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1845-1849	231.00	289.54	228.74	210.71	324.94	276.87	228.57	231.85	223.14	227.16	230.05	245.6888	245.11	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1850-1854	240.00	300.82	237.66	218.92	337.60	287.66	237.48	240.88	231.84	236.01	239.01	255.2611	254.66	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1855-1859	249.00	312.10	246.57	227.13	350.26	298.44	246.38	249.92	240.53	244.86	247.97	264.8334	264.21	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1860-1864	258.00	323.38	255.48	235.34	362.92	309.23	255.29	258.95	249.23	253.71	256.93	274.4057	273.76	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1865-1869	262.00	328.40	259.44	238.99	368.55	314.03	259.25	262.97	253.09	257.64	260.92	278.6601	278.00	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1870-1874	309.75	388.25	306.73	282.54	435.72	371.26	306.49	310.89	299.22	304.60	308.47	329.4464	328.67	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1875-1879	357.50	448.10	354.01	326.10	502.89	428.49	353.74	358.82	345.34	351.55	356.02	380.2327	379.33	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1880-1884	323.00	404.85	319.85	294.63	454.36	387.14	319.60	324.19	312.01	317.63	321.67	343.5389	342.73	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1885-1889	292.68	366.86	289.83	266.98	411.71	350.80	289.61	293.76	282.73	287.81	291.48	311.2954	310.56	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1890-1894	280.00	350.96	277.27	255.41	393.87	335.60	277.06	281.03	270.48	275.34	278.84	297.8046	297.10	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1895-1899	312.05	391.12	309.00	284.64	438.95	374.01	308.77	313.20	301.43	306.85	310.76	331.8878	331.10	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1900-1904	300.00	376.03	297.07	273.65	422.00	359.57	296.85	301.11	289.80	295.01	298.76	319.0764	318.32	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1905-1909	370.00	463.77	366.39	337.50	520.47	443.47	366.11	371.36	357.42	363.84	368.47	393.5276	392.60	1.00	1.25	0.99	0.91	1.41	1.20	0.99	1.00	0.97	0.98	1.00	
1910-1914	372.87	340.51	368.00	417.92	524.51	375.00	325.00	374.25	300.30	366.67	362.33	375.215	376.47	1.00	0.91	0.99	1.12	1.41	1.01	0.87	1.00	0.81	0.98	0.97	

Source: wage series

Table A11. Male casual industrial wages in guilders per day (unskilled and lower skilled)

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av.	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804	1.06	0.98	1.65	0.88	1.25	0.85	0.49	0.76	0.93	0.95	0.47	0.93	0.95	1.00	0.93	1.56	0.83	1.17	0.81	0.46	0.72	0.88	0.89	0.45	
1805-1810	1.06	0.98	1.66	0.88	1.25	0.86	0.49	0.76	0.93	0.95	0.47	0.94	0.95	1.00	0.93	1.56	0.83	1.17	0.81	0.46	0.72	0.88	0.89	0.45	
1810-1814	1.02	0.95	1.60	0.85	1.20	0.82	0.48	0.73	0.90	0.92	0.46	0.90	0.91	1.00	0.93	1.56	0.83	1.17	0.81	0.46	0.72	0.88	0.89	0.45	
1815-1819	1.12	1.04	1.75	0.93	1.32	0.90	0.52	0.80	0.98	1.00	0.50	0.99	1.00	1.00	0.93	1.56	0.83	1.17	0.81	0.46	0.72	0.88	0.89	0.45	
1820-1824	1.02	0.94	1.58	0.71	1.23	0.82	0.58	0.73	0.89	0.91	0.62	0.91	0.93	1.00	0.93	1.56	0.70	1.21	0.81	0.57	0.72	0.88	0.89	0.61	
1825-1829	0.95	0.88	1.47	0.66	1.17	0.76	0.54	0.68	0.83	0.85	0.57	0.85	0.87	1.00	0.93	1.56	0.70	1.24	0.81	0.57	0.72	0.88	0.89	0.61	
1830-1834	0.95	0.88	1.49	0.67	1.48	0.77	0.55	0.68	0.83	0.85	0.58	0.88	0.93	1.00	0.93	1.56	0.70	1.55	0.81	0.57	0.72	0.88	0.89	0.61	
1835-1839	0.94	0.87	1.47	0.66	1.75	0.76	0.54	0.67	0.83	0.84	0.57	0.90	0.98	1.00	0.93	1.56	0.70	1.86	0.81	0.57	0.72	0.88	0.89	0.61	
1840-1844	0.94	0.87	1.47	0.54	1.07	0.76	0.54	0.67	0.63	0.84	0.57	0.81	0.82	1.00	0.93	1.56	0.57	1.14	0.81	0.57	0.72	0.67	0.89	0.61	
1845-1849	1.00	0.93	1.56	0.73	1.07	0.81	0.57	0.68	0.69	0.52	0.61	0.83	0.85	1.00	0.93	1.56	0.73	1.07	0.81	0.57	0.67	0.68	0.52	0.61	
1850-1854	1.05	0.98	1.64	0.77	1.06	0.85	0.60	0.71	0.72	0.75	0.64	0.89	0.89	1.00	0.93	1.56	0.73	1.00	0.81	0.57	0.67	0.68	0.71	0.61	
1855-1859	1.19	1.11	1.86	0.87	1.36	0.96	0.68	0.81	0.83	0.85	0.72	1.02	1.04	1.00	0.93	1.56	0.73	1.14	0.81	0.57	0.67	0.70	0.71	0.61	
1860-1864	1.20	1.11	1.87	1.06	1.54	0.96	0.82	0.76	0.69	1.09	0.92	1.09	1.11	1.00	0.93	1.56	0.89	1.29	0.81	0.68	0.63	0.58	0.91	0.77	
1865-1869	1.19	1.12	1.85	1.09	1.63	1.22	0.81	0.87	0.80	1.11	0.88	1.14	1.16	1.00	0.94	1.56	0.92	1.37	1.03	0.68	0.73	0.67	0.94	0.74	
1870-1874	1.18	1.13	1.83	1.12	1.72	1.48	0.80	0.97	0.90	1.14	0.84	1.19	1.21	1.00	0.96	1.56	0.95	1.46	1.26	0.68	0.83	0.77	0.97	0.71	
1875-1879	1.25	1.22	1.94	1.23	1.93	1.85	0.85	1.15	1.07	1.24	0.85	1.32	1.35	1.00	0.98	1.56	0.98	1.55	1.48	0.68	0.92	0.86	1.00	0.69	
1880-1884	1.32	1.28	2.05	1.29	2.04	1.95	0.90	1.21	1.13	1.31	0.90	1.40	1.42	1.00	0.98	1.56	0.98	1.55	1.48	0.68	0.92	0.86	1.00	0.69	
1885-1889	1.39	1.35	2.16	1.36	2.15	2.06	0.94	1.28	1.19	1.38	0.95	1.47	1.50	1.00	0.98	1.56	0.98	1.55	1.48	0.68	0.92	0.86	1.00	0.69	
1890-1894	1.52	1.51	2.37	1.54	2.49	2.60	1.04	1.55	1.45	1.56	1.00	1.69	1.72	1.00	0.99	1.56	1.02	1.64	1.71	0.68	1.02	0.96	1.02	0.66	
1895-1899	1.34	1.77	2.09	1.37	2.20	2.30	0.92	1.37	1.45	1.37	1.22	1.58	1.68	1.00	1.32	1.56	1.02	1.64	1.71	0.68	1.02	1.08	1.02	0.91	
1900-1904	1.17	1.92	1.82	1.19	1.91	2.00	0.80	1.19	1.40	1.19	1.35	1.45	1.59	1.00	1.65	1.56	1.02	1.64	1.71	0.68	1.02	1.20	1.02	1.16	
1905-1909	1.78	2.41	2.20	1.80	2.90	2.46	1.21	1.62	1.90	1.67	1.98	1.99	2.19	1.00	1.36	1.24	1.02	1.64	1.38	0.68	0.91	1.07	0.94	1.11	
1910-1914	2.38	2.55	2.20	2.42	3.90	2.53	1.62	1.92	2.25	2.04	2.55	2.40	2.64	1.00	1.07	0.92	1.02	1.64	1.06	0.68	0.81	0.94	0.85	1.07	
1915-1919	2.14	2.20	2.33	2.15	2.68	2.20	1.90	1.90	3.93	2.07	1.96	2.31	2.36	1.00	1.03	1.09	1.01	1.25	1.03	0.68	0.89	1.84	0.97	0.92	
1920-1924	5.20	5.15	4.88	5.23	5.59	5.11	3.54	4.91	5.32	5.61	6.41	5.18	5.34	1.00	0.99	0.94	1.01	1.08	0.98	0.68	0.94	1.02	1.08	1.23	

Source: wage series

Table A12. Female casual industrial wages in guilders per day (unskilled and lower skilled)

Period	Wages													Ratios										
	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL
1800-1804																								
1805-1810																								
1810-1814																								
1815-1819	0.40	0.37	0.21	0.35	0.39	0.39	0.27	0.29	0.33	0.26	0.28	0.32	0.34	1.22	1.13	0.65	1.07	1.18	1.19	0.82	0.90	1.00	0.80	0.84
1820-1824	0.35	0.40	0.23	0.29	0.45	0.42	0.29	0.32	0.36	0.29	0.30	0.34	0.37	0.98	1.12	0.65	0.81	1.27	1.19	0.82	0.90	1.00	0.80	0.84
1825-1829	0.38	0.43	0.25	0.32	0.49	0.46	0.32	0.35	0.39	0.31	0.33	0.37	0.40	0.98	1.12	0.65	0.81	1.27	1.19	0.82	0.90	1.00	0.80	0.84
1830-1834	0.41	0.47	0.27	0.34	0.53	0.49	0.34	0.38	0.42	0.34	0.35	0.39	0.43	0.98	1.12	0.65	0.81	1.27	1.19	0.82	0.90	1.00	0.80	0.84
1835-1839	0.31	0.47	0.28	0.24	0.58	0.50	0.35	0.38	0.43	0.34	0.36	0.38	0.44	0.73	1.11	0.65	0.56	1.36	1.19	0.82	0.90	1.00	0.80	0.84
1840-1844	0.30	0.45	0.26	0.23	0.55	0.48	0.33	0.36	0.41	0.33	0.34	0.37	0.42	0.73	1.11	0.65	0.56	1.36	1.19	0.82	0.90	1.00	0.80	0.84
1845-1849	0.33	0.44	0.29	0.33	0.60	0.46	0.37	0.37	0.45	0.41	0.37	0.40	0.44	0.73	0.98	0.65	0.74	1.35	1.04	0.82	0.84	1.00	0.93	0.84
1850-1854	0.36	0.48	0.31	0.40	0.65	0.47	0.40	0.39	0.49	0.45	0.41	0.44	0.48	0.73	0.98	0.65	0.82	1.35	0.97	0.82	0.81	1.00	0.93	0.84
1855-1859	0.38	0.52	0.34	0.43	0.71	0.51	0.43	0.42	0.53	0.49	0.44	0.47	0.52	0.73	0.98	0.65	0.82	1.35	0.97	0.82	0.81	1.00	0.93	0.84
1860-1864	0.41	0.55	0.36	0.51	0.75	0.50	0.46	0.44	0.56	0.59	0.47	0.51	0.56	0.73	0.98	0.65	0.91	1.35	0.89	0.82	0.78	1.00	1.05	0.84
1865-1869	0.58	0.78	0.51	0.58	1.07	0.59	0.53	0.61	0.79	0.54	0.75	0.67	0.77	0.73	0.98	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.68	0.94
1870-1874	0.58	0.73	0.51	0.58	1.07	0.59	0.54	0.62	0.80	0.63	0.79	0.68	0.77	0.73	0.92	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.79	0.99
1875-1879	0.59	0.74	0.52	0.58	1.08	0.60	0.54	0.62	0.80	0.63	0.80	0.68	0.77	0.73	0.92	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.79	0.99
1880-1884	0.59	0.74	0.52	0.59	1.08	0.60	0.54	0.62	0.80	0.64	0.80	0.68	0.78	0.73	0.92	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.79	0.99
1885-1889	0.59	0.74	0.52	0.59	1.09	0.60	0.54	0.63	0.81	0.64	0.80	0.69	0.78	0.73	0.92	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.79	0.99
1890-1894	0.59	0.69	0.52	0.59	1.09	0.60	0.54	0.63	0.81	0.73	0.84	0.69	0.77	0.73	0.86	0.65	0.73	1.35	0.75	0.67	0.78	1.00	0.90	1.05
1895-1899	0.66	0.74	0.53	0.53	1.11	0.56	0.49	0.64	0.82	0.70	0.91	0.70	0.79	0.81	0.90	0.65	0.64	1.35	0.67	0.60	0.78	1.00	0.85	1.10
1900-1904	0.74	0.79	0.54	0.46	1.13	0.51	0.44	0.65	0.84	0.67	0.97	0.70	0.82	0.88	0.94	0.65	0.55	1.35	0.60	0.52	0.78	1.00	0.80	1.16
1905-1909	0.86	0.92	0.63	0.54	1.32	0.59	0.51	0.76	0.98	0.79	0.63	0.78	0.91	0.88	0.94	0.65	0.55	1.35	0.60	0.52	0.78	1.00	0.80	0.64
1910-1914	1.00	1.07	0.74	0.62	0.70	0.69	0.60	0.99	1.14	0.91	0.68	0.83	0.90	0.88	0.94	0.65	0.55	0.62	0.60	0.52	0.87	1.00	0.80	0.59
1915-1919	1.25	2.50	1.17	1.45	1.71	1.59	1.39	1.03	2.65	2.12	1.26	1.65	1.87	0.47	0.94	0.44	0.55	0.65	0.60	0.52	0.39	1.00	0.80	0.48

Source: wage series

Table A13. Children's casual industrial wages in guilders per day (unskilled and lower skilled)

Period	Wages													Ratios										
	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL
1800-1804																								
1805-1810																								
1810-1814																								
1815-1819	0.27	0.35	0.38	0.22	0.52	0.35	0.32	0.43	0.40	0.43	0.38	0.37	0.40	0.67	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1820-1824	0.26	0.34	0.37	0.21	0.50	0.34	0.31	0.41	0.39	0.42	0.36	0.36	0.38	0.67	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1825-1829	0.25	0.33	0.35	0.21	0.48	0.33	0.30	0.40	0.37	0.40	0.35	0.34	0.37	0.67	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1830-1834	0.24	0.31	0.34	0.20	0.46	0.31	0.29	0.38	0.36	0.39	0.34	0.33	0.35	0.67	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1835-1839	0.24	0.31	0.33	0.19	0.46	0.31	0.28	0.37	0.35	0.38	0.33	0.32	0.35	0.67	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1840-1844	0.20	0.26	0.28	0.16	0.38	0.26	0.23	0.31	0.29	0.32	0.27	0.27	0.29	0.68	0.89	0.95	0.55	1.31	0.88	0.81	1.07	1.00	1.09	0.94
1845-1849	0.21	0.29	0.29	0.21	0.39	0.20	0.25	0.27	0.31	0.31	0.29	0.27	0.30	0.68	0.93	0.95	0.68	1.29	0.65	0.81	0.89	1.00	1.00	0.94
1850-1854	0.22	0.30	0.30	0.22	0.41	0.21	0.26	0.28	0.32	0.32	0.30	0.29	0.31	0.68	0.93	0.95	0.68	1.29	0.65	0.81	0.89	1.00	1.00	0.94
1855-1859	0.22	0.32	0.31	0.26	0.42	0.14	0.27	0.23	0.33	0.30	0.31	0.28	0.31	0.68	0.98	0.95	0.80	1.27	0.42	0.81	0.70	1.00	0.91	0.94
1860-1864	0.26	0.39	0.37	0.31	0.50	0.17	0.32	0.28	0.39	0.36	0.37	0.34	0.37	0.67	0.98	0.95	0.80	1.27	0.42	0.81	0.70	1.00	0.91	0.94
1865-1869	0.23	0.33	0.32	0.27	0.42	0.14	0.27	0.23	0.33	0.38	0.31	0.29	0.32	0.70	0.98	0.95	0.80	1.27	0.42	0.81	0.70	1.00	1.13	0.94
1870-1874	0.22	0.33	0.32	0.27	0.42	0.14	0.27	0.23	0.33	0.38	0.38	0.30	0.32	0.67	0.98	0.95	0.80	1.27	0.42	0.81	0.70	1.00	1.13	1.13
1875-1879	0.29	0.37	0.34	0.39	0.46	0.22	0.31	0.27	0.36	0.41	0.37	0.35	0.37	0.81	1.03	0.95	1.07	1.27	0.60	0.85	0.75	1.00	1.13	1.02
1880-1884	0.32	0.40	0.37	0.42	0.50	0.24	0.34	0.29	0.39	0.44	0.40	0.37	0.40	0.81	1.03	0.95	1.07	1.27	0.60	0.85	0.75	1.00	1.13	1.02
1885-1889	0.34	0.44	0.40	0.45	0.54	0.26	0.36	0.32	0.42	0.48	0.43	0.40	0.43	0.81	1.03	0.95	1.07	1.27	0.60	0.85	0.75	1.00	1.13	1.02
1890-1894	0.44	0.49	0.43	0.61	0.58	0.36	0.41	0.36	0.46	0.51	0.42	0.46	0.48	0.95	1.08	0.95	1.33	1.27	0.78	0.90	0.79	1.00	1.13	0.91
1895-1899	0.39	0.61	0.55	0.78	0.74	0.46	0.53	0.46	0.58	0.66	0.51	0.57	0.59	0.67	1.05	0.95	1.33	1.27	0.78	0.90	0.79	1.00	1.13	0.87
1900-1904	0.27	0.72	0.67	0.94	0.90	0.55	0.64	0.56	0.71	0.80	0.59	0.67	0.70	0.38	1.01	0.95	1.33	1.27	0.78	0.90	0.79	1.00	1.13	0.83
1905-1909	0.56	0.98	0.65	1.28	1.10	0.75	0.87	0.77	0.96	1.08	0.86	0.90	0.94	0.58	1.01	0.68	1.33	1.14	0.78	0.90	0.79	1.00	1.13	0.89
1910-1914	0.96	1.24	0.49	1.62	1.23	0.95	1.10	1.08	1.22	1.37	1.16	1.13	1.18	0.79	1.01	0.40	1.33	1.01	0.78	0.90	0.89	1.00	1.13	0.95
1915-1919	0.86	1.10	0.44	1.44	1.09	0.85	0.98	0.96	1.08	1.22	1.03	1.00	1.05	0.79	1.01	0.40	1.33	1.01	0.78	0.90	0.89	1.00	1.13	0.95

Source: wage series

Table A14. Men's casual wages in the textile industry per day in guilders

	Wages													Ratios											
Period	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av.	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	
1800-1804																									
1805-1810																									
1810-1814																									
1815-1819	0.57	0.87		0.38	1.06	0.60	0.42	0.63	0.60	0.73	0.52	0.64	0.67	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1820-1824	0.62	0.94		0.41	1.15	0.65	0.45	0.68	0.65	0.79	0.56	0.69	0.72	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1825-1829	0.66	1.01		0.44	1.24	0.70	0.49	0.74	0.70	0.85	0.60	0.74	0.78	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1830-1834	0.71	1.08		0.47	1.33	0.75	0.52	0.79	0.75	0.91	0.64	0.80	0.83	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1835-1839	0.74	1.13		0.49	1.38	0.78	0.55	0.82	0.78	0.94	0.67	0.83	0.86	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1840-1844	0.57	0.87		0.38	1.07	0.60	0.42	0.63	0.61	0.73	0.52	0.64	0.67	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1845-1849	0.65	0.98		0.43	1.21	0.68	0.48	0.72	0.69	0.83	0.59	0.72	0.76	0.94	1.44		0.62	1.76	0.99	0.70	1.05	1.00	1.21	0.85	
1850-1854	0.72	1.10		0.68	1.35	0.76	0.53	0.80	0.77	0.98	0.65	0.83	0.85	0.94	1.44		0.89	1.76	0.99	0.70	1.05	1.00	1.28	0.85	
1855-1859	0.78	1.19		0.74	1.46	0.82	0.58	0.87	0.83	1.06	0.71	0.90	0.92	0.94	1.44		0.89	1.76	0.99	0.70	1.05	1.00	1.28	0.85	
1860-1864	0.64	0.98		0.78	1.20	0.68	0.48	0.69	0.68	0.93	0.58	0.76	0.75	0.94	1.44		1.15	1.76	0.99	0.70	1.01	1.00	1.36	0.85	
1865-1869	0.75	0.97		0.85	1.39	0.78	0.55	0.97	0.79	1.07	0.59	0.87	0.89	0.94	1.23		1.07	1.76	0.99	0.70	1.22	1.00	1.36	0.75	
1870-1874	0.85	1.11		0.96	1.59	0.89	0.63	1.29	0.90	1.22	0.67	1.01	1.07	0.94	1.23		1.07	1.76	0.99	0.70	1.44	1.00	1.36	0.75	
1875-1879	0.99	1.18		1.09	1.85	1.04	0.73	1.51	1.05	1.42	0.73	1.16	1.23	0.94	1.13		1.03	1.76	0.99	0.70	1.44	1.00	1.36	0.70	
1880-1884	1.13	1.35		1.24	2.11	1.19	0.84	1.72	1.20	1.63	0.84	1.32	1.40	0.94	1.13		1.03	1.76	0.99	0.70	1.44	1.00	1.36	0.70	
1885-1889	1.27	1.52		1.40	2.38	1.34	0.94	1.94	1.35	1.83	0.94	1.49	1.58	0.94	1.13		1.03	1.76	0.99	0.70	1.44	1.00	1.36	0.70	
1890-1894	1.40	1.52		1.48	2.62	1.47	1.03	2.13	1.48	2.01	0.96	1.61	1.71	0.94	1.02		1.00	1.76	0.99	0.70	1.44	1.00	1.36	0.65	
1895-1899																									
1900-1904																									
1905-1909																									
1910-1914																									
1915-1919	3.71	4.02		3.91	6.92	3.89	2.73	5.64	3.93	5.32	2.54	4.26	4.53	0.94	1.02		1.00	1.76	0.99	0.70	1.44	1.00	1.36	0.65	

Source: wage series

Table A15. Women's casual wages in the textile industry per day in guilders

Period	Wages													Ratios										
	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL	Av.	W.Av.	GR	ZH	ZL	FR	NH	UT	DR	NB	OV	LI	GL
1800-1804																								
1805-1810																								
1810-1814																								
1815-1819																								
1820-1824																								
1825-1829																								
1830-1834																								
1835-1839	0.35	0.50	0.43	0.23	0.61	0.45	0.32	0.40	0.43	0.36	0.35	0.40	0.43	0.83	1.17	1.00	0.54	1.43	1.07	0.75	0.95	1.00	0.84	0.83
1840-1844	0.32	0.45	0.38	0.21	0.55	0.41	0.29	0.36	0.38	0.32	0.32	0.36	0.39	0.83	1.17	1.00	0.54	1.43	1.07	0.75	0.95	1.00	0.84	0.83
1845-1849	0.36	0.43	0.43	0.22	0.62	0.42	0.33	0.34	0.43	0.37	0.36	0.39	0.41	0.83	1.00	1.00	0.51	1.43	0.96	0.75	0.80	1.00	0.83	0.83
1850-1854	0.40	0.48	0.48	0.24	0.69	0.46	0.36	0.38	0.48	0.42	0.40	0.44	0.46	0.83	1.00	1.00	0.51	1.43	0.96	0.75	0.80	1.00	0.83	0.83
1855-1859	0.44	0.53	0.53	0.27	0.77	0.51	0.40	0.42	0.53	0.47	0.44	0.48	0.51	0.83	1.00	1.00	0.51	1.43	0.96	0.75	0.80	1.00	0.83	0.83
1860-1864	0.48	0.58	0.59	0.28	0.84	0.50	0.44	0.38	0.59	0.48	0.48	0.51	0.54	0.83	1.00	1.00	0.47	1.43	0.85	0.75	0.64	1.00	0.81	0.83
1865-1869	0.65	0.79	0.79	0.37	1.14	0.58	0.59	0.41	0.79	0.53	0.53	0.65	0.70	0.83	1.00	1.00	0.47	1.43	0.73	0.75	0.52	1.00	0.81	0.88
1870-1874	0.66	0.80	0.80	0.38	1.15	0.58	0.60	0.31	0.80	0.65	0.71	0.68	0.71	0.83	1.00	1.00	0.47	1.43	0.73	0.75	0.39	1.00	0.81	0.88
1875-1879	0.67	0.81	0.81	0.38	1.16	0.59	0.61	0.47	0.81	0.66	0.72	0.70	0.74	0.83	1.00	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.88
1880-1884	0.68	0.82	0.82	0.39	1.18	0.60	0.62	0.48	0.82	0.67	0.72	0.71	0.75	0.83	1.00	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.88
1885-1889	0.69	0.83	0.83	0.39	1.19	0.61	0.62	0.48	0.83	0.67	0.73	0.72	0.76	0.83	1.00	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.88
1890-1894	0.70	0.69	0.84	0.40	1.21	0.61	0.63	0.49	0.84	0.72	0.79	0.72	0.75	0.83	0.82	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.94
1895-1899	0.74	0.73	0.89	0.42	1.28	0.65	0.67	0.52	0.89	0.77	0.84	0.76	0.80	0.83	0.82	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.83
1900-1904	0.78	0.77	0.94	0.44	1.35	0.69	0.71	0.55	0.94	0.82	0.89	0.81	0.84	0.83	0.82	1.00	0.47	1.43	0.73	0.75	0.58	1.00	0.81	0.83
1905-1909	0.81	0.81	0.98	0.46	1.41	0.59	0.74	0.76	0.98	0.87	0.71	0.83	0.89	0.83	0.82	1.00	0.47	1.43	0.60	0.75	0.78	1.00	0.81	0.72
1910-1914	1.00	0.99	1.21	0.57	1.74	0.73	0.91	0.71	1.21	0.92	0.76	0.98	1.05	0.83	0.82	1.00	0.47	1.43	0.60	0.75	0.59	1.00	0.81	0.72
1915-1919	2.19	2.18	2.65	1.24	3.80	1.60	1.99	1.56	2.65	0.97	0.81	1.97	2.23	0.83	0.82	1.00	0.47	1.43	0.60	0.75	0.59	1.00	0.81	0.72

Source: wage series

Table A16. Male and female employment by sector in percentages<sup>ab</sup>

Sector	1807	1849	1859	1889	1899	1909	1920	1930
<i>Men</i>								
Primary	42.7	36.8	36.8	35.3	33.8	30.4	26.1	22.6
Secondary	26.0	36.4	36.4	36.8	37.6	39.2	41.6	44.1
Tertiary	30.5	25.2	25.1	26.0	26.7	29.2	31.0	32.0
Rest	0.7	1.6	1.8	1.9	1.8	1.3	1.2	1.4
<i>Women</i>								
Primary	42.7	47.2	48.3	37.9	33.0	29.2	13.9	14.3
Secondary	26.0	16.5	15.9	14.6	16.6	19.0	23.4	22.1
Tertiary	30.5	36.2	35.6	47.4	50.4	51.8	62.7	63.6
Rest	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.0

<sup>a</sup> The 1807 census merely reported the share of *total* employment in each sector: men and women were not reported separately. Therefore, I have used the same percentages for men and women in this specific year.

<sup>b</sup> The 'Rest' category consists of *losse werklieden*: working people that were given the title '(day) labourer', that is, with no further specification of the type of work (van Vugt, *Een Arbeidersbuurt*, p. 181).

Sources: Centraal Bureau voor de Statistiek, 'Census 1849'; Centraal Bureau voor de Statistiek, 'Census 1859'; Centraal Bureau voor de Statistiek, 'Census 1889'; Centraal Bureau voor de Statistiek, 'Census 1899'; Centraal Bureau voor de Statistiek, 'Census 1909'; Centraal Bureau voor de Statistiek, 'Census 1920'; Centraal Bureau voor de Statistiek, 'Census 1930'; Smits and Horlings, 'Dutch GNP'.

#### *Appendix 5. The gender wage gap in agriculture and industry, 1800-1914*

The gender wage gap can be calculated by dividing the female wage rate with the male wage rate or the other way around. The former shows the female wage as a percentage of the male wage, meaning that the lower the outcome, the larger the gender wage gap. The latter shows the male wage as a percentage of the female wage, meaning that the larger the outcome, the larger the gender wage gap. Throughout this dissertation, I employed the second method.

Table A17 below shows the GWG in several occupations. They are all self-explanatory, except for the male casuals labourer/female farm servant. This GWG is not meant to look at men's and women's wages for the same type of work, but to further emphasize the favourable position of female farm servants relative to male agricultural labourers from the 1880s onwards. The GWG is calculated by dividing 250 times one men's day wage for casual work with the annual wage of a female farm labourers. As becomes clear, the difference between these two annual incomes decreased from the end of the nineteenth century onwards, meaning that the position of female farm servants in the agricultural labour market improved.

Table A17. The gender wage gap in agriculture and industry, 1800-1914

	<b>Agriculture</b>				<b>Industry</b>	
<i>Period</i>	<i>Male servant/ female servant</i>	<i>Male annual farm labourer/ female servant</i>	<i>Male casual labourer/ female casual labourer</i>	<i>Male casual labourer/ female farm servant</i>	<i>Male/female industrial casual labourer</i>	<i>Male/female casual textile labourer</i>
1800-1804	1.50		1.37	2.21		
1805-1810	1.48		1.33	2.20		
1810-1814	1.59		1.26	2.20		
1815-1819	1.61	2.96	1.08	2.25	2.94	
1820-1824	1.60	2.87	1.27	2.14	2.50	
1825-1829	1.44	2.46	1.33	2.33	2.16	
1830-1834	1.43	3.35	1.40	2.07	2.16	
1835-1839	1.43	3.68	1.38	2.21	2.24	2.01
1840-1844	1.53	3.65	1.40	2.17	1.97	1.72
1845-1849	1.54	3.78	1.41	2.21	1.90	1.83
1850-1854	1.54	4.00	1.44	2.38	1.84	1.84
1855-1859	1.52	3.67	1.43	2.29	1.98	1.80
1860-1864	1.61	3.43	1.43	2.31	1.97	1.39
1865-1869	1.65	3.27	1.54	2.38	1.51	1.27
1870-1874	1.71	3.54	1.67	2.37	1.58	1.50
1875-1879	1.67	3.27	1.81	2.05	1.75	1.65
1880-1884	1.44	3.10	1.96	2.34	1.83	1.86
1885-1889	1.43	2.84	1.54	1.89	1.92	2.07
1890-1894	1.36	2.40	1.73	1.82	2.22	2.27
1895-1899	1.46	2.41	1.61	1.67	2.11	
1900-1904	1.38	1.97		1.24	1.95	
1905-1909	1.50	2.32	1.68	1.85	2.40	
1910-1914	1.51	1.82		1.24	2.94	

Source: wage series (Boter)



## References

### *Primary sources*

- Addens, N.G., *Arbeid en Loon in den Landbouw [Labour and Wages in Agriculture]* (Groningen, 1928).
- Anonymous, *Arbeidsloonen en Levensbehoeften in de Gemeente Arnhem [Wages and Sustenance in the Municipality of Arnhem]* (Arnhem, 1870).
- Arbeidsinspectie, *Enquête, Gehouden door de Staatscommissie Benoemd Krachtens de Wet van 10 Januari 1890 (Staatsblad No. 1) (Tweede Afdeling). Twente. [Survey by the Commission of the State, Appointed by Virtue of the Law of 10 January 1890 (Sheet 1) (Second Department). Twente]* (The Hague, 1890).
- , *Verslag Omtrent het Onderzoek Ingesteld door de Derde Afdeling der Staatscommissie van Arbeidsenquête [Report by the Third Department of the State Commission of the Labour Survey]* (The Hague, 1890).
- , *Verslag van de Eerste Afdeling der Staatscommissie van Arbeidsenquête [Report by the First Department of the State Commission of the Labour Survey]* (The Hague, 1890).
- , *Verslag van de Tweede Afdeling der Staatscommissie van Arbeidsenquête [Report by the Second Department of the State Commission of the Labour Survey]* (The Hague, 1890).
- Bultman, H.F., 'Verslagen van de Inspecteurs van den Arbeid in het Koninkrijk der Nederlanden over 1891 [Reports by the Labour Inspectors in the Netherlands, 1891]', *Verslag over den Landbouw in Nederland over 1896 en 1897* (1899).
- Centraal Bureau voor de Statistiek, 'Opgaven van Kamer van Arbeid Omtrent "Gewone Loon", Verzameld op Model A.' [Statements of the Chamber of Labour Concerning "Normal Wages", Collected on Model a]', *Tijdschrift van het Centraal Bureau voor de Statistiek*, 1 (1902), pp. 1-31.
- , 'Opgaven van Kamer van Arbeid Omtrent "Gewone Loon", Verzameld op Model a [Statements of the Chamber of Labour Concerning "Normal Wages", Collected on Model a]', *Tijdschrift van het Centraal Bureau voor de Statistiek*, 2 (1903), pp. 1-31.
- , 'Statistiek van de Loonen der Volgens de Ongevallenwet 1901 Verzekerde Werklieden in de Textielindustrie in 1908 [Statistics of the Wages According to

- Labourers Insured by the Law on Accidents in the Textile Industry in 1908]', *Bijdragen tot de Statistiek van Nederland* (1908).
- , 'Statistiek van de Loonen en den Arbeidsduur der Volgens de Ongevallenwet van 1901 Verzekerde Werklieden in de Schoenfabrieken en Leerlooierijen in het Jaar 1916 [Statistics of the Wages According to Labourers Insured by the Law on Accidents in Shoe and Leather Factories in 1916]', *Bijdragen tot de Statistiek van Nederland*, 274 (1916).
- , 'Statistiek van Loon en Arbeidsduur [Statistics of Wages and Working Time]', *Statistiek van Nederland*, 365 (1922).
- Dam, E.W., 'De Officiële Loonstatistiek en Hare Uitkomsten [The Official Wage Statistics and Its Outcomes]', *De Economist*, 62 (1913), pp. 541-562.
- , 'De Officiële Loonstatistiek en Hare Uitkomsten [The Official Wage Statistics and Its Outcomes]', *De Economist*, 64 (1915), pp. 716-731.
- , 'De Officiële Loonstatistiek en Hare Uitkomsten [The Official Wage Statistics and Its Outcomes]', *De Economist*, 66 (1917), pp. 538-549.
- , 'De Officiële Loonstatistiek en Hare Uitkomsten [The Official Wage Statistics and Its Outcomes]', *De Economist*, 70 (1921), pp. 211-230.
- Departement van Landbouw Nijverheid en Handel, *Onderzoek naar den Fabrieksarbeid van Gehuwde Vrouwen in Nederland [Survey on Married Women's Factory Labour in the Netherlands]* (The Hague, 1911).
- Directie van den Arbeid, *Onderzoekingen naar de Toestanden in de Nederlandsche Huisindustrie, Deel I: Voedings- en Genotmiddelen [Research on the Condition of the Dutch Home Industry, Part I: Food and Stimulants Industry]* (The Hague, 1914).
- , *Onderzoekingen naar de Toestanden in de Nederlandsche Huisindustrie, Deel II: Diamantbewerking, Drukkersbedrijf, Chemische Industrie, Hout- en Stroobewerking, Metaalbewerking, Papierbewerking, Schoenmakers [Research on the Condition of the Dutch Home Industry, Part II: Diamant Processing, Printing, Chemical Industry, Wood-, Straw-, Metal-, and Paper Processing, Shoemakers]* (The Hague, 1914).
- , *Onderzoekingen naar de Toestanden in de Nederlandsche Huisindustrie, Deel III: Textielindustrie – Kleeding en Reiniging [Research on the Condition of the Dutch Home Industry, Part III: Textile Industry – Apparel and Cleaning]* (The Hague, 1914).
- Landbouwcommissie, *Uitkomsten van het Onderzoek naar den Toestand van de Landbouw in Nederland, Deel IV [Conclusions from the Research on the State of Agriculture in the Netherlands, Part IV]* (The Hague, 1890).

Sociaal Democratische Studieclub, *Landarbeiders. Hun Arbeidsduur en Arbeidsverhoudingen* [*Agricultural Labourers. Their Working Time and Labour Relations*] (Amsterdam, 1909).

Staatscommissie voor den Landbouw, *Algemeen Overzicht van den Oeconomischen Toestand der Landarbeiders in Nederland* [*General Overview of the Economic Condition of Agricultural Labourers in the Netherlands*] (The Hague, 1908).

———, *Verslagen Betreffende den Oeconomischen Toestand der Landarbeiders in Nederland. Deel I: Groningen-Gelderland* [*Reports on the Economic Condition of Agricultural Labourers in the Netherlands. Part I: Groningen-Gelderland*] (The Hague, 1908).

———, *Verslagen Betreffende den Oeconomischen Toestand der Landarbeiders in Nederland. Deel II: Utrecht-Limburg* [*Reports on the Economic Condition of Agricultural Labourers in the Netherlands. Part II: Utrecht-Limburg*] (The Hague, 1908).

### ***Secondary literature***

Allen, R.C., *Enclosure and the Yeoman: Agricultural Development of the South Midlands, 1450-1850* (Oxford, 1992).

———, 'The Great Divergence in European Wages and Prices from the Middle Ages to the First World War', *Explorations in Economic History*, 38 (2001), pp. 411-447.

———, 'The High Wage Economy and the Industrial Revolution: A Restatement', *Economic History Review*, 68 (2015), pp. 1-22.

Allen, R.C., Bassino, J.-P., Ma, D., Moll-Murata, C., and van Zanden, J.L., 'Wages, Prices and Living Standards in China, 1738-1925: in Comparison with Europe, Japan, and India', *Economic History Review*, 64 (2011), pp. 8-38.

Becker, G.S., 'A Theory of the Allocation of Time', *The Economic Journal*, 75 (1965), pp. 493-517.

Bieleman, J., *Boeren in Nederland: Geschiedenis van de Landbouw 1500-2000* [*Farmers in the Netherlands: The History of Agriculture 1500-2000*] (Amsterdam, 2008).

Boot, H.M. and Maindonald, J.H., 'New Estimates of Age- and Sex-Specific Earnings and the Male: Female Earnings Gap in the British Cotton Industry, 1833-1906', *Economic History Review*, 61 (2008), pp. 380-408.

- Boot, J.A.P.G., 'Handspinnen van Katoen en Handspinnerijen (Deel 1) [Manual Spinning of Cotton and Spinning Houses (Part 1)]', *Textielhistorische Bijdragen*, 24 (1984), pp. 52-80.
- , 'Handspinnen van Katoen en Handspinnerijen (Deel 2) [Manual Spinning of Cotton and Spinning Houses (Part 2)]', *Textielhistorische Bijdragen*, 26 (1986), pp. 38-80.
- Boter, C., 'Marriages Are Made in Kitchens: The European Marriage Pattern and Life-Cycle Servanthood in Eighteenth-Century Amsterdam', *Feminist Economics* (2016), pp. 1-25.
- Bras, H., *Zeeuwse Meiden: Dienen in de Levensloop van Vrouwen, 1850-1950 [Maids from Zeeland: Serving as Part of Women's Life-Cycle, 1850-1950]* (Amsterdam, 2002).
- , 'Maids to the City: Migration Patterns of Female Domestic Servants from the Province of Zeeland, the Netherlands (1850-1950)', *History of the Family*, 8 (2003), pp. 217-246.
- Brugmans, I.J., *De Arbeidende Klasse in Nederland in de 19e Eeuw (1813-1870) [The Working Class in the Netherlands During the 19th Century (1813-1870)]* (Den Haag, 1925).
- Burnette, J., 'An Investigation of the Female-Male Wage Gap During the Industrial Revolution in Britain', *Economic History Review*, 50 (1997), pp. 257-281.
- , 'Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution', *Journal of Economic History*, 59 (1999), pp. 41-67.
- , 'The Wages and Employment of Female Day-Labourers in English Agriculture, 1740-1850', *Economic History Review*, 57 (2004), pp. 664-690.
- , *Gender, Work and Wages in Industrial Revolution Britain* (Cambridge, 2008).
- Clark, G., 'Farm Wages and Living Standards in the Industrial Revolution: England, 1670-1869', *Economic History Review*, 54 (2001), pp. 477-505.
- , 'The Condition of the Working Class in England, 1209-2004', *Journal of Political Economy*, 113 (2005), pp. 1307-1340.
- , 'The Long March of History: Farm Wages, Population, and Economic Growth, England 1209-1869', *Economic History Review*, 60 (2007), pp. 97-135.
- Feinstein, C.H., *Statistical Tables of National Income, Expenditure, and Output of the U.K., 1855-1965* (Cambridge, 1976).

- Feinstein, C.H., 'Pessimism Perpetuated: Real Wages and the Standard of Living in Britain During and after the Industrial Revolution', *Journal of Economic History*, 58 (1998), pp. 625-658.
- Fowler, A., 'Great Britain: Textile Workers in the Lancashire Cotton and Yorkshire Wool Industries', in L. Heerma van Voss, E. Hiemstra-Kuperus and E. v. Nederveen Meerkerk eds., *History of Textile Workers, 1650-2000* (Farnham, 2010), pp. 231-252.
- Frankema, E. and van Waijenburg, M., 'Structural Impediments to African Growth? New Evidence from Real Wages in British Africa, 1880-1965', *Journal of Economic History*, 72 (2012), pp. 895-926.
- Goldin, C.D., *Understanding the Gender Gap: An Economic History of American Women* (New York, 1990).
- Gorter, R.A. and de Vries, C.W., *Gegevens Omtrent den Kinderarbeid in Nederland Volgens de Enquêtes van 1841 en 1860 [Information About Child Labour in the Netherlands According to the Surveys of 1841 and 1860]*. Vol. 8, *Economisch-Historisch Jaarboek* (The Hague, 1922).
- de Groot, G., *Fabricage van Verschillen: Mannenwerk, Vrouwenwerk in de Nederlandse Industrie (1850-1940) [Construction of Differences: Men's Work, Women's Work in the Dutch Industrial Sector (1850-1940)]* (Amsterdam, 2001).
- , 'Aanlappers en Drossters: Mannenwerk, Vrouwenwerk in de Nederlandse Katoenspinnerij (1865-1948) te Hengelo (Ov.) [Aanlappers and Drossters. Men's Work, Women's Work in the Nederlandse Katoenspinnerij (1865-1948) in Hengelo (Overijssel)]', *Textielhistorische Bijdragen*, 42 (2002), pp. 19-42.
- Heerma van Voss, L., *De Doodsklok voor den Goeden Ouden Tijd: de Achturendag in de Jaren Twintig [The Clock of Death for the Good Old Times: The Eight-Hour Work Day in the 1920s]* (Amsterdam, 1994).
- Horrell, S. and Humphries, J., "'The Exploitation of Little Children': Child Labor and the Family Economy in the Industrial Revolution', *Explorations in Economic History*, 32 (1995), pp. 485-516.
- Hudson, P., *The Industrial Revolution* (London; New York; Melbourne; Auckland, 1992).
- Humphries, J., 'Enclosures, Common Rights, and Women: The Proletarianization of Families in the Late Eighteenth and Early Nineteenth Centuries', *Journal of Economic History* (1990), pp. 17-42.

- , 'The Lure of Aggregates and the Pitfalls of the Patriarchal Perspective: A Critique of the High Wage Economy Interpretation of the British Industrial Revolution', *Economic History Review*, 66 (2013), pp. 693-714.
- Humphries, J. and Weisdorf, J., *Unreal Wages? A New Empirical Foundation for the Study of Living Standards and Economic Growth in England, 1260-1860*, Discussion Papers in Economic and Social History 147 (Oxford, 2015).
- , 'The Wages of Women in England, 1260-1850', *Journal of Economic History*, 75 (2015), pp. 405-447.
- Jansen, M., *De Industriële Ontwikkeling in Nederland 1800-1850 [The Industrial Development in the Netherlands 1800-1850]* (Amsterdam, 1999).
- Janssens, A. and Pelzer, B., 'Did Factory Girls Make Bad Mothers? Women's Labor Market Experience, Motherhood, and Children's Mortality Risks in the Past', *Biodemography and social biology*, 58 (2012), pp. 133-148.
- Jordan, E., 'The Exclusion of Women from Industry in Nineteenth-Century Britain', *Comparative Studies in Society and History*, 31 (1989), pp. 273-296.
- Kint, P. and van der Voort, R.C.W., 'Economische Groei en Stagnatie in de Nederlanden 1800-1850 [Economic Growth and Stagnation in the Netherlands 1800-1850]', *Economisch- en sociaal-historisch jaarboek*. (1980), pp. 105-153.
- Lane, P., *Women in the Regional Economy: The East Midlands, 1700-1830* (Warwick, 1999).
- Lazonick, W., 'Industrial Relations and Technical Change: The Case of the Self-Acting Mule', *Cambridge Journal of Economics*, 3 (1979), pp. 231-262.
- van Leeuwen, M. and Maas, I., *HISCLASS. A Historical International Social Class Scheme* (Leuven, 2011).
- van Leeuwen, M., Maas, I., and Miles, A., *HISCO: Historical International Standard Classification of Occupations* (Leuven, 2002).
- van Leeuwen, M., Maas, I., and Miles, A., 'Creating a Historical International Standard Classification of Occupations an Exercise in Multinational Interdisciplinary Cooperation', *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 37 (2004), pp. 186-197.
- Leunig, T., *Piece Rates and Learning: Understanding Work and Production in the New England Textile Industry a Century Ago*, London School of Economics Working Papers 72/03 (London, 2003).

- Lintsen, H. and Bakker, M., *Geschiedenis van de Techniek in Nederland: de Wordings van een Moderne Samenleving 1800-1890, Deel 3 [A History of Technique in the Netherlands: The Realization of a Modern Society 1800-1890 (Part 3)]* (Zutphen, 1993).
- Lubbers, G., *De Statistiek van het Arbeidsloon en van de Werkloosheid [Statistics of Wages and Unemployment]* (Amsterdam, 1926).
- Mincer, J., 'Labor-Force Participation of Married Women: A Study of Labor Supply', in U.-N. B. C. f. E. Research ed., *Aspects of Labor Economics* (Princeton, 1962), pp. 63-105.
- Minoletti, P., *The Importance of Gender Ideology and Identity: The Shift to Factory Production and Its Effect on Work and Wages in the English Textile Industries, 1760-1850* (Oxford, 2011).
- Mitchell, B.R., *British Historical Statistics* (Cambridge, 1988).
- van Nederveen Meerkerk, E., 'Market Wage or Discrimination? The Remuneration of Male and Female Wool Spinners in the Seventeenth-Century Dutch Republic', *Economic History Review*, 63 (2010), pp. 165-186.
- van Nederveen Meerkerk, E., Heerma van Voss, L., and Hiemstra-Kuperus, E., 'De Nederlandse Textielnijverheid in een Globaliserende Wereld, 1650-2000 [The Dutch Textile Industry in a Globalising World, 1650-2000]', *Textielhistorische Bijdragen*, 46 (2006), pp. 11-44.
- , 'The Netherlands', in L. Heerma van Voss, E. Hiemstra-Kuperus and E. van Nederveen Meerkerk eds., *History of Textile Workers, 1650-2000* (Farnham, 2010), pp. 363-396.
- van Nederveen Meerkerk, E. and Paping, R., 'Beyond the Census. Reconstructing Dutch Women's Labour Market Participation in Agriculture in the Netherlands, Ca. 1830-1910', *History of the Family*, 19 (2014), pp. 447-468.
- Ogilvie, S.C., 'How Does Social Capital Affect Women?: Guilds and Communities in Early Modern Germany', *American Historical Review*, 109 (2004), pp. 325-359.
- Overton, M., *Agricultural Revolution in England. The Transformation of the Agrarian Economy 1500-1850* (Cambridge, 1996).
- Paping, R., *'Voor een Handvol Stuivers': Werken, Verdienen en Besteden : de Levensstandaard van Boeren, Arbeiders en Middenstanders op de Groninger Klei, 1770-1860: de Levensloop van Boeren, Arbeiders en Middenstanders op de Groninger Klei, 1770-1860 [For a Handful of Nickels. Working, Earning, and Spending: The Life-Cycle of Farmers, Labourers and the Middle-Class on the Groningen Clay Soils, 1770-1860]* (Groningen, 1995).

- Poelstra, J., *Luiden van een Andere Beweging: Huishoudelijke Arbeid in Nederland, 1840-1920* [People from Another Group. Domestic Labour in the Netherlands 1840-1920] (Amsterdam, 1996).
- Posthumus, N.W., *Huisindustrie in Nederland. Loon- en Arbeidsverhoudingen. Catalogus der Voorwerpen Aanwezig op de Nederlandsche Tentoonstelling van Huisindustrie te Amsterdam* [Home Industry in the Netherlands. Wages and Labour Relations. Catalogue of the Objects Displayed at the Dutch Exhibition of the Home Industry in Amsterdam] (Amsterdam, 1909).
- Pott-Buter, H., *Facts and Fairy Tales About Female Labor, Family, and Fertility: A Seven-Country Comparison, 1850-1990* (Amsterdam, 1993).
- Priester, P.R., *De Economische Ontwikkeling van de Landbouw in Groningen, 1800-1910: een Kwalitatieve en Kwantitatieve Analyse* [The Economic Development of Agriculture in Groningen, 1800-1910: A Qualitative and Quantitative Analysis] (Wageningen, 1991).
- Schmidt, A. and van Nederveen Meerkerk, E., 'Reconsidering the "First Male-Breadwinner Economy": Women's Labor Force Participation in the Netherlands, 1600-1900', *Feminist Economics*, 18 (2012), pp. 69-96.
- Sharpe, P., *Adapting to Capitalism: Working Women in the English Economy, 1700-1850* (New York, 1996).
- , 'The Female Labour Market in English Agriculture During the Industrial Revolution: Expansion or Contraction?', *Agricultural History Review*, 47 (1999), pp. 161-181.
- Simonton, D., *A History of European Women's Work: 1700 to the Present* (London, 1998).
- Smits, J.P. and Horlings, E., *Dutch GNP and Its Components, 1800-1913* (Groningen, 1999).
- Speechley, H.V., *Female and Child Agricultural Day Labourers in Somerset, C. 1685-1870* (Exeter, 1999).
- Stanfors, M., Leunig, T., Eriksson, B., and Karlsson, T., 'Gender, Productivity, and the Nature of Work and Pay: Evidence from the Late Nineteenth-Century Tobacco Industry', *Economic History Review*, 67 (2014), pp. 48-65.
- Verdon, N., *Changing Patterns of Female Employment in Rural England, C. 1789-1890* (Leicester, 1999).
- , 'The Rural Labour Market in the Early Nineteenth Century: Womens's and Children's Employment, Family Income and the 1834 Poor Law Report', *Economic History Review*, 55 (2002), pp. 219-248.



- Vermaas, A., 'Real Industrial Wages in the Netherlands, 1850-1913', in P. Scholliers and V. Zamagni eds., *Labour's Reward: Real Wages and Economic Change in 19th- and 20th-Century Europe* (Aldershot, 1995).
- Voth, H.-J., *Time and Work in Eighteenth Century London* (Oxford, 1997).
- , 'Living Standards During the Industrial Revolution: An Economist's Guide', *American Economic Review*, 93 (2003), pp. 221-226.
- de Vries, J. and van der Woude, A., *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500-1815* (Cambridge, 1997).
- van Vugt, T., *Een Arbeidersbuurt onder de Rook van 'De Sphinx'. Een Sociaal-Ruimtelijke Geschiedenis van het Boschstratkwartier-Oost te Maastricht, 1829-1904* [*A Working-Class Neighbourhood under the Smoke of 'De Sphinx'. A Social-Spatial History of the Boschstratkwartier-Oost in Maastricht, 1829-1904*] (Hilversum, 2015).
- van Zanden, J.L., 'Lonen en Arbeidsmarkt in Amsterdam, 1800-1865 [Wages and the Labour Market in Amsterdam, 1800-1865]', *Tijdschrift voor Sociale Geschiedenis*, 9 (1983), pp. 3-27.
- , *De Economische Ontwikkeling van de Nederlandse Landbouw in de Negentiende Eeuw, 1800-1914* [*The Economic Development of Dutch Agriculture During the Nineteenth Century, 1800-1914*] (Wageningen, 1985).
- van Zanden, J.L. and van Riel, A., *The Strictures of Inheritance: The Dutch Economy in the Nineteenth Century* (Princeton, 2004).

### **Online sources**

- Allen, R.C. Amsterdam. In, <https://www.nuffield.ox.ac.uk/People/sites/Allen/SitePages/Biography.aspx>. (accessed 10 May, 2016).
- Centraal Bureau voor de Statistiek. Census 1849. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1849/index.html>. (accessed December, 2016).
- . Census 1859. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1859/index.html>. (accessed December, 2016).
- . Census 1889. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1889/index.html>. (accessed December, 2016).

- . Census 1899. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1899/index.html>.  
(accessed December, 2016).
- . Census 1909. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1909/index.html>.  
(accessed December, 2016).
- . Census 1920. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1920/index.html>.  
(accessed December, 2016).
- . Census 1930. In, <http://volkstellingen.nl/nl/volkstelling/jaarview/1930/index.html>.  
(accessed December, 2016).