Wage Floors Set in Collective Bargaining: Evidence on Wages and Employment in Argentina

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May 16, 2025

Abstract

In Argentina, the national minimum wage (NMW) coexists with sectoral wage floors (WF) established through collective bargaining agreements (CBA). These WFs exceed the NMW for most registered workers, rendering the minimum wage largely ineffective. Using novel data on union-negotiated wages combined with administrative records, this paper analyzes the impact of WFs set in CBAs on employment, wages, and wage inequality among formal workers. The analysis is conducted at both the industry and individual levels, utilizing a fixed-effects model by year and sector and a linear probability model based on individual worker trajectories. Results indicate that CBAs reduce overall wage inequality by decreasing inequality at the upper end of the distribution without affecting the lower end. No significant employment effects are found, except for a negative impact in sectors with a higher proportion of small firms (MSMEs). However, at the worker level, CBAs reduce the probability of remaining employed for workers near the wage floors, with more negative effects observed in MSMEs. Finally, CBAs' positive effect on wage increases and negative effects on employment are more pronounced in unfavorable macroeconomic conditions.

JEL Classification: J22, J31, J38, K31.

Keywords: Inequality, Employment, Collective Bargaining, Unions, Minimum Wage, Argentina.

1 Introduction

Labor income is the main source of household income in Latin America, representing, on average, 70% of the total. The importance of wages as determinants of social well-being is evident to a greater or lesser extent across all socioeconomic groups. Therefore, the existence of mechanisms that guarantee minimum wage levels for favorable living conditions is central both as a welfare policy and as a redistributive policy.

There are several labor institutions that aim to ensure these wage floors. In particular, the establishment of a national minimum wage (NMW) is one of the most widely implemented policies to ensure a minimum income threshold. In Argentina, the national minimum wage policy coexists with sectoral wage floors determined through collective bargaining. These two labor institutions thus become key mechanisms for ensuring wage income, reducing inequality, and extending labor protection. Specifically, sectoral wage floors (WF) are established for different unions and are often set above the value of the NMW. This means that for the vast majority of registered wage earners, the NMW is not operational. In this context, the wage evolution of many workers is determined by the agreements reached in Collective Bargaining Agreements (CBA), and it is therefore expected that wage inequality and employment may be affected by this labor institution.

Empirical evidence on labor institutions is mostly focused on the effects of the minimum wage and shows that this institution reduces wage inequality without having harmful effects on employment (Autor et al., 2016; Cengiz et al., 2019; Neumark and Corella, 2021).[1] While there is some connection between this institution and collective bargaining, as both set minimum income thresholds, sectoral wage floors are negotiated between unions and companies, so their final effects on wage inequality and employment are not analogous to those of a government-imposed minimum wage. Despite their relevance, empirical evidence on collective bargaining is not as widespread and is currently a topic of great academic interest. Available studies to date suggest that unions and collective bargaining reduce inequality (Farber et al., 2021; Card and Cardoso, 2022, among others). Furthermore, for Argentina, there are descriptive studies that suggest that collective bargaining is more relevant than the NMW, at least in terms of guiding the wage structure (Marshall, 2019; Alejo and Casanova, 2016).

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[1] The literature analyzing the scope of NMWs as redistributive policies is extensive, both for developed countries and Latin America. For Latin America, evidence shows that increases in the minimum wage tend to have equalizing effects, primarily on the wages of formal workers, although the effects vary depending on the initial level, the magnitude of the increases, and the degree of enforcement (Maloney and Mendez, 2007; Bosch and Manacorda, 2010; Alves et al., 2012; Borraz and González-Pampillón, 2017; Engbom and Moser, 2021). However, a particular emphasis in recent literature is that the effectiveness of this policy in setting a minimum income threshold and reducing inequality is strongly linked to its impacts on employment. Far from being conclusive about the standard prediction that minimum wages negatively affect employment, empirical evidence has shown in many cases null or even positive effects (Card and Krueger, 1994; Dickens et al., 1999; Dube et al., 2010; Meer and West, 2016; Jardim et al., 2018; Neumark, 2018; Cengiz et al., 2019; Dustmann et al., 2022). Although some studies find negative impacts (Grau et al., 2011; Borraz and González-Pampillón, 2017), others argue that there are no effects on employment (Lemos, 2009; Grau et al., 2011). For studies on the minimum wage in Argentina, see for example: Maurizio and Vázquez (2016) and Arcidiácono (2015).

From a theoretical perspective, the effects of the WF setting on both inequality and employment are not straightforward. Regarding inequality, increases in WFs are expected to affect wage dispersion by reducing the importance of personal characteristics in wage determination, standardizing wages within collective bargaining agreements based on job characteristics and seniority (Freeman, 1980). Similarly, they may reduce wage differentials at the extremes of the distribution by dampening returns to observable and unobservable skills (such as education).[2]

A second mechanism cited in the literature suggests that since unions are voluntary membership organizations that represent the ideological roots of their members, they tend to pursue egalitarian wage policies through CBAs (Boeri and Van Ours, 2013). Additionally, the literature has argued that unions induce firms to share rents derived from market power with workers. Although globalization, technological change, and deregulation may have reduced the available rents for redistribution, unions may still have room to shift the distribution of remaining rents between workers and firms through collective bargaining (Abowd and Lemieux, 1993; Abowd, 1989; Rose, 1987). In this context, recent studies have documented, at the firm and establishment levels, the existence of wage premiums (Song et al., 2019; Card et al., 2013; Barth et al., 2016), with unionized establishments enjoying higher premiums (Hirsch and Mueller, 2020). Hence, it is possible that WFs improve the wages of workers at the lower end of the distribution, although the magnitude of the decline in lower-end inequality may be limited by spillover effects to higher percentiles of the distribution. At the same time, if formal jobs were destroyed and those jobs belonged to the most vulnerable workers, observed formal wage inequality could compress as a consequence of the loss of low-paying jobs.

A key aspect to consider when thinking about the expected theoretical effects on employment is the underlying market structure. Under conditions of perfect competition, and considering WFs as minimum thresholds that firms face when defining their employment levels, increases in WFs could have harmful effects on employment. In the presence of unions, the classic theoretical framework suggests that unions are monopolistic sellers of labor to firms, reducing employment levels in exchange for higher wages. However, recent literature has particularly focused on the idea that in non-competitive labor markets, the imposition of minimum thresholds and/or the existence of unions and collective bargaining does not necessarily have harmful effects on employment levels. Thus, in monopsonistic labor markets, union bargaining could raise workers' wages to their efficiency level without generating negative impacts on jobs (Manning, 2011; Naidu et al., 2018; Corella, 2020; Azar et al., 2019).

Thus, the ultimate impact on wage inequality and employment is theoretically ambiguous, leaving it to empirical research to discern the direction of the effect. This presents a new challenge, particularly given the scarcity of direct evidence on the labor market consequences of wage floors in developing countries. A first contribution is thus towards this literature, recently expanded for developed countries and with limited development for the region.[3]

Specifically, this paper analyzes the effects of sectoral wage floors set through collective bargaining on employment, wages, and wage inequality among formal workers in Argentina.

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[2] The results in Vogel (ming) indicate that the minimum wage has effects in this direction.

[3] For the case of Uruguay, see Blanchard et al. (2021).

To answer this question, we constructed a comprehensive and novel database. For the first time, we combined information on wage floors (agreed upon in the collective agreements) of Argentina's most important unions with administrative data on formal sector employees. Although these data are frequently published by the Ministry of Labor (MTEySS), in this paper, a correspondence was constructed between the country's main unions and the ISIC Revision 4 classification to obtain the sectoral wage floors associated with Argentina's most relevant unions. Combining wage floor data that varies by sector with administrative records of individuals' labor trajectories allows us to create an innovative database that reflects the second central contribution of this work.

Using the above data, we exploit the variation in sectoral wage floors among different unions in Argentina over time through a Two-Way Fixed Effects (TWFE) model. The results indicate that collective bargaining reduces overall wage inequality and inequality at the upper end of the distribution but does not have equalizing effects at the lower end. This analysis is complemented by a linear probability model based on individual workers' trajectories. These results suggest that collective bargaining reduces the probability of remaining employed for workers near the wage floors. Furthermore, sectors with a higher proportion of small and medium-sized enterprises (SMEs) and workers from these types of companies seem to experience more negative effects. It is also found that collective agreements play a more significant role in wage increases when the macroeconomic context is more unfavorable, although this may be more detrimental to employment.

The rest of the paper is organized as follows. Section 2 provides a brief description of how labor relations function in Argentina, particularly collective bargaining between workers and employers. Section 3 describes the data used, while Section 4 outlines the empirical strategy. Section 5 shows the evolution of the wage floors and sectors analyzed, followed by the presentation of results in Section 6. Section 7 concludes.

2 Collective Bargaining in Argentina: An Overview

In Argentina, as in many countries, two major wage determination institutions coexist: a national minimum wage and a system of collective bargaining. In the Argentine context, both institutions are well-established, with the period from 2003 to 2015 characterized by strong support and implementation of these mechanisms. While both are important for setting wages for salaried workers, the role of the minimum wage seems to be relegated primarily to protecting the incomes of precarious workers or those not covered by collective agreements (e.g., those in the informal sector, as Lombardo et al. (2024) suggest), without serving as a clear reference for collective bargaining. Thus, during much of this period, adjustments to the minimum wage differed from negotiated wages, suggesting that the two institutions operated separately (Marshall, 2019). As a result, for the vast majority of registered salaried workers, wages negotiated in collective agreements play a more significant role in guiding their wage evolution.

Collective bargaining in Argentina is predominantly centralized, with most agreements

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established at the industry level rather than at the company level. Historically, collective bargaining agreements (CBAs) were set at the industry level, although during the 1990s, there was a decentralization process that increased the relative importance of company-level agreements. From 2003 onwards, this decentralization process began to reverse, so that during the period from 2004 to 2015, between 64% and 73% of the collective agreements and contracts were negotiated at the industry level, while the remainder were negotiated at the company level. When expressed in terms of covered personnel, 95% of workers are covered by agreements negotiated at the industry level, and only 5% of the total covered personnel are due to company-level agreements.

In an industry-level agreement, guidelines are established that define the employment relationship for workers and employers within that industry. In particular, each agreement negotiates the minimum wages that must be paid in the industry represented by the union. It is important to note that these minimum wages are not uniform for all workers covered by the agreement; rather, different wage floors are set for each occupational category within the industry, with further differentiation between the basic wage of the agreement and additional payments that may be negotiated, typically for seniority, attendance, night shifts, productivity, among others. An important point is that the wage floors determined in collective agreements, like all content included in these agreements, are mandatory for all workers in the industry or company within the scope of the agreement, regardless of whether they are union members or belong to the employer's association. One of the main components of collective agreements is the periodic renewal of wage brackets through agreements (Alejo and Casanova, 2016). Because the main content of CBAs is wage-related, they became one of the principal tools for unions during the 2000s and 2010s, leaving little room for businesses to implement strategies for flexibilization and individualized payments. (Palomino and Trajtemberg, 2006).

Another noteworthy aspect of the collective bargaining system is its wide coverage. Figure 1 shows the level and evolution of the coverage rate of CBAs, calculated as the ratio between the personnel covered by collective agreements and the annual average number of private salaried employment positions. As can be seen, after a transition period following Argentina's crisis in 2001 (when there was practically no collective bargaining and the few agreements that were signed were at the company level), the coverage rate stands at around 65% on average.[4] One point to highlight is the marked growth from 2004 onwards, in response to a proactive stance by the government to streamline and resume these wage determination mechanisms, as well as the increase in formal employment that occurred during those years as post-crisis recovery.

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[4] These values are similar to those presented by the ILO on its web page and to those of other studies that have measured the coverage rate of collective bargaining agreements (e.g., Lombardo and Martinez-Correa (2019)). The differences are due to the universe of registered workers considered in the different sources.

Figure 1: Coverage rate of collective bargaining agreements

Notes. The figure shows the evolution over time of the coverage rate of collective bargaining agreements. It is calculated as the ratio between the personnel covered by homologated agreements and the annual average number of private registered salaried employment positions.
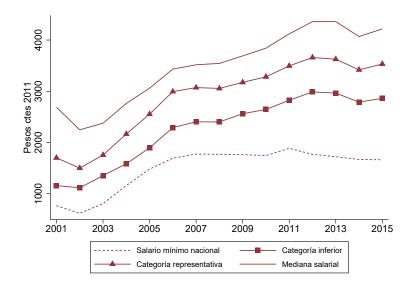
Source. Own elaboration based on data from the Integrated Pension System (SIPA) and the Department of Labor Studies and Relations of the Ministry of Labor, Employment, and Social Security (MTEySS).

Regarding the role of the state, in Argentina, bargaining is bipartite (unions and employers), although the government can intervene as a last resort since it has the authority to homologate the agreements reached. As Marshall (2019) points out, although there are no formal guidelines from the government towards bargaining in Argentina, informal guidelines were often established during the period under study. Most of them were associated with the macroeconomic context, particularly controlling inflation, suggesting in some way caps on negotiated increases or longer terms for each agreement. While these guidelines seem to have been successful in the early years, with accelerating inflation, unions demanded higher wage increases to avoid losing purchasing power. Nevertheless, although the government's role may have taken a back seat in wages negotiated in CBAs, its role is more decisive in updating the minimum wage, which may explain why negotiated wages have increased on average more than the minimum wage. This can be observed in Figure 2, which shows the evolution of the minimum wage along with the evolution of wage floors negotiated in agreements. Specifically, an average of the wages of the lower category in each industry is presented, and an average of the wages of the representative categories (those that group the largest number of workers) of each economic activity. Additionally, the evolution of the median wage of registered private sector workers is incorporated.

As shown in Figure 2, while in the first period (2001-2004) the minimum wage increased more than the negotiated wages, this trend reverses from that date onward. This may be due to the fact that, as Marshall (2019) suggests, both labor institutions operated independently. Moreover, as mentioned earlier, although the minimum wage may have been an important guide for determining the income threshold for the most precarious workers, it seems that the

Figure 2: Evolution of the minimum wage, negotiated wages, and formal private sector wages. 2001-2015

Notes. The figure shows the evolution of the national minimum wage, along with the average of the negotiated wages. Two averages of wage floors are presented. Each of these averages are first calculated across the industries covered by each union (since a union may cover more than one industry) for the unions with available collective bargaining data. Then, the average of these averages is calculated across different unions. First, the average of the negotiated wages for the lower categories is presented (wage for the lowest wage bracket of the various occupational categories in each industry); second the average of the negotiated wages for the representative categories (wage of the wage bracket with the largest number of workers in the various occupational categories in each industry). The median wage of registered workers for the private sector is also included. All values are expressed in constant pesos of 2011. The national minimum wage and the negotiated wages are as of December of each year, while the median wage is the annual average.

Source. Own elaboration based on SIPA and data from the Department of Labor Studies and Relations of the Ministry of Labor, Employment, and Social Security (MTEySS).

wages negotiated in agreements play a more significant role in guiding wage evolution. Thus, Figure 2 shows that the median wage of registered private sector jobs evolves similarly to the wage floors of collective agreements, particularly from 2005 onwards, which seems to coincide with the sharp increase in coverage rate presented in Figure 1. A relevant point to highlight is that Figure 2 shows the average wage floors across different industries. However, there is heterogeneity in the evolution of negotiated wages among different unions, both in level and in variations achieved over the period, as discussed further in Section 5.

3 Data

This study uses two data sources: i) employment and wage data; and ii) wage floors data from collective agreements. For employment and wage data, we use the Longitudinal Sample of Registered Employment (MLER, for its acronym in Spanish) published by the Ministry of Labor, Employment and Social Security (MTEySS, for its acronym in Spanish), based on administrative records from the Argentine Integrated Pension System (SIPA, for its acronym in Spanish). The MLER consists of monthly affidavit submitted by private sector companies to the AFIP (Federal Administration of Public Revenues, for its acronym in Spanish) to determine social security contributions for their employees, allowing us to track the labor trajectories of registered individuals. It is representative of all individuals who held registered salaried employment between 1996 and 2015 and contains information on over 500,000 workers and more than 1.4 million job records. By including the sector of activity of the employer, the data can be aggregated at that level. It is important to note that these data refer to registered employment and do not distinguish between part-time and full-time jobs, as there is no information on hours worked. Additionally, the MLER provides some worker characteristics, such as gender and age, along with characteristics of the firm where the labor relationship is registered, such as size (employment size brackets), company age, and the province (similar to US states) where it operates. All workers aged 18 to 60 are considered, and the upper part of the wage distribution is winsorized (by sector-year), assigning the 99th percentile wage value to those reporting wages above that value. For constructing the worker-month panel, each worker must have a unique labor relationship per period. In cases where a worker reports two or more simultaneous jobs, the labor relationship with the highest remuneration is selected.

For minimum wage data, we use information published by the MTEySS regarding wages set in CBAs from 18 private sector unions for the period 2001-2021. The information published by MTEySS comes from the compilation of agreements signed annually between unions and employer chambers. Although there are a considerable number of unions signing agreements annually (approximately 300), the MTEySS publishes data on those agreements it considers most important in terms of worker representation.

It is important to note that each wage agreement defines different wage floors according to the occupational category of each worker. For each industry where unions negotiate, the MTEySS publishes information for two occupational categories: i) the lower category, which includes the lowest wage scale of the various occupational categories in each industry; ii) the representative category, which includes the largest number of workers in the industry (e.g., bricklayer in construction). For these two categories, the published wage floor is the "consolidated wage," that consists of the basic wage, stipulated additional payments, and increases decreed by the Executive Power, in case they were not included in the wage agreements or had already been absorbed by increases. In presenting results, the reference wage floor used is the consolidated wage for the representative category (abbreviated as CR), as it best represents the minimum wages in each industry.

Finally, starting from union-level minimum wage data, a correspondence is established

at the industry level (using ISIC Revision 3 classification disaggregated to two, three, or four digits, as appropriate). This allows us to combine negotiated wage floor data with employment and wage information for each industry available in SIPA. The combination of these two data sources provides a panel at the union (industry)/month level for the period 2001 to 2015, with a total of 3060 observations.[5] The following table shows the correspondence between unions and industries constructed to merge the data sources. The first column of Table 1 lists unions as published in the MTEySS wage agreement information; columns 2 and 3 provide examples of how this information is reported. Additionally, each row is matched with the ISIC code (Rev 3) that best corresponds to the union, as shown in column 4. Finally, all registered workers in SIPA under the industries defined in column 4 are assigned the corresponding wage floor.[6]

Table 1: Correspondence between unions and ISIC industry codes

| | Wage floor | | |
Union	Dec-04	Dec-05	ISIC (Rev 3) Industry
Food	650	950	15
National Private Banks (ADEBA)	518	828	652
Footwear	670	960	192
Truck Drivers	1.039	1.545	6021
Wholesale & Retail	423	957	51-52
Construction	566	927	45
Sports and Civil Entities (UTEDyC)	678	958	910-924
Gastronomy	695	1.064	552
Graphic media	600	840	221-222
Mantaining & Janitors	50	110	7493
Metal-mechanicalworking	564	765	272
Plastics	766	954	252
Chemicals	596	1.222	232-241-2421-2422
Healthcare (non-hospitalization)	527	850	851
Security	584	900	7492
Textile	666	893	171-173
Passanger Transport	N/A	N/A	6022

Source. Own elaboration based on SIPA and data from the Department of Labor Studies and Relations of the Ministry of Labor, Employment, and Social Security (MTEySS).

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[5] It was not possible to associate a ISIC code to the "Doormen" union, so the panel contains information from 17 unions.

[6] As an example, the Truck Drivers union (row 4) was associated with the ISIC code (Rev 3) of 6021. Subsequently, all labor relations registered in SIPA under the 6021 branch of activity were identified and assigned a wage floor of $1039 for 2004.

4   Empirical Strategy

As mentioned in the previous section, after combining both data sources, we obtain a panel of 17 sectors for the period 2001 to 2015, with monthly frequency.[7] Based on this, we exploit the variability that exists between unions over time to analyze the effects of wage floors set in collective bargaining agreements on wages, inequality, and employment. Specifically, we start with a TWFE model to estimate the following equation:

$$y_{st} = \alpha + \beta floor_{st} + \gamma_s + \delta_t + \sigma_s * time + \lambda X_{st} + \epsilon_{st} \tag{1}$$

Where y_{st} refers to the labor outcome for sector s at time t (in this case, wage levels at different points in the distribution, wage inequality measures and employment levels), $floor_{st}$ is the wage floor for sector s at time t; γ_s are sector-level fixed effects that capture specific changes that might have occurred at the industry level, and δ_t are time fixed effects. Standard errors are constructed through wild-bootstrap with clustering at the sector level.

In addition to the TWFE base specification, we include controls related to the composition of workers and firms in each sector: the proportion of male workers, the proportion of workers in each region, as well as shares of age groups, firm size and firm age where the employment relationship is carried out.[8] Finally, we include annual sectoral linear trends to control for heterogeneous temporal effects across different economic sectors.

Equation (1) is estimated both in levels and first differences, in line with the literature (Allegretto et al., 2017; Autor et al., 2016). The main variable of interest is $floor_{st}$ and the coefficient of interest is β, since it captures the elasticity of wages (or employment) with respect to the wage floor of the analyzed sector. The identification is based on the assumption that, once controlled for the characteristics of workers and firms in each sector, as well as specific factors for each union and each year, there are no other shocks that simultaneously affect the minimum collective bargaining wages and employment and wage variables, reflecting simultaneity in the equations. While the inclusion of fixed effects and sectoral temporal trends allows for controlling for possible endogeneity sources, the implemented empirical strategy is not entirely causal, so the results should be interpreted as correlations or elasticities rather than purely causal effects.

5   Descriptive Evidence

Before presenting the results, we provide a brief description of the evolution of the sectors analyzed in terms of employment, wages, and negotiated wage floors. Figure 3 shows the

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[7] In the following, the terms sectors, branches of activity or unions will be used interchangeably to refer to the unit of analysis of the panel.

[8] The age groups used are: 18 to 30 years; 31 to 45; 46 to 60. Firm size is measured in employment brackets: up to 9 employees; 10 to 49; 50 to 200; and more than 200. The age of the firm is divided into: those firms created before 2001; those created between 2001 and 2005; those created between 2006 and 2010; and those created after 2010.

evolution of negotiated wage floors between 2003 and 2015, expressed in constant 2011 pesos. Given that there are 17 different wage floors, the purpose of this figure is to show the existence of variability over time and between sectors, a crucial aspect for implementing the empirical strategy presented in Section 4. Each gray dot in Figure 3 is the annual average wage floor of a union (in constant pesos). The evolution of the 25th, 50th, 75th, and 90th percentiles of these sectoral wage floors is highlighted, showing also the value of the NMW. In summary, it is observed that i) the value of the NMW is significantly lower than the rest of the sectoral wage floors; ii) there is considerable amplitude between the negotiated sectoral wage levels among unions; and iii) while real increases are clearly observed until 2011 (to later begin a certain stagnation), the largest increases occurred until 2006/2007. Although there is an average increasing trend at least until 2009, not all unions managed to negotiate similar increases. Thus, while some sectors managed to continue increasing the purchasing power of their wage floors, others barely managed to maintain their real wage unchanged, and some unions even lost purchasing power.[9] This differential evolution is accentuated from 2010 onwards, under a context of economic slowdown and rising inflation. Additionally, the figure shows the evolution of the national minimum wage, which always remains below all negotiated wage floors (as mentioned in Section 2), reaffirming the importance of collective bargaining as a wage-setting mechanism for most formal workers in Argentina.

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[9] On many occasions, while wage floors are not adjusted high enough to maintain real wages, unions achieve other increases through bonuses, special compensations, or other non-remunerative items.
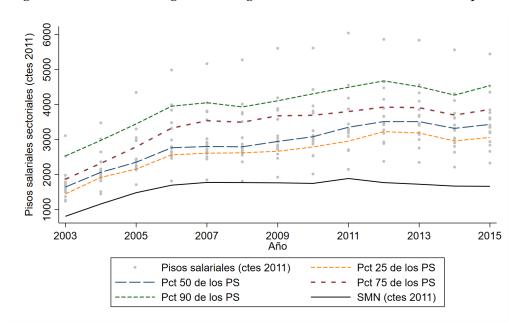
Figure 3: Evolution of negotiated wage floors, 2003-2015 (constant 2011 pesos)

Notes. Each gray dot is the annual average of a union's wage floor (in constant pesos); and some lines are highlighted with the evolution of the 25th, 50th, 75th and 90th percentiles of those sectoral wage floors. The black line reflects the value of the national minimum wage (in constant 2011 pesos).
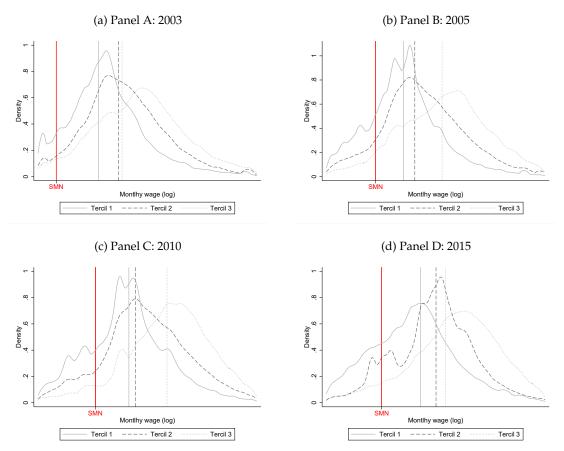
Source. Own elaboration based on data from the Department of Studies and Statistics on Labor Relations of the Ministry of Labor, Employment and Social Security (MTEySS).

The above highlights that, although most sectors have collective bargaining mechanisms, not all of them manage to negotiate equally beneficial agreements. This could be because there are unions with fewer workers or they belong to sectors with poorer economic performance, which imposes limits on negotiated wage increases. Thus, the final outcome of collective bargaining on wage inequality is unclear. While it is expected that this mechanism reduces inequality within each sector (favoring increases in the lowest wages), the fact that some unions achieve better increases than others could widen the gap between the total workers, thereby increasing overall wage inequality.

Although the above is not directly tested in the Results section, Figure 4 shows the effectiveness of collective agreements for four different years, as it relates observed wages with the negotiated wage floors and the national minimum wage. Considering Panel A, which corresponds to the year 2003, three wage distributions are observed, corresponding to industry terciles. These terciles were constructed based on the wages paid in each industry: tercile 1 includes the five industries with the lowest median wages, tercile 2 includes the six industries that pay intermediate wages, and the last tercile comprises the six industries with the highest median wages. The dotted vertical line for each tercile refers to the negotiated wage floor (in this case, it is the average of the wage floors for the representative category of the six indus-

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tries in each tercile), while the red line indicates the national minimum wage. As observed, the distributions are centered around the sectoral minimums, supporting the operability of these wage floors, while the role of the national minimum wage as a wage reference is diminished.

Figure 4: Effectiveness of Wage Floors. Terciles of Branches of Activity

(a) Panel A: 2003

(b) Panel B: 2005

(c) Panel C: 2010

(d) Panel D: 2015

Notes. Each wage density corresponds to a tercile of branches of activity based on the median wages of each sector. The vertical line for each group is the wage for the representative category, while the red line indicates the national minimum wage. Tercile 1 comprises: Footwear, Construction, Gastronomy, Maintenance & janitors, Security, Textiles. Tercile 2: Wholesale & retail, Sports and Civil Entities, Graphic media, Plastics, and Healthcare. Tercile 3: Food, Aluminum, Banking, Truck Drivers, Passenger Transport, Chemicals.
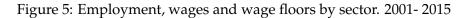
Source. Own elaboration based on data from the Ministry of Labor, Employment and Social Security (MTEySS) and the Integrated Pension System of Argentina (SIPA).
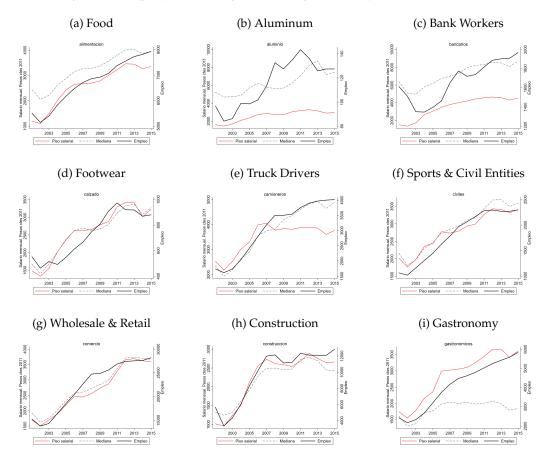
The interpretation of panels B, C, and D of Figure 4 is analogous to that for the year 2003 (panel A); and the conclusions about the irrelevance of the national minimum wage and the effectiveness of collective agreements for workers participating in collective bargaining remain

consistent throughout the period. Comparing the distributions between the four years sheds some additional light. Firstly, although the national minimum wage is always significantly lower than the sectoral floors, its bite seems to increase as the wage mass below this value grows each year. Secondly, the distance between the distributions of each tercile changes over the period: between 2003 and 2010, the two lower terciles are close to each other and move away from the wages of the richest sectors; whereas in 2015, the intermediate sectors appear to move away from the lower-earning sectors and position themselves closer to those negotiating higher wage floors. Thus, the hypothesis that wage improvements achieved by some unions may have widened the gap between workers and increased overall wage inequality seems plausible based on Figure 4; although the evidence is not clear-cut, and therefore the results of section 6 are not entirely straightforward.

As discussed in Section 2, collective bargaining in Argentina increased considerably from 2004 onwards, a period that coincides with strong economic growth and labor market dynamism. GDP grew at an average annual rate of 7.5% until 2007, followed by a period of economic slowdown, including negative growth rates; while employment increased significantly during the early years, accompanied by a decline in the unemployment rate that lasted for most of the analyzed period and a reduction in informality. Additionally, the largest wage increases occurred mainly during the 2003-2008 period. This is somewhat expected, as greater labor market dynamism provides more room to increase wage floors without negatively affecting employment.

It is likely that sectors with better economic performance experienced collective bargaining with higher wage increases. This can be observed in Figures 5 and 6, which presents the evolution of wage floors, median wages, and employment for each sector separately. The red line indicates the wage floor from collective agreements, the dashed line reflects the median wage, and the black line represents employment. As a general pattern, sectors that showed greater employment dynamism also exhibit larger increases in their wage floors. However, it's important to note that the relationship between these variables isn't consistently positive or negative. There are periods and sectors where the negotiated wage floor increases alongside rising employment and wages, but there are also instances where the wage floor goes up while employment falls, or sectors where the median wage keeps rising even though the wage floor stays the same. As discussed at the beginning of this work, the existence of various interaction mechanisms between wage floors, actual wages received, and employment results in the final effects and expected outcomes on key labor market variables not being entirely obvious.

Figure 5: Employment, wages and wage floors by sector. 2001- 2015

(a) Food	(b) Aluminum	(c) Bank Workers

(d) Footwear	(e) Truck Drivers	(f) Sports & Civil Entities

(g) Wholesale & Retail	(h) Construction	(i) Gastronomy

Notes. The red line represents the wage floor from the industry's CBA for the representative category. The gray line reflects the median wage at the industry level. Both values are expressed in constant 2011 pesos. The black line indicates the sectoral employment level, defined as the total number of jobs registered in SIPA in the corresponding branch of activity, as of December of each year.

Source. Own elaboration based on MTEySS and SIPA.

Figure 6: Employment, wages and wage floors by sector. 2001- 2015

(a) Graphic Media Workers

(b) Maintenance & Janitors

(c) Passenger Transport

(d) Plastics

(e) Chemical

(f) Healthcare

(g) Security

(h) Textiles

Notes. Same as Figure 5.

Source. Same as Figure 5.

6 Results

6.1 Sector-level Analysis

In this section, the results are organized into three groups of labor outcomes: wages, inequality, and employment.

6.1.1 Wages

A first point to analyze is to what extent collective bargaining manages to increase the wages of workers covered by the agreements. Although this may seem like a trivial question, there are various situations where this is not entirely obvious. While collective agreements are manda-

tory for all firms, regardless of whether they participated directly in the negotiation, a low level of enforcement could allow wages to not increase as much as the collective agreement stipulates. In another direction, as evidenced in Card and Cardoso (2021), in some firms or for some occupations, the agreements are only a minimum reference, and some firms may implement larger increases to maintain their wage premium. Another relevant point is that collective agreements do not define wage increases for managerial and professional positions, so the final effect on wage distribution also depends on the adjustments received by these occupations and their share in the total analyzed wages.

Table 2 shows the elasticity of changes in the wage floors of collective bargaining on the wages of different percentiles of the distribution. These results come from estimating equation (1) for each percentile of the wage distribution; that is, a different equation is estimated for each point in the distribution, substituting in each case the dependent variable with a different percentile. The results of six different specifications of the proposed model are presented: three specifications with the dependent variable in levels and three specifications in first differences. All estimations include fixed effects by year and by sector. The second specification of each block (columns 2 and 5) also incorporates annual sectoral linear trends; while columns 3 and 6 add controls for worker and firm characteristics.

Table 2: Results on Wage Levels

	Levels			FD		
	(1)	(2)	(3)	(4)	(5)	(6)
p10	0.415**	0.361**	0.381***	0.359***	0.359***	0.359***
	[0.031]	[0.017]	[0.000]	[0.000]	[0.000]	[0.000]
p25	0.377**	0.343**	0.371***	0.332***	0.332***	0.332***
	[0.024]	[0.015]	[0.000]	[0.000]	[0.000]	[0.000]
p50	0.303***	0.333***	0.354***	0.302***	0.303***	0.303***
	[0.001]	[0.000]	[0.000]	[0.001]	[0.001]	[0.001]
p75	0.148	0.226***	0.271***	0.223**	0.224**	0.224**
	[0.177]	[0.007]	[0.003]	[0.012]	[0.012]	[0.013]
p90	-0.002	0.113	0.158**	0.124**	0.125**	0.125**
	[0.978]	[0.121]	[0.035]	[0.043]	[0.043]	[0.042]
Mean	0.132	0.216**	0.254***	0.224***	0.225***	0.224***
	[0.169]	[0.011]	[0.001]	[0.002]	[0.002]	[0.002]
Observations	2,652	2,652	2,652	2,635	2,635	2,635
Levels/FD	Log	Log	Log	FD	FD	FD
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector trends	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes

Notes. The estimates reflect the marginal effects of estimating equation (1) on different points of the wage distribution (except in the final row, which uses the average wage). All variables are in constant 2011 pesos and expressed in logarithms. Formal workers aged 18 to 60 are considered. All specifications incorporate fixed effects by year, month, and industry. Specifications 2, 3, 5, and 6 include sectoral linear trends. Specifications 3 and 6 include controls: proportion of male workers, proportion of workers in each region, shares of age groups, firm size, and firm age. Linear trends by sector are included to control for heterogeneous temporal effects across different industries.
Cluster-robust wild-bootstrap p-values at the sector level in square brackets. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Source: Own elaboration based on MTEySS data.

The results of the complete specification in levels (column 3) suggest that a 10% increase in the minimum wage generates a 3.8% increase in the real wage at the 10th percentile, and a 3.7% increase at the 25th percentile. These significant effects persist throughout the distribution,

with a decreasing pattern as one moves up the wage distribution. Regarding the complete specification in first differences (column 6), although the magnitudes are slightly lower, similar effects are observed on the left end of the distribution, with decreasing magnitudes on the right tail.

Figure 7 graphically shows the results of columns 3 and 6 of the previous table (complete specifications in levels and differences). The central result is that changes in sectoral wage floors from collective bargaining agreements increase wages across the entire distribution, fairly homogeneously up to the first half of the wage distribution, and decreasingly but positively and significantly on the right tail. These results are consistent with recent literature, showing similar magnitudes to those found in other countries (from France to South Africa), with coefficients around 0.3 to 0.5 (Villanueva and Adamopoulou, 2022). Additionally, another relevant point is that the effects on the entire wage distribution have also been empirically supported, as firms often pay a type of "wage cushions" above the wage floors to many workers. These "wage cushions" are maintained when minimum wages are adjusted to keep wage gaps, and thus most increases end up affecting a large part of the wage scale (Card and Cardoso, 2022).
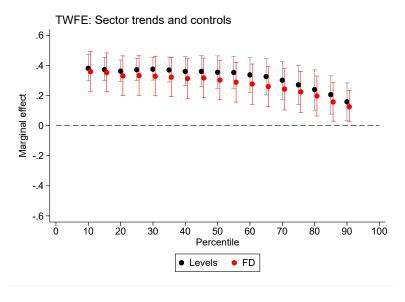
Figure 7: Results on Wages

Notes. The horizontal axis indicates the wage percentiles, while the vertical axis shows the marginal effects from estimating equation (1) across the distribution. Point estimates are presented along with their respective 90% confidence intervals, estimated using cluster-robust wild bootstrap.
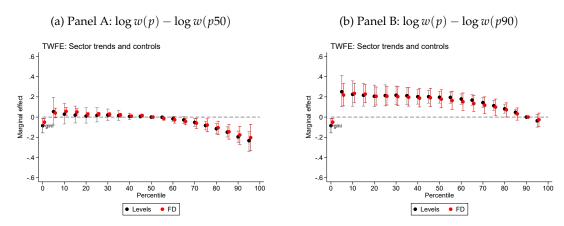
Source. Own elaboration based on data from MTEySS.

6.1.2   Wage Inequality

Another question to address is the impact of collective bargaining agreements on wage inequality among formal workers, as effects can be expected in opposite directions. Wage floors can compress inequality within each industry; however, if the outcomes of collective bargaining agreements vary significantly between sectors, overall inequality may increase. Although these mechanisms are not directly tested, Figure 8 shows the results on overall formal wage inequality. The coefficients are obtained by estimating the model from the previous section, but replacing the dependent variable with various inequality ratios instead of wage levels. Specifically, the left panel estimates the effects on the ratios of each percentile relative to the median wage in both levels and first differences (FD); while the right panel shows inequality ratios of each percentile relative to the 90th percentile wage.

The estimates in Panel A indicate that sectoral wage floors established by CBAs do not appear to have been effective in reducing lower-end inequality, possibly because the negotiated minimums generate uniform increases across several lower deciles, as seen in the previous section on wage levels. Regarding upper-end inequality, the estimates on the right suggest a reduction in the wage gap relative to the 90th percentile, up to approximately the 75th percentile. As an additional measure of overall inequality, the Gini index was used as the dependent variable, yielding significant and negative coefficients in both specifications.

Figure 8: Results on Wage Inequality

(a) Panel A: $\log w(p) - \log w(p50)$

(b) Panel B: $\log w(p) - \log w(p90)$

Notes. The horizontal axis indicates wage percentiles, while the vertical axis shows the marginal effects from estimating specification 3 of equation (1) for various wage inequality ratios. Additionally, we plot on the vertical axis the estimation using the Gini coefficient as the dependent variable. The left panel uses the ratio relative to the median wage $\log w(P) - \log w(p50)$ as the dependent variable, sequentially estimating equation (1) for the ratio $\log w(p10) - \log w(p50)$, then for $\log w(p15) - \log w(p50)$, and so on. The right panel is analogous, now using the ratio relative to the 90th percentile wage $\log w(P) - \log w(p90)$ as the dependent variable. Point estimates are presented along with their respective 90% confidence intervals, estimated using cluster-robust wild bootstrap.

Source: Own elaboration based on MTEySS data.

6.1.3 Employment

The labor institutions literature has focused much of its interest on analyzing the extent to which the existence of wage floors affects employment levels. This is because the effectiveness of this policy in improving welfare is strongly linked to its impacts on employment, beyond its effects on wage improvement and redistribution. Contrary to the standard prediction that wage floors negatively affect employment, empirical evidence for both developed and developing countries has often shown null or even positive effects (Lemos, 2009; Grau et al., 2011; Neumark and Corella, 2021; Dube, 2019; Corella, 2020; Saltiel and Urzúa, 2022).

To address this question, equation (1) is estimated using employment levels as the dependent variable. Table 3 presents the results for the six specifications used so far. Employment levels were estimated considering the wage floor variable with different time lags because if wage increases have negative effects on employment, this adjustment is usually not immediate. No significant effects are observed in any of the six specifications considered or for any time period. These conclusions hold when incorporating sectoral GDP as an additional control (Table A1) or replacing the main wage floor variable (representative cathegory) with an indicator of wage floor effectiveness, such as the Kaitz Index (Table A2).

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Table 3: Results on Employment

	Levels			FD		
	(1)	(2)	(3)	(4)	(5)	(6)
Employment	-0.306	0.107	0.074	0.000	0.000	0.000
	[0.619]	[0.628]	[0.531]	[0.992]	[0.993]	[0.974]
Employment (3m lag)	-0.281	0.118	0.074	-0.008	-0.008	-0.008
	[0.649]	[0.570]	[0.513]	[0.398]	[0.391]	[0.373]
Employment (6m lag)	-0.255	0.147	0.095	-0.015	-0.015	-0.016
	[0.691]	[0.444]	[0.459]	[0.635]	[0.647]	[0.640]
Employment (12m lag)	-0.200	0.194	0.123	-0.002	-0.003	-0.003
	[0.786]	[0.273]	[0.287]	[0.699]	[0.661]	[0.661]
Observations	2,448	2,448	2,448	2,431	2,431	2,431
Levels/FD	Log	Log	Log	FD	FD	FD
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector trends	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes

Notes. The estimates reflect the marginal effects of estimating equation (1) on the number of jobs for workers aged 18 to 60. All variables are expressed in logs. All specifications incorporate fixed effects by year, month, and industry. Specifications 2, 3, 5, and 6 include sectoral linear trends. Additionally, specifications 3 and 6 include controls: proportion of male workers, proportion of workers in each region, shares of age groups, firm size, and firm age.

Cluster-robust wild-bootstrap p-values at sector level in square brackets. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Source: Own elaboration based on MTEySS data.

A final exercise for sectoral employment analysis is to see if the effects of wage floors vary based on the composition of the sectors. To do this, an interaction between the main wage floor variable and the proportion of the following groups in each sector is included in the main equation: i) men; ii) young workers; and iii) micro, small, and medium-sized enterprises (MSMEs). The equation to be estimated in this case is given by:

$$y_{st} = \alpha + \beta_1 floor_{st} + \beta_2 shr_{st} + \beta_3 floor_{st} \times shr_{st} + \gamma_s + \delta_t + \lambda X_{st} + \epsilon_{st} \qquad (2)$$

Where, $shr_{st} = \{shr_{MSMEs}, shr_{young}, shr_{male}\}$. The coefficient of interest in this case is β_3 as it captures the differential effect on employment that wage floors have when the proportion of workers with the three characteristics mentioned above increases.

The results are presented in Table 4. The noteworthy case is the coefficient associated with the interaction with the proportion of MSMEs, as it is the only case where the coefficients are significant for all time periods. In this case, the estimate indicates that a 1 percentage point increase in the proportion of MSMEs would result in an additional 2% decrease in employment, compared to the effect on sectors with large companies. The idea that the effects of wage floors on employment may be more detrimental in sectors with a higher proportion of MSMEs is consistent with the literature since medium and small enterprises have less room to adjust to wage increases and are also not typically the ones negotiating wage increase guidelines Fanfani (2023).

Table 4: Results on Employment

	Employment	3m lag	6m lag	12m lag
$floor \times sh_{MSMEs}$	-0.021**	-0.020**	-0.021**	-0.019**
	[0.033]	[0.028]	[0.020]	[0.019]
$floor \times sh_{young}$	0.013**	0.013*	0.011	0.009
	[0.031]	[0.059]	[0.100]	[0.129]
$floor \times sh_{male}$	0.009	0.008	0.009*	0.008*
	[0.104]	[0.102]	[0.099]	[0.081]
Observations	2,652	2,601	2,550	2,448
Levels/FD	Log	Log	Log	Log
Sector FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Sector trends	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Notes. The estimates reflect the marginal effects associated with the coefficient β_3 from estimating equation (2) on employment, considering different time periods. All variables are expressed in logarithms. All specifications incorporate fixed effects by year, month, and industry, as well as worker and firm controls.

Cluster-robust wild-bootstrap p-values at sector level in square brackets. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Source: Own elaboration based on MTEySS data.

6.2 Individual level analysis

6.2.1 Main Results

The results of the sector-level analysis show that collective bargaining reduces formal wage inequality without negatively impacting employment levels. This was obtained by implementing a TWFE methodology, which allows us to observe the average results at the sector level. In this section, an individual-level analysis is conducted, taking advantage of the data structure that allows us to track individual worker trajectories over time. The interest lies in analyzing the employment dynamics of workers after each collective bargaining adjustment. Specifically, the aim is to evaluate whether a worker whose wage must be adjusted due to an increase in the sectoral wage floor remains in the same job or employed in the private sector for a certain time after that adjustment.

To evaluate this, workers are grouped into bins based on their proximity to the next period's industry-level wage floor ($floor_{s,\,t+1}$). Workers who earn more than the current wage floor ($w_t > floor_{st}$) but less than the next sectoral minimum ($w_t < floor_{s,\,t+1}$) are placed in bins less than one. Those earning more than the next wage floor ($w_t > floor_{s,\,t+1}$) are placed in bins greater than one.

Based on Dustmann et al. (2022), workers are grouped into eleven bins according to their wage ratios relative to the next wage floor. These groups include: a) workers directly affected by the adjustments, with ratios between 0.80-0.95 and 0.95-1.00; b) partially treated workers, with ratios between 1.00-1.45 (earning the next wage floor but not much more) whose wages may also increase with the next adjustment; and c) minimally treated workers (control group), who earn 45% to 50% more than the next wage floor at the time of adjustment.[10]

The equation to be estimated is:

$$y_{i_{w(t)}t+1} = \gamma_{i_{w(t)}t+1} D_{i_{w(t)}t+1} + \beta X_{it} + \epsilon_{it} \tag{3}$$

where the outcome variable is $y_{i_{w(t)}t+1} = (0,1)$, depending on whether worker i who (before the adjustment) belonged to bin w remains in the same job six months after the wage floor adjustment. The variables capturing the effects of belonging to groups with different treatment intensities are defined as $D_{i_{w(t)}t+1}$, which indicates whether worker i belongs to bin w at time t (before the adjustment). Therefore, the coefficients of interest are $\gamma_{i_{w(t)}t+1}$, which show the change in the probability of staying in the same job conditional on being in bin w at the time of the adjustment, once controlled for worker characteristics (gender, age, and real wage) and firm characteristics (age, size, and region). Additionally, month/year-specific and worker-specific factors are controlled for.

Before evaluating employment dynamics, it is important to analyze whether, after a sectoral wage floor adjustment, wages change differentially according to the wage bin, i.e., whether the constructed bins indeed reflect different treatment intensities. For this, equation (3) is esti-

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[10] A total of eleven bins are constructed: $[0.8 - 0.9), [0.9 - 0.95), [0.95 - 1.0), [1.0 - 1.05), [1.05 - 1.10), [1.10 - 1.15), \cdots, [1.45 - 1.5]$.

mated using wage change as the dependent variable. The results are shown in Figure 9, where it can be seen that the closer a worker's wage is to the wage floor, the greater the wage increase at the time of the adjustments. It is also observed that this increase diminishes as the worker's wage moves away from the sectoral minimum.
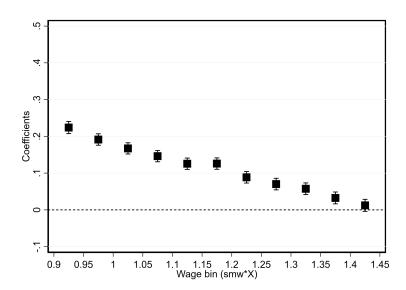
Figure 9: Wage Changes When the Wage Floor Adjusts

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.

Source. Own elaboration based on MTEySS data.

Given the above, the probability of remaining employed a certain time after the adjustment is estimated to evaluate whether the wage floor adjustments affect employment dynamics. The results of these estimates are shown in Figure 10.[11] It is observed that the probability of remaining employed six months after the adjustment decreases for all bins considered affected (either fully or partially), except for the group considered minimally treated or control group. For example, this implies that for bin 0.9, the probability of remaining employed six months after the adjustment decreases by 2 percentage points compared to the minimally treated group.

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[11] The SIPA sample microdata involve more than 109 million monthly observations of worker trajectories. The final observations included in the regressions are those that met the following conditions, in line with the empirical strategy: i) the worker's wage complied with the CBA minimum at the time of adjustment (their wage at the time of adjustment was equal to or greater than the wage of the lowest category); ii) the ratio of their wage at the time of adjustment to the next wage floor for the lowest category is between 0.8 and 1.5; iii) the observations correspond to the months where a wage floor adjustment occurs.
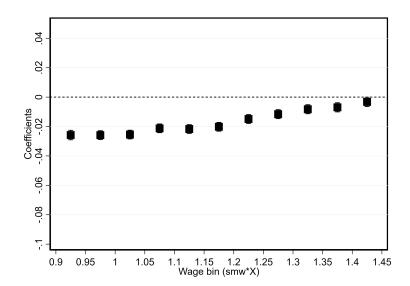
Figure 10: Probability of Remaining Employed 6 Months After Adjustment

These conclusions hold when considering alternative time periods such as three or twelve months after the adjustment, with slightly lower magnitudes when considering one year (Figure A1); or when considering the probability of staying in the same job instead of the probability of being employed (Figure A2).
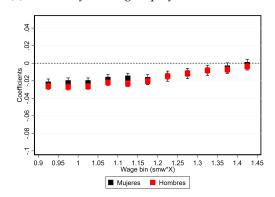
6.2.2 Heterogeneous Results

As a final exercise to better understand these dynamics, heterogeneous effects were analyzed based on: i) gender; ii) age; iii) firm size; and iv) time period.

Gender. The left panel of Figure 11 shows the effects on wage increases for men and women; while the right panel shows the effects on the probability of remaining employed. Although the differences are not significant, larger increases are observed for men compared to women, but these do not seem to translate into worse employment effects.

Figure 11: Individual analysis by gender

(a) Wage change when the wage floor adjusts

(b) Probability of being employed 6 months after

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.
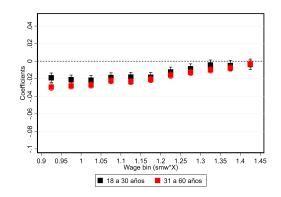
Source. Own elaboration based on MTEySS data.

Age. Regarding the effects by age, workers were divided into two groups: i) 18 to 30 years old; and ii) 31 to 60 years old; to evaluate whether wage floors had differential impacts on wage increases and employment dynamics according to this characteristic. The left panel of Figure 12 shows the effects on wage increases, and the right panel shows the effects on the probability of remaining employed. Although the differences are not significant, larger increases are observed for adults, which translate into lower employment probabilities. Unlike the evidence for developed countries, which often finds greater effects on young workers (Cengiz et al., 2019), this result aligns with evidence for Latin America. Various studies have found that the minimum wage seems to impact adult workers more than young workers (Blanchard et al., 2021; Lombardo et al., 2024).
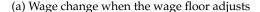
Figure 12: Individual analysis by age

(a) Wage change when the wage floor adjusts

(b) Probability of being employed 6 months after

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.
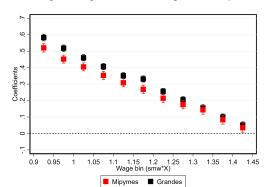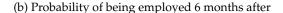
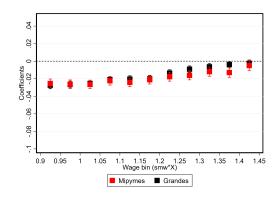*Source.* Own elaboration based on MTEySS data.

Firm Size. Regarding firm size, individuals working in Micro-, Small and Medium-sized Enterprises (MSMEs) were grouped separately from those working in large companies. The left panel of Figure 13 shows the effects on wage increases; while the right panel shows the effects on the probability of remaining employed. It is observed that although wage floors generate smaller increases in smaller companies, these adjustments seem to be more detrimental to employment for this type of company when analyzing the bins of partially treated workers. This coincides with the results found in the sectoral analysis of section 6.1, which indicated that a higher proportion of MSMEs had a differential negative effect on employment. Additionally, this aligns with empirical evidence from other countries, which finds that smaller companies have less capacity to absorb the wage increases stipulated in collective agreements, as they are typically not the ones participating in the negotiations (Martins, 2021; Boeri et al., 2021; Fanfani, 2023).
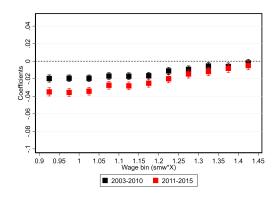
Figure 13: Individual analysis by firm size

(a) Wage change when the wage floor adjusts

(b) Probability of being employed 6 months after

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.

Source. Own elaboration based on MTEySS data.

Time Period. Finally, to evaluate whether the economic context can influence the effects of wage floors on the labor market, the period was subdivided into two: the first period from 2003 to 2010, which can be considered a period of relative economic dynamism; and the second period from 2011 to 2015, where the macroeconomic context was less favorable. The results are presented in Figure 14. The left panel shows that collective agreements appear to have had more influence on wage increases when macroeconomic conditions were less favorable; that is, in the absence of collective bargaining agreements, wages might have increased less. On the other hand, the right panel indicates that the negative effects on employment deepen when the macroeconomic context is worse, possibly because not all firms can absorb these wage increases. The worse effects of wage floors during periods of lower economic dynamism are also documented by the minimum wage literature in Latin America, as presented in Ferreira et al. (2014), and Lombardo et al. (2024).

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Figure 14: Individual analysis by time period

(a) Wage change when the wage floor adjusts

(b) Probability of being employed 6 months after

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.

Source. Own elaboration based on MTEySS data.

7 Conclusions

In Argentina, as in many countries, there are two major wage-setting institutions: a national minimum wage and a collective bargaining system. For the Argentine case, the period between 2003-2015 was characterized by a strong impetus and validity of these mechanisms. While both are relevant for setting workers' wages, the role of the minimum wage seems to be limited to mainly protecting the incomes of precarious workers or those not covered by collective bargaining agreements, without clearly influencing the wages established in these agreements. Thus, for most of the mentioned period, minimum wage adjustments differ from the negotiated wage floors (WF), so both institutions appear to have operated separately (Marshall, 2019). As a result, for the vast majority of registered wage earners, it is the wages negotiated in collective agreements that largely guide their wage evolution.

This greater relevance of WF poses a new empirical challenge. Although it shares some commonalities with minimum wage studies as they both set minimum income thresholds, these wage floors are negotiated between unions and companies. Therefore, their final effects on wage inequality and employment are not analogous to those of a government-imposed minimum wage. Using novel data on wages negotiated by the most important unions during the period 2001 to 2015, combined with administrative records, a Two-Way Fixed Effects model is estimated at the sectoral level to analyze the extent to which collective bargaining affected workers' wages, formal wage inequality, and employment. Complementarily, worker-level employment dynamics after adjustments are studied, taking advantage of the labor trajectory

structure available in the administrative records.

The sectoral-level results suggest that collective bargaining managed to increase the wages of registered workers, relatively homogeneously in the lower part of the distribution, with effects spreading to much of the wage scale, albeit decreasingly. These wage increases managed to reduce overall wage inequality by reducing inequality in the upper tail of the distribution, with no equalizing effects in the lower part. On the other hand, the analysis of individual trajectories suggests that collective bargaining reduces the probability of remaining employed for workers close to the wage floors. Additionally, sectors with a higher proportion of MSMEs and workers in such companies seem to experience more negative effects. It is also found that collective agreements have a greater impact on wage increases in less favorable macroeconomic conditions, though this can be more detrimental to employment this suggests a dynamic equalizing effect.

While in Latin American countries the analysis of minimum wage policy is relevant due to its widespread use, the above results reaffirm the importance of collective bargaining as an additional wage-setting mechanism with a redistributive scope. In particular, in countries where the coverage rate is high, such as Argentina, it is essential to have empirical evidence that identifies the effects of this labor institution to improve the design of public policies and labor market regulations.

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Appendix A

Table A1: Results on Employment - Sectoral GDP control

	Levels			FD		
	(1)	(2)	(3)	(4)	(5)	(6)
Employment	-0.306	0.107	0.074	0.000	0.000	0.000
	[0.619]	[0.628]	[0.531]	[0.992]	[0.993]	[0.974]
Employment (3m lag)	-0.281	0.118	0.074	-0.008	-0.008	-0.008
	[0.649]	[0.570]	[0.513]	[0.398]	[0.391]	[0.373]
Employment (6m lag)	-0.255	0.147	0.095	-0.015	-0.015	-0.016
	[0.691]	[0.444]	[0.459]	[0.635]	[0.647]	[0.640]
Employment (12m lag)	-0.200	0.194	0.123	-0.002	-0.003	-0.003
	[0.786]	[0.273]	[0.287]	[0.699]	[0.661]	[0.661]
Observations	2,448	2,448	2,448	2,431	2,431	2,431
Levels/FD	Log	Log	Log	FD	FD	FD
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector trends	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes

Notes. The estimates reflect the marginal effects of estimating equation (1) on the number of jobs for workers aged 18 to 60. All variables are expressed in logarithms. All specifications incorporate fixed effects by year, month, and industry, as well as sectoral linear trends. Additionally, controls include the proportion of male workers, the proportion of workers in each region, and shares of age groups, firm size, and firm age. Column 2 of each block adds sectoral GDP controls (at a one-digit level).

Cluster-robust wild-bootstrap p-values at the sector level in square brackets. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Source. Own elaboration based on MTEySS data.

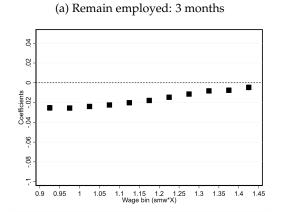### Table A2: Results on Employment using the Kaitz Index

	Levels			FD		
	(1)	(2)	(3)	(4)	(5)	(6)
Employment	-0.306	0.107	0.074	0.000	0.000	0.000
	[0.619]	[0.628]	[0.531]	[0.992]	[0.993]	[0.974]
Employment (3m lag)	-0.281	0.118	0.074	-0.008	-0.008	-0.008
	[0.649]	[0.570]	[0.513]	[0.398]	[0.391]	[0.373]
Employment (6m lag)	-0.255	0.147	0.095	-0.015	-0.015	-0.016
	[0.691]	[0.444]	[0.459]	[0.635]	[0.647]	[0.640]
Employment (12m lag)	-0.200	0.194	0.123	-0.002	-0.003	-0.003
	[0.786]	[0.273]	[0.287]	[0.699]	[0.661]	[0.661]
Observations	2,448	2,448	2,448	2,431	2,431	2,431
Levels/FD	Log	Log	Log	FD	FD	FD
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector trends	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes

Notes. The estimates reflect the marginal effects of estimating equation (1) on the number of jobs for workers aged 18 to 60. The central variable is a measure of the effectiveness of the sectoral wage floor, defined as the ratio between the wage floor value and the median wage for each sector. All variables are expressed in logarithms. All specifications incorporate fixed effects by year, month, and industry. Specifications 2, 3, 5, and 6 include sectoral linear trends. Additionally, specifications 3 and 6 include controls: proportion of male workers, proportion of workers in each region, and shares of age groups, firm size, and firm age.
Cluster-robust wild-bootstrap p-values at the sector level in square brackets. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Source: Own elaboration based on MTEySS data.

Figure A1: Results for longer time lags in job permanence

(a) Remain employed: 3 months   (b) Remain employed: 12 months

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.
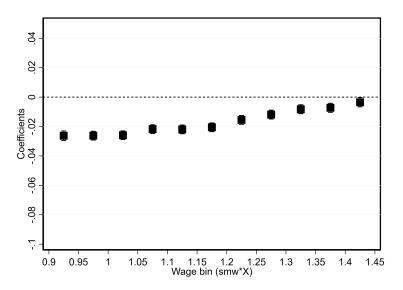
Source. Own elaboration based on MTEySS data.

Figure A2: Probability of Remaining in the Same Job 6 Months After Adjustment

Notes. The effects are relative to the omitted bin (minimally treated/control group). The horizontal axis shows the eleven constructed bins, and the vertical axis shows the point estimates with their respective 90% confidence intervals.

Source. Own elaboration based on MTEySS data.