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Union Negotiation and Wage Inequality in Argentina: An Empirical Analysis of Recent Trends

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ABSTRACT

In conjunction with the recovery of the Argentine economy between 2003 and 2011, income distribution improved considerably. Though it does not provide a quantitative assessment, the relevant literature points to the resurgence of union negotiation as central to this process. This paper provides an account of the evolution of intra-union and inter-union inequality in basic wage agreements signed during this period, and reveals considerable improvements in both. The second part of the paper studies the behavior of the *Federación de Camioneros* (Truckers' Federation) and its role in wage negotiations during the same period.

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1. INTRODUCTION

From 2001 to 2002, Argentina underwent one of the worst economic, social and political crises in its history. GDP fell by 4.5% and 11% in those years, and unemployment reached 17% in 2001 and 20% in 2002. Moreover, the Gini coefficient went from 0.49 to 0.53 between 2000 and 2003, a dramatic increase by world standards.[2]

Nevertheless, from 2003 onwards the country began a rapid process of economic recovery that returned major indicators to pre-crisis levels over the course of a few years. Between 2003 and 2011, the Argentine GDP grew at an average annual rate of almost 7% and the unemployment rate was, on average, down to 10%. The Gini index decreased from 0.53 in 2003 to 0.43 in 2011, improving by 18.9%.[3]

Many papers have attempted to explain the magnitude and main drivers of the recovery, specifically in terms of the reduction in inequality it afforded. These works include Marshall (2005), Beccaria et al. (2005), Cruces and Gasparini (2009), Gasparini and Lustig (2011).

While the analyses of these authors have effectively contributed to documenting the evolution of income inequality in Argentina and to analyzing some of its causes, insufficient data has meant that the literature has not been able to *quantify* the impact of each factor.

The resurgence of union activity has been indicated as one of the main causes for the recovery of real wage levels and the fall in inequality. There are, however, no studies that systematically analyze the evolution of wages in the collective bargaining agreements signed during this period. How much did the minimum wages of unionized workers actually increase from 2003 onwards? Did trade unions sign agreements that reduced the gap between the wages in the best and worst pay categories? Was there a larger increase in the wages of industries where pay was relatively low? This issue—

[2] GDP and unemployment data collected by the Instituto Nacional de Estadísticas y Censos (INDEC, Argentine official statistics office), downloaded starting in April 2012. Available at: www.indec.gov.ar. Ginis collected by the Socio-Economic Database for Latin America and the Caribbean (SEDLAC) downloaded starting in April 2012. Available at http://sedlac.econo.unlp.edu.ar

[3] An important engine of the recovery was the evolution of wages in nominal and real terms in a context of growing inflation. Though this paper doesn't focus on that issue, relevant basic data is presented in Appendix .

that is, the evolution between 2003 and 2011 of the minimum wages of unionized workers, both within each union (intra-union) and relative to other unions (inter-union)—is the topic addressed in this paper.

Figure I presents the distribution of workers by job status in order to measure the portion of the economically active urban population (EAP). Under Argentine labor regulations, collective bargaining agreements (CBAs) signed in a given sector are automatically applied to all workers in that industry (regardless of membership or non-membership in the relevant trade union).[4] As a consequence, union minimum wages (UMWs) act as a legal minimum wage for each sector, and therefore have a direct impact on the employees covered by a CBA. In the private sector, such employees represent 26% of the urban EAP.[5] This analysis also covers the minimum wages of the rural sector, which employs 6% of all private and registered employees (Palomino and Trajtemberg, 2006), or 16% of the rural EAP.[6] Thus, this analysis applies to 25% of the Argentine EAP.

Significantly, in addition to the direct effect on the sectors mentioned above, UMWs may, by means of a spill-over effect, have an impact on the income of non-registered workers, employed professionals not covered by the CBA, and even freelancers.

Collier and Etchemendy (2007) have studied the processes behind the resurgence of unions during the post-crisis period. They find that, during the 2002 crisis, organizations of the unemployed were the key player in more than 60% of labor conflicts, whereas, in conjunction with economic recovery, unions returned to center stage, accounting for 75% of labor conflicts in 2005. The authors studied the evolution of conflicts from 2002 to 2006 in detail and found that the number of episodes per year involving public employees fell by 56%, while the number involving private-sector employees increased by 20%.

[4] Moreover, only one union is authorized for each branch of activity and geographical region, thus ensuring a monopoly of power in negotiation that favors the syndicate. For further information on the Argentine system of labor relations, See Trajtemberg (2009).

[5] This paper does not analyze the public sector, since the nature of its wage negotiations differs from that of the private sector.

[6] Own calculations based on data from RENATEA and OISS, and from the Undersecretariat for Technical Programming and Labor Studies of the MTEySS based on Argentine Household Survey (EPH) (INDEC). This figure corresponds to the 2nd quarter of 2011.

There was also a sharp increase in the number of collective bargaining agreements signed per year. While during the 1990s the number was practically constant at just over 200 agreements per year, after a temporary fall between 2000 and 2002 the number of collective bargaining agreements signed was over 900 by 2006.

Finally, Collier and Etchemendy point out that the collective bargaining process became more centralized as a result of growth in union power. Between 2002 and 2006, negotiations at industry level over total negotiations grew by 168%, while negotiations at firm level over total negotiations fell by 25% during that same period. The centralization was driven by changes on the management side, since on the union side the high level of centralization dates back to the 1990s: approximately 80% of agreements were signed by national unions or federations, as opposed to local/regional unions.

Meanwhile, Palomino and Trajtemberg (2006) found that between 2003 and 2006 the number and range of private-sector workers—whether urban or rural—covered by a collective bargaining agreement increased largely thanks to higher rates of membership.[7] According to the authors, the rate of workers covered grew to approximately 53% in those years.

In sum, Collier and Etchemendy (2007) observe that as of 2003 a multifaceted process of growth in union power began. More precisely, the period witnessed a resurgence in centralized union power, specifically large national unions that negotiate minimum wages at the industry level with the corresponding business chambers. Furthermore, according to Palomino and Trajtemberg (2006) there was a sharp increase in the number and range of workers covered by collective bargaining agreements. These facts indicate that unions were central to determining wages from 2003 onwards and, therefore, to income distribution.

The objective of this paper is to collect raw data and to analyze the evolution of the wages of unionized workers in agreements signed between 2003 and 2011. Research of this type has not been performed previously. The objective of the analysis is to provide

[7] Since the level of registered workers continued to grow (see, for instance, Colina and Ronconi, 2011), it is logical to assume that the number of workers covered by CBAs did as well.

greater understanding of the role played by the resurgence in union activity in the decrease in inequality during the period in question.[8]

There was, in fact, a reduction in the inequality of union minimum wages between 2003 and 2011 at both intra- and inter-union levels. On average, the fall in inequality within each union reached 13.3%. Between unions, however, the average fall was more pronounced: 28.7% when comparing average wages per union and 40.2% when comparing minimum wages per union. A global analysis was also performed in which the entire sample was analyzed without distinguishing by union in order to suggest overall trends in relation to covered workers in general. On average, inequality fell by 21.3%; in truncated samples at 1% and 5%, it fell by 27.5% and 30.7%, respectively. Finally, the inter-union Gini indices were recomputed using the current population distribution pyramid as formulated by the Argentine household survey (EPH) as a robustness check. The evolution of coefficients was largely similar: inequality fell by 19% when comparing average wages per union and by 44% when comparing minimum wages per union. This analysis was not performed on intra-union inequality because no information was available for that purpose, but an alternative check computed in Appendix yields similarly robust results.

In the second part of this paper, a case study of the Truckers' Federation[9] is analyzed. Two hypothesis are tested: if the wage increases negotiated by the union were large or if they were small compared to those obtained by other unions from 2003 to 2011, given two main factors affecting the union during that period, mainly the quasi-monopolization of freight-transport services and a leader who, as the secretary general of the National Labor Confederation, answered to the government from 2004 onwards.

This paper is organized as follows: section two presents a summary of the relevant literature; section three introduces the methodology; section four provides data analysis

[8] Note that this study does not perform a cause-effect estimation of union wages over inequality of actual income. It would be virtually impossible to perform such an analysis for several reasons including unobservable spill-over effects and endogenous variables such as relative prices and productivity rearrangements, among others.

[9] For the sake of simplicity, from here on the truckers' association will be referred to as either a union or as a federation. The unit of analysis will be specifically the *Federación Nacional de Trabajadores Camioneros y Obreros del Transporte Automotor de Cargas, Logística y Servicios* (FedCam), the body that represents all truckers' unions in Argentina.

and results; section five presents the case study of the Truckers' Federation; and section six draws conclusions.

2. LITERATURE

Most of the literature on unions and their effects on income inequality has found that they produce a double effect (see, for instance, Card, Lemieux and Riddell, 2004): on the one hand, they increase disparity between covered and non-covered workers as unionized workers negotiate higher wage increases than their non-unionized peers;[10] on the other hand, they decrease inequality amongst covered workers as workers earning lower wages are usually larger in number and hence enjoy greater bargaining power.

Many studies have documented the sharp fall in income inequality in Argentina after the 2001-2002 crisis. In an attempt to understand this phenomenon, scholars have tried to identify the main processes that have led to improvements in income distribution.

In their analysis of the first years of the economic recovery, Beccaria, Esquivel and Maurizio (2005) have found that between 2002 and 2004 the salaries of non-registered employees were the ones that experienced the highest rate of growth, indeed a rate well above that of registered employees who, on average, earn higher wages. This yielded an improvement in distribution. The authors propose that this trend was due to public policies and systematic increases in the *Salario Mínimo Vital y Móvil* (SMVM, the legal minimum wage) passed by the government during those years. Furthermore, a higher employment rate and higher real wages led to greater average income per household, decreasing poverty and narrowing the gap between the rich and the poor. Lastly, by means of a Mincer regression of wages, they identify a decrease in return to education, which accounts in part for the reduction in inequality.[11]

Cruces and Gasparini (2009) perform an episode analysis of the historical evolution of income distribution in Argentina. After the 2001-2002 crisis, they identify several factors that together generated a scenario of decreasing inequality. The two central factors were changes in relative prices and overall economic recovery. The first factor benefited industries intensive in low-skilled labor, therefore increasing the generally lower income of this sector. The second factor had a rebound effect on the economic

[10] Moreover, wage increases may lead to higher unemployment and, in the case of developing countries like Argentina, to higher rates of informal work.

[11] My findings provide an alternative explanation for this fact: rather than a decrease in return to education, what the Mincer regression might be capturing (at least in part) are the effects of union negotiation during the period. Union negotiation reduced the gap between high-income and low-income workers, which is strongly correlated to high-skilled and low-skilled workers.

crisis of the previous years during which there was a sharp increase in inequality (a common consequence of deep macroeconomic crisis, according to the authors). Cruces and Gasparini maintain that the economic recovery entailed four additional factors that improved income distribution. First, a reversion of the initial overshooting of the exchange rate as the Argentine currency regained some of its lost purchasing power. Second, starting in 2003 there was an increase in the demand for labor due to the low level of real wages, which in turn reduced unemployment and increased the overall income level. Third, there was a low rate of investment in capital expansion and technology, mainly due to the high rate of investment in those areas in the 1990s and post-crisis uncertainty/caution. This slowed down the distributive deterioration caused by the skill-biased technical change (SBTC). Fourth, Cruces and Gasparini emphasize the government's positive attitude toward collective bargaining and a more active role in the labor market with measures like periodic increases in the legal minimum wage and cash transfers to the poorest sectors.

Gasparini and Lustig (2011) find a similar pattern of income-distribution recovery and its indices across various Latin American countries. Like Cruces and Gasparini (2009), they discuss economic recovery in conjunction with a rise in the employment rate and a post-crisis rebound effect as causal mechanisms. They also discuss the government's policy of intervening more actively in the labor market, increasing the legal minimum wage and supporting union demands and negotiations, along with higher public spending in the form of cash or goods transfers. Gasparini and Lustig also identify an expansion of primary schooling that yielded a reduced rate of return to education, and its subsequent wage differential.[12] Lastly, they point out the elimination of pro-market reforms introduced during the 1990s, reforms that had powerful regressive effects.

Trajtemberg (2009), on the other hand, has attempted to estimate the impact of unions on income distribution in Argentina. He makes use of a cross-section analysis, using data from a survey of registered employees (*Encuesta de Trabajadores en Empresas*), and comparing observable characteristics of workers covered by CBAs with those that are not. Trajtemberg finds greater wage disparity among non-covered workers. Note that, as a cross-section analysis, Trajtemberg's study does not assess the evolution of the

[12] Once again, some of the reduction in return to education might be explained by union activity rather than the expansion of primary education.

relevant variables over time and therefore does not reach any conclusions on the effect of collective bargaining on income distribution.

3. METHODOLOGY

3.1. Database

In order to contribute to the economics literature on the main reasons for the reduction in income inequality in Argentina, this paper aims to study the evolution of inequality in union minimum wages.

The Argentine Ministry of Labor's *Labor Glossary* defines UMWs as "the minimum wage for a standard workday received by an employee with no seniority as determined by the collective bargaining agreement, for the period of a month, without additional payments."[13] These wages are laid out in the collective bargaining agreements signed by union representatives and representatives of the business chambers or companies in a given sector. UMWs apply to all employees who perform tasks covered by that sector's CBA, whether or not those employees are paying or non-paying union members. As mentioned in the Introduction, workers covered by CBAs in Argentina account for approximately 25% of the labor force.

A database was built on the basis of the minimum-wage schemes of fifteen unions of private-sector workers signed in accordance with their respective Collective Bargaining Agreements at four points in time: January 2003, January 2004, January 2007 and January 2011. Table IV presents the list of unions analyzed and their main characteristics.

The full salary schemes were gleaned from each CBA, thus making it possible to perform an intra-union analysis (this is significant, since the lowest wage category or the simple average of the wage scheme is usually what is taken into account in analyzing CBAs).

The main source of the data was the Ministry of Labor, which provides an online database of CBAs.[14] Significantly, since it is common for a union to sign different CBAs with different parties, the CBA selected for each union was the one signed with the largest business chamber and that covered the largest possible portion of the country's territory.

[13] Author's own translation from Spanish. See Glosario Laboral (MTEySS) available at: http://www.trabajo.gov.ar/left/estadisticas/glosario/index.asp

[14] The search engine is available at: https://convenios.trabajo.gob.ar/ConsultaWeb/Aviso.asp

A number of factors were considered in selecting the unions. First, it was important to include the largest unions in terms of workers covered;[15] nine of the ten largest unions were included (teachers had to be excluded because their CBA is connected to the public sector). Second, the three primary sectors were covered, that is, the primary sector (agricultural workers), the secondary sector (construction, textile and metallurgical workers and others), and the third sector (health, commerce, trucking and others).

Furthermore, all the selected CBAs were signed by representatives of the entire sector, as opposed to representatives of specific companies. This was based on Collier and Etchemendy's findings (2007) that large unions that engaged in centralized negotiations for the entire sector were at the forefront of the resurgence in trade unions in the post-crisis period. Moreover, private-sector employees were more aggressive during this period, whereas their public-sector counterparts reduced demands.

3.2. Calculation Methodology

Three statistical methods were implemented to capture the variations in the distribution of union wages over time: the Gini index, the maximum/minimum ratio (max/min ratio) and the coefficient of variation (CV).

While the Gini index is the indicator used most often in the relevant literature, there is one factor that may limit its descriptive power: it is heavily affected by the population distribution behind the wage scheme (i.e. the number of individuals earning each wage). The database used here includes only the wages signed in agreements by each union (one wage per category); it contains no information on the proportion of workers in each wage category (in other words, the population distribution is assumed to be uniform). Though this reduces the Gini coefficient's descriptive power, it does not render it an unreasonable measure of inequality. Finally, to analyze the credibility of the uniformity assumption, two robustness checks were performed by adding an actual population distribution to the analysis, estimated by means of the EPH (see Section 4.4 and Appendix C).

[15] Since there is no clear measure of the number of workers covered by each union, an ad-hoc ranking was devised on the basis of the frequency of employees observed in each industry, as per question "pp04b_cod" in the Argentine Household Survey (EPH) between 2003 and 2011. Pursuant to that ranking, the most representative union from each industry was selected.

The max/min ratio is useful to measuring the maximum wage gap, which is very intuitive and easy to interpret. The problem is that it does not consider wage disparities within the distribution. For instance, a salary scheme where nine out of ten receive W_{low} and one receives W_{high} will yield the same max/min ratio as a scheme were one out of ten receives W_{low} and the other nine receive $W_{high.}$ Finally, the evolution of inequality as per this statistic is computed as the percentage variation in "overwages." An "overwage" is defined as the max/min ratio minus one.

The coefficient of variation (standard deviation over average) is extremely useful to compensating for the deficiencies in the max/min ratio because it takes into account inequality throughout the full distribution. The downside is that it is not as intuitive. Significantly, it is possible to compare different wage schemes because the standard deviation is normalized by the average.

4. ANALYSIS

This section presents the analysis as well as the results obtained.

4.1. Global Evolution

The aim of the global analysis is to capture in broad terms what happened in the sector of workers covered by CBAs. Thus, an assessment of the evolution of the three statistical indicators analyzed was performed by considering all of them in the same sample, i.e. without distinguishing the union of pertinence for each UMW.

The full sample included 262 distinct wages; it encompassed all the categories outlined in each union's wage scheme. To verify the robustness of the results, the three indicators were also estimated in truncated samples at 1% and 5%. Table I presents the variation in the indices between 2003 and 2011.

The global analysis evidences a robust decrease in inequality between 2003 and 2011. The Gini index and the CV evidence small variations between sample sizes. On the other hand, the max/min ratio is relatively volatile: while its variation is always negative, it goes from -25.5% to almost double that figure as the sample size is reduced.

Evolution during the intermediate periods was far from stable. During the first year, inequality was largely constant; between 2004 and 2007, there was a steep fall in the indices, implying considerable improvement. During the following three years, however, income distribution bounced back, showing considerable deterioration in all indices. Graphs in Figure II summarize the results.

In conclusion, though wage equality improved among private-sector workers covered by a collective bargaining agreement, the wage evolution was disparate: until 2007 inequality seemed to fall sharply, but that tendency leveled off between 2007 and 2011.

4.2. Evolution of Intra-Union Inequality

To study the evolution of UMWs distribution within each union, the three indices were applied separately. Figure III presents the evolution of the Gini indices (normalized to

"1" as of January 2003).[16] See Table VI for detailed evolution of the Gini coefficients for each union.

The tendency is towards a decrease in inequality with average overall variation between 2003 and 2011 of -13.7%. Outcomes did, however, vary between unions: three unions showed an increase in inequality, one remained constant (agricultural workers) and eleven showed improvement.

Figure IV presents the evolution of max/min ratios per union (normalized to "1" as of January 2003). See Table VII for the detailed evolution of the max/min ratios for each union.

The evolution of intra-union inequality varied only slightly whether the Gini indices or the ratio analysis was used. The average overall variation in this statistic between 2003 and 2011 was –a fall of 14.8%. Like the Gini coefficients analysis, the salary distribution of three unions was shown to have deteriorated during this period, distribution among agricultural workers remained constant, and eleven unions showed improvement.

Finally, Figure V presents the results for the coefficients of variation (normalized to "1" as of January 2003). See Table VIII for the detailed evolution of the CV per union.

The evolution of this indicator is very similar to the Gini index, though on average it shows less improvement in the distribution. The CV presents an average fall of 11.3%. As with the other two indices, the wage distribution of three unions worsened, that of agricultural workers remained constant, and the remaining eleven unions showed improvement.

In conclusion, the wage distribution of eleven of the fifteen unions showed improvement, one remained constant over time (agricultural workers) and the distribution of the remaining three deteriorated. Results are robust to the different methodologies.

[16] This normalization is useful to showing which and how many unions improved/worsened internal wage inequality. With the Gini index, the values in and of themselves are not particularly informative, since the index is bound to the number of categories in a given union (i.e. the "population" structure for each union).

The case of agricultural workers is interesting: between 2003 and 2011, this sector, which became central to political and economic debates, was greatly affected by the devaluation of the Argentine peso and the adjustment of prices in the Argentine economy. One possible explanation for the lack of variation in the wage distribution of workers in this sector might be the difficulty for these workers to coordinate action since they are distributed throughout the countryside and work in small groups (a wholly different scenario for unionization from that of urban workers).[17]

4.3. Evolution of Inter-Union Inequality

To study the changes in inequality in wages at the inter-union level, the three indices were applied to two different alternatives for wages distribution: the distribution of the lowest category/minimum wages per union and the distribution of the average wages per union. Results obtained with the Gini index are presented in Figure VI:

An improvement in distribution is observed regardless of which configuration is used. The average wage per union index goes from 0.197 in 2003 to 0.148 in 2011 (a fall of 24.7%) and the minimum category wage per union index drops from 0.223 to 0.129 (a fall of 42.2%).

The results yielded by the max/min ratio are similar. See the evolution in Figure VII.

In relation to the distribution of average wages per union, the ratio goes from 3.887 in 2003 to 2.714 in 2011 (a fall of 40.6% in the "overwage") and in relation to the distribution of minimum category wages per union the drop is from 3.766 to 2.631 (a fall of 41.0% in the "overwage").

The coefficient of variation yields similar overall results, although the absolute variation is somewhat less. See Figure VIII.

The index of average wages per union dropped from 0.363 to 0.287 in 2003 and 2011 respectively (a fall of 20.9%), and the index of minimum category wages per union from 0.381 to 0.239 (a fall of 37.4%).

[17] Another plausible explanation is that the overall tendency to a more equitable distribution of wages was offset by technical advances that favored skilled labor; the Argentine agro-industry underwent major technological improvements during this period, driven by a sharp increase in the price of commodities. This second hypothesis, however, loses validity when the categories covered by collective bargaining agreements are contemplated: the higher wages are earned by "*encargados*," "*puesteros*" and "*capataces*," none of which requires skilled labor, indicating that technical advances were not a factor.

In conclusion, income distribution between unions improved considerably from 2003 to 2011. This means that the wage increase of unionized workers who were earning higher wages in 2003 was less than that of unionized workers receiving lower salaries in that year. The result is robust to all specifications.

Similarly robust is the finding that, after 2007, the tendency towards a decrease in the distribution of minimum wages slowed and the distribution of averages worsened considerably. Regarding minimum wages per union, this is due to the poor performance of the textile industry which, in 2007, had the second lowest minimum wage, a figure that had increased by only 90% as of 2011 (the average increase during this period was 141%). It is also due to the outstanding increase in the minimum wage of bank employees (372%).[18] The pattern of average wages per union is similarly skewed by the banking sector, which was located in the upper half of the distribution in 2007 and negotiated an exceptional average increase between that year and 2011 (334% against an overall rate of 141%). It is also a a consequence of the poor performance of the textile and commerce sectors, which were located in the lower half of the distribution in 2007; and experienced average growth rates as low as 91% and 71%, respectively.

The analysis of minimum wages per union clearly shows that the improvement in distribution of salaries was substantially greater than the improvement in average wages per union. Significantly, the two series behaved differently between 2007 and 2011: the former continued to improve while greater levels of inequality took hold in the latter. This may be a consequence of the increase in the legal minimum wage by the government (throughout the 90s and through July 2003 it was frozen at AR$ 200). Lee (1999) finds that a fall in the legal minimum wage in constant US$ during the 80s in the United States was the main explanation for a decrease in income inequality at the lower tail of the distribution curve. The sharp increase in the legal minimum wage in Argentina during the post-crisis period, then, could have caused an improvement in the distribution of salaries among the minimum categories per union.

[18] The dramatic increase in the wages of unionized workers in the banking sector was largely due to the overshooting of earnings in that sector from 2007 to 2011. In 2007, aggregate net revenues amounted AR$ 3,905 million; in 2011, they reached AR$ 14,754 million (an increase of 278%). See Banco Central de la República Argentina, "*Informe sobre Bancos, diciembre 2011,*" available at: http://www.bcra.gov.ar/pdfs/polmon/InfBanc1211.pdf.

The rationale behind this argument is as follows: since the legal minimum wage is the lowest cutoff for every worker's salary, no union would sign a wage lower than that level. Thus, when the minimum wage is increased by the government, a new floor for future negotiations is set, bringing all wages below the new legal minimum wage up to that level, if not higher. Significantly, legal minimum wage increases may have negative effects on overall employment and rates of declared workers.[19] Figure IX presents the recent evolution of the legal minimum wage as well as the average wage of each union's minimum category. As can be seen, there is a high level of correlation between the two.

The possibility of reverse causality would contradict Lee's argument, that is, a process whereby the legal minimum wage evolved in function of wages negotiated by unions during a previous round of collective bargaining. If this were the case, the explanatory power of the legal minimum wage in relation to the decrease in inequality would be shifted in its entirety to union negotiations.

4.4. Evolution of Inter-Union Inequality under the Actual Salaries Distribution Function

After analyzing the evolution of wage disparities between unions, a central question arises: would results be the same if the analysis was based on the actual distribution of workers in the economy?[20] The previous analysis assumed a uniform distribution of employees among sectors, which is a simplification of reality. In this section, the inter-union inequality Gini indices are recalculated on the basis of the actual population pyramid of workers distributed in different industries. Note that the max/min ratio remains unchanged in this analysis and that the level of correlation between the coefficient of variation and the Gini index is high (0.99 in both configurations) and, hence, obviated for the sake of simplicity. The population pyramid was estimated on the basis of the Argentine Household Survey (Encuesta Permanente de Hogares – EPH) between III-2003 and IV-2011, using data on registered private-sector employees.

[19] A great deal of literature is available on the legal minimum wage's effects on the economy. See, for instance, Card and Krueger (1993), DiNardo et al. (1996), Neumark and Wascher (2000), Kaufman (2010). In relation to Latin American countries specifically, see Bell (1997) and Lemos (2009).

[20] Robustness analysis could be performed only on inter-union inequality because there is no data available on the distribution of workers within each union. Nevertheless, intra-union results were checked based on the assumption that the weight structure of distribution among private-sector workers matched that of registered workers in general. See Appendix for full analysis and results.

More precisely, the pyramid was constructed on the basis of the CAES classification system applied in the EPH, which allocates a certain activity to each worker.[21] The link between a particular activity and its union was deduced considering the largest union for each activity/industry. Table II summarizes the weight of each union according to this process.

That table shows, for instance, that the wages in the commerce sector were much more important to determining inequality than those of the railway sector since there are many more workers covered by the former's CBA than the latter's, thus yielding more realistic results. Figure X presents the evolution of the Gini indices on the basis of the new criteria.

As the tables show, the pattern for results based on this approach follow the same patterns as those yielded by the uniform distribution approach; the two minor differences that do arise can be summarized as follows: (i) inequality is less when the actual distribution of workers is taken into account; and (ii) between January 2007 and January 2011, the recalculated coefficients show poorer evolution of wage equality. This is due to the weight of the commerce sector, which negotiated a relatively low wage increase during this period (72% and 71% in minimum wage and average wage, respectively, while the overall averages for this period were 141% in both cases), thus magnifying the variance of the sample by widening the gap between unions.

[21] The relevant question in the EPH was code "pp04b_cod," which is the CAES code assigned to the worker's activity. See Clasificador de Actividades Económicas para Encuestas Sociodemográficas del MERCOSUR, available at: http://www.indec.gov.ar/nuevaweb/cuadros/4/EPHcontinua_CAES_Mercosur_09.pdf Since the EPH does not cover rural areas, agricultural workers were assigned a 6% weighting as per Palomino and Trajtemberg (2006) estimation. See page 8.

5. CASE STUDY: THE TRUCKERS' FEDERATION

Since economic reactivation in 2003, the *Federación Nacional de Trabajadores Camioneros y Obreros del Transporte Automotor de Cargas, Logística y Servicios* (FedCam, the Truckers' Federation) has repeatedly been the focus of political and economic debate in the Argentine labor market. Hugo Moyano, who has been the union's secretary general and leader since 1992, has also been the head of the *Confederación General Del Trabajo* (CGT, General Labor Confederation) since 2004, which makes him a central player in the debate on salaries and the negotiation process.[22]

During the period studied, the truckers' union demonstrated its strength through strikes and blocking access to factories and companies whose production or distribution relies on ground transportation. Moreover, as a consequence of the dismantling of the railway system and a production matrix that relies heavily on the agro sector, ground motor transportation holds a quasi-monopoly on the country's freight transport industry. Finally, the fact that the CGT's secretary general is from FedCam is a strong sign of power (Collier and Etchemendy, 2007).

For all these reasons, it might be expected that FedCam's wages would have increased substantially more than those of other unions. Nevertheless, Collier and Etchemendy (2007) offer an alternative interpretation: since the leader of the truckers' union is, thanks partly to government support, also the leader of the General Labor Confederation, he has to deal with demands from both sides: the union and the government. For instance, the union demands that he negotiate large wage increases, while the government requires him to meet inflation targets.

It is not clear, therefore, what should be expected in terms of the wage agreements signed by this union during the period analyzed. This case study will analyze the actual behavior of the Truckers' Federation and its leader between 2003 and 2011. To that end, the percentage increase in the average wage of each union per period is presented

[22] For a review of the Truckers' Federation and its role in the Argentine public sphere, see Pontoni (2012).

in Table III.[23] Truckers rank 11th in the sample in total salary increase between 2003 and 2011, which would seem to support the second hypothesis.

There are three other issues that merit mention. First, FedCam has obtained a significant number of non-cash benefits that may be seen as compensation for workers. These benefits consist mainly of establishing resorts and recreational facilities throughout the country (with below-market prices for those covered by the truckers' CBA), high quality health insurance, and policies that indirectly support the union (e.g. between 2005 and 2012, the government refunded employers for 3% of the gross salary paid in fiscal contributions for every full-time worker covered by FedCam's CBA).

Second, a detailed study of wage variations within the union yields a unique pattern for "first category drivers," which is presented in Figure XI.[24] First category drivers earned the highest salary within FedCam's wage structure in three of the four periods studied (and the second highest in the remaining period), reflecting a privileged position within the union. Moreover, although equality improved somewhat between 2004 and 2007, it reverted to earlier levels from 2007 to 2011. Significantly, this is not in line with the general trend during the period, let alone the overall tendency of the union, as discussed in the intra-union inequality section above.

First category drivers include those capable of exercising the greatest influence (see footnote 24), that is, those that give the union the most bargaining power due to their ability to completely disrupt ground-transportation services. This explains the interest in protecting the privileged position of this group among FedCam workers.

Third, Figure XII presents the evolution of the ratio of FedCam's average wage vs. the mean of the other unions' average wages. The graph shows that in January 2003 and January 2004 FedCam wage levels were considerably higher than those of other unions. This implies that, though percentage increases were relatively low from 2003 to 2011, the increase in terms of cash was generally larger than that obtained by others, thanks to the magnitude of the salary at the beginning of the period.

[23] FedCam's UMWs were computed differently to the others: extra payments on performance were included. See Appendix for details on the calculation and the rationale behind this modification.
[24] When referring to "first category drivers" (*conductores de primera categoría* in Spanish) it involves long distance heavy freight trucks, towing vans or trucks, mail trucks and garbage trucks, among other.

On the other hand, Figure XII strongly supports the "moderation hypothesis." In the first year of the sample, when Moyano was the leader of FedCam but not yet of the General Labor Confederation, the difference between truckers' wages and those of other workers grew even greater. From 2004 onwards, however, that privileged position suddenly collapsed, and their wages relative to the others fell to levels lower than 2003. This change happened in 2004, the year Moyano was appointed Secretary General of the CGT, thus reflecting the need to heed government demands in addition to those of the workers. Indeed, it may be due to his ability to balance these interests that he has been able to stay in power for all these years.[25]

In conclusion, results seem to suggest that the first hypothesis was pertinent until 2004, when there was no direct political pressure from the government on wage negotiations between the union and the relevant business chamber. After 2004, the second hypothesis seems to be operative, as reflected in a slowdown in the wage increases negotiated by truckers compared to the rest of the unions in the sample.

[25] For examples of conciliatory measures undertaken by Moyano, see "Más privilegios para Moyano," La Nación, 08/12/2005, available at: http://www.lanacion.com.ar/729343-mas-privilegios-para-moyano; "Moyano: "En ningún momento dije que alentaba la apertura de las paritarias"", La Nación, 06/02/2010, available at http://www.lanacion.com.ar/1271016-moyano-en-ningun-momento-dije-que-alentaba-la-apertura-de-las-paritarias; "La CGT apoyó al Gobierno", Página/12, 10/28/2010, available at http://www.pagina12.com.ar/diario/elpais/1-155828-2010-10-28.html

6. CONCLUSIONS

The economic and social crisis that Argentina underwent in 2001-2002 had arduous effects on GDP and employment. Starting in 2003, though, the country began a process of recovery and economic expansion that, through 2011, meant an annual average growth rate of almost 7%, and kept unemployment down, on average, to a rate of 10%. Moreover, the Gini coefficient fell by 18.9%, after a strong increase during the 90s and the crisis.

Many empirical studies have exhaustively quantified the curbing of inequality during the post-crisis period. While there is a certain consensus about the fact that union demands played an important role in the process of reactivation, none of these studies has presented data capable of measuring the impact that unions had on income distribution over time.

This study has attempted to address this issue by contributing figures representative of how inequality changed both between unions and within them (i.e. inter-union and intra-union inequality).

From 2003 to 2011, inequality among workers covered by collective bargaining agreements in general (that is, without distinguishing by union) behaved as follows: when the full sample is considered, inequality decreased on average by 21.3%, which implies a considerable improvement in the distribution of wages. When truncated samples at 1% and 5% are considered, there are falls of 27.5% and 30.7%, respectively.

Likewise, average equality within each union improved by 13.3%, though variability was great. The distribution of three unions deteriorated; one remained constant (agricultural workers); and the remaining eleven improved, at diverse rates.

An analysis of inter-union equality shows considerable improvement across the board. In the distribution of average wages per union, the change was, on average, a decrease in inequality of 28.7%; in the distribution of minimum wages per union, the decrease was 40.2%. One possible explanation for the steeper change in the second case is the increase in the government-set legal minimum wage, which pushed upwards all salaries below that level.

In considering the actual pyramid of population distribution among unions, the evolution of inter-union inequality is basically unchanged, with only two minor differences: inequality is lower in all periods, and indices suggest a poorer performance between 2007 and 2011 (due to the importance of the commerce sector, whose wage increase, in relative terms, was very low, thus amplifying distribution variance).

Useful extensions to this work would be the following: (a) to expand the database so as to include more sectors; (b) to delve further into the relationship between CBAs and effectively paid wages. Until now the only source of information has been Palomino and Trajtemberg's calculations in 2006 on the basis of data from the MTEySS, which shows a remarkable convergence; and (c) to connect variations in the distribution of wages agreed on under CBAs with the actual variation in income distribution, estimating to what extent the latter is explained by the former. This may prove extremely difficult, especially due to the difficulty of isolating potential endogenous variables and spillover effects which inevitably ensue withCBA-wage determination.

The second part of the paper addressed the case of the Truckers' Federation and its behavior in wage negotiations between 2003 and 2011. It was found, briefly, that the truckers' union did not perform well in terms of wage negotiation during the period, with low wage increases in percentage terms from 2003 to 2011.

It is important to point out, though, that by January 2004 the average minimum wage for FedCam workers was higher than the sample's mean, which implies increases in terms of cash greater than those gained by other unions in subsequent periods, even when those other unions negotiated higher percentage increases.

Furthermore, the gap between the wages of "first category drivers" (workers earning the highest minimum wage in the union and who play a key role in the functioning of transportation services) and FedCam's average wage was largely constant; indeed it even increased during the last period. This is unusual given the general trends observed in the other sectors during the period. It reflects the special consideration given to the workers that provide the union with the bulk of its negotiating power.

Lastly, there is a clear break in the trend of truckers' wages as compared to those of the rest of the sample after 2004, when the leader of that union became the head of the General Labor Confederation and the nexus between the workers and the government.

This suggests that Moyano played a conciliatory role as of that moment, by moderating wage demands in order to comply with government inflation targets, among other,

7. BIBLIOGRAPHY

Beccaria, L., V. Esquivel and R. Maurizio (2005). "Empleo, salarios y equidad durante la recuperación reciente en la Argentina". *Desarrollo Económico*, Vol. 45, No. 178.

Bell, L.A. (1997). "The Impact of Minimum Wages in Mexico and Colombia". *Journal of Labor Economics*, Vol. 15, No. S3, Julio 1997.

Card, D. and A. Krueger (1994). "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania". *The American Economic Review*, Vol. 84., No. 4, September 1994.

Card, D., T. Lemieux and W. G. Riddell (2004). "Unions and Wage Inequality". *Journal of Labor Research*, Vol. XXV, No. 4.

Colina, J. and L. Ronconi (2011). "Simplification of Labor Registration in Argentina. Achievements and Pending Issues." *Inter-American Development Bank,* Working Papers Series: 277, October 2011.

Collier, R. B. and S. Etchemendy (2007). "Down but not out: The Recovery of a Downsized Labor Movement in Argentina (2003-2007)." *Politics & Society*, Vol. 35 No. 3, September 2007 363-401.

Cruces, G. and L. Gasparini (2009). "Desigualdad en Argentina. Una revisión de la evidencia empírica". *Desarrollo Económico*, Primera Parte en Vol. 48, No. 192; Segunda Parte in Vol 49, No. 193.

DiNardo, J. E., N. Fortin and T. Lemieux (1996). "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semi-Parametric Approach". *Econometrica*, Vol. 64, September 1996.

Dirección de Estudios de Relaciones de Trabajo. "Estado de la Negociación Colectiva". Various editions, Ministerio de Trabajo, Empleo y Seguridad Social.

Gasparini, L. and N. Lustig (2011). "The rise and fall of income inequality in Latin America". *Centro de Estudios Distributivos, Laborales y Sociales*, Working Paper No. 118, Universidad de La Plata.

Groisman, F. and A. Marshall (2005). "Determinantes del grado de desigualdad salarial en la Argentina: Un estudio interurbano". *Desarrollo Económico*, Vol. 45, No. 178.

Kaufman, B. E. (2010). "Institutional economics and the minimum wage: Broadening the theoretical and policy debate". *Industrial and Labor Relations Review*, Vol. 63, No. 3, April 2010.

Lee, D. S. (1999). "Wage inequality in the United States during the 1980s: Rising dispersion or falling minimum wage?" *The Quarterly Journal of Economics*, Vol. 114, August 1999.

Lemos, S. (2008). "Minimum wage effects in a developing country". *Labour Economics*, Vol. 16, Year 2009.

Marshall, A. (2005). "Labor Regulations and Unionization Trends: Comparative Analysis of Latin American Countries". *Visiting Fellow Working Papers*, Paper 22, ILR School, Cornell University.

Neumark, D. and W. Wascher (2000). "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment". *The American Economic Review*, Vol. 90, No. 5, December 2000.

Palomino, H. and D. Trajtemberg (2006). "Una nueva dinámica de las relaciones laborales y la negociación colectiva en la Argentina". In *Revista de Trabajo*, Year 2, No. 3, Ministerio de Trabajo, Empleo y Seguridad Social.

Pontoni, G. A. (2012). "The Power of Trucks in Argentina. Labor relations in the road transportation sector after 2003." CONICET and MTEySS.

Subsecretaría de Programación Técnica y Estudios Laborales (2005). "Trabajo, Ocupación y Empleo. Relaciones laborales, territorios y grupos particulares de actividad". Edición No. 3, Ministerio de Trabajo, Empleo y Seguridad Social.

Trajtemberg, D. (2009). "El impacto de la determinación colectiva de salarios sobre la dispersión salarial". In *Trabajo, Ocupación y Empleo*¸ Edición No. 8, Subsecretaría de Programación Técnica y Estudios Laborales, Ministerio de Trabajo, Empleo y Seguridad Social.

APPENDIX A

The definition of Union Minimum Wage applied to FedCam was slightly different from the one applied to other unions. Whereas for other unions the term is defined as the minimum wage for each category in each agreement signed, in the case of FedCam additional concepts were included. As will be shown regarding the results obtained in this paper, though, the difference is modest.

For years, FedCam has negotiated an extra payment for long-distance drivers based on mileage. They also receive a sum of money for every day spent out of residence and for every time they cross a national border. Additional bonuses given to workers in the federation involve the type of cargo.[26] Short-distance drivers receive additional sums for meals and per actual day worked, and those performing armored-transportation services earn an additional for long-distance service. All of these concepts were contemplated in computing FedCam's UMWs.

In attempting to contemplate these factors in a reasonable way, assumptions were made about how many times a month on average each of the variables applied to a typical driver. Based on twenty-one business days per month, the following assumptions were made in the case of long-distance drivers: 350 km per day (7350 km per month), five days spent out of residence, one border crossing and two armored-transportation services rendered; in the case of short-distance drivers, twenty-one meals and twenty-one additional bonuses per actual day worked.

It was important to include these extraordinary payments because truckers' work is enmeshed in these types of variables, especially mileage in the case of long-distance drivers. Moreover, it was not a case of cherry picking, but rather a conservative measure; truckers' wages are higher when these extras—which grew at a faster rate than the union's UMWs—are included. The position of this union in the ranking of total

[26] Since FedCam works with many different industries, many workers have negotiated increases for rendering services to a certain sector. For instance, if a driver works with the dairy industry, he receives 15% more than the union minimum wage. Since there is no information on the proportion of FedCam workers working with each activity/industry, it is impossible to compute a weighted average of these percentage increases for each wage category. Hence, they were not included in the final version of the FedCamwage scheme. A robustness check was performed by including these additionals as a simple average, and results did not change significantly.

negotiated salary increases, then, would be even lower if these factors were not taken into account.

APPENDIX B

With the post-crisis recovery, nominal wages increased sharply. Growing inflation, which has been denied by most government offices, casts doubt on the exact growth rate of wages in real terms. Figure XIII shows the evolution of these variables as per the sample of UMWs.

Again, the average nominal UMW (computed as the simple average of all union wage categories) increased sharply. In real terms, however, there is a slight divergence from the nominal variable from 2004 to 2007, which reflects a growing inflationary process. During those years, the figures put out by INDEC (*Instituto Nacional de Estadísticas y Censos*, Argentina's official statistics office) did not differ from the findings of private consultants, such as BA City Finance & Economics (BA City).

Nonetheless, INDEC, despite recognition of a moderate increase in inflation, asserts that between 2007 and 2011 the average UMW continued to grow at a fast pace in real terms. According to BA City, though, purchasing power remained practically constant during this period, as graphed in Figure XIII.[27]

[27] Graciela Bevacqua, former director of INDEC, developed the CPI used by BA City Finance & Economics. It is composed as follows: until September 2006, based on INDEC's CPI; from October 2006 to October 2007, based on the province of Mendoza's CPI; from November 2007 to June 2008, based on the CPI of a private consultant; and from July 2008 onwards, based on *IPC City*, an index computed precisely by BA City. *IPC City* computes 20,000 prices and 550 product varieties on sale in the city of Buenos Aires and twenty-four localities in Greater Buenos Aires. It emulates INDEC's methodology for CPI calculation used until 2006 (prior to the federal government's intervention in that agency) and follows ILO's CPI Manual (2004). BA City closed in 2011 after reporting a series of threats pursuant to the publication of the inflation series. Data had to be reconstructed from different sources, specifically: information prior to May 2010 from https://sites.google.com/site/bsascity/inflation; and subsequent months from www.bsas-city.com.ar; the methodology description is based on http://cdi.mecon.gov.ar/docelec/ah1181.pdf

APPENDIX C

This appendix provides a robustness check on the intra-union inequality analysis. As mentioned above, the Gini index is tightly bound to the proportion of population assigned to each income level. Since a uniform distribution of workers for each wage scheme was assumed in this analysis, results may vary if a pyramidal distribution had been used instead.

Although this paper does not set out to study the correlation between its results and the evolution of inequality in what workers actually take home, the robustness of results is still checked on the basis of a more likely population distribution.

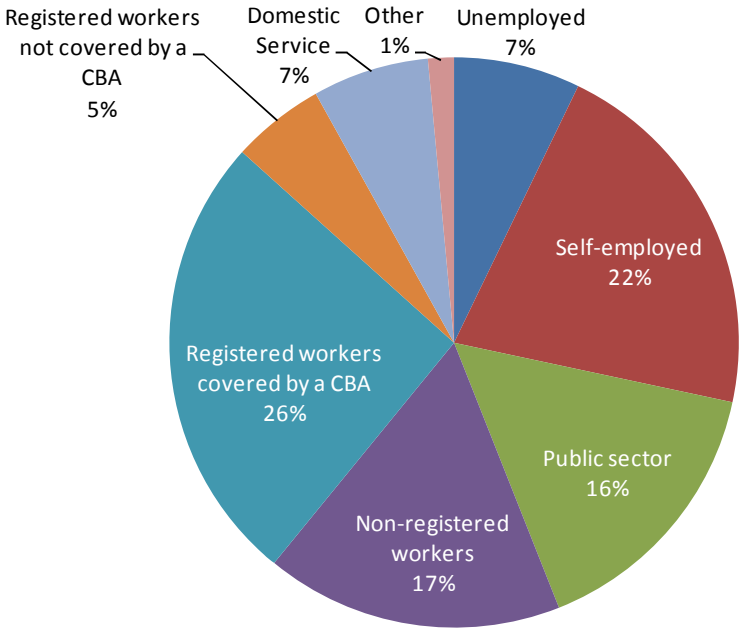
The pyramid for each period was built based on the EPH and weights were computed in function of all private-sector employees who contributed to a retirement pension (as a measure of formal work) and who earned positive income in the last month. The highest salary per period was deleted to avoid biases due to presence of outliers.

For the sake of simplicity, only three unions were analyzed: one that showed improved distribution (domestic service), one that showed poorer distribution (construction), and one whose distribution was constant (agricultural workers). See Table XI for the weights allocated to each union's wage categories.

Figure XIV summarizes the findings, showing that results were similar in all three cases. It would seem, then, that conclusions are robust to using a usual population pyramid instead of a uniform distribution in the allocation of weights among wage categories.

FIGURES

Figure I EAP composition in the urban sector, 2011[28,29]

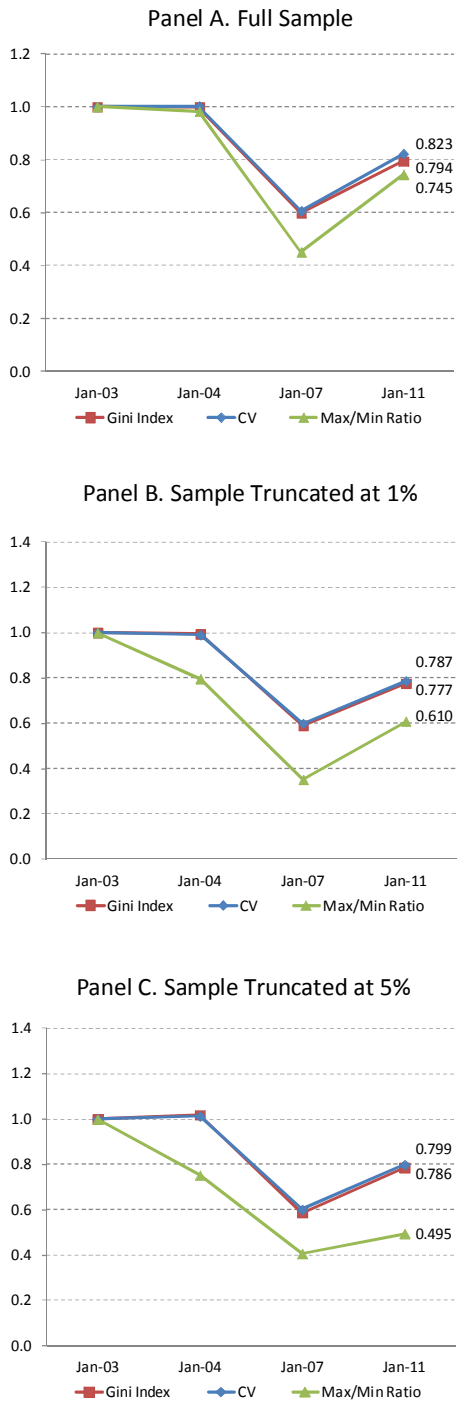


Source: Own preparation based on "Trabajo, Ocupación y Empleo," edition No. 3, published by MTEySS and on data published by the Undersecretariat for Technical Programming and Labor Studies of the MTEySS, based on the Argentine Household Survey (Encuesta Permanente de Hogares, EPH) (INDEC). Figures correspond to 2nd quarter of 2011, except for the share of private-sector registered workers that are covered by an agreement, which was estimated as of 2005 (see Palomino and Trajtemberg, 2006).

[28] The distinction between domestic service and registered workers covered by a CBA is necessary because of differences in data source. Nevertheless, domestic service has union representation, although it is limited compared to the other industries.

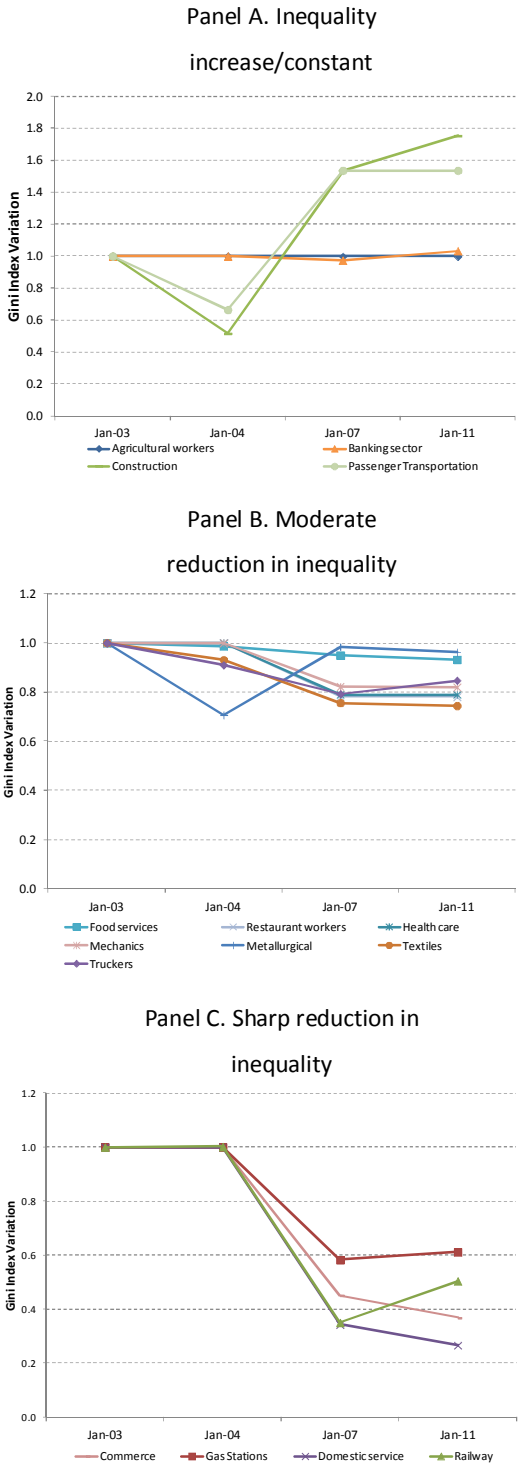
[29] Since these percentages are constantly changing, this graph should be considered a recent approximation.

Figure II Evolution of Global Analysis Standardized Indices under Full and Truncated Samples at 1% and 5% (2003-2011)



Source: Own preparation based on collective bargaining agreements.

Figure III **Gini Indices of Intra-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)**

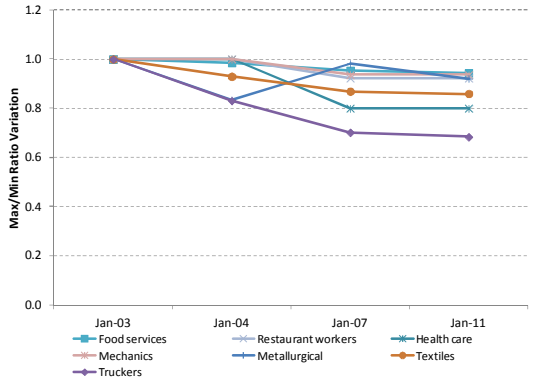


Source: Own preparation based on collective bargaining agreements.

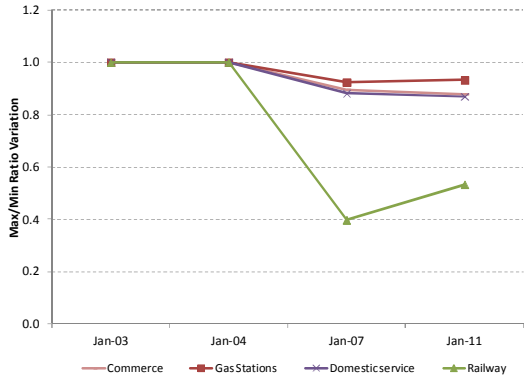
Figure IV **Max/Min Ratios of Intra-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)**

Panel A. Inequality increase/constant

Panel B. Moderate reduction in inequality



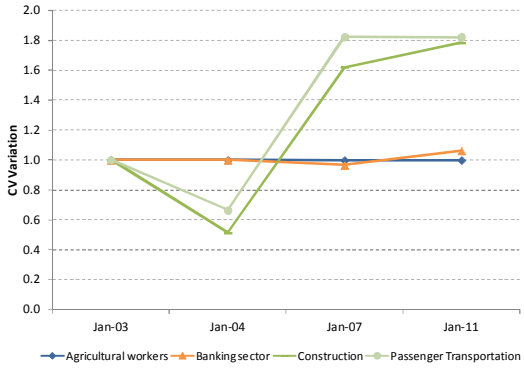
Panel C. Sharp reduction in inequality



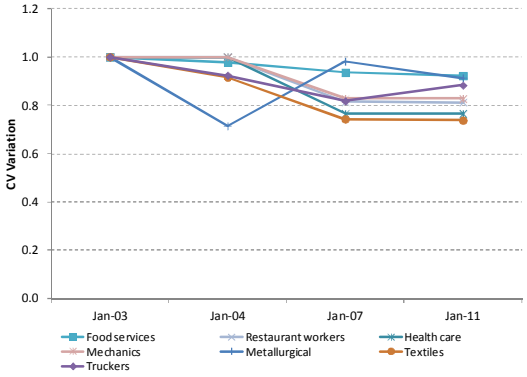
Source: Own preparation based on collective bargaining agreements.

Figure V **Coefficients of Variation of Intra-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)**

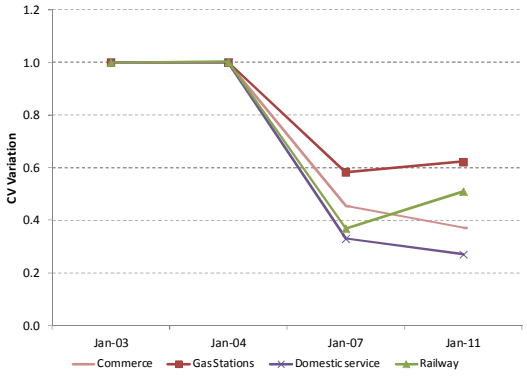
Panel A. Inequality increase/constant



Panel B. Moderate reduction in inequality

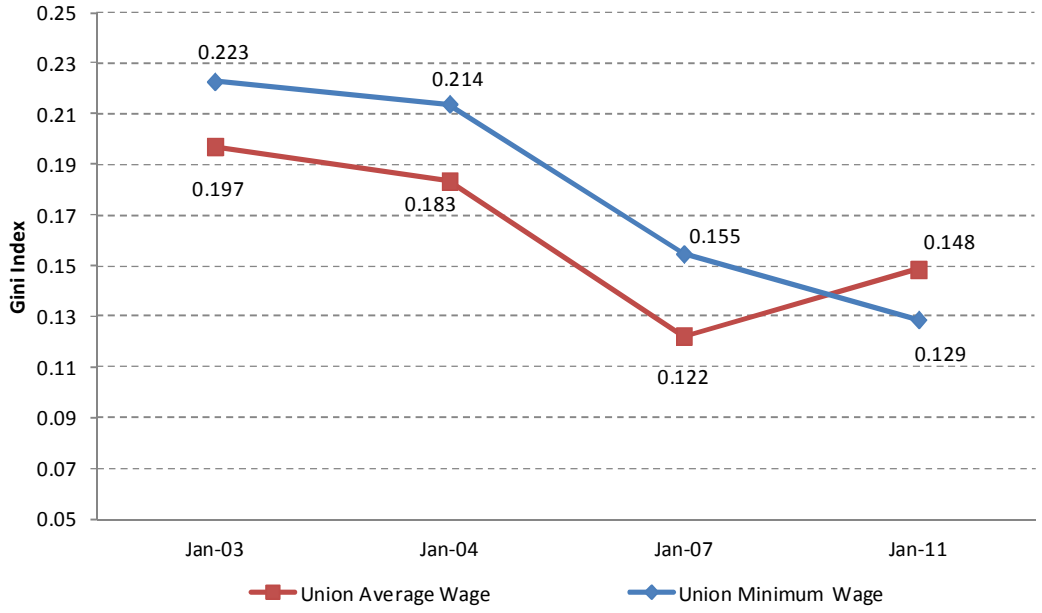


Panel C. Sharp reduction in inequality



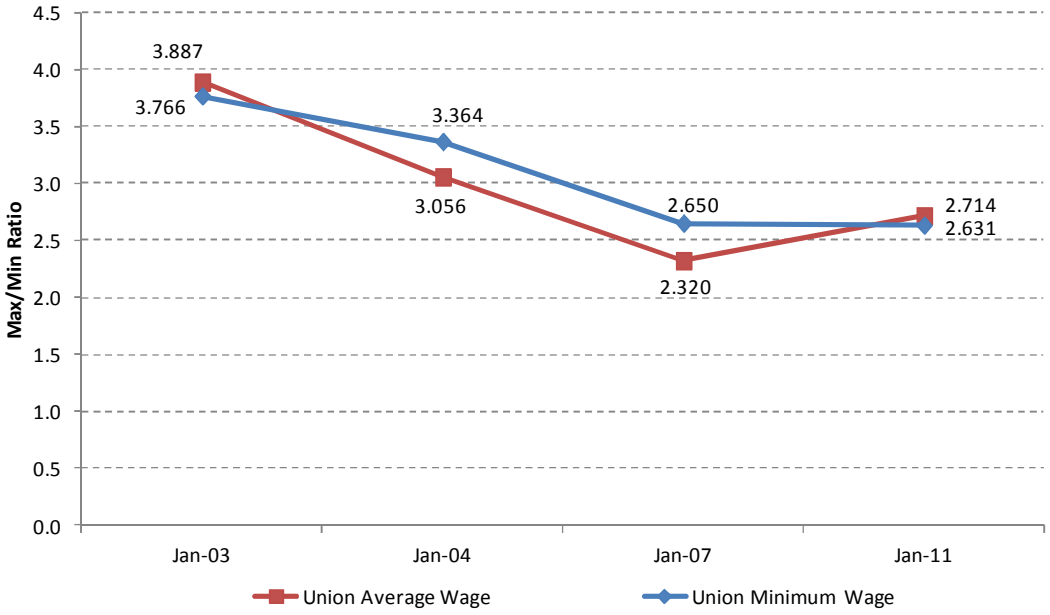
Source: Own preparation based on collective bargaining agreements.

Figure VI Gini Indices of Inter-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)



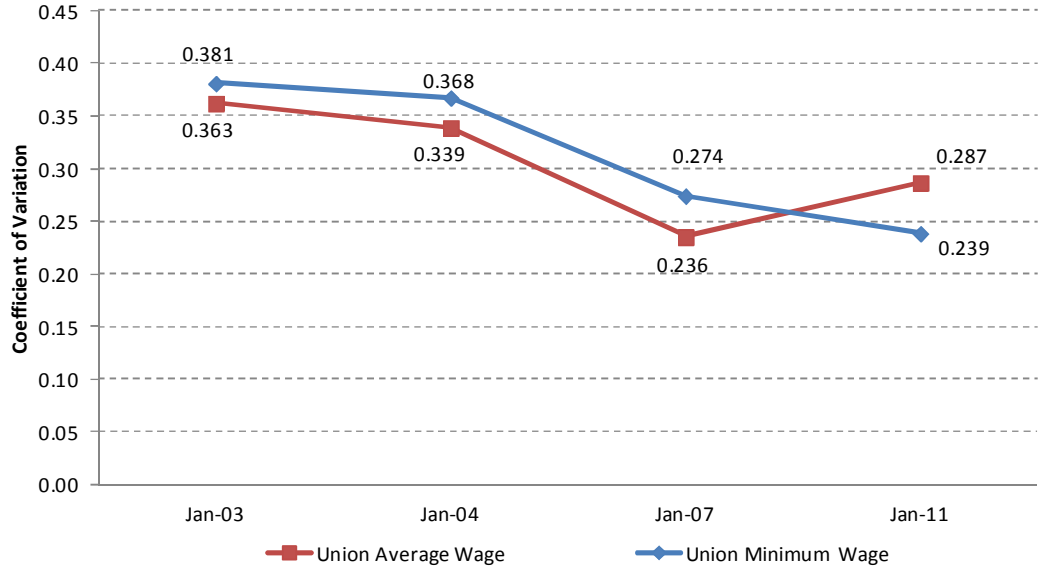
Source: Own preparation based on collective bargaining agreements.

Figure VII Max/Min Ratios of Inter-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)



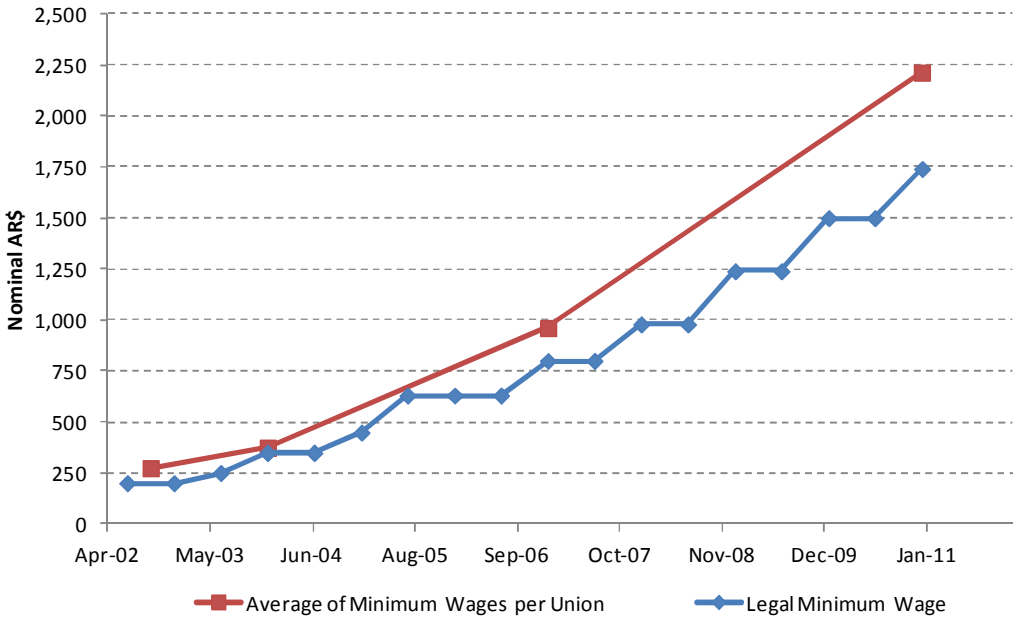
Source: Own preparation based on collective bargaining agreements.

Figure VIII Coefficients of Variation of Inter-Union Wage Distribution as per Collective Bargaining Agreements (2003–2011)



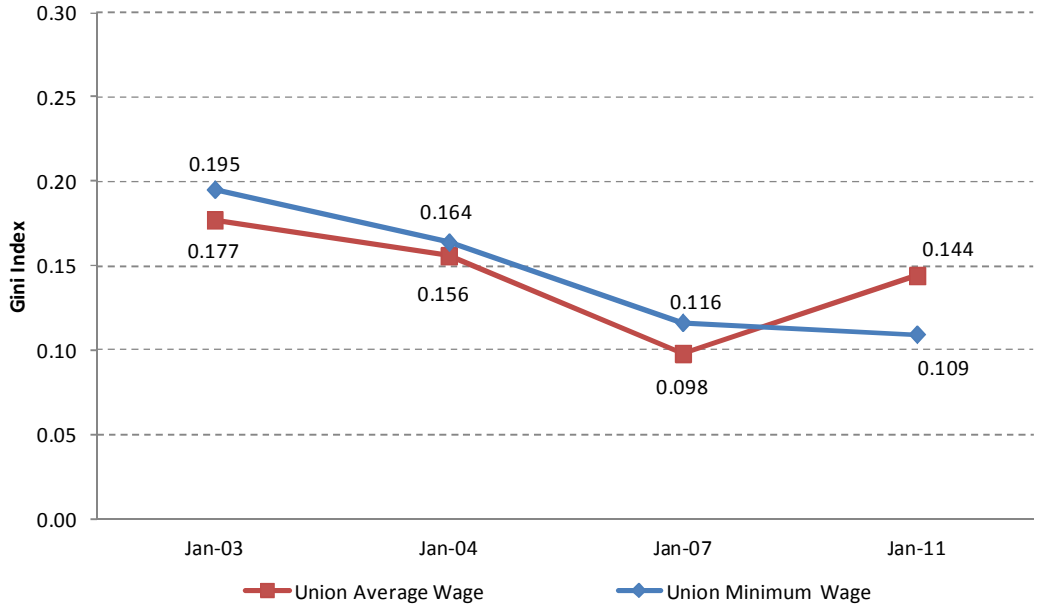
Source: Own preparation based on collective bargaining agreements.

Figure IX Evolution of Legal Minimum Wage and Average of Minimum Wages per Union (2003–2011)



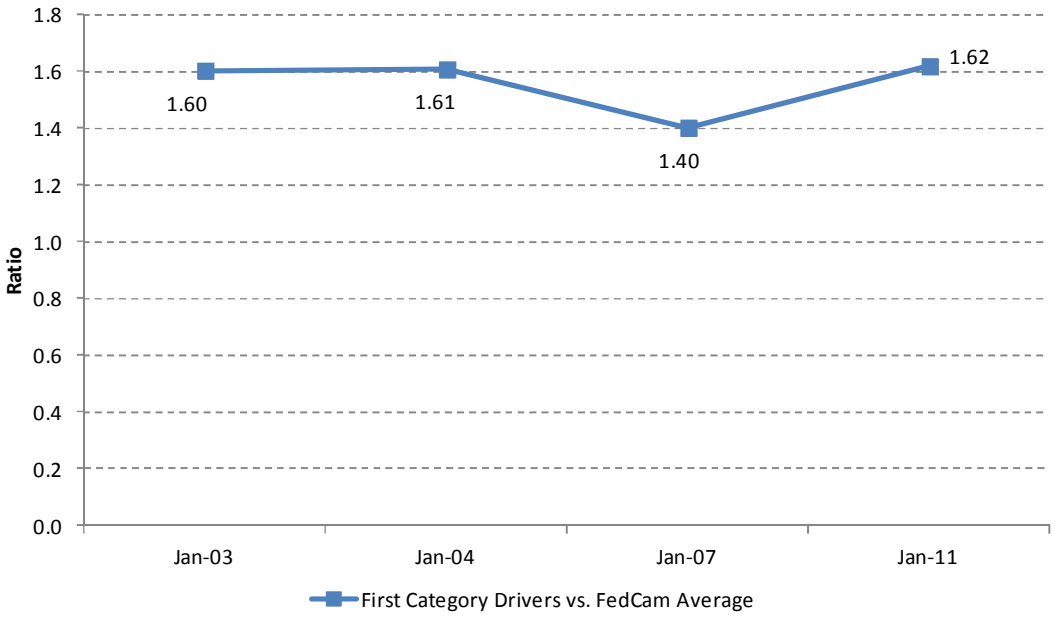
Source: Own preparation based on collective bargaining agreements. Data on legal minimum wage available at http://www.trabajo.gov.ar/left/estadisticas/bel/descargas/cuadros/2625.xls

Figure X Inter-Union Inequality Evolution (2003-2011): Gini Indices under Actual Salary Distribution Function



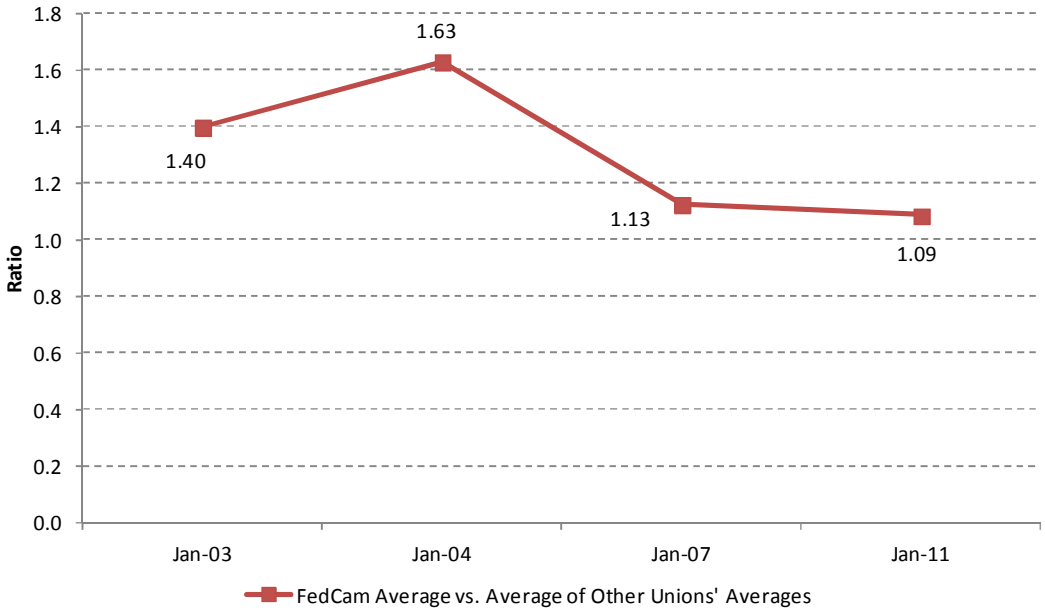
Source: Own preparation based on collective bargaining agreements, EPH III-03 – IV-11 and Palomino and Trajtemberg (2006).

Figure XI Wage of First Category Drivers vs. FedCam Average Wage Ratio



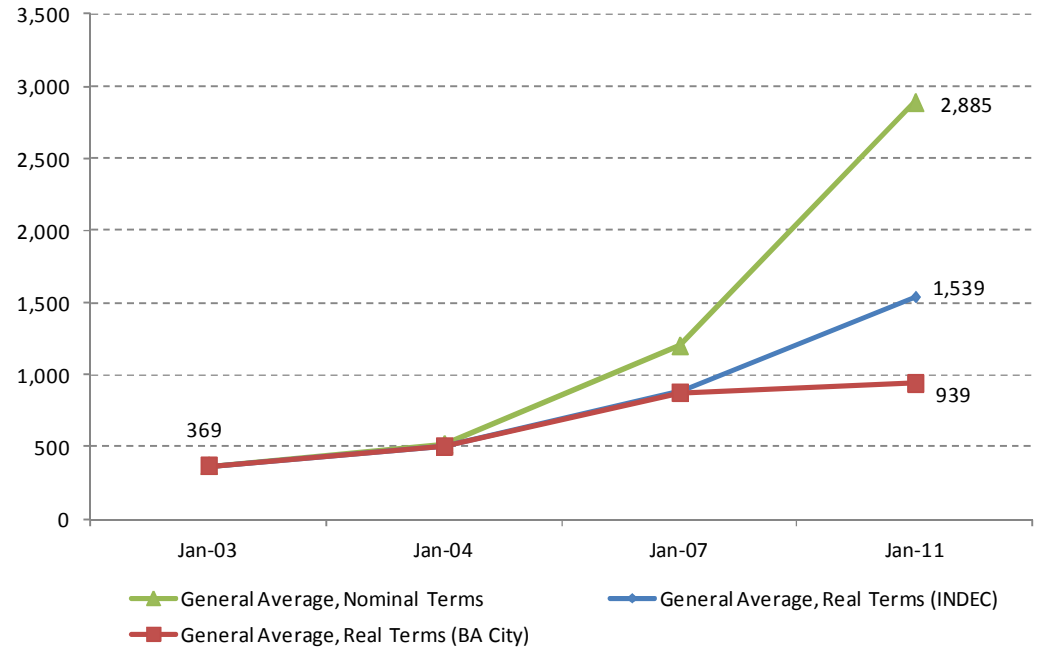
Source: Own preparation based on collective bargaining agreements.

Figure XII FedCam Average Wage vs. Average of Other Unions' Average Wages



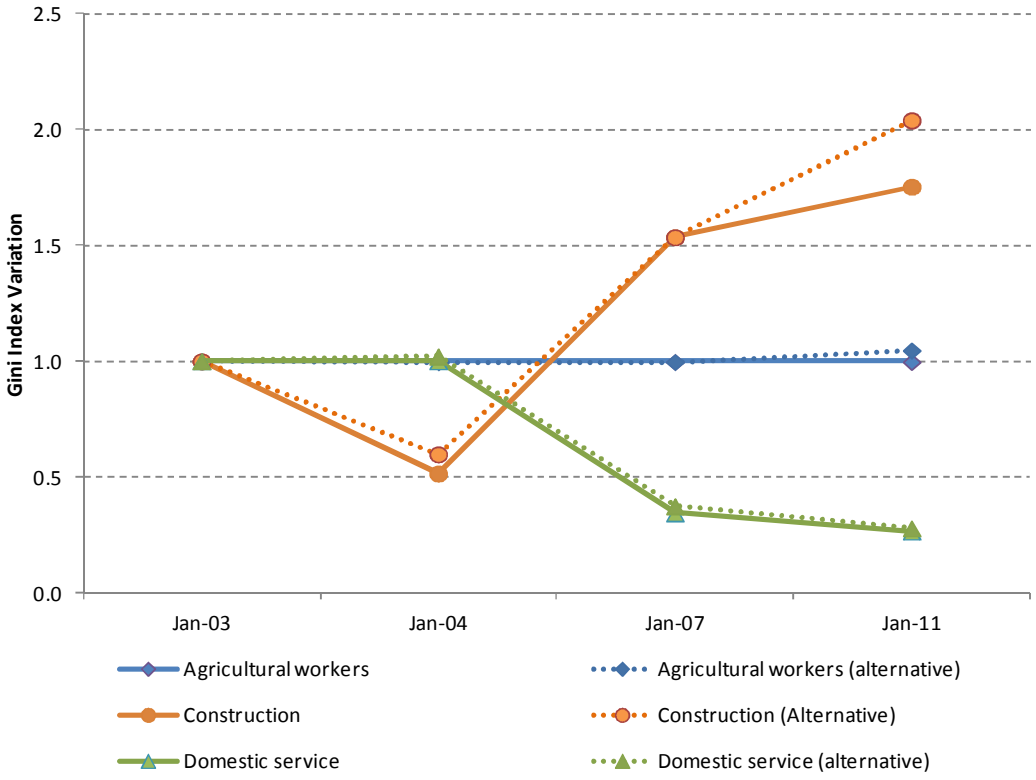
Source: Own preparation based on collective bargaining agreements.

Figure XIII Evolution of Overall Average Union Wage in Nominal and Real Terms (2003–2011)



Source: Own preparation based on minimum-wage data published by MTEySS, and on inflation figures from INDEC and BA City Finance & Economics.

Figure XIV Intra-Union Inequality Evolution (2003-2011): Gini Indices under Actual Salaries Distribution Function



Source: Own preparation based on minimum-wage data published by MTEySS and the Argentine household survey (EPH), 4th quarter editions of years 2003, 2004, 2007 and 2011.

TABLES

Table I **Summary of Results from Global Analysis (2003-2011)**

Sample Size	Gini Index	Max/Min Ratio	Coefficient of Variation
Full Sample	-20.6%	-25.5%	-17.7%
Truncation at 1%	-22.3%	-39.0%	-21.3%
Truncation at 5%	-21.4%	-50.5%	-20.1%

Source: Own preparation based on collective bargaining agreements.

Table II **Weight Structure for Inter-Union Robustness Analysis**

%	Union
25.2%	Commerce
8.8%	Metallurgical
8.5%	Construction
8.3%	Health care
7.8%	Restaurant workers
6.9%	Food services
6.5%	Mechanics
6.2%	Passenger transp.
6.0%	Agricultural workers
4.7%	Banking sector
3.8%	Textiles
2.6%	Domestic service
2.5%	Truckers
1.7%	Gas Stations
0.6%	Railways

Source: Own preparation based on EPH III-03 – IV-11 and Palomino and Trajtemberg (2006).

Table III Evolution of Average Wages per Union (2003–2011), in %

Union	Change by Period			Total Change
	2003 - 2004	2004 - 2007	2007 - 2011	
Metallurgical	199.21%	108.18%	135.91%	**1369.46%**
Banking sector	0.00%	201.87%	325.01%	**1182.97%**
Construction	92.48%	115.46%	161.71%	**985.34%**
Textiles	83.96%	191.35%	91.14%	**924.50%**
Food services	130.06%	86.33%	138.22%	**921.18%**
Domestic service	0.00%	199.76%	195.90%	**786.97%**
Passenger transp.	50.03%	151.65%	122.48%	**739.96%**
Agricultural workers	46.64%	87.44%	194.82%	**710.36%**
Health care	0.00%	245.88%	126.70%	**684.09%**
Railway	17.88%	172.27%	127.15%	**629.05%**
Truckers	56.13%	65.86%	127.87%	**490.10%**
Restaurant workers	0.00%	182.99%	101.55%	**470.37%**
Gas Stations	0.00%	194.28%	77.93%	**423.62%**
Commerce	0.00%	190.33%	70.90%	**396.16%**
Mechanics	0.00%	95.28%	105.52%	**301.33%**

Source: Own preparation based on collective bargaining agreements.

Table IV General Characteristics of the Sample

Union	CBA No.	No. Of Categories	Inicial Period	Geographical Coverage	Comments
Agricultural workers	Law N° 22.248	11	Jan-98	Entire country	*Jan-98 is an average of the seven provinces with UMW adjustments closer to that date (*)*
Food services	224/94	24	Jan-03	Entire country	-
Banking sector	18/75	26	Mar-91	Entire country	*12 categories were excluded because they covered managers, which is an exception in the Argentine union representation system*
Commerce	130/75	20	May-94	Entire country	-
Construction	76/75	4	Aug-93	Entire country, except for provinces of Chubut, Neuquén, Río Negro, Santa Cruz and Tierra del Fuego	*Original data is in hourly wage. 21 business days per month and 8 hours per business day were assumed*
Gas Stations	317/99	7	Jun-99	Buenos Aires City and Greater Buenos Aires	-
Restaurant workers	164/91	5	Apr-95	Entire country, except for province of Tucuman	*As of 2005 the province of Tucuman was included, creating a new CBA (No. 401/05)*
Health care	122/75	31	Mar-94	Entire country	-
Domestic service	73/89	5	Mar-91	Buenos Aires City and Greater Buenos Aires	-
Mechanics	27/88	11	Jun-95	Entire country	-
Metallurgical	260/75	25	Feb-91	Entire country	*Corresponds to steel industry. Original data is in hourly wage. 21 business days per month and 8 hours per business day were assumed*
Passenger transp.	460/73	15	Jun-95	Buenos Aires City, Greater Buenos Aires and certain companies that operate in other provinces	-
Railway	571/03	7	Oct-02	Railroads Belgrano Sur and Roca	-
Textiles	120/90	15	Nov-91	Entire country	*Original data is in hourly wage. 21 business days per month and 8 hours per business day were assumed*
Truckers	40/89	41	Jul-95	Entire country, except for the region south of Rio Colorado, that extends to Rio Barrancas, until Rio Santa Cruz	*See Appendix B*

Source: Own preparation based on collective bargaining agreements.

(*) The initial period is a simple average of Catamarca, La Rioja, Mendoza, Neuquen, Rio Negro, San Juan and Tucuman.

Table V Evolution of Inter-Union Inequality (2003–2011) by Minimum and Average wages per Union

Reference	Statistic	Jan-03	Jan-04	Jan-07	Jan-11	Total Variation (2003-2011)
Minimum Category	Gini Index	0.223	0.214	0.155	0.129	*-42.2%*
Minimum Category	Max/Min Ratio	3.766	3.364	2.650	2.631	*-41.0%*
Minimum Category	CV	0.381	0.368	0.274	0.239	*-37.4%*
Averages	Gini Index	0.197	0.183	0.122	0.148	*-24.7%*
Averages	Max/Min Ratio	3.887	3.056	2.320	2.714	*-40.6%*
Averages	CV	0.363	0.339	0.236	0.287	*-20.9%*

Source: Own preparation based on collective bargaining agreements.

Table VI Evolution of Intra-Union Inequality (2003–2011) by Gini Index

Union	Jan-03	Jan-04	Jan-07	Jan-11	Total Variation (2003-2011)
Domestic service	0.038	0.038	0.013	0.010	-73.5%
Commerce	0.036	0.036	0.016	0.013	-63.2%
Railways	0.221	0.221	0.077	0.111	-49.6%
Gas Stations	0.031	0.031	0.018	0.019	-38.9%
Textiles	0.070	0.066	0.053	0.052	-25.6%
Restaurant workers	0.093	0.093	0.072	0.072	-22.0%
Health care	0.057	0.057	0.045	0.045	-21.0%
Mechanics	0.068	0.068	0.056	0.056	-18.0%
Truckers	0.144	0.131	0.114	0.122	-15.3%
Food services	0.093	0.092	0.088	0.087	-6.7%
Metallurgical	0.087	0.061	0.085	0.084	-3.8%
Agricultural workers	0.040	0.040	0.040	0.040	-0.1%
Banking sector	0.115	0.115	0.111	0.118	3.3%
Passenger transp.	0.020	0.013	0.030	0.030	53.6%
Construction	0.035	0.018	0.053	0.061	75.4%

Source: Own preparation based on collective bargaining agreements.

Table VII Evolution of Intra-Union Inequality (2003–2011) by Max/Min Ratio

Union	Jan-03	Jan-04	Jan-07	Jan-11	Total Variation (2003-2011)
Domestic service	1.211	1.211	1.067	1.053	-74.8%
Railways	3.696	3.702	1.468	1.973	-63.9%
Commerce	1.238	1.238	1.109	1.089	-62.6%
Truckers	2.329	1.934	1.635	1.592	-55.5%
Health care	1.692	1.692	1.353	1.353	-49.0%
Textiles	1.558	1.448	1.354	1.340	-39.1%
Gas Stations	1.209	1.209	1.117	1.128	-38.9%
Restaurant workers	1.610	1.610	1.487	1.486	-20.3%
Mechanics	1.590	1.590	1.488	1.488	-17.3%
Metallurgical	1.904	1.586	1.868	1.752	-16.7%
Food services	2.102	2.073	2.003	1.984	-10.8%
Agricultural workers	1.284	1.283	1.283	1.283	-0.3%
Banking sector	2.300	2.300	2.258	2.342	3.2%
Construction	1.196	1.098	1.330	1.387	97.2%
Passenger transp.	1.122	1.080	1.278	1.277	126.8%

Source: Own preparation based on collective bargaining agreements.

Table VIII Evolution of Intra-Union Inequality (2003–2011) by Coefficient of Variation

Union	Jan-03	Jan-04	Jan-07	Jan-11	Total Variation (2003-2011)
Domestic service	0.082	0.082	0.027	0.022	-73.0%
Commerce	0.065	0.065	0.030	0.024	-62.8%
Railways	0.413	0.413	0.152	0.210	-49.0%
Gas Stations	0.059	0.059	0.034	0.037	-37.8%
Textiles	0.128	0.118	0.095	0.095	-26.2%
Health care	0.105	0.105	0.081	0.081	-23.4%
Restaurant workers	0.183	0.183	0.149	0.149	-18.8%
Mechanics	0.126	0.126	0.104	0.104	-17.3%
Truckers	0.266	0.246	0.218	0.235	-11.7%
Metallurgical	0.156	0.112	0.153	0.143	-8.6%
Food services	0.182	0.178	0.170	0.168	-7.8%
Agricultural workers	0.077	0.077	0.077	0.077	-0.1%
Banking sector	0.211	0.211	0.204	0.224	6.2%
Construction	0.072	0.037	0.117	0.129	78.4%
Passenger transp.	0.036	0.024	0.065	0.065	82.3%

Source: Own preparation based on collective bargaining agreements.

Table IX Minimum Wages per Union (2003-2011)

Union	Jan-03	Jan-04	Jan-07	Jan-11
Agricultural workers	273	400	750	2,210
Food services	218	504	959	2,302
Banking sector	200	200	624	2,948
Commerce	345	345	1,052	1,813
Construction	191	379	763	1,934
Gas Stations	364	364	1,117	1,989
Restaurant workers	300	300	900	1,814
Health care	253	253	1,012	2,294
Domestic service	237	237	740	2,205
Mechanics	479	479	984	2,024
Metallurgical	127	423	800	2,008
Passenger transp.	441	674	1,655	3,681
Railways	204	239	1,320	2,305
Textiles	132	244	736	1,399
Truckers	343	570	1,004	2,275

Source: Own preparation based on collective bargaining agreements.

Table X Average Wages per Union (2003-2011)

Union	Jan-03	Jan-04	Jan-07	Jan-11
Agricultural workers	301	441	826	2,436
Food services	295	679	1,266	3,016
Banking sector	348	348	1,049	4,459
Commerce	380	380	1,103	1,884
Construction	204	394	848	2,219
Gas Stations	402	402	1,183	2,105
Restaurant workers	374	374	1,057	2,130
Health care	344	344	1,189	2,696
Domestic service	253	253	757	2,241
Mechanics	623	623	1,217	2,502
Metallurgical	180	540	1,124	2,652
Passenger transp.	465	698	1,757	3,908
Railways	477	562	1,530	3,474
Textiles	160	295	860	1,643
Truckers	494	772	1,280	2,918

Source: Own preparation based on collective bargaining agreements.

Table XI Weighting Structures for Robustness Check (Appendix C)

Union/Category	Jan-03	Jan-04	Jan-07	Jan-11
Agricultural workers				
1	21%	19%	20%	20%
2	14%	14%	13%	13%
3	12%	11%	11%	11%
4	10%	10%	10%	10%
5	9%	9%	9%	9%
6	8%	8%	8%	8%
7	7%	7%	7%	7%
8	6%	6%	6%	6%
9	5%	5%	5%	5%
10	4%	4%	4%	5%
11	3%	3%	3%	4%
12	2%	2%	2%	2%
Construction				
1	40%	38%	38%	38%
2	25%	24%	24%	24%
3	18%	18%	18%	18%
4	12%	13%	12%	13%
5	6%	7%	7%	8%
Domestic service				
1	35%	33%	33%	33%
2	22%	21%	21%	21%
3	17%	17%	17%	17%
4	13%	13%	13%	13%
5	9%	9%	9%	10%
6	5%	5%	5%	6%

Source: Own preparation based on Argentine Household Survey (EPH).