



## *Skilled and Unskilled Wages in Uruguay, 1915-2015.*

María Camou (Universidad de la República, Uruguay)

[maria.camou@cienciassociales.edu.uy](mailto:maria.camou@cienciassociales.edu.uy)

Silvana Maubrigades (Universidad de la República, Uruguay)

[silvana.maubrigades@cienciassociales.edu.uy](mailto:silvana.maubrigades@cienciassociales.edu.uy)

### **Abstract**

The main purpose of this paper is to analyze the evolution of the wage gap between skilled and unskilled labor in line with changes in subsequent economic productive models. Following this line of research, we need to construct a long-run series of the evolution of skilled and unskilled wages.

Research on the long-term evolution of wages in Uruguay has been slow due to the lack of sources for its reconstruction. However, a wage series for unskilled construction workers for the years 1879-1996 is available (Bértola et al. 1999). On the basis of this series an interpretation of the evolution of real wages has been constructed, which covers three major periods: 1870-1930, with slow growth of real wages and GDP, the State-led industrialization period (1930-1970) with a significant growth of GDP and an even higher increase of real wages, and a final period, which featured the discontinuation of this trend and a sharp decrease of real wages within the context of GDP growth followed by a very slow wage recovery from 1985 onwards.

In this research we will present a new wage series for skilled, semi-skilled and unskilled workers for the years 1918-2010 in Uruguay, which will take into account the global economic context of each period and its impact on wages. We will focus on the relevance of the evolution of the skill premium and inequality. We look at the correlation between wages and GDP per capita growth and the Gini coefficient. In the last chapter we will compare our series with similar series for six Latin American countries in the course of the 20th century (Astorga 2017).

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### **1. Introduction**

The main purpose of this paper is to analyze the evolution of the wage gap between skilled and unskilled labor in line with changes in subsequent economic productive models. Following this line of research, we need to construct a long-run series of the evolution of skilled and unskilled wages.

Research on the long-term evolution of wages in Uruguay has been slow due to the lack of sources for its reconstruction. However, a wage series for unskilled construction workers for the years 1879-1996 is available (Bértola et al. 1999). On the basis of this series an interpretation of the evolution of real wages has been constructed, which covers three major periods: 1870-1930, with slow growth of real wages and GDP, the State-led industrialization period (1930-1970) with a significant growth of GDP and an even higher increase of real wages, and a final period, which featured the discontinuation of this trend and a sharp decrease of real wages within the context of GDP growth followed by a very slow wage recovery from 1985 onwards.

As part of our research we improved the existing data, as we elaborated new series of wage differences between skilled, semi-skilled and unskilled workers. We also worked out a long-run series for unskilled rural workers.

This will also be an important contribution to the discussion of the evolution of wages as related to qualifications and changes in technological development and the demand for skilled work in the periods under review.

The paper will start with a brief presentation of our approach to the topic and its relevance for economic history research. The second chapter will focus on the background of our research and point out the aspects, where progress has been made in the course of our research. Thereafter we will present our sources and explain our methodology decisions. This point is particularly important, because there are no data available for the early period. Therefore we need to define different skill baskets of occupations for several sectors. For the period 1915-1980 we have data from private company files and public budgets. However, this kind of data is restricted to some sectors and occupations. For the following period (1981-2010) we used household surveys that include more information on occupation-related skill gaps. The fourth chapter will present our results: a new wage series for skilled, semi-skilled and unskilled workers for the years 1918-2010 in Uruguay, which will take into account the global economic context of each period and its impact on wages. In our interpretation we will consider supply and demand effects as well as institutional changes along the period. Chapter five will focus on the relevance of the evolution of the skill premium and inequality. We look at the correlation between wages and GDP per capita growth and the Gini coefficient. In the last chapter we will compare our series with similar series for six Latin American countries in the course of the 20th century (Astorga 2017). The last point summarizes our preliminary results and sets out some questions for future research.

## **2. Our starting point**

The debate on the increase in wage inequalities, which has been going on over the last 20 or 30 years has emphasized different aspects. However, its conclusions are not unanimous. While for some authors globalization is the fundamental explanatory factor

of this process, others highlight the role of domestic factors, especially technological change resulting in an increase of the relative demand for skilled labor.

A long-term approach appears as the most suitable approach to studying the evolution of supply and demand of workers with different skill levels and their impact on wage dispersion. From the demand side, the different stages of the industrialization process including the development of different industrial sectors and changes in technology had an impact on the demand of skilled workers and therefore on wages. Likewise, from the supply side, the processes of modernization and expansion of the State and the changes in workers training systems led to new qualification requirements for workers.

In the classical and neo classical tradition wage dispersion was attributed mainly to efficiency, “by which wages in some measure are adjusted to the productive capacity of employees in particular types of work or, alternatively, workers are selected with reference to expected performance at given wage rates” (Douty 1961). This includes differences related to the human capital stock of the workers.

Further research established that these links do not provide a sufficient explanation of the wage differences in time within and between countries, as well as differences between and within branches and companies.

The wage differences among workers experienced changes throughout the economic development process, which responded mainly to labor market conditions, to changes in the demand for qualifications and to the volume and elasticity of human capital supply (Kaelble & Thomas 1991).

For Van Zanden (2009), relative wages are, for periods with little statistical information, a crucial source of information on the structure of the economy and the level of development. This author finds evidence by comparing the correlations between the fall of the skill premium (income by rating) and long-term economic growth. Low-level skill premia are believed to reflect the good functioning of human capital formation institutions, a key variable for the explanation of growth.

The remuneration structure is, in our view, a complex issue: on one hand it involves the economic structure, the population pyramid, the status of women, discrimination against particular groups of workers, while at the micro level the size of enterprises,

among other aspects, has an influence on wage differences. On the other hand conflicts, trade unions and state policies also matter, when it comes to studying this topic. But labor economics should go beyond the analysis of specific institutions, to include evolutionary trends in the past (Green 2004).

Which are the main determinants in the evolution of the skill premium? As described the literature provides a variety of interpretations. In essence there are three key lines to explain this link. One explores the relationship between education and the skill premium. Evidence of an increase in wage inequalities in the United States since the 1970s has been attributed to changes in demand associated with technological change and a relative scarcity in the specific supply linked to the new technological paradigm (Mincer 1996). Other authors presented in-depth analysis of the role of technological change in wage inequalities and development. According to Galor and Tsiddon (1997), a complementary explanation is associated with the cycle of technological innovation: whereas at an initial stage innovations tend to increase wage inequality, as they basically reward skills (understood as non-curricular experience or knowledge), once they are disseminated and become more accessible for the training of human capital, inequality tends to decrease, although it becomes more persistent, because investment in education is required. This type of decision is more associated with the influence of education at home and therefore the educational level of the parents.

A second view of the topic emphasizes the changes in the demand of skilled workers depending on technical changes or the adoption of new technologies (Acemoglu 2003). This author also takes into account the role of institutions, as he observes a larger increase in inequality in the United States as compared to Europe after 1980.

The third explanation focuses more intensively on institutions (Rodgers 1994), although it does not deny the importance of supply and demand factors. The idea is that labor institutions tend to strengthen the position of unskilled workers and therefore to diminish the skill premium. Therefore it is important to gather evidence on the positive relationship between stronger wage regulations and labor market regulation. But this link is not the only determinant; the extent to which wages are regulated is equally important. Accordingly, in this paper we attempt to include more sectors, some of which were not regulated in the early stage.

Although the main objective of our paper is the construction of new series, we also test different explanations concerning possible impacts on the evolution of the skill premium. Our results enable us to consider the relation between the different phases of development that we already studied and the wage levels and structure. Is the reduction of wage gaps taking place in specific institutional contexts?

This discussion is also important, when we try to analyze the evolution of inequality in a society at large, especially due to the increased income-related percentage portion. In Uruguay we still lack information about the pay roll percentage for the early period. In the 1950s it was as high as 50%, before it declined following strong wage adjustments during the dictatorship, until finally a slow recovery process began (UNDP Uruguay 2008). In more regulated sectors of the labor market dispersion within the group is reduced, while regulation contributes to a decrease in inequality.

### **3. Previous research on wages in Uruguay**

As part of long-term research on standards of living, wages and inequality in Uruguay several studies included wage series referring to unskilled construction workers, which in PPP-based comparisons with international wages for the time period 1870-2010 (Bértola et al. 1999).

Subsequently, average wage series were reconstructed by industrial sectors for the period 1930-1969 (Lara, 2010). This work aimed at comparing productivity, wages and industrial development. Another exhaustive investigation covering the time period from 1946 until 1955 focused on the evolution of the salaries by occupation agreed upon by the wage councils of those years (Notaro, Fernández Caetano, & Sörensen, 2012).

In a previous project (2010) Camou analyzed the evolution of salaries by qualification for two industrial companies (textile and meatpacking) during the ISI, being one of her main conclusions that a decrease in inequality could be detected during this period. As the enforced wage bargaining law of 1943 covered industrial and trade workers only, the question of how wages in other sectors of the economy developed (mainly rural and public sectors) could not yet be answered.

In this paper we would like to move a step further and to include qualifications and occupations into our exploration of the wage gap. On the basis of this reconstruction we will suggest some answers to various issues. On one hand, wage dispersion as an important component of inequality will help us to better explain its changes along different economic models through time. On the other hand we will discuss the impact of technological change and variations in labor demand on the wage gap.

Generally speaking, if the main purpose of an economic model is the improvement of a population's quality of life, the way labor remunerations are structured implies the viability of an entire economy.

#### **4. Studying the skill premium in the long run: sources and methodology**

*“Two major decisions are involved in attempts to summarize, in one measure, the magnitude of skill differentials in a country. What level of skill should be taken? How should it be measured? In most existing comparative studies, the practice is to take middle skill levels and to use means or medians of wage rates (earnings, where available) as the main measure”.*

(Berg 1968).

In our case we attempt to elaborate series including unskilled, semi-skilled and skilled wages.

The unskilled series were prepared on the basis of the wages earned by the workers of two of the main industrial companies of the textile and meatpacking sectors and by rural workers between 1918 and 1980. The long-run oriented rural wage series is an advance of our research, which deals with a special sector with very low wage levels and without any regulation during most of the time period under review.

In the case of semi-skilled wages between 1918 and 1969 we drew from the average wages paid by the same meatpacking and textile companies. The categories include mainly: dyer, washer, oiler driver, operator (textiles) and slaughterer and frozen worker (meatpacking). The period 1975-1981 included semi-skilled workers of a representative company of the rubber industry.

In our series skilled workers are defined on the basis of the average wage of high school teachers and public surveyors for the same period. We weighted the more numerous group of teachers as 70% and professionals as 30%.

Taking into account that this category is usually composed of professionals and technicians (Astorga 2017), the position of a surveyor representing a lower salary on the scale of professionals working in the public sector was selected. On the Uruguayan wage scale college teachers are comparable to low-skilled workers.

Data for the period 1981-2010 is based on household surveys. We used wages from average employment categories. The category “skilled” represents the average wage of groups 2 (Professionals) and 3 (Technicians and Associate Professionals).

Semi-skilled wages were taken from group 7 (Craft and Related Trades Workers) and unskilled from group 9 (Elementary Occupations).

Our comparison with other Latin American countries relies on the wage series elaborated by Astorga, which followed similar criteria to define the groups of skilled, semi-skilled and unskilled workers. Following Astorga’s methodology, nominal wages were deflated by consumer price indices and expressed in 1970 dollars. As a result, the series are comparable both in level and in trend.

### ***The sources and their representativeness***

The construction of the wage series in this research is based on different types of sources. In the first stage, the main sources are business files and state budgets. In the second period (1981-2010), as mentioned above, we have better data and the information is based on household surveys.

For the first period 1927-1959 information was processed from the archives of the Campomar textile company and the Swift meatpacking plant. These sources made it



possible to access information about wages by occupation, which did not exist at the macro level. The Campomar archive comprises a large part of the documentation of this company since its foundation in 1898 until its final closure in the nineties of the 20th century.

In the case of Campomar the individual salary records of the plant's entire workforce are counted during one quarter of each year, during the period 1918-1951. Each record contains name, registration number, occupation, number of hours worked, total earned, supplements, licenses and discounts.

The Swift archive covers workers' personnel records for the time period 1912-1957.

The universe of data collected between both companies includes all workers, which means an average of about 6,000 workers per year, for the period 1913-1957. The workers of Swift and Campomar represented between 5 and 7 percent of Uruguay's industrial workforce, depending on annual variations. This universe is extremely broad and assures a high degree of reliability of the results obtained.

Skilled public salaries were reconstructed on the basis of the general expenditure budgets of the Republic of Uruguay, which provide annual information about the salaries of all State agencies. Until the beginning of the 1950s, wages underwent few changes in inter-budgetary periods, but towards the end of the period the inflationary process resulted in an increase of laws and decrees introducing amendments to the budget law.

The evolution of rural wages in the time period 1918 - 1960 could be studied thanks to the accounting books of Bodega Santa Cruz.<sup>1</sup> For the period 1960-1981 the series covering the wage evolution of rural workers was reconstructed on the basis of the salary and wage books of the San Pedro del Timote farm (span. Estancia "San Pedro de Timote"), near the Cerro Colorado train station in the Uruguayan department of Florida. This large establishment owned by Alberto Gallinal was well known for its high cattle quality and its production volume.

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<sup>1</sup> "Bodega" means wine cellar. Files provided by the Centro de Estudios Latinoamericanos de la Facultad de Humanidades, Universidad de la República.

## **5. Evolution of the wage gap in Uruguay**

Uruguay's economic development process from 1870 to the 21st century highlights different structural change strategies. The behavior and composition of the labor market, as well as the level of the wages earned by the workforce, have been highly dependent on these ups and downs. Since the export-led boom of the late nineteenth century, Uruguay consolidated its agrarian productive structure. This structure depended on the performance of the international commodity markets and was accompanied by an unsuccessful industrialization effort, which aimed at creating a diversified and sustainable production structure.

The agro-export led model, which dominated the Uruguayan economy between 1870 and 1930, relied heavily on livestock-based products, mainly meat and wool, which accounted for 90% of the country's total exports, compared to a scant 5% of agricultural products. Since the beginning of the 20th century this agrarian base was complemented by an early industrialization process, mainly in the country's capital Montevideo. Development was fundamentally oriented towards the production of perishable goods for domestic consumption. In addition, a mainly trade-oriented service sector developed in the local economy at an early stage.

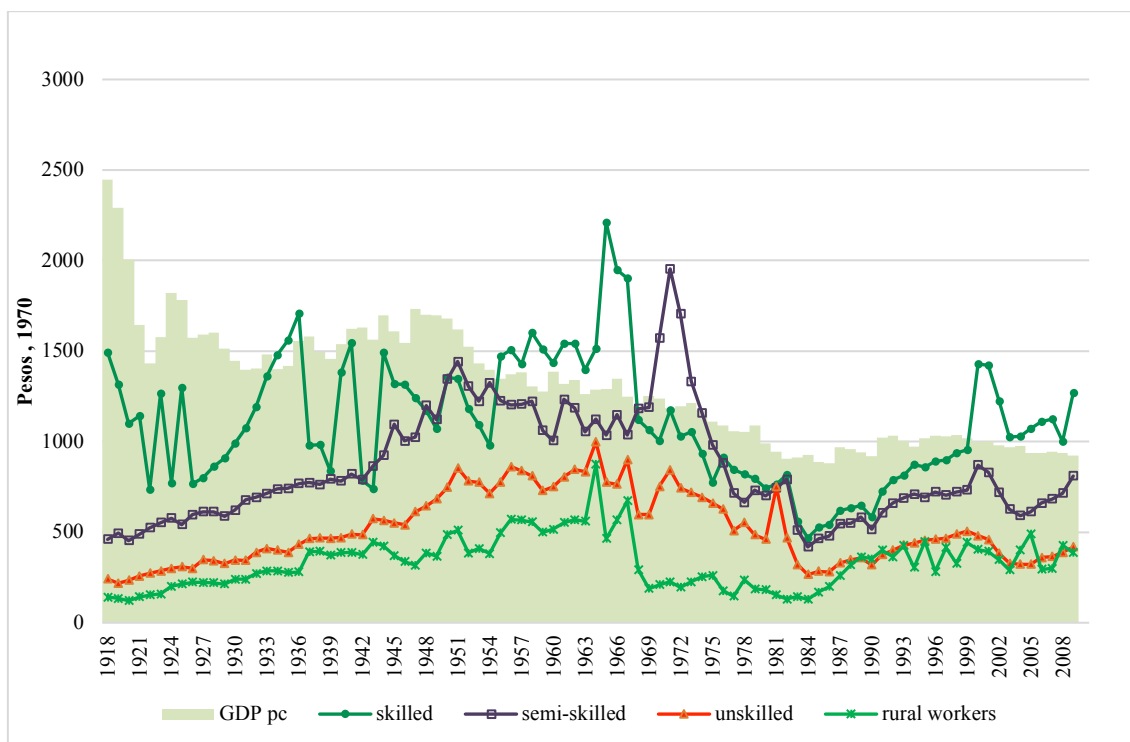
The productive structure of the economy as outlined above strongly conditioned the development and growth of the country's labor market. Thus, the agrarian sector required a very small labor force and eventually turned into the main driver of migration from the countryside to the city. At the same time, rural activities required a low-qualification labor force, a fact that explains low wage levels throughout the period under review.

In the case of workers employed in other sectors, the dynamics of economic growth varied considerably throughout the 20th century. According to the available information for the last decades of the agro export-led period (1918-1930), the labor market showed sustained wage differences between semi-skilled and unskilled workers. At the same time, the data referring to skilled workers reveal a higher variability. Nevertheless, the income level of skilled workers is consistently higher than the levels of other sub groups. The heterogeneous participation of professionals in this group may have had a strong influence on this result.

The 1930s mark a period of limited changes in relative wages, with the exception of skilled workers. Salaries of qualified public sector employees, which had been well above the general wage level, decreased towards the end of the decade, thereby reducing the wage differential between workers. This was mainly due to the structural changes the country was undergoing; while the relative weight of the agricultural sector decreased, the participation of the manufacturing and services sectors both in employment and GDP became stronger (Ardente, Díaz, and Rossi 2004) (Bértola 2005).

This productive transformation had a strong impact on wage distribution and eventually led to an increasing participation of workers' incomes in the economy. And it led to increasing wages for less qualified jobs, to the extent of equating the average wages of semi-skilled and skilled workers. This is also explained by the type of industry, which developed in the country, being its basic features a low demand for skilled labor and labor-intensive production methods.

**Graph 1. Evolution of wages among workers and GDP, Uruguay 1918-2009**



Sources: Wages: 1918-1980 Company Files and General Expenditure Budgets. 1981-2010 Household surveys. GDP, Moxlad database.

In 1943 labor regulation was introduced in the industrial and services sectors, which implied the negotiation of minimum wages in all occupations in tripartite councils with the participation of the State, employers and employees. During the industrialization period, between 1930 and 1970, the institutions linked to the labor market played a stabilizing role that contributed to a decrease in wage dispersion in the entire labor market. Before the background of a "weak" welfare state, wage negotiations and industrialist policies were extended, social spending expanded and price controls for basic food products and rents were introduced. This mix of factors contributed to a significant improvement of the overall average wage. The only exception to this apparent decrease in wage inequality were the rural wages, which did not show any tendency towards convergence with the general wage level.

Since 1960, the crisis of the State-led industrialization model became apparent through the decrease of GDP per capita, chronic deficits in the balance of payments, accelerated inflation and increasing social and political unrest. Maintaining the productivity of the most dynamic industries of the period was based on the reduction of labor costs. The persistent fall of real wages indicates the size of the adjustment that affected workers.

During the government of J. Pacheco Areco (1967-1971) a variety of measures were implemented to reestablish the foreign trade balance and stabilize prices. Price and income freezes were implemented in June 1968 and turned out to be a first step towards real wage reductions. Government measures also put an end to the tripartite relationship between State, employers and workers. Since that moment workers were excluded from the collective bargaining process, in which they had been participating since 1943.

In reply to the failure of the industrialization model, a new period of "export-led growth" - or second globalization - began in the 1970s. In accordance with the Washington Consensus, in this period Latin America and the Caribbean adopted a package of economic policies, which focused on commercial and financial liberalization, privatization and deregulation, as well as the dismantling of protectionist industrial policies (ECLAC, 2018).

During the period of dictatorship in Uruguay (1973-1984), income reductions were permanent, and after 1982 rising unemployment and a growing informal labor market added to the decrease of wages. As a result of this decline, average real wages in 1984

represented 61.7% of the level achieved in 1970. In particular, rural wages remained submerged at the lowest level of the entire period under review.

The years after 1985 witnessed a deepening of the policies implemented in the previous decade, leading to the consolidation of the liberal and excluding model of open doors, which characterizes the second globalization. Outstanding features of this continuity are the increasing relative overall importance of companies, increased flexibility, the loss of trade union influence and a deepening differentiation between qualified and unskilled labor. Unemployment levels remained unchanged and even worsened during the 1990s, despite an increase of GDP. But this was not the only problem during this period. The rate at which precarious working conditions, informality and under-employment rose, while the social protection of workers diminished, even accelerated at that stage. The economic liberalization was accompanied by growing wage dispersion and an increasingly inequitable income distribution. This is a pattern that includes the countries of Latin America and the developed countries within the framework of the new techno-economic paradigm.

The impact of the re-primarization process of the Uruguayan economy, reoriented towards the production and sale of agrarian goods with little added technological value resulted in a deepening wage gap between skilled and unskilled workers. On one hand, rural sector workers reduced the wage gap, which separated them from unskilled workers. On the other, the restructuring of the labor market and its liberalization during the 1990s meant that the wages of semi-skilled and skilled workers began to recover. However, despite this trend the gap between skilled and semi-skilled workers remained constant.

The economic crash at the beginning of the 21st century had a considerable impact on wage levels. However, the labor market started to recover with the inauguration of a social democratic government in 2005. Despite the short period of change, the reactivation of collective bargaining, the recovery of former employment levels and the increase of GDP have contributed to the recovery of the general average income.

## **6. Skill premium, growth and inequality**

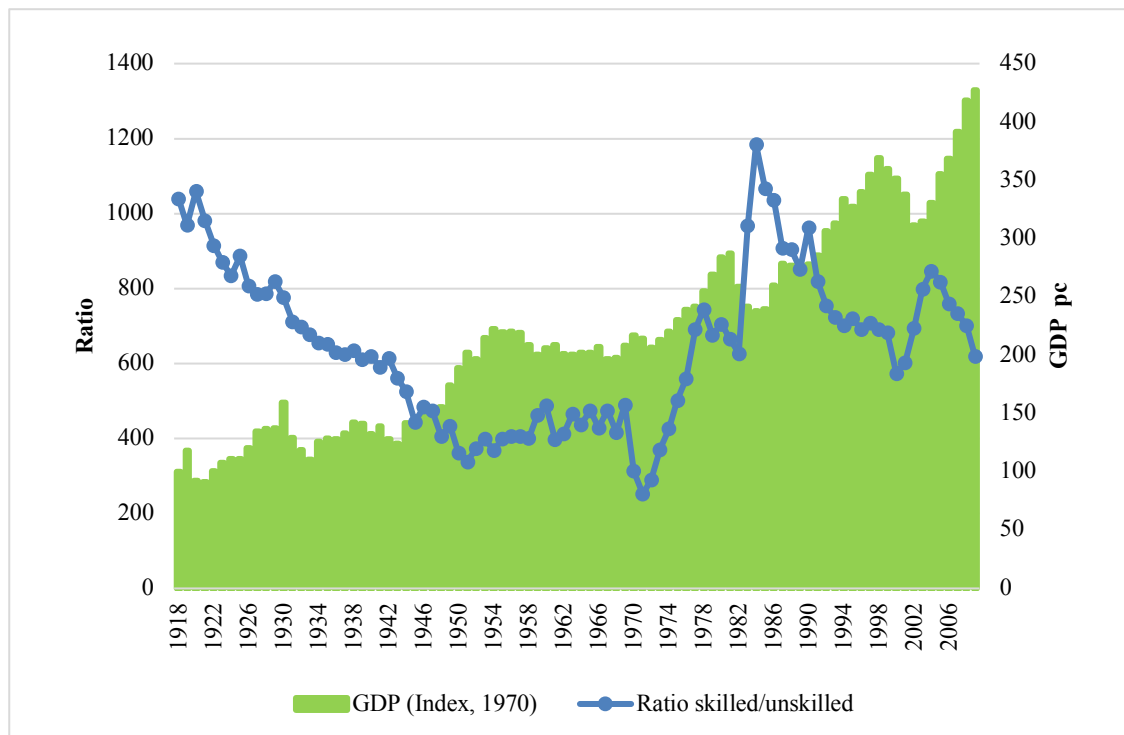
The importance of analyzing the wage gap between skilled and unskilled workers is explained by the possibility to estimate the weight of qualification for remuneration and to understand how the development process of a country is linked to inequality.

From a theoretical perspective, qualified labor as a productive factor would be a necessary condition to achieve economic growth. The skill premium would generate differences among workers according to the revaluation of their skills. As we mentioned in the introduction, this statement has been subject to ample discussion in specialized publications. In the case of Uruguay a long-term perspective shows that the gap between skilled and unskilled workers fell significantly between 1918 and 1950 and remained relatively stable and low during the following two decades. These results account for the type of labor demand generated by the country's economic development.

In much of the state-led industrialization process the incorporation of skilled labor does not seem to have been a key element of economic growth. The industrialization strategy was based on the incorporation of a semi-skilled and unskilled labor force. Within the framework of the institutional changes introduced since the 1940s this contributed to a wage increase that might explain the reduction of the preexisting gap.

The institutions set up in this period had a great influence on aspects such as the fixing of salaries, the increase of unionization, collective bargaining, the protection of industries and price controls on the domestic market. All of these elements contributed to changes in the supply and demand of labor with a comparatively lower average qualification level of workers.

**Graph 2. Skill premium and growth. Uruguay 1918-2009**



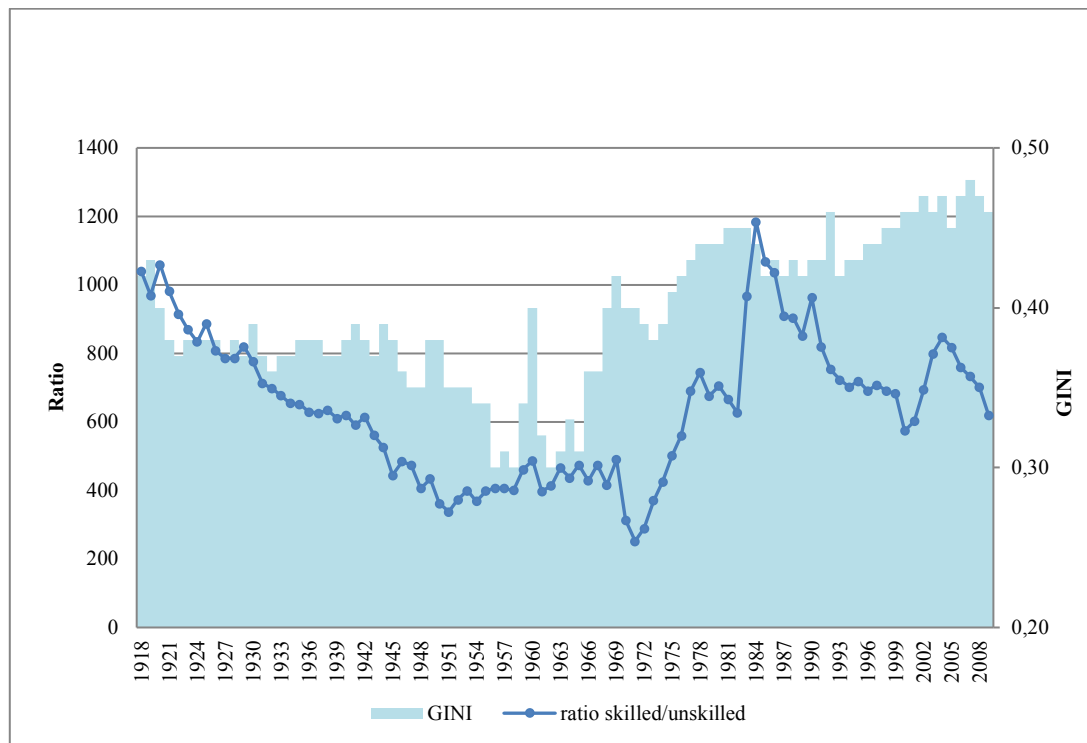
Sources: Wages: 1918-1980 Company Files and General Expenditure Budgets. 1981-2010 Household surveys. GDP, Moxlad database.

It should be noted that the same period of decreasing wage gaps between workers also witnessed a process of increased spending on education and social services (Camou & Maubrigades, 2005; Azar 2012). The relative supply of skilled workers may have improved not only because of the increase in educational coverage, but also because of training policies, due to the rise of women's participation in secondary and tertiary education. On the basis of these data it is possible to formulate the hypothesis that an increase in the relative supply of qualified workers contributed to the reduction of the wage gap. According to these data Uruguay would be framed within a trend towards more equality that encompassed the industrialized countries.

The 1970s marked a turning point of this process, in line with the changes introduced into the development model that were mentioned previously. This new model installed a new perspective to the role of the labor market in terms of control of production costs and improvements in competitiveness. The commercial opening generated two parallel changes: first, the re-primarization of the economy and the country's return to production of commodities for export; and second, the step-by-step introduction of new

technologies and knowledge, which created an increasing demand for skilled workers - and a deepening wage gap - in the long run. In this context, the increase of the skill premium corresponds to a global tendency to increase qualified wages as part of the framework of changes in the technical / productive paradigm.

**Graph 3. Skill Premium and inequality. Uruguay 1918-2009**



Sources: Wages: 1918-1980 Company Files and General Expenditure Budgets. 1981-2010 Household surveys. GDP, Moxlad database.

The time period 1985-2000 reveals a general wage increase and, at the same time, an increasing wage gap between skilled and unskilled workers. Towards the end of the analyzed period the policy change following the inauguration of a social-democratic government started to improve the labor market conditions with the reintroduction of collective bargaining, the formalization of employment and the regulation of minimum wages (Bértola & Williamson, 2016). Rising commodity prices during the 2000s generated an increase of GDP levels, which in turn acted as an economic backing for the introduction of changes on the labor market. Both, the reinstallation of collective bargaining and the regulation of the formal labor market, have a positive effect on the average wage level. Workers gained bargaining power to demand more participation in



benefits and wages. New legislation also led to a significant increase of minimum wages.

Our estimate of the evolution of the ratio between skilled/unskilled wages shows a strong correlation with the estimate of the Gini Index for the same period. Only in the last decade the correlation has weakened. We can assume that in this decade, in which labor institutions protected the level of unskilled wages a decrease of the skill premium might occur, although income inequality remains high due to the rise of other incomes (rents, capital, etc). Inequality estimates presented by Bértola (2005) allow us to observe that the postwar period produced one of the most evident reductions in inequality. Several reasons can explain this tendency. The beginning of collective bargaining, the introduction of social policies, and encouraging industrial policies with a strong protection of the domestic production were among the new actions that contributed to reducing the inequality gap. Within this context of structural change it is important to highlight that the loss of weight of the agricultural sector did not generate an increase of inequality. Quite on the contrary, the growing industrial sector and the increasing labor force of this sector generated new opportunities for trade unions and better conditions for collective wage bargaining. The failure of the industrialization project in Uruguay and the subsequent economic opening was related to a general increase of inequality levels since the 1960s, above all among paid workers.

The structural change (since the 1990s) pointed to the liberalization and reduction of the State, which implied a decrease of the role of tripartite negotiations in wage bargaining. Furthermore, the industrial sector went through an important reduction in size and scale of its production, which added to the technical changes, implied a significant reduction of the general demand for work in that sector, and at the same time, an increasing demand for skilled workers. Deregulation and structural changes in favor of more "efficiency" implied wage cuts, the reduction of the wage share in GDP (around 20%), and a segmentation of the labor market. All of this led as a result to an increase of global inequality since the 1960s, and it will be difficult to reverse this trend in order to improve labor market conditions. The period following the 2002 crash opened a window of opportunity for the return to the former negotiating conditions. However, this occurs in a context, in which the unions need to adjust their participation in accordance with the transformation of the labor market, the reduction of the industrial sector and an increase of the service sector and freelance work.

## **7. Latin American comparison**

At this point we compared the evolution of the skill premium in some Latin American countries. This is a first version of the comparison based on our own estimates for Uruguay and the data elaborated by Astorga. The data may have some explanatory power, nevertheless they should be taken with caution. Future research will be needed to refine the criteria of occupation selection.

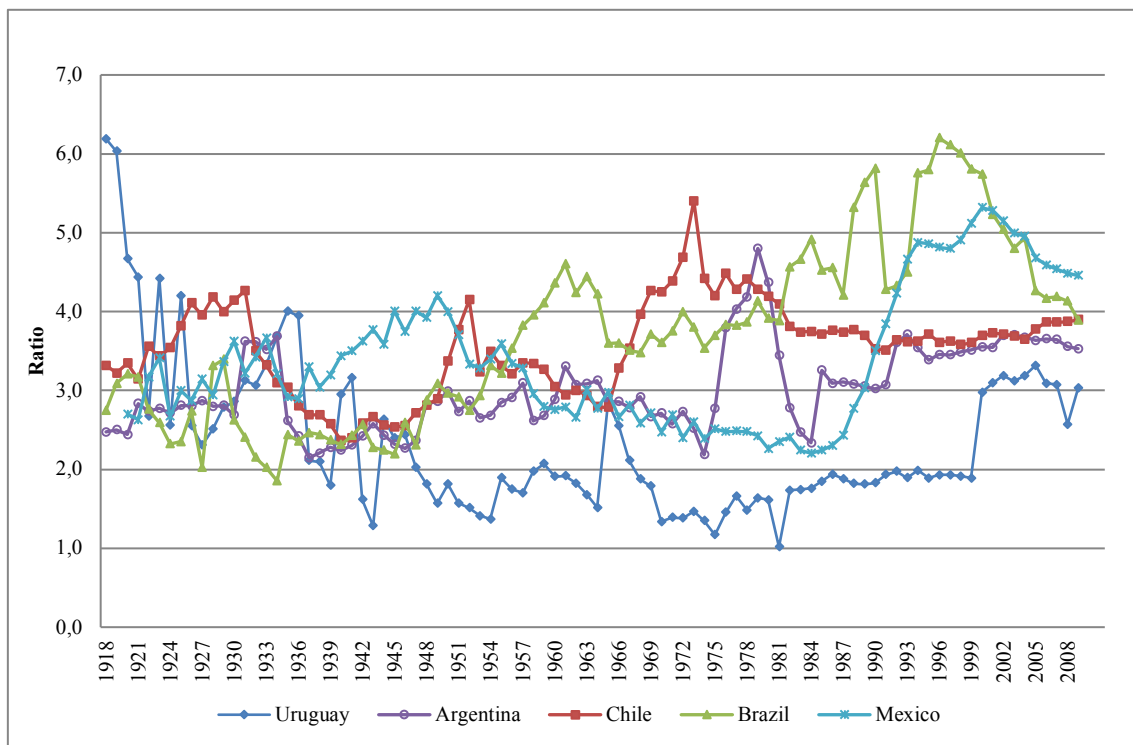
Our results are in line with the evolution of global inequality estimates elaborated by other researchers (Bértola 2018).

In Graph 4 we present the wage ratio between skilled/unskilled workers for Mexico, Uruguay, Brazil, Argentina and Chile.

For this country panel the evolution of the ratio is linked with the different economic periods of Latin American history. The graphical observation in the long run shows a kind of U-shaped curve, which is not concurrent.

In our data beginning in 1918, when the international integration of the region into the world economy was already under way and labor supply increased as a result of mass immigration, the wage gap remained high. During the period of export-led growth the ratio between the countries was closer than during the rest of the 20th century. In Chile the skill premium may be higher than in other countries due to the economic specialization concentrating on copper and nitrate exports, which determine a polarized labor market with unskilled primary sector workers and skilled technicians and managers. In spite of this particular case all the countries increased the wage gap until the beginning of the 1930s.

**Graph 4. Skill Premium in Latin America. 1918-2009**



Sources: Wages in Uruguay: 1918-1980 Company Files and General Expenditure Budgets.1981-2010 Household surveys. Others countries: Astorga (2017).

The next period from the 1930s to the 1970s was characterized by lower wage dispersion. The industrialization-led growth process contributed to this result, although it did not coincide in time in the region. In Argentina, Uruguay and Mexico the skill premium decreased in the long run. In the countries of the Southern Cone this decrease was based on a policy package to strengthen the domestic market. Brazil followed a different pattern of industrialization, which gave priority to exporting manufacturing goods and adopted a series of policies to diminish wage dispersion. Brazil and Mexico are huge countries with strong regional differences, where the average wages paid in industrial areas exceed those of other productive sectors. As a result, in and around Sao Paulo a high-income industrial workers' elite emerged.

During the final period since the 1980s the economic model has been open and market-oriented. The integration of the region into the global economy occurred in the context of a new technological economic paradigm, which change the relative demand of skilled labor. The following decades were dominated by a rising trend in skill premia. Within

the context of the Washington Consensus policies of the 1990s the labor market experienced a reduction of labor regulation and increasing flexibility. This decade was characterized by a sharp surge of skill premia, with Brazil and Mexico as leaders of this trend. Despite the low relative skill premium level of Uruguay throughout the period, in the final decade the country joined the trend.

The beginning of the 21st century marked a turning point, especially Brazil and Mexico started to reduce the gap. Uruguay and Argentina recovered from the 2002 economic crisis and began a moderate reduction.

## **8. Final remarks**

This paper offers a long-run view of the Uruguayan wage evolution (1918-2010) based on four yearly wage series based on occupational categories from different sectors.

One of the advantages of this approach is the possibility to work out initial estimates of the development of relative wages, which will enable us to distinguish wage performances together with different economic development patterns and eventually to answer the following questions: Which are the moments of change and continuity, how strong is the link between structural change and labor market response? The data now available will allow us to find new explanations to this kind of questions.

The evidence backs our previous knowledge about the decline of inequality in Uruguay towards the middle of the 20th century. At the same time it highlights specific new tendencies of the labor market. A mix of three variables can explain the changes of the wage gap: higher education levels, the ups and downs of skilled-labor demand and institutional factors. The industrialization process was not intensive in skilled work, but education levels improved. However, the qualifications did not always adjust to the industrial demand. During this period the institutional arrangements of the labor markets played a dominant role. In the open, liberal period the deregulation and flexibility of the labor market had an impact on the gap together with supply and demand effects, which continued with the new technological economic paradigm.

Our results confirm the assumption of a lower relative wage inequality of Uruguay in comparison with the country panel. In terms of the skill premium in the region, Uruguay has performed as the most equitable country throughout the time period under analysis. The different scenarios that we find in the Uruguayan case in the long run are also present in the other countries, where they seem to be more severe. It seems that the labor markets of bigger economies are more exposed to external shocks and therefore less stable.

There are many aspects to follow in this line of research. One we would like to mention is the importance of estimates concerning the pay rolls of different wage groups so as to be able to measure the levels of wage dispersion for the entire labor force. .

## 9. References

- Acemoglu, Daron. 2003. "Cross-Country Inequality Trends", Vol. 113, No. 485, Features (Feb., 2003), Pp. F121-F149. Published by: Wiley on Behalf of the Royal Economic Society. Stable URL: <http://www.jstor.org/stable/3590141>. CROSS-COUNTRY INEQUALITY TRENDS \*." *The Economic Journal* 113(485):121-49.
- Astorga, P. 2017. *Real Wages during Economic Development in Latin America*. edited by R. Gate. Barcelona. Retrieved (<https://www.researchgate.net/publication/312384063>).
- Berg, E. 1968. *Wage Structure in Less Developed Countries*. Michigan: Center for Research on Economic Develop.
- Bértola, L. 2005. "A 50 Años de La Curva de Kuznets: Crecimiento Económico y Distribución Del Ingreso En Uruguay y Otras Economías de Nuevo Asentamiento Desde 1870." *Investigaciones de Historia Económica* 1(3):135-76.
- Bértola, L., L. Calicchio, M. M. Camou, and G. Porcile. 1999. *Southern Cone Real Wages Compared: A Purchasing Power Parity Approach to Convergence and Divergence Trends, 1870-1996*. Unidad Multidisciplinaria. Facultad de Ciencias Sociales.
- Bértola, Luis. 2018. "Viewed up Close, Nobody Is Normal: Industrialization and Income Distribution in Latin America. An Essay." edited by (International Economic History IEHACongress).
- Douty, H. M. 1961. "Sources of Occupational Wage and Salary Rate Dispersion within Labor Markets." *Industrial and Labor Relations Review* 15(1):67-74.
- Green, D. A. 2004. "No Title." Pp. 27-38 in *Labour Market Evolution*, edited by M. Granthma, G and MacKinnon.
- PNUD-Uruguay, •. 2008. "C." Pp. 46-59 in *Desarrollo Humano en Uruguay 2008. Política, políticas y Desarrollo Humano*. Montevideo: PNUD.
- Rodgers, G. 1994. "Institutional Economics, Development Economics and Labour Economics." Pp. 1-24 in *Workers, institutions and economic growth in Asia*, edited by G. Rodgers. Ginebra: International Institution of Labour Studies.