

A relationship between job quality and economic growth over the long run and the role of labour institutions: the case of Uruguay, 1991–2018

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Abstract

The trend reflected in the job quality index constructed for this study indicates that economic growth alone is not enough to improve the quality of employment. Econometric techniques are used to estimate the long-run relationship between this index and GDP. The results of those calculations clearly point to a negative relationship between these two variables from 2005 on, when job quality began to improve against a backdrop of strong economic growth in combination with changes in the institutional framework (labour laws and collective bargaining mechanisms) that were conducive to an improvement in job quality.

Keywords

Employment, human resources, working conditions, economic growth, measurement, econometric models, case studies, Uruguay

JEL classification

C43, I31, J23, J24, J81

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I. Introduction

As the globalization process intensifies, the attainment of international competitiveness is becoming a more and more challenging goal for businesses and is generating mounting tensions in terms of working conditions, in general, and of wages, job stability, social benefit coverage and the prospects for professional development and career advancement, in particular. The issue of job quality in Latin American countries has consequently become an increasingly important area of research in recent years.

Studies on this topic are still few and far between, however, particularly in the case of developing countries, owing to the theoretical and methodological complexity of the subject. While the International Labour Organization (ILO) (1999) has made an effort to define the concept of job quality in terms of “decent work”, in theoretical terms it remains a dynamic, multidimensional concept involving opposing interests (those of employers versus those of workers). In addition, in operative terms, efforts to address the issue are subject to the availability of information on all its various facets (Burchell and others, 2014).

What factors improve job quality? The literature points to two types of variables: those relating to the economic and productive context, such as the growth rate of economic activity and productivity, and those relating to the institutional or regulatory framework of the labour market (Ghai, 2003; González and Bonofiglio, 2002; Weller and Roethlisberger, 2011).

Ocampo and Sehnbruch (2015) distinguish between what they call “non-traditional” employment variables, which relate to qualitative characteristics of employment and are less closely correlated with the business cycle but respond relatively quickly to changes in the regulatory framework, and what they refer to as “traditional” variables, which have more to do with the quantity of employment (activity, employment and unemployment rates, and real wages) and are more closely correlated with changes in economic activity. Studies focusing on Chile (Ruiz-Tagle and Sehnbruch, 2015) and Brazil (Huneus and others, 2015) both reach this conclusion, whereas, in a study dealing with Colombia (Farné and Vergara, 2015), the authors found that job quality was also influenced by economic growth in that country.

In the same vein, Bensusán (2009), in reference to an ILO report on Latin America (2008), notes that higher economic growth rates allowed Latin America to improve some of its labour market indicators between 2002 and 2007 (a lower unemployment rate and, to a lesser degree, higher real wages), but she goes on to say that this did not necessarily translate into improvements in job quality, which suggests that economic growth does not automatically result in better forms of employment. In the same study, when discussing improvements in job quality in Argentina in 2004–2007, she talks about the difficulty of determining how much of that improvement was attributable to high economic growth rates and how much was the result of a better law enforcement system or the reactivation of the social dialogue.

Variables associated with economic growth and those associated with labour institutions have both been identified as playing a highly influential role in bringing about changes in job quality. Weller (2014) asserts that labour productivity, which reflects the prevailing conditions for economic growth and the expansion of production, influences how much capacity exists for boosting job quality because it determines, in part, what benefits will be provided to workers. In theoretical terms, the two variables that are most closely associated with each other are labour productivity and wage levels, even though productivity gains do not necessarily or automatically translate into higher wages. In addition, non-wage factors relating to job quality that have to do with the institutional structure of the labour market (such as collective bargaining mechanisms and labour laws and standards) tend to show improvement when economic growth and productivity are on the rise. This is because they usually entail costs for employers, and their observance is thus influenced by the level of business enterprises’ available resources.

Porras and Rodríguez López (2014) observe that the average quality of employment in Uruguay was no better in 1998 than it had been in 1991, even though the country had experienced rapid economic growth and the labour market had been becoming more flexible in the intervening years.

By contrast, a sharp decrease in the relative number of poor-quality jobs was seen between 2003 and 2011, at a time when economic activity was forging ahead and when, from 2005 on, the State was taking a more active role in shaping the rules of the game in the labour market in an effort to improve working conditions. Based on those data, the authors of that study concluded that economic growth is not enough in itself to improve job quality and that the regulation of the labour market also plays an important role. Those findings should be viewed with caution, however, because, first of all, the data used in that study cover only the beginning and end of that expansionary period and thus do not indicate what was happening in terms of job quality during the period that elapsed between those starting and ending years. In addition, other economic phenomena that could have influenced the trend in job quality need to be taken into account.

The main objective of this study is therefore to analyse the connection between job quality and economic growth in Uruguay in 1991–2018 and to determine what role labour market institutions played in that respect; in order to do so, it will also be looking at other factors that could account for some part of the relationship between the two. To that end, a synthetic multidimensional index was developed to measure wage earners' job quality based on the same methodology that Porras and Rodríguez López (2014) used in their study, with the difference that, in this case, the index has a quarterly periodicity, making it possible to track trends throughout the period in question and to generate a relational model using time series techniques.

This study is structured as follows. The second section reviews the concept of job quality itself, the methods used to measure it and the relationship between job quality and the business cycle. The third section describes the methodology used to build the substandard job index (SJI) and to arrive at an econometric estimate of that relationship. The fourth section presents an analysis of how this index has trended and the magnitude of that trend, along with the estimation of the model. The fifth section offers a series of conclusions.

II. Background

1. The concept of job quality and its measurement

There is no single agreed definition of job quality. As job quality is a multidimensional mental construct that encompasses a number of different, subjective elements, it is defined in many different ways and is therefore a somewhat nebulous term.

Generally speaking, job quality is defined as a set of employment-related factors that influence workers' health and their economic, social and psychological well-being. Farné and Vergara (2015) add that it should be regarded as a reflection of objective characteristics shaped by labour institutions on the basis of universally accepted standards. However, for most studies, job quality is defined by extension based on descriptions of the minimum standards that a position should meet or the characteristics it should have in order to be classified as being "quality employment" (Farné, 2003).

Anker and others (2002) have systematized the conditions that a job should fulfil in order to be classified as decent work based on that concept as defined by ILO (1999): it should provide earnings that are adequate to cover basic needs, as a minimum; it must be productive; it must include social benefit coverage (for accidents, old age, unemployment and illness); it should be freely chosen; it should provide training; and it should uphold workers' basic rights in line with international standards. González and Bonofiglio (2002) view the concept as involving monetary and non-monetary aspects and therefore define job quality on the basis of level of earnings, type of labour relations, job and income stability, the level of effort required, working conditions and opportunities for personal development.

It therefore appears that a degree of consensus exists as to some of the characteristics of decent work in terms of monetary considerations (decent remuneration that corresponds to the functions and qualifications of the person performing the work, paid vacation time and overtime pay), labour rights (a formal labour contract, severance pay, health care and social security coverage, and the possibility of unionizing) and personal development (ongoing training opportunities).

Two problems arise when an attempt is made to measure job quality, however: (i) the scarcity of the information needed to measure each of the dimensions of decent work; and (ii) differences in the methods used to aggregate the multiple dimensions that are involved in determining quality.

The first constraint limits the scope of the relevant measurements and thus results in an underestimation of job quality problems. The nature of the second limitation depends on the methodology being used to address the issue. Some researchers focus on a given characteristic or analyse each dimension separately (ILO, 2014; Amarante and Arim, 2005; Amarante and Espino, 2009; Araya, Brunini and Lavallega, 2013, for Uruguay), which makes it difficult to form an overall picture of the problem. Others have chosen to construct a synthetic index which yields a single score that encompasses all the relevant factors (for Uruguay, Miranda, Porrás and Rodríguez, 2014, and Porrás and Rodríguez López, 2014; for Colombia, Farné, 2003, and Farné and Vergara, 2015; for Chile, Huneus, Landerretche and Puentes, 2012; and for Brazil, Huneus and others, 2015).

Building an index of this sort has certain advantages, but it also raises some problems. Having a single indicator makes it possible to track its movements and thus gain some idea of the problem as a whole, which is useful for purposes of analysis and comparison. In addition, according to Sehnbruch (2004), it is helpful for moving beyond the narrow view of unemployment as an “employment problem” in the context of the public debate surrounding the issue. But when a global indicator cannot be broken down into its constituent parts, information is lost. In addition, the construction of such an index entails subjective—and, therefore, debatable—decisions about such things as how much weighting to assign to each dimension of the global indicator or how to go about combining qualitative and quantitative indicators (Ghai, 2003).

For this study, a synthetic index of job quality has been constructed based on the same methodology as used by Porrás and Rodríguez López (2014), which is in turn an adaptation of a methodology developed by Alkire and Foster (2007 and 2011) for measuring multidimensional poverty. This methodology was also used by Huneus, Landerretche and Puentes (2012) and by Huneus and others (2015) in studies on Chile and Brazil, respectively. The advantages of using this indicator are outlined in the section on methodology.

2. The relationship between job quality and the business cycle

Can economic growth in and of itself lead to the creation of high-quality jobs? According to Davoine, Erhel and Guergoat-Larivière (2008), a study focusing on European Union countries did not detect the presence of any trade-off between the number of job openings and job quality. Thus, job creation, which correlates positively with the business cycle, does not appear to have led to any decline in job quality. However, these authors also state that the theoretical and empirical relationships between the quantity of jobs and their quality is not so straightforward because they are influenced by labour institutions in each particular country.

The authors of some studies have found that economic growth is the explanatory variable for improvements in job quality, and they therefore tend to believe that the government should not take any action to alter the rules of the game in the labour market. For example, Jiménez (2016) concludes that, in the case of Argentina, the rate of labour informality is countercyclical and the level of high-quality

jobs is procyclical. The index of trade openness used in that study reflects a positive relationship with the level of high-quality jobs and a negative one with the rate of labour informality, while recruitment costs and the presence of labour institutions tend to result in an increase in informal jobs and a decline in higher-quality ones.

In a study on Colombia, Farné and Vergara (2015) analysed job quality during the period from 2002 to 2011. That was a time when atypical contracts came into greater use, along with mechanisms for making labour relations more flexible, even though the swift growth of the country's economy during those years boosted job creation rates, along with a number of job quality indicators. The authors estimate that the improvement in working conditions was slight but widely distributed during that time, thanks to increases in income and in social security coverage, together with a reduction in underemployment (measured as a shortfall of available working hours), with independent workers benefiting the most from that situation.

Other studies, however, have not found such a clear-cut relationship between these variables. In a study on Chile, Ruiz-Tagle and Sehnbruch (2015) note that, at the same time that the economy was growing rapidly and job creation was reaching record levels, no change was seen in contractual conditions or in the percentage of informal employment (i.e. labour relations that did not benefit from an employment contract, did not entitle workers to social protection benefits and did little to reward seniority). They therefore conclude that job quality did not improve in Chile even in the presence of rapid economic growth and that the key variable influencing job quality is the presence or absence of an indefinite employment contract. They were not able, however, to detect a clear-cut relationship between the trend of that variable and economic growth. In a study on Brazil during the period from 2002 to 2011, Huneeus and others (2015) found that the legislation passed during that time in an effort to formalize employment relationships, together with the policies introduced to spur economic growth and investment in certain sectors, did result in significant improvements in job quality, although the quantity of jobs did not increase to any substantial degree.

Ramos, Sehnbruch and Weller (2015) reach a similar conclusion and, on that basis, make the argument that it is unreasonable to expect economic growth to automatically bring about an improvement in working conditions, since a number of external factors come into play as well (e.g. globalization, regulation and deregulation, and the effectiveness of labour law enforcement). They therefore suggest that consideration be given to the possibility of adopting policies to encourage the formalization of employment relationships, improve working conditions and strengthen the linkages between those conditions and social protection systems. An ILO study (2013) also states that there is no automatic relationship between informality and economic growth, although growth is essential if employment in the informal sector is to be curbed. An effort is made to demonstrate that economic growth can help to bring about a reduction in informality when it is combined with targeted policies for strengthening the connection between these two variables.

Another ILO study (2014) notes that informal employment in Uruguay has declined since 2005 thanks to the implementation of various types of public policies at a time when the economy was rapidly expanding. Porras and Rodríguez López (2014) also reach this conclusion in their analysis of the situation in Uruguay. Their substandard jobs index (SJI) for 1991, 1998, 2003 and 2011 indicates that the situation was fairly stable in the 1990s but that the percentage of such jobs then fell sharply in the 2000s, once the country had emerged from its 2002 economic crisis. This latter period was also a time when policies designed to bring about an improvement in job quality were being applied, in contrast to the policy landscape in the 1990s, when, among other things, the country's wage councils were not being convened.

The public policies implemented from 2005 on focus on worker protection and the promotion of union activity; the regulation of working conditions for domestic service workers and of labour

outsourcing systems; incentives for the formalization of employment relationships through the Social Security Institute (BPS); the establishment of the National Institute of Employment and Vocational Training (INEFOP); the introduction of a cap on the length of the workday for farmworkers; and the promotion of collective bargaining in both the public and private sectors. All of these measures are designed to have a positive impact on the various aspects of job quality. The creation of the Integrated National Health System (SNIS) is also thought to have contributed to the formalization process by reducing the cost of health coverage for workers' (and especially low-income workers') families (Bérgolo and Cruces, 2013).

The above findings point to the existence of a positive relationship between economic growth and job quality in Uruguay and provide an indication of the differentiated effects that the main sorts of labour regulations can have on that relationship.

III. Methodology

This section will outline the methodology used to build the synthetic index and will then go on to describe the procedure used to estimate the relationships between job quality and economic growth.

1. The substandard jobs index

(a) A synthetic index

As in Porras and Rodríguez López (2014), this study uses the methodology developed by Alkire and Foster (2007 and 2011) to construct a substandard jobs index (SJI). This kind of index has a number of useful properties: (i) it changes when the quantity of substandard jobs changes (incidence) and when the quantity of problematic dimensions or shortcomings changes (intensity); and (ii) it can be disaggregated, which makes it possible to determine which dimensions account for the poor quality of employment.

From among the indicators used by Alkire and Foster (2007 and 2011), the SJI employs the adjusted headcount ratio (MO). In order to identify poor-quality jobs using this method, a double cut-off has to be defined. The first step is to define a deprivation threshold for each dimension (z_j) and then a threshold for the minimum number of instances of deprivation (k) needed to classify a job as being of poor quality. A job can therefore be categorized as being substandard if the number of instances of deprivation (c_j) that it entails is equal to or greater than k .

Using the system of notation employed by Alkire and Foster (2007 and 2011), the SJI can be written as:

$$SJI = MO = H * A \quad (1)$$

H is the headcount (i.e. the percentage of jobs that are substandard) and $H=q/n$, where q is the quantity of jobs that have fewer than k problematic dimensions out of the d dimensions considered and n is the total number of jobs. To obtain q , the following steps are followed: (i) For each dimension j , a cut-off point z_j is defined, and each job is then assessed in the d dimensions. The next step is to construct the variable c_j , which measures the quantity of shortcomings exhibited by each job; this can take the following values: 0, 1, 2, ... d . If, for a given job, $c_j=d$, then that job is subject to problems in all of the dimensions; (ii) k is then determined and compared with c_j for each job. All jobs in which $c_j \geq k$ will be substandard; and (iii) finally, q equals the headcount of substandard jobs.

A is the term that provides information about how bad the substandard jobs are (intensity). It is computed as $A = \sum c_j(k) / (qd)$. This means that it measures the proportion of problems associated with

substandard jobs. For example, $A=0.5$ means that, on average, substandard jobs have shortcomings in half of all their dimensions.

The adjusted headcount ratio or, in our case, the SJI, is then:

$$SJI = H * A = \left(\frac{q}{n}\right) * \frac{\sum c_i(k)}{(qd)} = \frac{\sum c_i(k)}{nd} \quad (2)$$

Thus, it signifies the total number of instances of deprivation (shortcomings) exhibited by substandard jobs ($\sum c_i(k)$), divided by the total possible number of shortcomings, which means that all employed persons are subject to shortcomings in all dimensions (nd). The SJI is therefore sensitive to both the frequency and the magnitude of shortcomings in job quality and therefore encompasses both the incidence and intensity of those shortcomings in a single indicator. This is essential in order to evaluate the effectiveness of policies aimed at improving the situation for workers and to assess how they evolve over time, since the index value will diminish more if a reduction in the number of workers whose jobs exhibit shortcomings in terms of quality is combined with a reduction in the number of shortcomings exhibited by jobs that continue to be of poor quality.

The SJI can take a value of between 0 and 1. It will be equal to 1 in a hypothetical worst-case scenario, in which all jobs suffer from shortcomings in terms of quality ($q = n$) in all their dimensions ($c_i = d$). Thus, an increase in the value of the index signifies a deterioration in job quality. This could be due to an increase in the number of substandard jobs, to a further worsening of jobs that are already bad (an increase in the number of dimensions in which there are problems) or both. Meanwhile, a decrease in the value of the index indicates movement away from the worst possible situation, whether because there are fewer substandard jobs, because the existing substandard jobs are becoming less so (i.e. they are exhibiting fewer shortcomings) or both. The lowest possible value for the SJI is 0, which would correspond to a situation in which $q = 0$ or, in other words, where there are no substandard jobs.

(b) Selection of indicators, deprivation thresholds and weightings

As noted earlier, one of the constraints affecting measurements of job quality is the scarcity of information, and the selection of the dimensions that are ultimately used in this research is therefore contingent upon the availability of the necessary data.

The information used here, which has been drawn from the continuous household surveys conducted by the National Institute of Statistics (INE), permits the definition of four basic dimensions for the index: earnings, social protection, productivity and opportunities for personal development, and hours worked.

- (i) **Earnings.** The monetary and in-kind wages received per hour worked in a person's principal occupation are counted as earnings. A job is not considered to be of poor quality in this dimension if earnings are sufficient. While "sufficient" is generally an arbitrary concept, here it is defined as the amount of money at which the poverty line is set, expressed in units per hour (based on a 40-hour work week). While this is a basic minimum, it is actually debatable whether a job can be said to be of sufficient quality if the wage it pays is just high enough to reach the poverty line. However, since the main objective of this study is to track the movement or trend of the SJI, rather than its level at any given point in time, this criterion was chosen because it aligns with the approach used in Porras and Rodríguez López (2014).
- (ii) **Social protection.** This dimension reflects whether the job affords social security coverage or, in other words, whether it is registered with BPS and therefore provides a retirement pension, unemployment insurance, sick leave and health insurance. Shortcomings in this dimension are defined as a lack of this type of coverage. As the universe for this study is composed of

wage earners, shortcomings in this area are a factor only for persons employed in the private sector. This information did not begin to be gathered in the continuous household survey until 2001. For the years before then, the information was obtained indirectly for private sector wage earners from data on health insurance coverage provided by the Social Security Health Plan Administration (DISSE), which only covers wage earners who are registered with the social security system.

- (iii) Productivity and opportunities for personal development. It is an established standard in the literature that a good-quality job should be productive and offer the employee opportunities for personal development. If a job does not display these characteristics, then it is considered to be of poor quality. Increases in productivity are associated, on the one hand, with a company's development and growth and, on the other, with the possibility of improving employees' working conditions. A good job should also provide workers with the possibility of being promoted and of upgrading their skills through ongoing training. As precise measurements of these variables are unavailable, the number of employees per company has been used as a proxy. This choice is based on the hypothesis that workers in small businesses (fewer than five employees) do not have an opportunity to achieve significant productivity gains on a sustained basis and have virtually no chance of being promoting or of upgrading their skills. It has to be recognized, however, that this approach could lead to a job being classified as of poor quality when it actually is not; this could happen, for example, in microenterprises that have attained high levels of productivity by taking advantage of recent technological breakthroughs. Information on the quality of a job as measured by this dimension should therefore be taken with a grain of salt. Another consideration is the fact that, in Uruguay, persons working in firms that have fewer than five employees are mainly found in the domestic service, retail trade, food services and construction sectors, where working conditions are undoubtedly very closed associated with the way in which the threshold value for this dimension is defined.¹
- (iv) Hours worked. A job is regarded as problematical in this respect if an employee works for fewer than 40 hours per week but is available and wishes to work more hours (i.e. the worker is underemployed) or for over 48 hours were week. Both of these situations are classified as problematic in terms of this dimension.

In order to determine which jobs are of poor quality, it is necessary to define k (the number of problematic dimensions that a job would have to have in order to be classified as a substandard job). For the purposes of this study, $k = 1$. The choice of this value is based on the fact that, according to Porras and Rodríguez López (2014), the trend in the index for $k > 1$ during the years covered by the SJI is similar, differing only in terms of its actual level. Accordingly, a shortcoming in any one of the dimensions is sufficient to classify the job as being of poor quality.

Once the classification of substandard jobs has been established, the corresponding information needs to be aggregated. The methodology for building the SJI described in the preceding section calls for the assignment of weights to all the dimensions in the same way, although it is also permissible to place greater importance on a given dimension. All the dimensions are given equal weights because there is no theoretical basis for justifying differential weightings, so doing so would be equally arbitrary.

¹ In 2018, 45.3% of all microenterprise employees worked in the domestic service sector; if this group is combined with persons working in the retail trade, food services and construction industries, the proportion rises to 73%. And if the category is expanded to include those employed in microenterprises in the agricultural, food production, passenger transport (taxis) and other services (all activities that also offer few opportunities for realizing productivity gains, for personal development and for promotion), then the proportion climbs to 85%. In 1991, the corresponding percentages were 53.8%, 75.5% and 87%, respectively.

2. The econometric methodology

The starting point here is the assumption that the two variables of interest (the SJI and GDP) are not stationary and that, therefore, in order to avoid a spurious relationship, a cointegration analysis is called for. The autoregressive distributed lag model (ARDL) is therefore used; p and q represent the order of the lags of the dependent and independent variables, respectively. The method proposed by Pesaran and Shin (1995), Pesaran, Shin and Smith (1996 y 2001) and Pesaran (1997) is then used for the cointegration analysis.

This procedure has some advantages over other commonly used cointegration techniques. For one thing, it allows cointegration relationships to be detected while imposing fewer restrictions on the order of the integration of the variables, which only need to be less than $I(2)$; for another, it works better than other methods with small samples.

This method consists of estimating a model using an error correction mechanism associated with the general ARDL model (q,q) . In this case:

$$\Delta SJI_t = a_1 SJI_{t-1} + a_2 \log(GDP)_{t-1} + \sum a_{3i} \Delta SJI_{t-i} + \sum a_{4i} \Delta \log(GDP)_{t-i} + \sum a_n D_{nt} + a_0 \quad (3)$$

where a_0 is a constant and D_{nt} are dummy variables that could represent atypical values as well as other phenomena that may have affected job quality. The null hypothesis of non-cointegration is explored using the F-test, which consists of estimating the F-statistic (Wald test) of the joint significance ($a_1 = a_2 = 0$) of the lagged levels of the variables and comparing it with the critical values of the tables in Pesaran, Shin and Smith (2001). If the F-statistic is above the maximum critical value in the table, then cointegration among the variables is not rejected; if it is below the minimum value, cointegration is rejected; and if it is somewhere in the middle, the result is uncertain and the relationship will have to be estimated using a different procedure. In addition, the a_1 coefficient should be negative and significant based on the critical values of the table in Pesaran, Shin and Smith (2001). These tests should be validated with the model where the order of the lag q fulfils the maximum absolute value criterion of Akaike or Schwarz and where the residuals are well behaved (no autocorrelation, with a normal distribution and homoscedastic).

If the cointegration relationship is confirmed, the next step is to define the most suitable specification, which will be the one whose order of lag is significant for all the variables. Finally, once the model has been estimated, the impact of GDP on the SJI in long-term equilibrium, which is calculated as $-(a_2/a_1)/100$, can be determined.

3. The data

The data used in this study are drawn from two sources. First, microdata from the INE continuous household surveys were used to build the SJI. Because those surveys have covered the entire country only since 2006, the coverage of the series used to build the index is limited to wage earners in urban areas (locations with 5,000 inhabitants or more). The GDP data have been taken from the national accounts prepared by the Central Bank of Uruguay.

IV. Findings

1. The SJI in Uruguay between the first quarter of 1991 and the fourth quarter of 2018

Figure 1 tracks the SJI for the period beginning in the first quarter of 1991 and running until the fourth quarter of 2018. As the reader will see, the index was fairly stable during the 1990s, with some fluctuations and an upward trend becoming apparent beginning in the third quarter of 2002; this upward movement signals a worsening of job quality and coincides with the height of the economic crisis which occurred during that period. From that point in time until early 2005, the SJI displayed a slight upward trend, followed by a significant improvement in working conditions (reflected in a steady downtrend in the SJI) that continued until 2014. In the remaining five years of the period under study, the index continued to descend, but the improvements were very slight and far smaller than they had been in the years leading up to 2014.

Figure 1
The substandard jobs index (SJI) for wage earners,
first quarter of 1991–fourth quarter of 2018
(Range of index: 0–1)



Source: Prepared by the author.

It should be pointed out that, because this study deals only with the quality of jobs held by wage earners, its results provide no more than a partial picture of the overall situation, since it does not cover other categories of workers, particularly own account workers without premises and unpaid family workers, whose working conditions are usually worse than those of wage earners. Thus, if job quality is analysed from the standpoint of employment as a whole, an increase in the relative proportion of total employment represented by wage-based employment would be sufficient to bring about an improvement in job quality overall, even if the quality of those jobs did not improve.

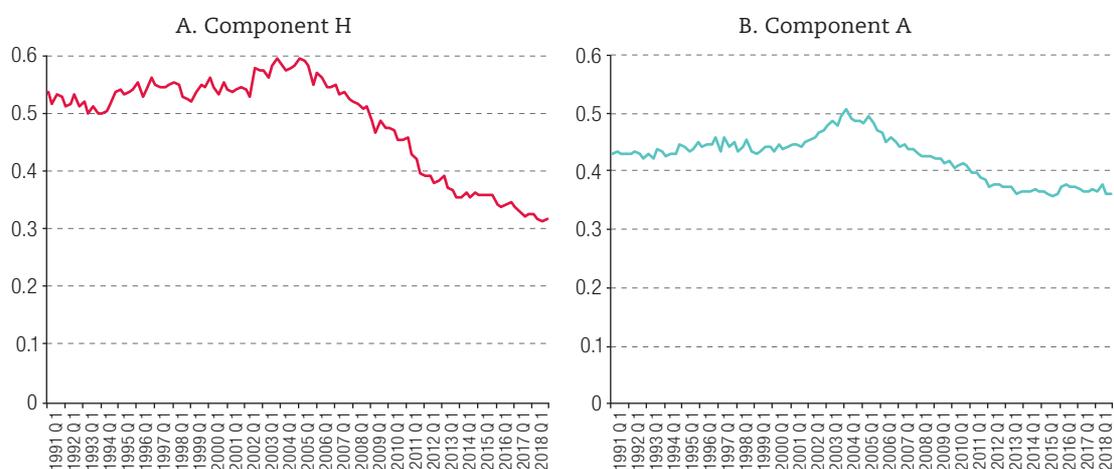
In Uruguay, however, the slight relative expansion of wage-based jobs in the private sector seen during the 1990s coincided with a decrease in the relative size of public sector employment. This translated

into a small reduction in the relative level of total wage-based employment in urban areas, which shrank from 73.6% of total urban employment in 1991 to 72.5% in 1998. At the same time, there was a slight upturn in the relative level of own account workers without premises, while unpaid family work held more or less steady. Consequently, the relative stability of the SJI during the 1990s does not reflect an improvement in job quality but simply a change in the composition of the labour force.

During the growth period that followed, although the relative size of the public sector wage-based workforce continued to descend until 2007 and thereafter remained flat, the increase in private sector wage-based employment more than made up for it, as the percentage of total employment represented by urban wage earners in the private sector climbed from 70% in 2002 to 74% in the latter years of the period under study, while the level of own account home-based employment dropped from 10% to 2.4% during those same years. Unpaid family work also declined steadily during those years. As a result, during this second period of economic expansion, job quality as a whole appears to have improved both because wage earners' job quality improved and because wage earners came to account for a larger portion of the total workforce while the proportions of own account home-based workers and unpaid family workers decreased.

As noted earlier, the SJI provides information on the proportion of wage earners whose jobs suffer from shortcomings in at least one dimension and can be used to determine how bad those jobs are. In terms of job quality in general, a situation in which the majority of jobs are of poor quality because they suffer from shortcomings in a single dimension is not the same as one in which those jobs suffer from shortcomings in all of the dimensions that were measured. Figure 2A traces the trend in the number of jobs displaying shortcomings in one of the relevant dimensions (component H with $k=1$). At the start of the 1990s and up to 1993, the percentage of wage earners in poor-quality jobs declined from around 55% to 50% of the total. By the end of 1994, that figure had rebounded to 55% and then, as a consequence of the 2002 economic crisis, reached nearly 60%. From 2005 onward, however, the number of poor-quality jobs fell steadily, dropping to around 32% of all wage-based employment by the end of the study period.

Figure 2
Components H (headcount) and A (average number of problematic dimensions)
of the substandard jobs index (SJI), first quarter of 1991–fourth quarter of 2018
(Ranges of index and proportions: 0–1)



Source: Prepared by the author.

Component A (see panel 2B) remained practically steady throughout the 1990s at around 0.43, which means that, on average, substandard jobs exhibited shortcomings in 43% of the relevant dimensions (1.72 dimensions). The economic crisis then drove up the number of problems in poor-quality jobs to an average of two dimensions ($A=0.5$) by the first quarter of 2004. From 2005 onward, however, the quality of jobs classified as substandard began to improve, with component A declining from 0.5 to around 0.36 by 2014, which means that poor-quality jobs displayed shortcomings in 36% of the relevant dimensions (1.44 dimensions).

2. Trend of the number of problematic dimensions and their impact on the SJI

Starting in 2005, the percentage of jobs exhibiting shortcomings in each of the relevant dimensions fell sharply; later on, in the closing years of the study period, this percentage levelled off or fell very slightly.

From 2000 to 2005, the percentage of wage earners whose incomes did not exceed the poverty line rose, as did the overall poverty rate in Uruguay. In the 1990s, the percentage of wage earners with insufficient incomes fluctuated but, as of late 1997, it was similar to what it had been at the start of that decade (see figure 3A). These were years of rampant inflation, which depressed real wages and pushed up poverty rates (in January 1991, the year-on-year inflation rate was 133%, although, by September 1998 the government had managed to bring it down to single-digit levels).

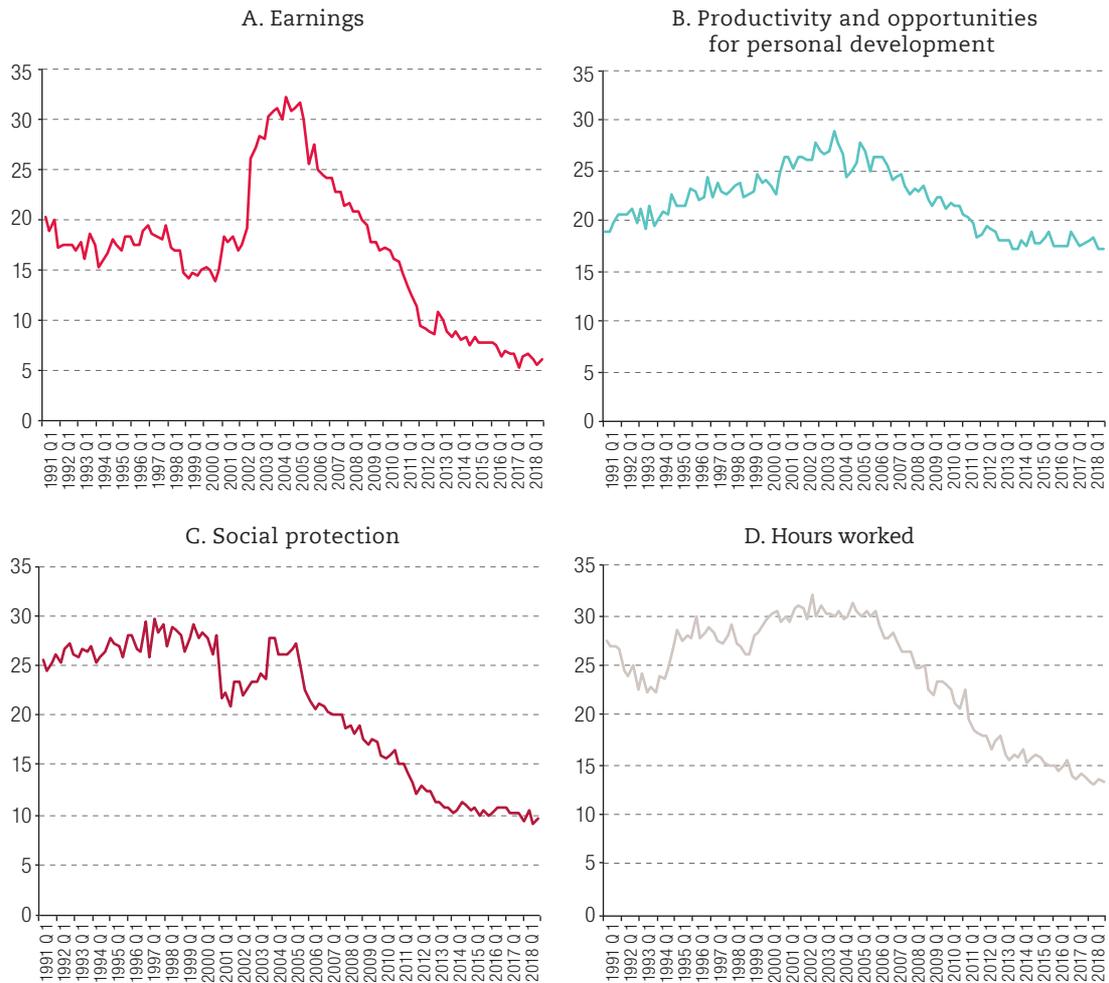
The number of jobs that did not provide social security coverage, which also rose in 2001–2005, followed a slight upward trend during the whole of the 1990s and in 2000, chiefly because of the decline in public sector employment as a share of total employment (Bucheli, 2004). The steep downturn seen in this data series in 2001 (see panel 3C) is a reflection of the fact, as mentioned earlier, that the continuous household survey did not capture all the relevant information because, up until that year, the only private sector wage earners with social security coverage who were counted were those who were signed up with the Social Security Health Plan Administration (DISSE) (Bucheli, 2004). The decrease thus indicates that this proxy variable did not reflect the true percentage of all workers with social security coverage.

The dimension of productivity and personal development opportunities reflected an upward trend until 2004–2005 and then, as noted above, began to trend downward before levelling off during the latter years of the study period. The growth of the economy during the 1990s was a period of trade liberalization, which gave rise to the increased use of outsourcing and to a deindustrialization process; this, in turn, led to a reduction in the number of persons employed in large companies and to an upturn in job creation in smaller firms (Amarante and Arim, 2005). By contrast, during the later period of economic growth, job creation was stronger in bigger businesses, and the percentage of wage earners in those larger companies therefore rose.

No clear pattern is apparent in the dimension of hours worked (under- or over-employment) in the years leading up to 2005, although this metric may have trended slightly upward starting in 1994.

As observed above, component A of the SJI indicates that substandard jobs exhibit, on average, problems in more than one dimension. The question arises, however, as to how much of an overlap exists among the various dimensions. Answering this question will show if any of the dimensions used in the index are redundant, since the criterion used for classifying a job as being of poor quality is $c_i \geq 1$.

Figure 3
Proportion of wage earners experiencing problems in each of the dimensions measured by the substandard jobs index (SJI), first quarter of 1991–fourth quarter of 2018 (Percentages)

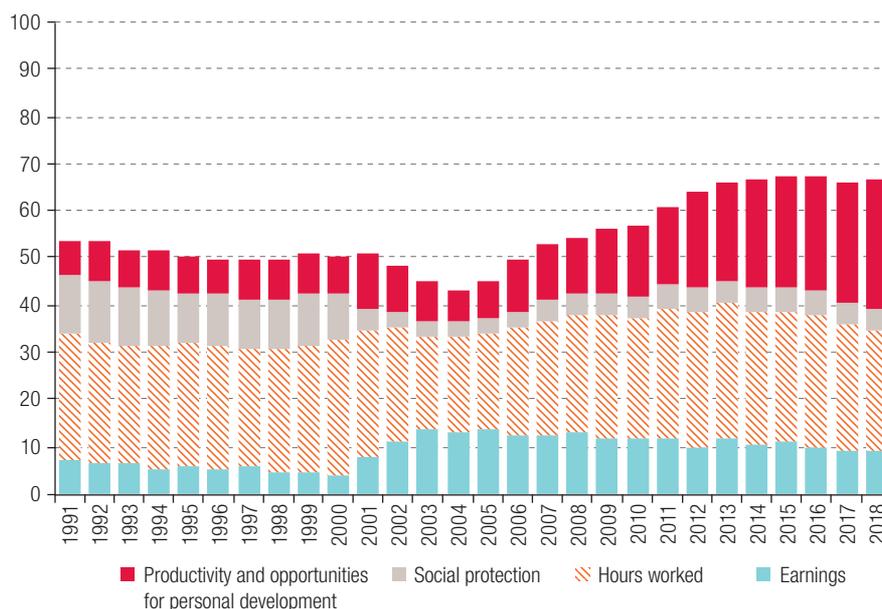


Source: Prepared by the author.

Figure 4 shows the percentage of substandard jobs displaying problems in just one of the dimensions. These types of jobs represented about 50% of all substandard jobs in the 1990s; this percentage decreased slightly during the economic crisis but then began to rise, reaching around 66% in the last years of the period under study.

Figure 4 also shows the distribution of problems among the various dimensions. For example, in the 1990s, on average, 5.7% of poor-quality jobs suffered from shortcomings only in terms of earnings, 25% only in terms of hours worked, 11.6% only in terms of social protection and 8% only in terms of low productivity and few development opportunities. In contrast, the averages for 2014–2018 were 10%, 27%, 5% and 24.7%, respectively. This indicates that there are, in fact, no redundant dimensions, as each one of them, taken alone, reflects the presence of poor-quality jobs throughout the study period, although with variations over time.

Figure 4
Substandard jobs exhibiting problems in a single dimension, 1991–2018
(Percentages of all substandard jobs)



Source: Prepared by the author.

There are also, however, substandard jobs that exhibit concurrent problems in more than one dimension (between 33% and 57%, depending on the year). For example, some jobs paying less than the equivalent of the poverty line also fail to offer social security coverage or entail low-productivity tasks that afford few development opportunities. In principle, however, the dimension relating to the number of hours worked does not appear to be closely related to any of the other variables.

The first column of table 1 indicates how frequently each of the dimensions, considered separately, corresponds to shortcomings in terms of job quality. On average, in 1991–2018, 33.5% of all substandard jobs paid less than the equivalent of the poverty line, 45.8% dealt with low-productivity tasks, 41.5% did not provide social security coverage and 49% required too few or too many working hours. While some of the jobs classified as being substandard displayed problems in a single dimension, others suffered from shortcomings in two or more dimensions at the same time, as noted earlier. The second column shows how frequently problems existed in two dimensions,² the following column in three, and the last column in all the dimensions considered. The most commonly arising pair of problems (25.9%) in substandard jobs was low productivity plus the absence of social security coverage; 11.7% of the substandard jobs were associated with problems in terms of earnings, productivity and social protection, while 4.5% involved problems in all four dimensions at one and the same time.

Figure 5 shows how much impact each of the dimensions has on the SJI. Panel 5A indicates the relative weight of each dimension in the value of the index at each point in time, while panel 5B gives the dimensional breakdown for the index. As discussed earlier, the fluctuations in the index during the 1990s do not yield any clear-cut trend, with the starting and ending values for that decade being virtually the same. The situation with respect to the relative shares of each dimension in the index is much the same, as there are no major changes in those shares.

² This does not mean that they exhibit problems only in two dimensions.

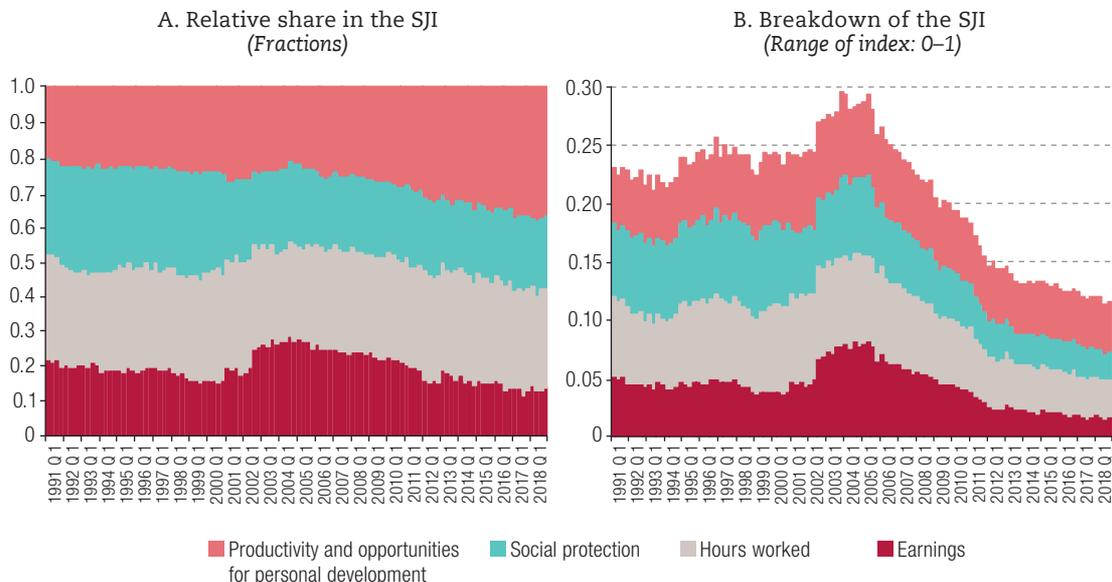
Table 1
 Problematic dimensions of substandard jobs, averages for 1991–2018
 (Percentages)

Single dimensions		Combinations					
Dimension	Percentages	Two dimensions		Three dimensions		Four dimensions	
Dimension	Percentages	Dimension	Percentages	Dimension	Percentages	Dimension	Percentages
Earnings	33.5	Earnings Productivity and opportunities for personal development	14.8	Earnings Productivity and opportunities for personal development Social protection	11.7	Earnings Productivity and opportunities for personal development Social protection Hours worked	4.5
Productivity and opportunities for personal development	45.8	Earnings Social protection	17.3	Earnings Productivity and opportunities for personal development Hours worked	5.7		
Social protection	41.5	Earnings Hours worked	11.8	Earnings Social protection Hours worked	6.7		
Hours worked	49.0	Productivity and opportunities for personal development Social protection	25.9	Productivity and opportunities for personal development Social protection Hours worked	9.3		
		Productivity and opportunities for personal development Hours worked	14.3				
		Social protection Hours worked	14.8				

Source: Prepared by the author.

Note: The first column corresponds to just one dimension at a time; the others refer to combinations of two, three or four dimensions that exhibit shortcomings.

Figure 5
 Impact of each dimension in the substandard jobs index (SJI), first quarter of 1991–fourth quarter of 2018



Source: Prepared by the author.

As already noted, the change in the index values for social protection that appeared in 2001 is essentially a reflection of the change in data coverage. During the 2002 crisis, the weight of the earnings and social protection dimensions in the SJI increased and, from 2005 on, there were fewer problems with quality in all the dimensions, although the decreases are less marked for productivity and personal development and for hours worked than they are for the other two dimensions, and their shares in the index therefore increase. It should be borne in mind that problems relating to productivity and development opportunities have been measured using company size as a proxy, which is subject to undesired biases, since jobs may have been classified as being of poor quality when that was actually not the case. The prevalence and larger relative share of this dimension should therefore be viewed with caution. A further consideration is that these kinds of problems are more closely linked to the production structures of the various sectors of activity that are leading the economy's growth, which, because they are structural in nature, are slower to change.

3. Job quality and economic growth

An analysis of the empirical evidence and background information suggests that the relationship between economic growth and job quality is not entirely clear during the whole of the period under study. GDP trends can be divided into three distinct periods. The first was a period of economic expansion (from the first quarter of 1991 to the fourth quarter of 1998) during which GDP grew at a cumulative annual rate of 4.5%, with a short-lived dip in 1995 during the so-called Tequila Crisis. During the second period, marked by recession and crisis (from the first quarter of 1999 to the third quarter of 2002), GDP shrank by a cumulative annual rate of -4.75%, while, in the third, it rebounded, expanding by an annual rate of around 5%.

As indicated above and as can be seen from figure 6, the SJI did not vary to any significant degree and followed no clear-cut trend during the economic expansion of the 1990s. It was fairly stable in the early years of the recession but then reflected a sharp deterioration during the height of the economic crisis, mainly because inflation seriously eroded the purchasing power of real wages, leaving many households with earnings that were below the poverty line. Although the economy made a comeback in the first few years after the third quarter of 2002, job quality did not improve, and wage earners' working conditions took a turn for the worse. It was not until well into 2005 that a clearly negative relationship between the SJI and GDP began to take shape, but that trend then continued until 2014. From that time on, job quality either remained flat or deteriorated very slightly, and GDP growth slowed.

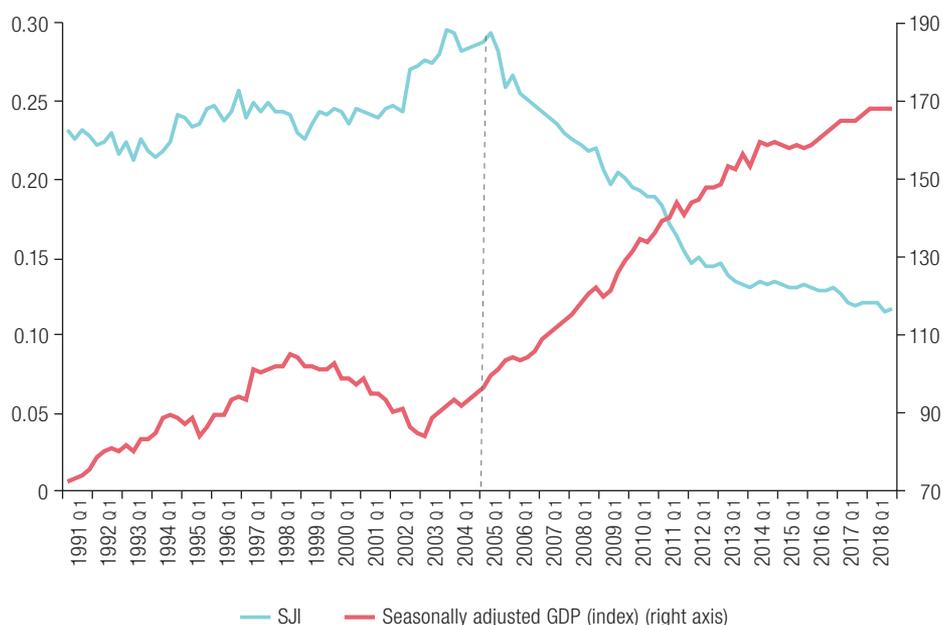
The studies outlined in an earlier section indicate that economic growth, in and of itself, is not enough to improve working conditions for wage earners but that it instead needs to be combined with public policies that help to engender and leverage the virtuous circle that can link growth with job quality.

This point was also made in reference to Uruguay by Araya, Brunini and Lavallega (2013). In a study covering the period from 2006 to 2012, these authors detected a positive trend in a number of the factors involved in the concept of decent work as developed by ILO. They indicate that the sustained growth of real per capita GDP seen during that period played a part in bringing about improvements in job quality, although they also note that this was not the only factor, since policy measures aimed at improving working conditions were also being implemented during those same years. They argue that the strong macroeconomic outcomes witnessed in the 1990s were not enough in themselves to improve social and employment indicators, and they stress the fact that the economic growth model promoted during more recent years differs substantially from the economic model of the 1990s.

The positive effect of economic growth on job quality can also be leveraged by other factors, in addition to labour laws and regulations. As noted in other sections of this study, the growth of the Uruguayan economy in the 1990s was coupled with a trade liberalization process that was associated

with increased outsourcing, deindustrialization and a reduction in the relative size of the public sector workforce, all of which had direct impacts on job quality. These were also years of high inflation, and the resulting erosion of workers' real wages is reflected in the earnings dimension of the SJI.

Figure 6
The substandard jobs index (SJI) for wage earners and seasonally adjusted GDP,
first quarter of 1991–fourth quarter of 2018
(Range of index: 0–1; base year 2005 = 100)



Source: Prepared by the author.

This study's objective is to formalize these ideas by estimating the effect of GDP growth on job quality and then seeking to determine what other factors may have influenced the relationship between those two variables.

Various approaches can be used to detect what influence labour laws and regulations or other factors had on job quality or on the relationship between job quality and economic growth. For this study, the long-run relationship between the SJI and GDP over the entire period of interest has been estimated as a first step, without incorporating any other variable into the model except for minor adjustments to deal with atypical values. If labour laws and regulations or the characteristics of economic growth are important factors, then a significant long-term relationship of the appropriate sign between the SJI and GDP would not be expected to show up in a finely tuned model with well-behaved residuals. Accordingly, the next step was to estimate the model for the various subperiods while taking the above-mentioned factors into account.

The autoregressive distributed lag model (ARDL) was used to analyse the long-run relationship between GDP and the SJI. As a first step, the order of integration of the variables "log(GDP) seasonally adjusted" and "substandard jobs index (SJI)" was analysed, since this method requires the variables to be I(0) or I(1) but not I(2). The augmented Dickey-Fuller test shows that both variables are I(1).

The cointegration between GDP and the SJI was then analysed by estimating equation (3) for the entire period (the first quarter of 1991 to the fourth quarter of 2018). As may be seen in section A of table 2, the Akaike and Schwarz criteria are not conclusive: one indicates four lags and the other one; in addition, all the models suffer from problems of the non-normality of residuals and heteroscedasticity,

and three of the four lags also suffer from problems of autocorrelation. What is more, in no case are the F- and t-statistics significant at 95%, according to the critical values of the tables in Pesaran, Shin and Smith (2001). Consequently, as was intuitively indicated by the analysis of figure 6, it cannot be concluded that a long-run relationship exists between GDP and the SJI throughout the period under study.

Table 2
The F-test for a long-run relationship between the variables

$\Delta SJI_t = a_1 SJI_{t-1} + a_2 \log(GDP)_{t-1} + \sum a_{SJI} \Delta SJI_{t-i} + \sum a_{GDP} \Delta \log(GDP)_{t-i} + \sum a_{nt} D_{nt} + a_0$					
A. First quarter of 1991 to fourth quarter of 2018		i=1	i=2	i=3	i=4
Selection criteria	Akaike	-7.00	-7.00	-6.96	-7.02*
	Schwarz	-6.86*	-6.80	-6.72	-6.72
Autocorrelation tests ^a	SC [χ^2 (1)]	0.27	0.61	0.00	0.01
	SC [χ^2 (4)]	0.62	0.20	0.01	0.00
F-test ($H_0: a_1 = a_2 = 0$) ^b	Statistical significance	5.20	4.34	4.49	5.25
		*			*
t-test ($H_0: a_1 = 0$) ^c	Statistical significance	-2.39	-2.14	-2.25	-2.60
Normality of residuals	p-value	0.00	0.00	0.00	0.00
Homoscedasticity of residuals	p-value	No	No	No	No
B. First quarter of 1991 to fourth quarter of 2004		i=1	i=2	i=3	i=4
Selection criteria	Akaike	-6.58*	-6.52	-6.44	-6.43
	Schwarz	-6.36*	-6.22	-6.07	-5.98
Autocorrelation tests ^a	SC [χ^2 (1)]	0.28	0.56	0.70	0.04
	SC [χ^2 (4)]	0.62	0.61	0.52	0.03
F-test ($H_0: a_1 = a_2 = 0$) ^b	Statistical significance	0.14	0.09	0.23	0.40
t-test ($H_0: a_1 = 0$) ^c	Statistical significance	-0.31	-0.02	0.32	0.03
Normality of residuals	p-value	0.28	0.11	0.11	0.09
Homoscedasticity of residuals	p-value	Yes	Yes	Yes	Yes
C. First quarter of 2005 to fourth quarter of 2018 ^d		i=1	i=2	i=3	i=4
Selection criteria	Akaike	-8.38*	-8.31	-8.25	-8.19
	Schwarz	-8.06*	-7.91	-7.78	-7.64
Autocorrelation tests ^a	SC [χ^2 (1)]	0.85	0.84	0.86	0.79
	SC [χ^2 (4)]	0.54	0.32	0.37	0.24
F-test ($H_0: a_1 = a_2 = 0$) ^b	Statistical significance	10.67	8.04	6.98	5.82
		***	***	**	**
t-test ($H_0: a_1 = 0$) ^c	Statistical significance	-4.48	-3.90	-3.62	-3.32
		***	***	**	**
Normality of residuals	p-value	0.11	0.11	0.10	0.14
Homoscedasticity of residuals	p-value	Yes	Yes	Yes	Yes

Source: Prepared by the author.

Note: SJI: standard jobs index. * significant at 10%; ** significant at 5%; *** significant at 1%.

^a p-value.

^b Critical values: 4.78 at 10%, 5.73 at 5% and 7.84 at 1%.

^c Critical values: 2.91 at 10%, 3.22 at 5% and 3.82 at 1%.

^d Dummy values (fe) were included to correct for problems with residuals: d(fe=2005Q4), fe=2005Q2 and fe>=2014Q1.

From an analysis of figure 6 it can also be deduced that, while job quality did deteriorate during the recessionary phase of the business cycle (1999–2002), which attests to the negative relationship existing between the two variables, it continued to worsen during the early years of the economic recovery (2003–2004); it was not until 2005 that the negative relationship between the two variables became more apparent and began to move in the expected direction.

Bearing this in mind, the model was then estimated for two subperiods: from the first quarter of 1991 to the fourth quarter of 2004, and from the first quarter of 2005 to the fourth quarter of 2018 (see sections B and C of table 2). As shown in section B of table 2, during the first of these subperiods (the first quarter of 1991 to the fourth quarter of 2004), the Akaike and Schwarz criteria point to a single lag. The residuals are well behaved in this model, but the F- and t-statistics are not significant, and the hypothesis of cointegration between the variables consequently has to be rejected. It is therefore concluded that no long-run relationship existed between them during that period.

The estimates of the model for the second subperiod (the first quarter of 2005 to the fourth quarter of 2018) indicates that a long-run relationship did exist between GDP and the SJI, however, since, at a significance of 99%, the F- and t-statistics of the model with a single lag according to the criteria of Akaike and Schwarz and well-behaved residuals are well above the critical value given in the tables in Pesaran, Shin and Smith (2001).

The most suitable specification of the model, in which the order of lags of all the variables is significant, was then defined (see table 3).

Table 3
Estimate of the long-run relationship between the substandard jobs index (SJI) and GDP, first quarter of 2005–fourth quarter of 2018

Dependent variable: d(SJI)			
Variable	Coefficient	p-value	
SJI(-1)	-0.338	0.000	
log(GDP_sa(-1))	-0.101	0.000	
d(log(GDP_sa))	0.079	0.057	
d(log(GDP_sa(-1)))	0.103	0.017	
d(t=2005Q4)	-0.012	0.000	
t=2005Q2	0.011	0.003	
t>=2014Q1	0.006	0.001	
c	0.548	0.000	
Normality test	0.121		
Autocorrelation test/LM test			
SC [χ^2 (1)]	0.749		
SC [χ^2 (4)]	0.532		
White heteroscedasticity test			
F-statistics	1.447	Prob. F(7.48)	0.209
Obs*R2	9.757	Prob. χ^2 (7)	0.203
Scaled explained sum of squares	6.304	Prob. χ^2 (7)	0.505

Source: Prepared by the author.

According to this estimation, the coefficient for the impact of GDP on the SJI in equilibrium is:

$$-\left(\frac{a_2}{a_1}\right) = -\left(\frac{-0.101}{-0.338}\right) = -0.2983 \quad (4)$$

In other words, under the long-term equilibrium conditions apparent from 2005 on, for each percentage point of GDP growth, the SJI decreased by 0.00298.

These results confirm that, for the first subperiod (1991–2004), the hypothesized existence of a long-run relationship between GDP and the SJI must be rejected, while, for the second subperiod (2005–2018), we can confirm the cointegration of the two variables and, therefore, the existence of a significant negative long-run relationship between the two.

V. Conclusions

The main objective of this study was to analyse the connection between job quality and economic growth and to identify factors that could have influenced that relationship in the Uruguayan economy in the period 1991–2018. To that end, a quarterly indicator of substandard urban wage-based employment was constructed using the methodology developed by Alkire and Foster (2007 and 2011).

As suggested by intuition, a long-run relationship was not found to exist between the substandard jobs index (SJI) and GDP for the entire period under study because the estimation included a subperiod (1991–2004) during which such a relationship did not appear to exist. That was a time when the labour market was becoming more flexible and the government was playing less of a role in determining the rules of the game in that market. Those years were also marked by deindustrialization, increased outsourcing, a downsizing of the public sector and high inflation—all factors that also influenced job quality.

Starting in 2005, however, a series of policy measures were introduced which, against a backdrop of stronger economic growth, brought about significant improvements in job quality. Those measures included: incentives for the formalization of employment relationships through the Social Security Institute (BPS) and laws governing the rights of outsourced workers that reduced the number of such workers who lacked social security coverage; the reactivation of wage councils, greater emphasis on pay increases for the lowest-paid workers and measures to raise the national minimum wage, all of which helped to reduce the percentage of workers earning less than the equivalent of the poverty line; and a law governing domestic service work, along with the conclusion of agreements in the construction and agricultural industries to help shorten the excessive workdays of employees in certain sectors. It was in this context that the estimation of the relationship between the SJI and GDP in 2005–2018 yielded a significant long-run relationship of the expected sign: the SJI decreased by 0.00298 for every percentage point of growth in economic activity. This suggests that the regulatory and institutional framework for the labour market (labour laws and collective bargaining mechanisms), which during the period in question exhibited certain characteristics that were conducive to improved working conditions, can give rise to significant improvements in job quality for wage earners during times of economic growth. It also suggests, however, that the lack of a relationship between GDP and job quality during the first subperiod was a result both of the types of labour laws and regulations in effect during that time and the characteristics of the economic growth in that period. The methodology used here does not, however, permit the relative importance of each of these factors to be determined.

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