

Measuring the Cost of Salaried Labor in Latin America and the Caribbean

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TECHNICAL NOTE

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Abstract

This paper presents new data documenting the cost of salaried labor in 20 Latin American and Caribbean countries. We gather data on the three main costs associated to hiring salaried labor; (i) minimum wages and other monetary benefits, (ii) mandated contributions for social insurance and other benefits and (iii) job security provisions. We present two new indicators. First, we calculate the average non-wage cost of salaried labor (NWC). This indicator answers the following question: for the average wage, what additional share of wages must be satisfied by workers and employers to fulfill all the law mandated non-wage costs of a legal salaried relationship. Our second indicator combines these non-wage costs with the nominal restriction that legal wages cannot be lower than the minimum wage. We calculate the annual dollar value of paying a worker the minimum wage plus all mandated non-wage costs as a share of GDP per worker. This constitutes the minimum cost of salaried labor (MCSL). We highlight seven important facts; (i) The *average non-wage cost of salaried labor (NWC)* for the region is 49% of wages. (ii) There is a large dispersion across countries like Argentina, Brazil and Peru with costs around 70% of wages and countries like Trinidad and Tobago, Jamaica and Chile with cost less than 40% of wages. (iii) Mandatory contributions are the most important component of the average non-wage cost of salaried labor with 27.3% of wages followed by additional benefits with 13.8% of wages while job security provisions account for another 8.4%. (iv) On average, mandated contributions from employers amount to 17.5% of average annual wages, versus 9.8% of mandated contributions from employees. (v) The *minimum cost of salaried labor (MCSL)* is on average 39% of GDP per worker. (vi) Variation of the MCSL across countries is even larger. For countries like Mexico, Trinidad and Tobago or the Dominican Republic the MCSL it is below 15% of GDP per worker while the minimum cost of hiring a salaried worker in Honduras is 95% of GDP per capita. (vii) Despite having below average NWC, the five poorest countries in our sample are those presenting the highest MCSL, due to high minimum wages relative to GDP per worker.

Keywords

Non-wage cost, payroll taxes, severance payments, minimum wages, Latin America and the Caribbean.

JEL codes

H25, J32, N16.

1. Introduction

Labor codes in Latin America and the Caribbean date back to early 20th century (Kaplan and Levy 2014). The provisions in those labor codes had broadly three objectives; provide workers with remuneration to ensure a decent standard of living, provide workers insurance against a series of risks (mainly, poverty in old age, sickness and disability among others), and generate disincentives for firms to dispose of workers without just cause. These provisions map into a series of instruments that range from minimum wages to mandatory social security contributions to job security provisions.

This paper quantifies these provisions that constitute the *cost of salaried labor* comparatively across 20 countries in Latin America and the Caribbean according to the prevailing legislation as of January 2014. Measuring and comparing these costs across countries is important for at least three reasons. First, they constitute the “price” for hiring a legal salaried worker. Many authors have shown that this price has important implications for the level and distribution of employment in Latin America and elsewhere (see Heckman and Pages (2000); Heckman and Pages (2004); Botero et al. (2004); Loayza et al. (2005); Micco and Pagés (2006); Kahn (2007); Feldmann (2009)). Second, they reveal how different countries establish what is considered a “fair” remuneration and the basic bundle of benefits for workers. As we see below both minimum wages and non-wage costs vary significantly across countries. And third, they provide insights on the different strategies that countries take to finance social insurance and other elements of their welfare state.

This paper presents two indicators that aim at capturing the cost of salaried labor. First, we calculate the non-wage cost associated to hiring salaried workers as a percentage of wages. This indicator answers the following question: for the average wage, what additional amount (as percentage of wages) must be satisfied by workers and employers to establish a legal salaried relationship. We quantify three components of this cost; (i) the additional mandated benefits (such as bonuses and paid leave) that a salaried worker is entitled to receive according to the legislation, (ii) the mandatory contributions to finance social insurance systems and other benefits (such as training, housing, among others), and (iii) a monetized version of job security provisions.¹ The first two elements of this indicator are relatively easy to measure. They are costs that the employer and employee must assume periodically and are readable expressed either in local currency or as a proportion of wages.² The third component is less straight forward to express in similar terms. Job security provisions include firing notice, severance payments, and other firing transaction costs and in some countries the requirement that the employer reinstates the worker if unfairly dismissed. These provisions are not necessarily all easily transformed into monetary costs, and some of them present large degrees of uncertainty as to how they translate into costs for the employer. They also

¹ Throughout the paper we focus on permanent salaried workers and abstract from temporary contracts which are generally exempt from job security provisions.

² The exception is how to monetize paid leave as a share of monthly wages.

may not necessarily apply to all salaried relations as they are contingent on job dismissal due to unjustified cause; in other words, not all salaried relationships will end up in an unjustified dismissal. Hence, this cost will not apply to all salaried workers. They also vary with tenure of worker in the firm. Our approach is to convert the advanced dismissal notice and the mandatory severance payments into monthly contributions for a stylized worker that has been 5 years in the firm to make them comparable to other mandated benefits. In a way, under certain conditions, this represents how much the employer would have needed to save monthly (as a percentage of wages) during the worker's tenure in the firm to satisfy the future dismissal costs. This indicator captures what we call the *average non-wage cost of salaried labor (NWC)* and is expressed as percentage of wages.

Our second indicator takes a slightly different route. It combines the elements that conform the *average non-wage cost of salaried labor* with the nominal restriction that wages cannot be lower than the minimum wage. We build on our first indicator to calculate the annual dollar value of paying a worker the minimum wage plus all mandated non-wage costs as a share of GDP per worker. This measure aims at capturing the *minimum cost of salaried labor (MCSL)* relative to the average labor productivity in a country. This indicator provides additional insights into the cost of salaried labor for at least two reasons. First, the real value of the minimum wage varies dramatically across countries in the region, providing, probably the clearest source of variation of the cost of hiring salaried workers in the region. For instance, the minimum annual wage in Honduras is almost three times the one in Mexico (US\$673 PPP vs US\$253 PPP) which in turn is more than three times as rich as Honduras. Second, for some countries, mandated contributions vary with wages levels, sometimes increasing contributions as the wage level increase. In other cases, there are fixed payments for certain services, which makes mandated contribution rates decrease with wage levels. Focusing on the minimum wage we establish, the bare minimum, Figures 1a and 1b below illustrate our categorization of costs and the construction of both indicators.

Several remarks are in order when interpreting these indicators. First, our analysis is based on data collected from the labor legislation of each country in the region. Therefore, they represent the “*de jure*” cost of salaried labor. Second, some of these costs are incurred in exchange of benefits. As such, they might be thought as deferred wages or savings (pension's contributions) or insurance premiums (health contributions). Hence, per se they do not necessarily translate into taxes. Interpreting them as pure taxes requires that the benefits that are financed with contributions are not valued by workers and they are not willing to pay for them. Third, since in some cases employers might be able to translate part of these costs to employees in the form of lower wages (except for the case of workers at minimum wages) they are also difficult to interpret as the actual non-wage cost for the employer to hire salaried labor. Although the law establishes who pays for these costs (either employer or employee) the economic incidence (who actually pays for them) may be very different across employees in a particular country and across countries. Economic incidence will depend on labor demand and supply conditions and again, how much workers value

benefits. This is particularly important when interpreting our first indicator (NWC)), as some of the costs legally borne by the employer might be transferred to workers in the form of lower wages (and vice versa). This possibility is reduced in our second indicator, (*MCSL*), as the employer cannot reduce wages to accommodate higher mandated costs. However, even in this indicator it is not entirely clear who would pay for the employee contributions. Finally, we acknowledge the fact that our measure of job security provision might be imperfect and might not capture the real perceived cost of job security provisions imposed on hiring labor. Many of the restrictions and potential costs of firing workers are of a qualitative nature (for instance, written or oral notification procedures, third party authorization for employers to dismiss a worker, reinstatement possibility, maximum period to make claims for unfair dismissals). For that reason, we provide an alternative indicator of firing costs based on the methodology of the OECD employment protection legislation index which tries to capture these additional dimensions.

To gather the data, we went through all existing bills, decrees, codes, regulations and norms that determine the labor costs in order to harmonize the information and facilitate the comparability across LAC countries as of January 1st 2014. Other sources of information used in this document are the International Social Security Association-ISSA (2014) for comparison purposes and the OECD/IDB/CIAT (2016) for information regarding the taxable bases and the lower and upper thresholds for contributions in each category. The analysis includes 20 countries: 18 from Latin America and two from the Caribbean. The selected countries are: Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.

The main results of this exercise are summarized in seven important facts; (i) The *average non wage cost of salaried labor* (NWC) for the region is 49% of wages. (ii) There is a large dispersion across countries like Argentina, Brazil and Peru with costs around 70% of wages and countries like Trinidad and Tobago, Jamaica and Chile with cost less than 40% of wages. (iii) Mandatory contributions are the most important component of the average non-wage cost of salaried labor with 27.3% of wages followed by additional benefits with 13.8% of wages and job security provisions which account for another 8.4%. (iv) On average, mandated contributions from employers amount to 17.5% of average annual wages, versus 9.8% of mandated contributions from employees. (v) The *minimum cost of salaried labor* (MCSL) is on average 39% of GDP per worker. (vi) Variation of the MCSL across countries is even larger. For countries like Mexico, Trinidad and Tobago or the Dominican Republic the MCSL it is below 15% of GDP per worker while the minimum cost of hiring a salaried worker in Honduras is 95% of GDP per capita. (vii) Despite having below average NWC, the five poorest countries in our sample are those presenting the highest MCSL This is due to the fact that the relatively poor countries in the region tend to have higher minimum wages relative to GDP per worker.

Figure 1a. The average non-wage cost of salaried labor (NWC)
Expressed as % of average wages

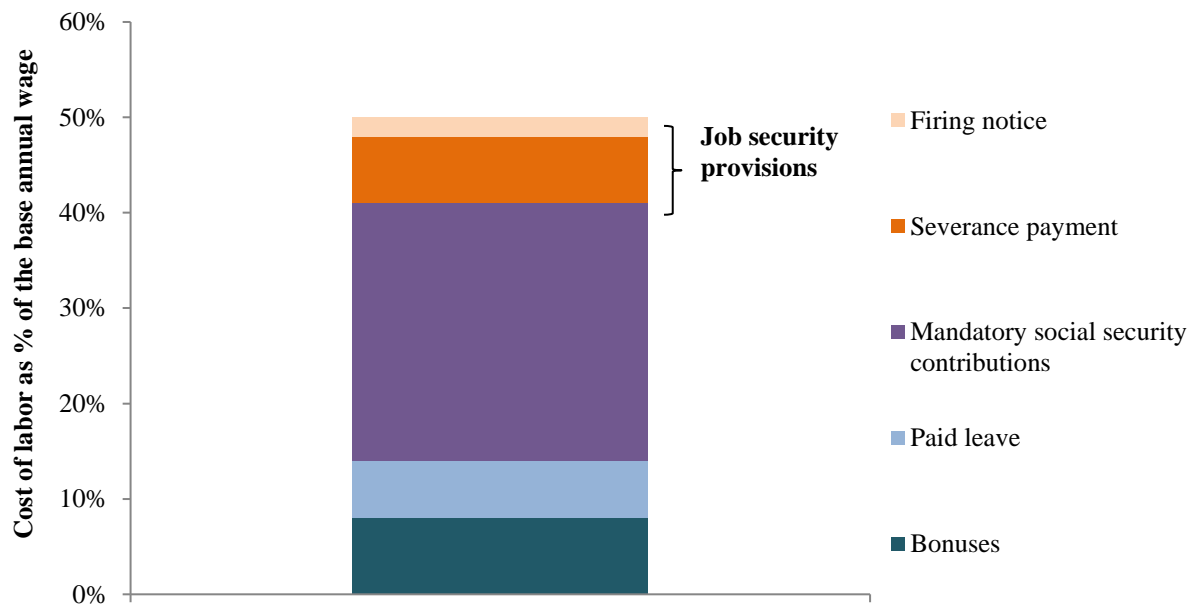
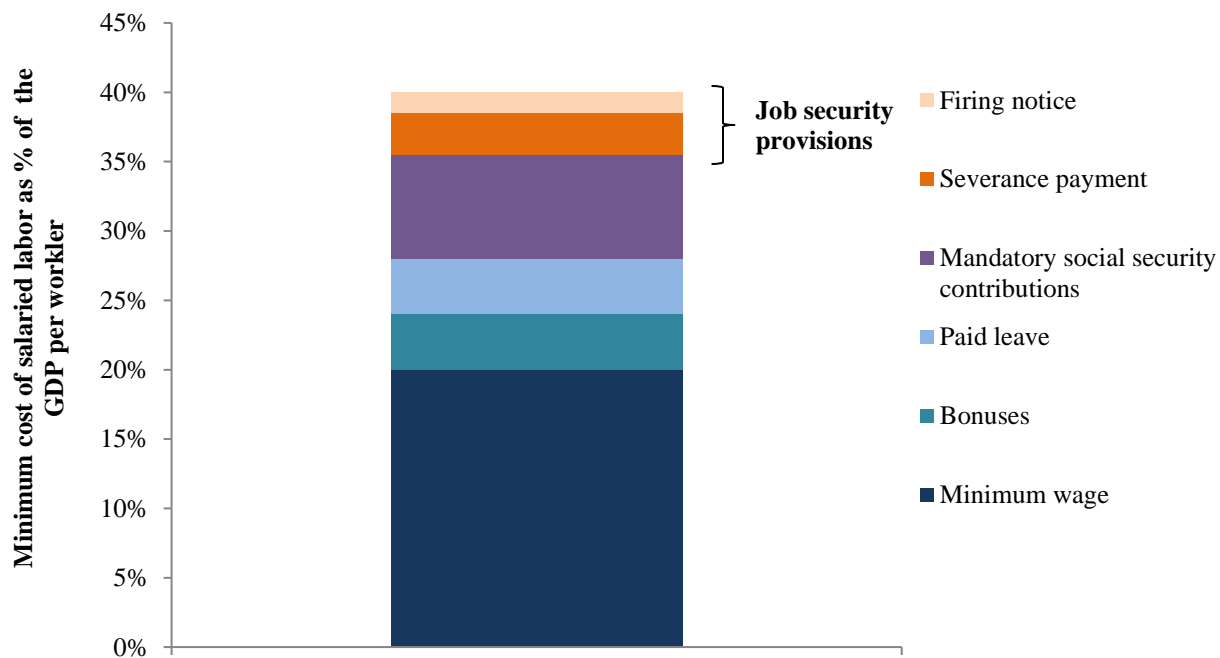


Figure 1b. The minimum cost of salaried labor (MCSL)
Expressed as % of GDP per worker



Source: authors.

We are not the first to provide a measure of the cost of hiring labor. Numerous papers and reports present similar information for a single country or a group of countries and analyze possible effects of these costs on labor markets outcomes (see Gruber, (1997); Kugler (1999); Saavedra and Maruyama (2000); Krugler and Krugler, (2003); Saavedra and Torero (2004); Rojas and Santamaría (2007); Crucesm Galiani and Kidyba, (2010); Betcherman, Daysal and Pagés, (2010); Mondragón et al. (2010); Roman (2011); Sánchez and Álvarez, (2011); Almeida y Carneiro (2012); Bergolo and Cruces, (2012), Heckman and Pages, 2000). However, sometimes is difficult to compare across studies as methodologies diverge and in some cases not all costs are included. The series of *taxing wages* remains the most notable effort to collect comparable data on mandated contributions and taxes for OECD countries. Recently, together with the IADB and CIAT, the OECD published a report using the taxing wages methodology for the Latin America and Caribbean region.

This paper complements and expands previous work in three ways. First, in our measures of costs we include not only mandated social security contributions but also other dimensions of non-wage salaried costs (such as paid leave and a monetized version of job security provisions).³ This provides a more comprehensive view of the non-wage costs incurred to legally hire a worker in the region. Second, we build in our measure the level of the minimum wage as an intrinsic component of the cost salaried labor. This is particularly important in Latin America and the Caribbean countries where minimum wages are well above the median wage and where an important share of wage workers are working in the informal sector with remunerations well below minimum wages. As noted before, it also has the advantage that the employer contributions cannot be passed through to workers and hence the “de jure” incidence is closer to the “de facto” incidence. However, our measures do not include income taxes levied on wages which are the main object of interest of the taxing wages publication. It is important to note that in Latin America very few workers would pay income taxes. In general, only workers in the 9th and 10th decile of the distribution would pay income taxes and in no country and in no case workers earning the minimum wage would pay income taxes.

Other authors have provided alternative measures of job security provisions. In the region Heckman and Pages 2000; Heckman and Pages 2004, compute a job security index that combines the severance payment and advance notice regulations. The constructed index measures the expected discounted cost, at the time a worker is hired, and it is presented as a share of wages. They also take advantage of variations in regulations over time to infer impacts on labor market outcomes. A different approach is taken by the OECD Employment Protection Legislation (EPL) indicators which combine monetary and non-monetary cost of dismissing workers into a numeric indicator. The EPL measures the degree of stringency of employment protection legislation along 21 basic items which can be classified in three main areas: (i) protection of regular workers against individual dismissal (EPR); (ii) regulation of temporary forms of employment (EPT); and (iii) additional, specific requirements for collective dismissals (EPC). We take a mixed approach. We

³ It does not include an imputation of sick leave.

follow Heckman and Pages 2000 to use firing notice and severance payment as a quantifiable measure to job security provisions. We however, present it as a share of monthly wages to be able to compare with other mandated benefits. Additionally, here we present a joint work with OECD to compute the ELP indicators for LAC countries to compare our measure of costs with a measure that captures additional dimensions of job separation provisions (we focus on the first dimension, protection of regular workers against individual dismissal (EPR)).⁴

The reminder the paper is as follows. Next section describes in detail the data and methodology to generate our two measures. Section III presents the main results of this exercise. Section IV concludes.

2. Data and methodology

In this section we describe each component of the labor cost, including a brief motivation for its inclusion, sources of information and methodology to compute its monetary value. We present two measures: the average non-wage cost of salaried labor (NWC) and the minimum cost of salaried labor (*MCSL*).⁵

They are calculated as follows

$$NWC = \frac{(B + PL) + (MC_w) + (JSP)}{\bar{W}} \quad (1)$$

$$MCSL = \frac{(MW + B + PL) + (MC_{mw}) + (JSP)}{GDP_{pw}} \quad (2)$$

Where \bar{W} is average base wage (without the annual bonus), *B* refers to bonus pay, *PL* paid leave, *MC* mandatory social insurance contributions, *JSP* job security provisions, *MW* base wage for the minimum wage, and *GDP_{pw}* is the Gross Domestic Product per worker.

Computing equations (1) and (2) merits several remarks. In the first indicator, the denominator is the base wage (average and minimum) instead of total gross wage compensation (which includes bonus pay) for two reasons. First, countries differ in the bonus pay policy. Some countries do not stipulate any extra payments (such as Chile) some other stipulate up to two months of additional payments (such as Bolivia, Guatemala, Honduras a Trinidad and Tobago). We sought to make this provision salient in our analysis. Second, bonus pay impacts the way other mandated contributions are calculated. As we argue below, mandatory social insurance contributions are normally established as a percentage of either base wages or total gross wages. Sometimes mandatory contributions vary depending on the wage level. Mostly notably minimum wage workers are

⁴ See IDB and OECD (2015). <http://www.oecd.org/els/emp/EPL-Document-LAC-Methodology-ENG.pdf>

⁵ Our calculations exclude extra in-kind payments such as food, housing, apparel, etc., as well as income transfers.

excluded from some contributions. In those cases, we use different contribution rates as described below.

In what follows we detail the data each of the components of equations (1) and (2). Table 1 below summarizes our raw data. Appendix 1 shows the summary and sources of information for each country. For illustration, appendix 2 shows the step by step calculation of equations (1) and (2) for Colombia.

Minimum wages

From a legal perspective, most labor legislations in LAC are equipped with a specific provision of minimum wages (in fact as Alaimo et al. (2015) document, 17 out of 18 LAC countries reviewed in their study include minimum wage provisions in their constitutions). They are also economically relevant as they restrict the ability of the employer to transfer to the employee other legal provisions that employers must cover. In some countries, minimum wages are particularly high reaching the upper part of the income distribution. For instance, minimum wages in Panamá, Costa Rica, Paraguay, Jamaica, Nicaragua, Guatemala, Peru and Honduras, are all above median wages.⁶ There is also great variability across countries. For instance, minimum wages in Argentina are more than three times higher than in Mexico (measured in monthly wage in USD PPP). Minimum wages are set with the redistributive aim of reducing poverty by providing a floor income to low skill workers; however, minimum wages can have secondary effects of adding rigidities to the labor market and even reduce (formal) employment. This problem is well documented in the literature (Maloney and Nunez 2004; Cunningham and Kristensen 2006; Goñi-Pacchioni 2013). Policies motivated on the reform of minimum wages are very often aimed at increasing them in real terms, even though the mean labor productivity at many firms in LAC countries is often below the levels of legal minimum wages (Lemos 2009). Some countries have several minimum wages. They may vary depending on the geographical area, sector or occupation. In the analysis below we focus on the national minimum wage ignoring occupational minimum wages that might be higher than the national. If there are regional minimum wages we take the highest regional minimum wage. Data on minimum wages was obtained from official institutions of each country such as Ministries of Labor, Central Banks, and official decrees. See table A.1 for details.

Bonus pay

The most common salary bonus in Latin America and Caribbean countries is called “extra month” (*aguinaldo*, in Spanish). The *aguinaldo* is often equivalent to 50 or 100 percent of monthly wages and is paid once or twice a year. In countries like Brazil, Colombia, and Uruguay, among others, workers are granted a 13th salary in the form of bonuses. In Argentina, for example, the bonus is given as a one-off payment every 12 months, while in Colombia the bonus is divided into two

⁶ We estimate median wages using reported wages of all salaried workers (formal and informal) in household surveys of each country. For more details see statistics at <http://www.sims.iadb.org> We define formal salaried workers those who pay social security contributions, mainly pensions.

installments, each one paid every six months. Chile is the only continental country to omit this mandatory payment, like many Caribbean countries such as Jamaica and Trinidad and Tobago where workers do not have this right. For the sake of comparisons, bonuses are translated into a monthly value as percentage of wages (equation 1) or GDP per worker (equation 2). Data on bonus pay comes directly from reviewing the legislation of each country.

Paid leave

This is an implicit cost of formal labor. All countries in the region stipulate a minimum number of days of paid leave a year, ranging from 14 in Argentina to 40 in Brazil.⁷ It represents a cost to the employer in the sense that the employee does not work during the leave and all wage obligations still must be satisfied. The legislation in some countries allows the worker not to take up the leave and be compensated for the number of days, in which case the total payment received by the workers increases by that amount. We take this approach to transform paid leave into monthly contributions for the employer in the same way we did for bonus pay. If the legislated paid leave is 30 days we assume that the worker's wage increases in 8.2% (30/365). In some countries, the number of days of paid leave varies with tenure. The mode in the region is to grant a paid leave of 15 working days, and goes up to 30 days in Nicaragua, Panama and Peru and 40 days in Brazil. We take the number of days of paid leave that an employee with five years of tenure would have. Data on paid leave comes directly from reviewing the legislation of each country.

Mandatory Contributions

Mandatory contributions are the bulk of the additional cost of hiring salaried labor. All countries in our sample mandate contributions for pensions. Many countries also mandate contributions for health insurance, work injury, unemployment insurance or savings for unemployment, and family allowances. For example, mandatory contributions in Argentina entail pensions for old age, disability and survivor, health care, work injury, and a contribution to *Asignaciones Familiares* (family allowances). In Honduras, Jamaica and Mexico, there is a mandatory contribution for a social housing fund. In the case of Mexico additional contributions are required to support day care centers for children.⁸ Some countries mandate contributions that do not have a direct benefit for either the firm or the employee. For instance, in Nicaragua, employers have to contribute 1.5% for the "Victims of War"; in Ecuador, there is a contribution for Farmer's Social Insurance. Some countries mandate contributions to generate savings for unemployment spells. This is the case of the well-known *cesantias* in Colombia or *Compensation for Length of Service* (CTS, its acronym in Spanish) in Peru, where employers must pay an additional salary to workers as precautionary unemployment savings, not unemployment insurance. Bonuses like *Cesantias* in Colombia and

⁷ This non-salary cost are added to the conventional official holidays which are paid by the employer but not worked by the employee (in Argentina official holidays can add up to 17 working days). We do not account for difference in official days of holidays across countries.

⁸ These can be viewed as payroll taxes. Payroll taxes do not benefit the worker in a direct manner. For instance, employers must pay mandatory contribution to finance training institutions in half of our sample or an education-specific tax in Jamaica and Panama.

CTS in Peru can be also withdrawn by the worker to buy real estate or to pay for own and children's education.

Normally, mandatory contributions are expressed as a percentage of wages. However, important for our calculations the reference wage varies across countries. In 8 out of 20 countries in our analysis the base for mandatory contributions is total gross wage which includes bonus pay that can reach up to two additional months of base pay or 16.4%. In the rest of the countries the contribution rates refer to the base wage (excluding the annual bonus).⁹ The denominator for the average non-wage cost of salaried labor (equation (1)) corresponds to the base wage (average and minimum). For instance, a contribution for pensions of 10% in a country with no bonus pay will just be 10%. A contribution of 10% for pensions in a country with two months bonus pay will be 11.64% ($10 \times (1 + 2 \times 30/365)$) of base wage. An additional complication is that contribution rates may vary across wages. For instance, several countries, like Bolivia or Honduras, exclude from certain contributions those workers who make exactly the minimum wage. Others, like Colombia, include solidary contributions applicable to higher wages to finance pensions for workers with lower wages. We use the contribution rate that applies to the average wage in the formal sector (MC_w in equation 1) to calculate the cost of salaried labor indicator and the contributions that apply to the minimum wage to calculate the minimum cost of salaried labor (MC_{mw} in equation 2).

Job security provisions

In case of dismissal (without just cause), employees in most countries must be given firing notice and severance payment. How to quantify this potential cost for in the salaried relationship is not straight forwards. Many authors do not impute the full cost of firing a worker but rather a percentage that emerges from multiplying the firing cost by the probability of dismissal (often estimated from household or employment surveys as the probability of becoming unemployed, or if available, the probability of an involuntary separation). In this exercise, we consider the full cost of firing a worker that remains for five years in the firm. We monetize the two components of the firing cost. First, employers must notify an employee about his or her dismissal within a certain number of days. If an employer decides to dismiss an employee without giving this notice period, then he must pay the equivalent to the working days to the employee.¹⁰ Second, employers must pay severance in compensation for terminating the contract with the employee. In most cases, both firing notice and severance payment vary with employee's tenure. For example, firing notice in Argentina is equivalent to 30 working days for workers with less than 5 years on the job and 60 working days for workers with 5 years of tenure or more. In the case of Bolivia, the length of notice period varies not only by tenure but also by type of worker (blue-collar versus white-collar

⁹ Either because there is no bonus pay or bonus pay does not enter in the base calculation for other mandatory contributions.

¹⁰ Because labor productivity of notified workers can decrease in a dramatic manner (Heckman and Pages, 2000) and because in some countries employers can dismiss an employee immediately by transferring the value worth the firing notice period, we have included firing notice as a contingent cost

workers, in Spanish, *obreros* versus *empleados*).¹¹ Firing notice is not mandatory in Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela. Severance payment also varies by tenure in most countries and, in some, it also varies by salary range. For workers with 5 years of tenure, Brazilian employers must pay the equivalent of 58 days of salary, while Peruvian employers must pay the equivalent of 225 days (Table 1). In the case of Colombia, severance pay varies both by tenure and the employee's monthly salary. For a worker making the minimum wage and 5 years of tenure, severance pay is equivalent to 110 days.¹² The data for this section draws from the joint IDB-OECD work on Employment Legislation Protection indicators, and we consider the scenario of a worker on an average wage and a minimum wage job and 5 years of tenure (Table 1).

To compare the cost of job security provisions to the rest of mandatory cost we convert the eventual (and contingent of unjustified dismissal) cost into monthly contributions. We compute the costs of firing notice and severance pay by computing the proportion of wages the employer should have saved every month to cover the eventual dismissal costs. This assumes that real wages are constant and the interest rate on those "savings" is 0.

Our measure of job security provision relies only on the potential monetary costs of firing a worker without considering other potential costs. To complement our analysis, we present an additional indicator that uses more comprehensive information about the costs of dismissing workers, the Employment Protection Legislation index developed by the OECD.

We use a subcomponent of the EPL index to consider a qualitative measure of job security provisions. For each country, the EPL index measures 21 basic items related to firing restrictions. These items are classified in three main areas: (i) protection of regular workers against individual dismissal (EPR); (ii) regulation of temporary forms of employment (EPT); and (iii) additional, specific requirements for collective dismissals (EPC). After converting each item to a cardinal scale, weighted synthetic indicators are calculated for the three main areas.

¹¹ According to the general labor law of Bolivia (article 12), employers must provide workers an advance notice of their dismissal. (1) Blue-collars: 7 days for tenure over one month, 15 days for tenure over 6months, 1 month for tenure over one year. (2) White-collars: 90 days for tenure over 3 months. If an employer dismisses an employee without prior notice, termination is considered in Spanish "*despido intempestivo*" being the employee entitle to the payment of "*desahucio*", which amounts to pay in lieu of notice. For more a summary of dismissal legislation on LAC countries see the IDB-OECD joint publication on Employment Legislation Protection indicators: <http://tinyurl.com/hnhvf4s> (in English) and <http://tinyurl.com/zn9e64t> (in Spanish).

¹² According to the labor code (código sustantivo de trabajo, CST), Severance pay for unfair dismissal ("sin justa causa") varies depending on the employee's monthly salary and tenure (Article 64 CST): Remuneration lower than 10 (ten) minimum legal monthly salaries (MLMS): (i) 30 days for tenure less than a year; (ii) 20 days (in addition to the 30 days of numeral (i)), for each subsequent year and in proportion per fraction of year. Remuneration in excess of 10 (ten) MLMS: (i) (i) 20 days for tenure less than a year; (ii) 15 days (in addition to the 20 days of numeral (i)), for each subsequent year and in proportion per fraction of year.

We focus on the first subcomponent, the EPR, which encompasses 9 of the 21 items of EPL, as follows:

(A) Procedural inconveniences: 1. Notification procedures (oral, written, by a third party); 2. Delay involved before notice can start;

(B) Notice and severance pay for no-fault individual dismissals: 3. Length of the notice period at different tenures; 4. Severance pay at different tenures;

(C) Difficulty of dismissal: 5. Definition of justified or unfair dismissal; 6. Length of trial period; 7. Compensation following unfair dismissal; 8. Possibility of reinstatement following unfair dismissal; and 9. Maximum time to make a claim of unfair dismissal.¹³

Table 2 describes the method used to convert raw data on each item into a cardinal unit or value (0-2, 0-3, 0-4, number of days, number of months) which is then converted into a score measured on a 0-6 scale, with higher values representing stricter regulation.¹⁴ For example, the first item “notification procedures” tries to capture the way in which the dismissal has to be announced to the worker, with values from 0 (if an oral statement is sufficient) to 6 (the employer cannot proceed to dismissal without authorization from a third party).

¹³ See the methodology here: <http://tinyurl.com/hnhvf4s> (in English) and <http://tinyurl.com/zn9e64t> (in Spanish).

¹⁴ As regards a number of items, Table 2 reports typical cases corresponding to integer cardinal units. However, as other situations not reported in the table are possible, fractional values are used to account for these cases. In certain cases fractional values are the result of averages of different rules applying to subsets of workers. See OECD (2013b), especially Box 2.1, for more details on the coding of specific situations.

Table 1. Labor costs for Latin America and Caribbean countries

Country	Monthly minimum wage	Bonus (days)	Paid leave (days)	Contribution base of mandatory contributions	Pensions	Health	Others	Total applicable for average wages	Total applicable for the minimum wage	Severance payment (days)	Firing notice (days)	GDP per worker (US\$ PPP)
	UDS PPP											
Argentina	883	30	14	Gross wage (wage+annual bonus)	21.2%	18.0%	5.3%	44.5%	44.5%	150	60	51,982
Bolivia	371	60	20	Net wage	15.7%	10.0%	1.7%	27.4%	24.4%	150	90	13,400
Brazil	412	30	40	Gross wage (wage+annual bonus)	29.0%	0.0%	14.2%	43.2%	42.2%	58	42	31,854
Chile	606	0	15	Gross wage (wage+annual bonus)	10.0%	7.0%	6.7%	23.7%	23.7%	150	30	48,876
Colombia	501	30	15	Net wage for employees, gross wage for employers. Work injury: two minimum wages Solidarity fund (pensions): 4 minimum wages.	16.0%	4.0%	12.6%	32.6%	32.3%	110	8	27,979
Costa Rica	778	30	14	Gross wage (wage+annual bonus)	9.1%	14.8%	11.8%	35.7%	35.7%	106	30	32,574
D. Republic	341	30	18	Gross wage (wage+annual bonus)	9.97%	10.13%	2.70%	22.80%	22.80%	115	28	32,257
Ecuador	578	30	15	Gross wage (wage+annual bonus)	9.74%	5.71%	5.15%	20.60%	20.60%	150		23,817
El Salvador	383	15	24	Net wage	13.0%	10.5%	1.0%	24.5%	24.5%	150		19,369
Guatemala	632	60	15	Net wage	5.5%	6.0%	6.0%	17.5%	17.5%	150		17,579
Honduras	673	60	20	Net wage	2.2%	5.5%	3.1%	10.73%	7.5%	150	30	11,887
Jamaica	380	0	14	Gross wage (wage+annual bonus)	5.0%	0.0%	13.8%	18.8%	18.8%	70	28	21,079

México	253	15	14	Gross wage (wage+annual bonus). Sickness and maternity (regular) 20.4%: minimum wage. Sickness and maternity 1.1%: surplus of gross wage over 3 minimum wages.	8.65%	8.87%	7.98%	25.50%	39.4%	190		39,897
Nicaragua	405	30	30	Net wage Training: Gross wage	11.0%	8.3%	5.0%	24.3%	24.3%	130		11,154
Panamá	777	30	30	Net wage Education Insurance (within other contributions): gross wage.	13.5%	8.5%	3.2%	25.2%	25.2%	119		41,758
Paraguay	730	30	12	Gross wage (wage+annual bonus)	23.0%	0.0%	1.0%	24.0%	24.0%	75	45	18,500
Peru	492	60	30	Net wage	13.0%	9.0%	9.0%	31.0%	31.0%	225		22,374
Trinidad and Tobago	564	0	14	Net wage	fix scale	fix scale	0	fix scale	fix scale	82.5		69,279
Uruguay	458	30	21	Net wage	22.50%	9.50%	7.15%	39.15%	39.15%	179		41,718
Venezuela	685	30	19	Net wage	13.0%	0.0%	8.8%	21.8%	21.8%	150		43,705

Source: Authors and OECD/IDB/CIAT (2016)

Notes: (1) In the case of Colombia, we consider the scenario as of January 1st 2014. During 2013, Colombia implemented a tax reform in two steps; one took effect on May 2013 and the other on January 1st 2014. (2) In Colombia, among other contributions is work injury. This contribution is not applicable for workers earning the minimum wage; the lower threshold for this contribution is equal to 3 minimum wages. SENA and ICBF contributions are effective for workers with an income higher than 10 minimum wages. Finally contributions for the solidarity fund (0-2%) are applicable to workers with wages higher than 4 minimum wages. (3) Minimum wages are presented monthly. Legally the frequency of the minimum wage is monthly in Argentina, Bolivia, Brazil, Chile, Costa Rica, Ecuador, Honduras, Nicaragua, Paraguay, Peru, Dominican Republic, Trinidad & Tobago, Uruguay and Venezuela; weekly in Jamaica; daily in Colombia, El Salvador, Guatemala and Mexico; and hourly in Panama. See table A.1 for details. (4) In Ecuador, apart from the annual bonus equivalent to 30 days or one salary per year, there is an additional annual payment equivalent to one minimum wage per year. (5) In Bolivia there is an additional employee contribution for pensions: the Solidarity Fund-additional mandatory contributions, which are applicable for individuals that earn more than 10 minimum wages. The rates are from 0% to 10%. This is not included in the total rate presented in this table. (6) In Bolivia the employers contributions to the Solidarity Fund (3%-pensions) are applicable for individual that earn more than the minimum wage. (7) For the calculation of labor costs in Guatemala the minimum wage is added to the bonus of 250 quetzales. (8) There are no official data, we report ILO estimates. (9) Income data for Jamaica and Nicaragua correspond to 2012 due to the availability of the household survey. (10) In Mexico, contributions for sickness and maternity are applicable for workers that earn more than 3 minimum wages. Besides, the contribution for Sickness and maternity (regular-20.4%) has a taxable base the minimum wage. (11) In Nicaragua, employer contributions for training have the gross wage as the taxable base. (12) In Panama, the taxable base for pensions and health mandatory contributions is the net wage. However, employees pay a rate of 7.25% on their annual 13th bonus for old-age and health contributions. Besides, bonuses paid to employees are taxed at 10.75% for the old-age and healthcare program. The taxable base for Education Insurance contributions (for employers-1.5% and employees-1.25% is the gross wage). (13) In Honduras the employers contributions for pensions (2%), health (5%) and work injury (0.2%) are applicable for individuals that earn more than the minimum wage (the minimum wage is not included). Besides, the upper threshold for all the contributions are 84,000, which is lower than the average wage (in this table are presented the rates applicable to the average wage). (14) For detailed information about other contributions apart from pensions and health, see Table A.2

Table 2. Quantifying the 9 basis measures of individuals dismissals of workers with regular contracts (EPR)

	Original unit and short description of typical cases		Assignment of numerical strictness scores						
			Assigned scores						
			0	1	2	3	4	5	6
1: Notification Procedures	Scale 0-3		Scale (0-3) × 2						
	0	when an oral statement is enough;							
	1	when a written statement of the reasons for dismissal must be supplied to the employee;							
	2	when a third party (such as works council or the competent labor authority) must be notified;							
	3	when the employer cannot proceed to dismissal without authorization from a third party.							
2: Delay involved before notice can start	Days Estimated time includes, where relevant, the following assumptions: 6 days are counted in case of required warning procedure, 1 day when dismissal can be notified orally or the notice can be directly handed to the employee, 2 days when a letter needs to be sent by mail and 3 days when this must be a registered letter.		≤ 2	< 10	< 18	< 26	< 35	< 45	≥ 45
3: Length of the notice period at	9 months tenure	Months	0	≤ 0.4	≤ 0.8	≤ 1.2	< 1.6	< 2	≥ 2
	4 years tenure	Months	0	≤ 0.75	≤ 1.25	< 2	< 2.5	< 3.5	≥ 3.5
	20 years tenure	Months	< 1	≤ 2.75	< 5	< 7	< 9	< 11	≥ 11
4: Severance pay at	9 months tenure	Months pay	0	≤ 0.5	≤ 1	≤ 1.75	≤ 2.5	< 3	≥ 3
	4 years tenure	Months pay	0	≤ 0.5	≤ 1	≤ 2	≤ 3	< 4	≥ 4
	20 years tenure	Months pay	0	≤ 3	≤ 6	≤ 10	≤ 12	≤ 18	> 18
5: Definition of justified or unfair dismissal	Scale 0-3		Scale (0-3) × 2						
	0	when worker capability or redundancy of the job are adequate and sufficient ground for dismissal;							
	1	when social considerations, age or job tenure must when possible influence the choice of which worker(s) to dismiss;							
	2	when a transfer and/or a retraining to adapt the worker to different work must be attempted prior to dismissal;							
	3	when worker capability cannot be a ground for dismissal.							
6: Length of trial period	Months Period within which, regular contracts are not fully covered by employment protection provisions and unfair dismissal claims can usually not be made.		≥ 24	> 12	> 9	> 5	> 2.5	≥ 1.5	< 1.5
7: Compensation following unfair dismissal	Months pay Typical compensation at 20 years of tenure, including back pay and other compensation (e.g. for future lost earnings in lieu of reinstatement or psychological injury), but excluding ordinary severance pay.		≤ 3	≤ 8	≤ 12	≤ 18	≤ 24	≤ 30	> 30
8: Possibility of reinstatement following unfair dismissal	Scale 0-3		Scale (0-3) × 2						
	0	no right or practice of reinstatement;							
	1	reinstatement rarely or sometimes made available;							
	2	reinstatement fairly often made available;							
	3	reinstatement (almost) always made available;							
9: Maximum time to make a claim of unfair dismissal	Months Maximum time period after dismissal notification up to which an unfair dismissal claim can be made.		Before dismissal takes effect	≤ 1	≤ 3	≤ 6	≤ 9	≤ 12	> 12

Source: OECD methodology, OECD (2013a)

3. Results

Using data in table 1 we calculate equations 1 and 2 for 20 LAC countries. Tables 3 and 4 and Figures 2 and 4 show the main results.

a) *The non-wage cost of salaried labor and the minimum cost of salaried labor.*

Our NWC indicator (equation 1) is on average in the region 49.5%. That is, in a salaried relationship, the additional mandated costs that the employer and the employee must satisfy to fulfill all mandated benefits and obligations is 49.5% of the base average wage. Additional benefits in form of bonus pay and paid leave account for 13.8%, mandated contributions account for 27.3 % and job security provisions account for another 8.4%. There is a large variance across countries with countries like Argentina, Brazil and Peru with costs around 70% of wages and countries like Trinidad and Tobago, Jamaica and Chile with cost less than 40% of wages.

Mandatory contributions are the main component of labor costs, representing 55% of total costs. In all countries but Guatemala and Honduras mandatory contributions represent the higher proportion of total costs. Only in Ecuador, Peru, Bolivia, Guatemala and Honduras mandatory contributions represent less than half of total costs. Job security provisions represent on average 17.6% of total cost, mostly due to severance pay that represents 15.5% of total labor costs; in fact, there are no costs associated with firing notice in almost half of our sample of 20 countries (Uruguay, Trinidad and Tobago, Mexico, El Salvador, Panama, Nicaragua, Venezuela, Ecuador, Peru and Guatemala).

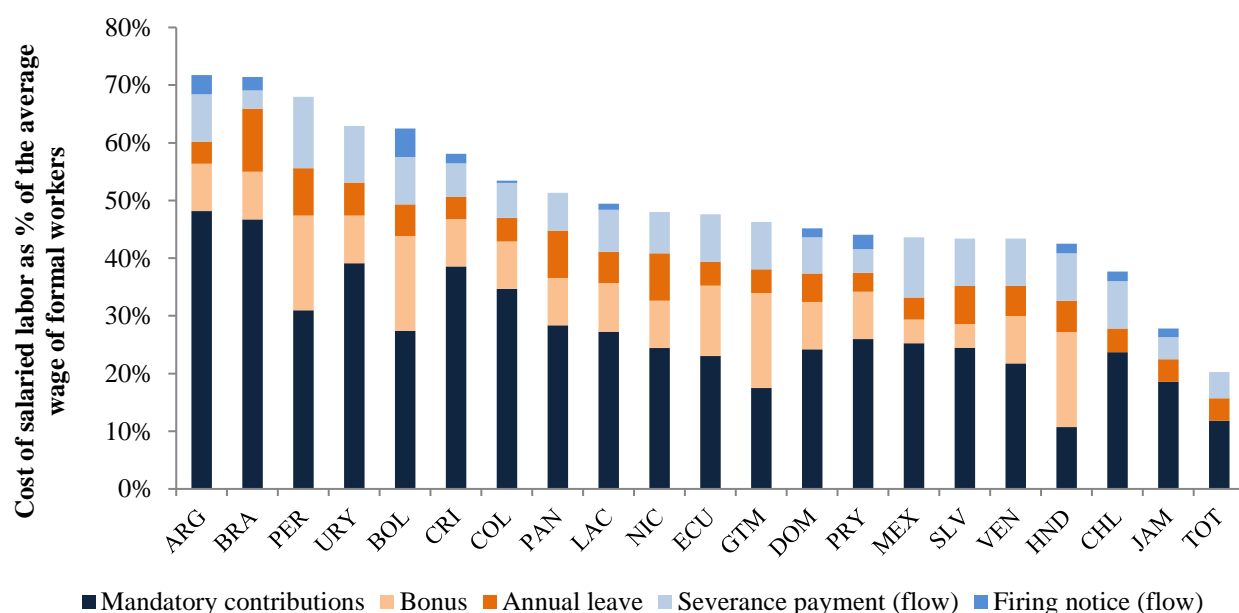
Furthermore, as a variation of the NWC indicator, we calculate the cost of salaried labor as a percentage of the average wage of informal workers to measure the actual cost for a firm if it wanted to formalize an informal salaried worker. This indicator is 1.5 times the NWC: the average cost in the region is 76% (Figure 3.), which reflects the difference in the quality between formal and informal jobs and shows that in LA formalizing a worker would cost almost 80% of its actual wage. Approximately, the average wage of informal salaried workers in the region is around 50% of the average wage of formal workers. Also, there are some changes in the ranking; for instance, Colombia ranks second in this variation, while in the original NWC is the seventh country with the highest cost. Uruguay is the country with the highest cost and in the lower end of the distributions there are not important changes.

The minimum cost of salaried labor (equation 2) in the region amounts to 39% of GDP per worker. That is, for the average country, the yearly minimum wage plus all additional salaried cost, mandated benefits and job security provisions amount to 39% of the average labor productivity. Variation in this indicator is even larger than in the previous one. For the five poorest countries in our sample the MCSL is over 50% of GDP worker, reaching a maximum of 95% of GDP per worker in Honduras. For countries like Mexico or Trinidad and Tobago or the Dominican Republic the MCSL it is below 15% of GDP per worker. This is essentially due to the fact that there are important variations in the levels of the minimum wage relative to GDP per worker. For instance,

the three poorest countries in our sample, measured by GDP per worker, Honduras (11,887 US PPP), Nicaragua (11,154 US PPP) and Bolivia (13,400 US PPP), have minimum wages in PPP terms higher than Mexico or the Dominican Republic, countries three times as rich (triple GDP per worker). Other countries also present similar patterns. Paraguay and Guatemala are countries with roughly half the GDP per worker of Brazil with minimum wages that represent two times the minimum wage in Brazil.

Hence despite the fact that relative high-income countries like Argentina, Brazil, and Chile tend to have higher mandated contributions and job security provisions, there are the relative low-income countries like Honduras, Guatemala, Nicaragua and Paraguay that present a disproportionate larger minimum cost of salaried labor. For these reasons, the correlation between these two indicators is low, only 0.12. The rank correlation is also low (0.22) and insignificant.

Figure 2: The average non-wage cost of salaried labor (NWC), 2014



Source: Authors

Figure 3: The average non-wage cost of salaried labor as a percentage of the average wage of informal workers.

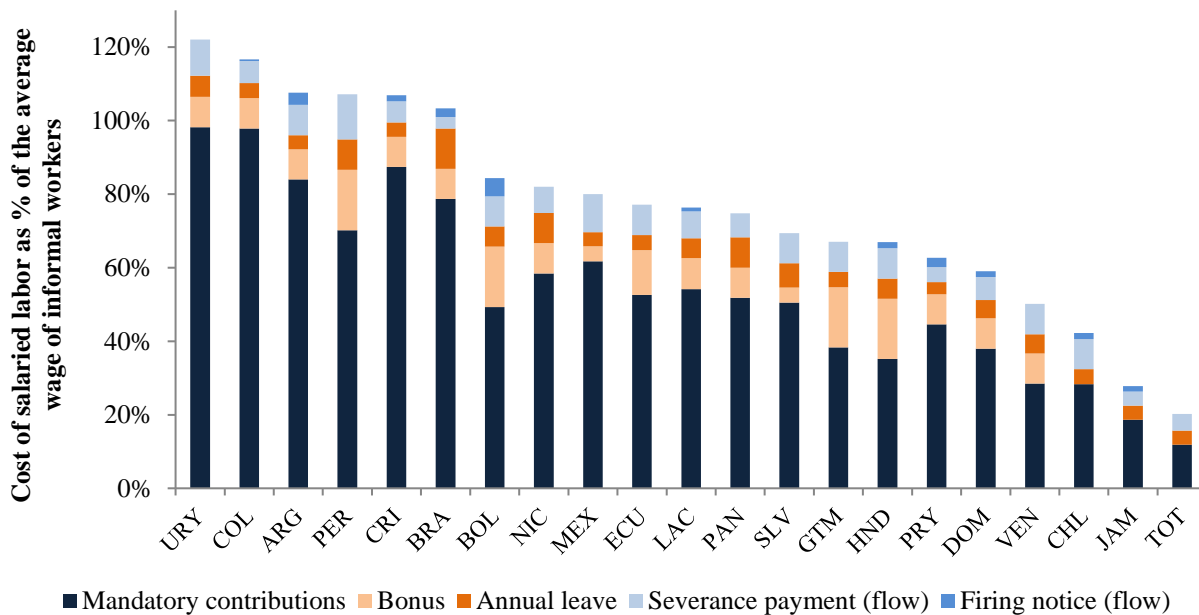
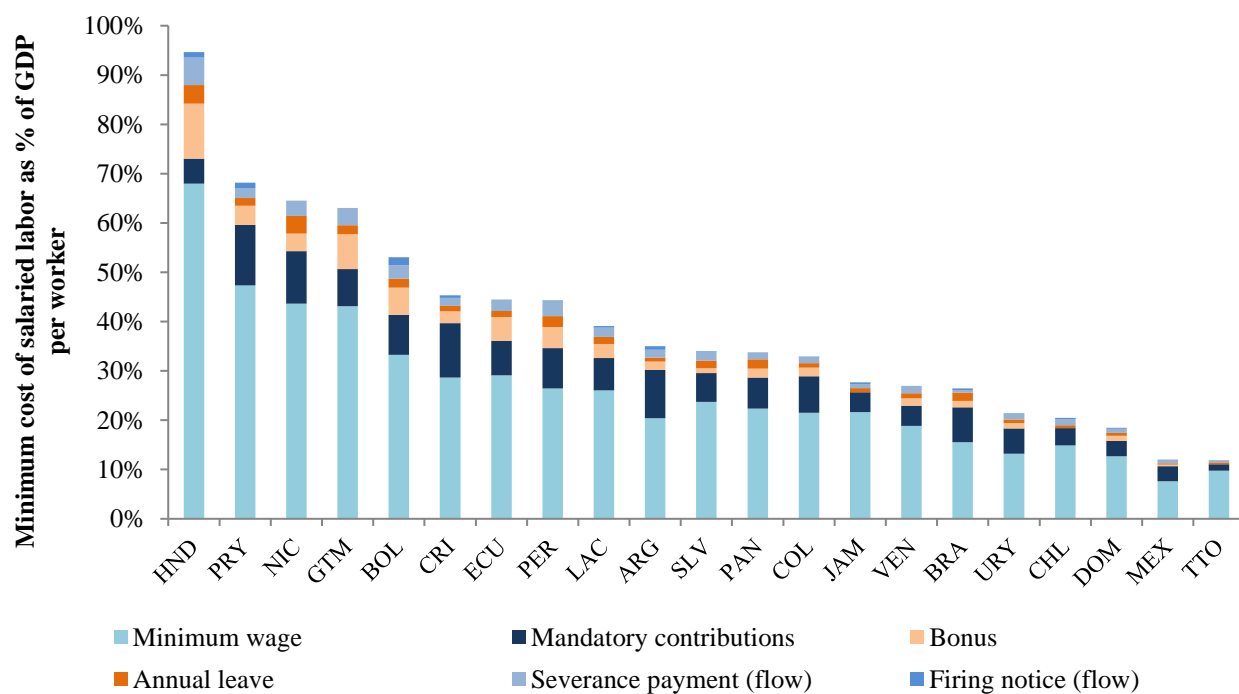


Figure 4: The minimum cost of salaried labor (MCSL), 2014



Source: Authors

Table 3: The average non-wage cost of salaried labor (NWC)
(as % of the average of net wages of formal salaried workers)

		Salaried costs	Job security provisions	
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	Mandatory contributions	Bonus	Annual leave	Severance payment (flow)	Firing notice (flow)	Total cost
ARG	48%	8%	4%	8%	3%	72%
BOL	27%	16%	5%	8%	5%	62%
BRA	47%	8%	11%	3%	2%	71%
CHL	24%	0%	4%	8%	2%	38%
COL	35%	8%	4%	6%	0%	53%
CRI	39%	8%	4%	6%	2%	58%
DOM	24%	8%	5%	6%	2%	45%
ECU	23%	12%	4%	8%	0%	48%
GTM	18%	16%	4%	8%	0%	46%
HND	11%	16%	5%	8%	2%	43%
JAM	19%	0%	4%	4%	2%	28%
MEX	25%	4%	4%	10%	0%	44%
NIC	24%	8%	8%	7%	0%	48%
PAN	28%	8%	8%	7%	0%	51%
PER	31%	16%	8%	12%	0%	68%
PRY	26%	8%	3%	4%	3%	44%
SLV	25%	4%	7%	8%	0%	43%
TOT	12%	0%	4%	5%	0%	20%
URY	39%	8%	6%	10%	0%	63%
VEN	22%	8%	5%	8%	0%	43%
LAC	27.3%	8.4%	5.4%	7.3%	1.1%	49.5%

Source: Authors

Table 4: The minimum cost of salaried labor (MCSL)
(as % of the GDP per worker)

Country	Minimum wage	Mandatory contributions	Salaried costs		Job security provisions		Total cost
			Bonus	Annual leave	Severance payment (monthly)	Firing notice (monthly)	
ARG	20%	10%	2%	1%	2%	1%	35%
BOL	33%	8%	5%	2%	3%	2%	53%
BRA	16%	7%	1%	2%	0%	0%	26%
CHL	15%	4%	0%	1%	1%	0%	20%
COL	22%	7%	2%	1%	1%	0%	33%
CRI	29%	11%	2%	1%	2%	0%	45%
DOM	13%	3%	1%	1%	1%	0%	18%
ECU	29%	7%	5%	1%	2%	0%	45%
GTM	43%	8%	7%	2%	4%	0%	63%
HND	68%	5%	11%	4%	6%	1%	95%
JAM	22%	4%	0%	1%	1%	0%	28%
MEX	8%	3%	0%	0%	1%	0%	12%
NIC	44%	11%	4%	4%	3%	0%	65%
PAN	22%	6%	2%	2%	1%	0%	34%
PER	26%	8%	4%	2%	3%	0%	44%
PRY	47%	12%	4%	2%	2%	1%	68%
SLV	24%	6%	1%	2%	2%	0%	34%
TTO	10%	1%		0%	0%	0%	12%
URY	13%	5%	1%	1%	1%	0%	21%
VEN	19%	4%	2%	1%	2%	0%	27%
LAC	26%	7%	3%	1%	2%	0%	39%

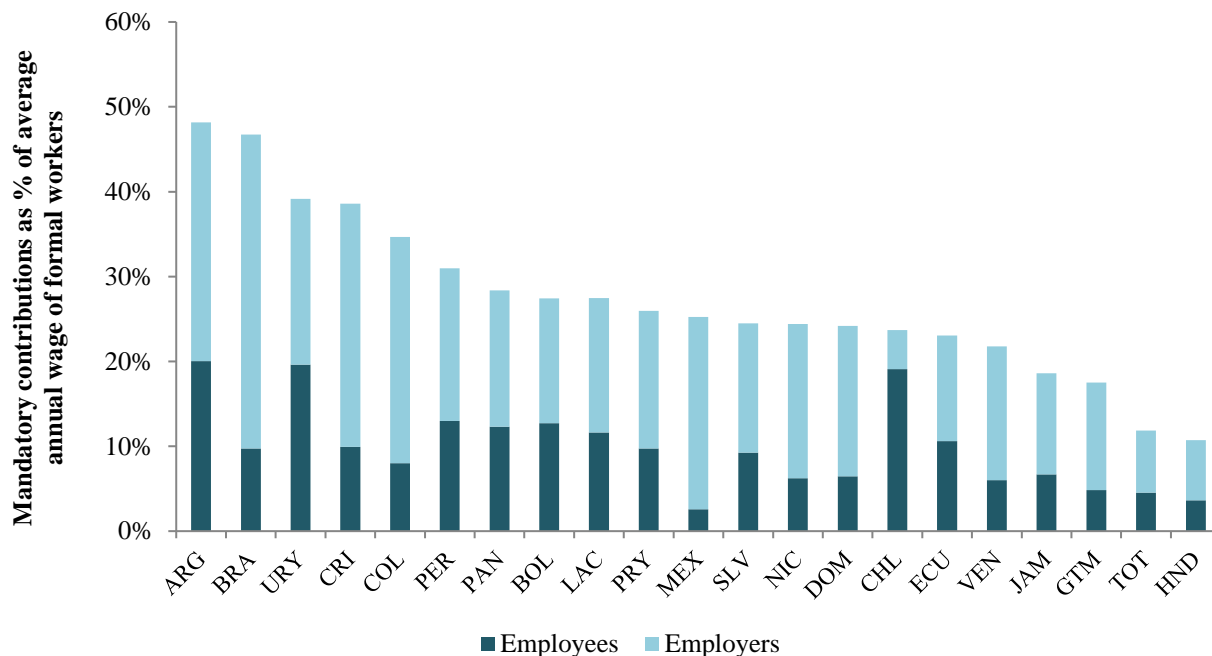
Source: Authors

b) De jure incidence of costs and the financing of the welfare state.

Most of the components of the cost of labor in our indicators are supposed to be paid by the employer. All the associated salaried costs and the job security provisions are exclusively the obligation of the employer to bear. Mandatory contributions, however, are by law split between employees and employers. These contributions aim at financing primarily the social insurance. This section dwells on differences in the level and configuration of those contributions. Economic incidence of these contributions could be very different since some of these costs could be passing through to workers in the form of lower wages.

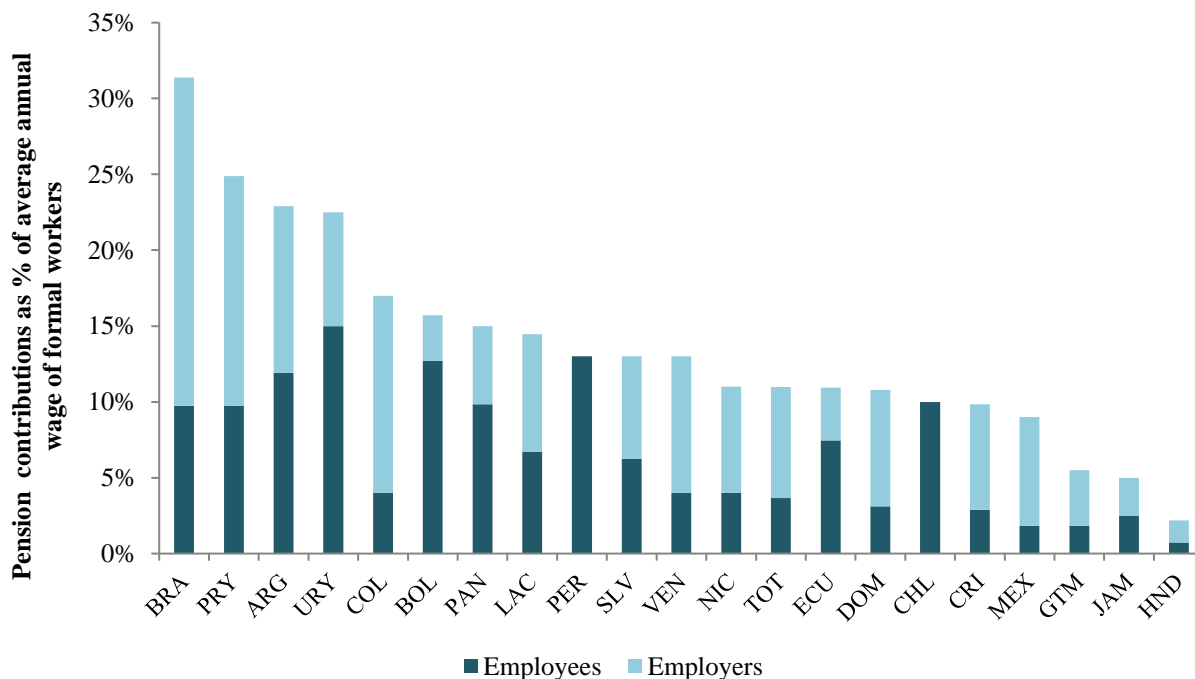
We start showing the legislated split of mandatory contributions as percentage of the base wage by employer and employee and type of contribution (total, pensions, health and other contributions) Figures 5 to 8.

Figure 5: Mandatory contributions as a share of (average annual) base wage: By employer and employee.



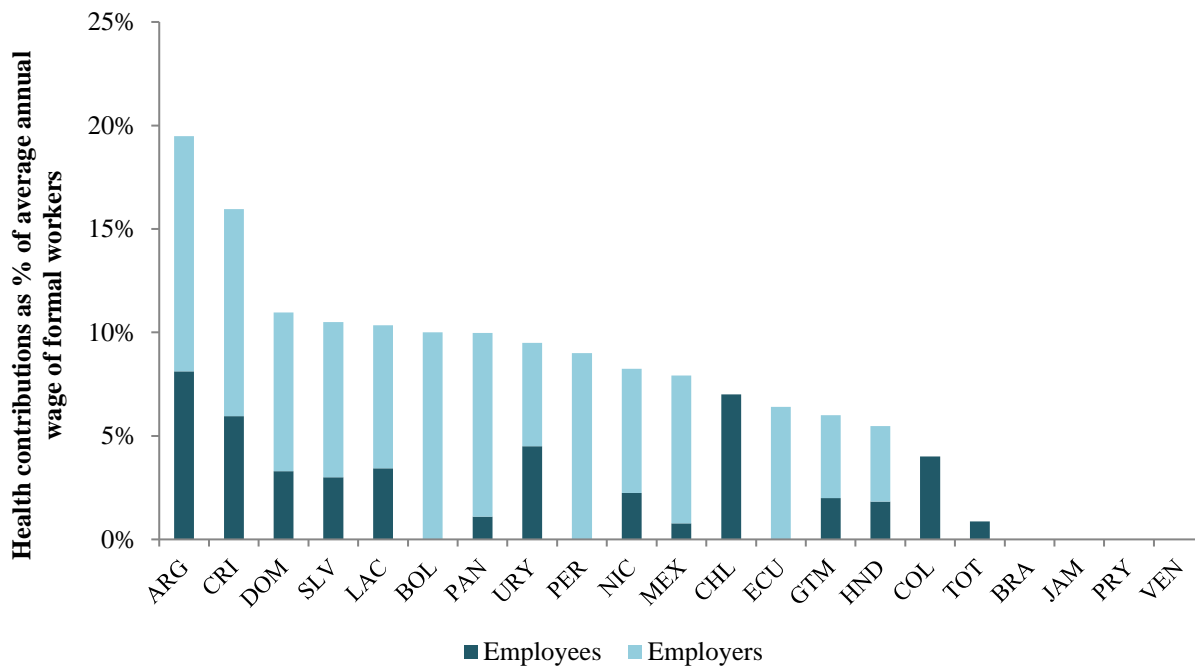
Source: Authors

Figure 6: Pensions contributions as a share of (average annual) base wage: By employer and employee.



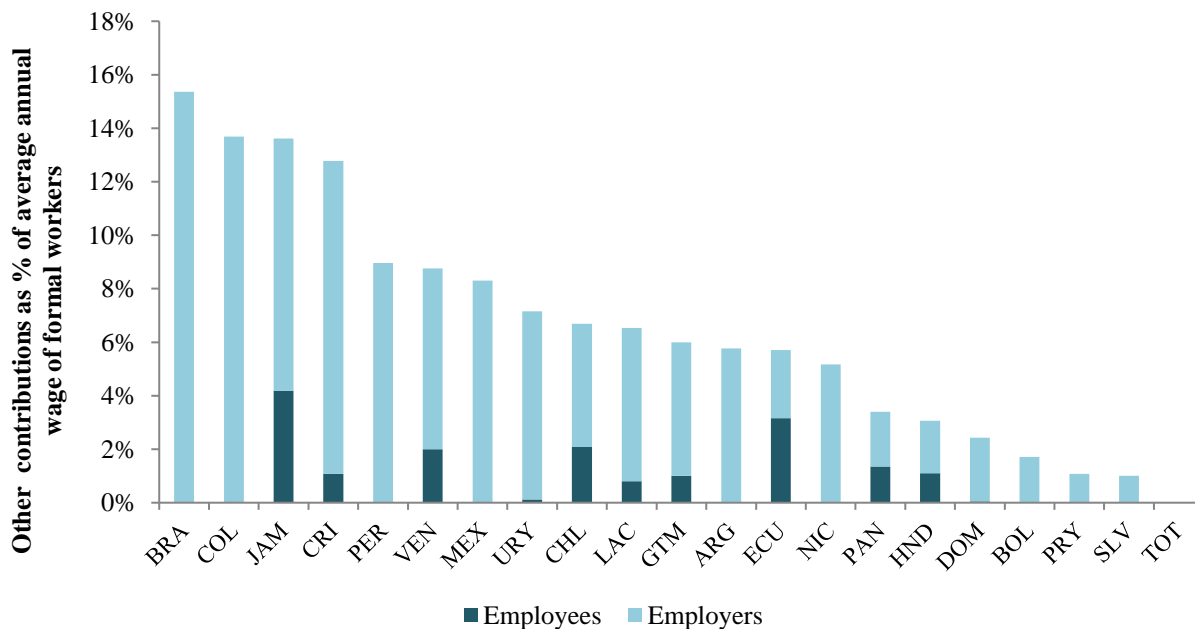
Source: Authors

Figure 7: Health contributions as a share of (average annual) base wage: By employer and employee.



Source: Authors

Figure 8: Other contributions as a share of (average annual) base wage: By employer and employee.



Source: Authors

Generally, employers are expected to pay the biggest share of mandated contributions. On average, mandated contributions for employers amount to 18% of average annual wages, versus 10% of mandated contributions for employees. The countries with highest mandated contributions for employers are Brazil (37%), Costa Rica (29%), Argentina (28%) and Colombia (27%). For employees are Argentina (20%), Uruguay (19.6%) and Chile (19%).

Interesting patterns emerge when analyzing the different nature of contributions. All countries in our sample mandate contributions for pensions for salaried workers. On average, employees of the region contribute with a 7% of their wage, while the average contribution from employers is 8%. However, mandated contribution for employers and employees varies significantly by country. For instance, with respect to pensions (Figure 6) some countries mandate high contribution rates from employers; that is the case of Brazil (22%), Paraguay (15%) and Colombia (13%). Others, like Chile and Peru do not set any pension contribution rate for employers. On the side of the employees the highest pension contribution rate is paid by Uruguayan workers (15%) while the lowest by Honduran workers (1%).

Health contributions vary substantially across countries depending on how countries decide to provide and fund health services. On average, employees of the region contribute with a 3% of their wage, while the average contribution from employers is 7%. Some countries provide universal health services in Brazil, Jamaica, Paraguay and Venezuela. These countries do not mandate contributions from either employers or employees.¹⁵ The rest of the countries in the region, use a mix of employer and employee contributions. Others, only mandate contributions from employers (Bolivia, Ecuador and Peru) or only from employees (Chile and Trinidad and Tobago). The country with the highest mandatory contribution rate for employers is Argentina, with an 11% of the average wage. On the employee's side, the highest contribution rate is established by Argentina with an 8%, followed by Chile (7%) and Costa Rica (6%).

We now turn to other mandatory costs. Recall that these include miscellaneous charges such as professional risk insurance, disability insurance; funds to finance training institutions or unemployment insurance (see Table A.2 for details of what is included as "other"). On average, other mandatory costs on the employee's side add up to 1% of base wage for the employee and 7% for the employer. Jamaica is the country with the highest contribution rate paid by the employee with 4%. The country with the lowest contribution rate for employees is the Dominican Republic with 0.05% with specific assignment for the institution that provides professional training. On the employer's side, Brazil is the country with the highest contribution, with a 15% rate (that contains contributions like that for the National Institute for Colonization and Agricultural Reform), followed by Colombia (13.7%) and Costa Rica (12%). Argentina, Bolivia,

¹⁵ Argentina also provides free access to universal health services financed through general revenues. In addition, it also mandates health contributions by employers and employees to finance private insurance (obras sociales) that allows beneficiaries to access private health care.

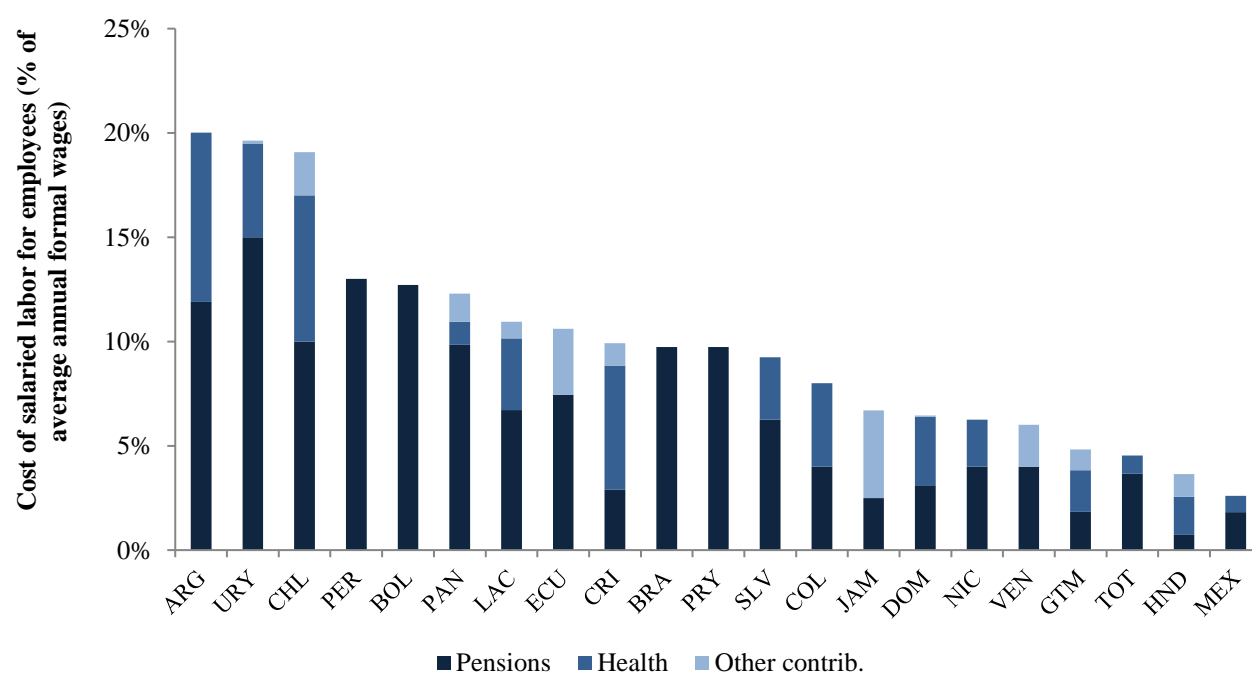
Brazil, Colombia, Mexico, Nicaragua, Peru, Paraguay and El Salvador employees are not obliged to make these contributions, but in every country employers must cover some of these costs.

We now compute our two indicators separately for employers and employees depending on the *de jure* incidence of the costs. For employees, this just consists on the share of mandated contributions they are responsible for. This amounts on average to 11% of the base wage (Figure 9) and 3% of GDP per worker (Figure 10).

For employers, in addition to the fraction of the mandated contributions, they are responsible for all salaried costs and job security provisions. Since in our indicators all benefits and job security provisions are born by the employer, the *de jure* bulk of the cost of salaried labor falls mainly on the employer. On average, the non-wage cost of salaried labor for employers is 40% of the base wage (Figure 11).

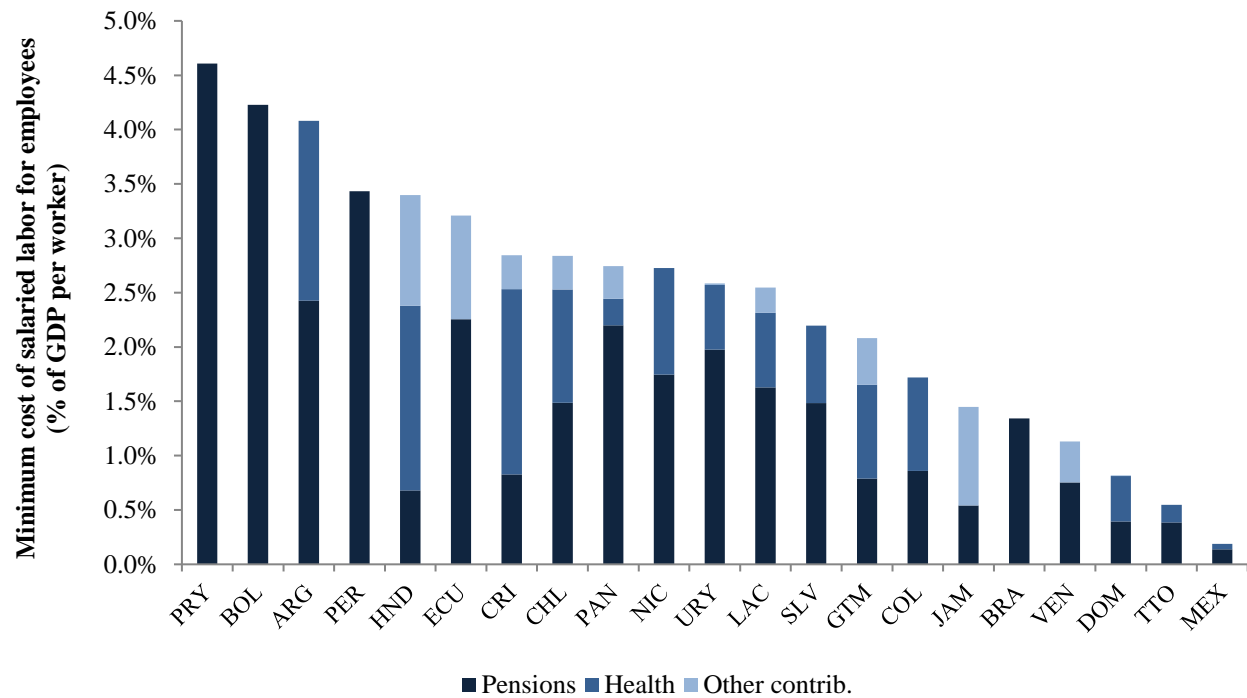
On average, the minimum cost of salaried labor for the employer is 37% of GDP per worker (figure 12). This is an important indicator. At the minimum wage, employers cannot pass through additional benefits or mandatory contributions to workers via lower wages. Therefore, if we abstract from employee contribution (which in some cases may be pass on to employers), this indicator is closest to represent the *minimum cost of salaried labor for employers*. Given the relatively low mandated contributions of workers to social insurance schemes (18% employers vs 11% employees), this indicator is relatively similar to the MCSL (which includes workers contributions). Only countries with high employee contributions like Argentina and Panama change positions compared to Figure 4.

Figure 9: Average non-wage cost of salaried labor: Employees contributions



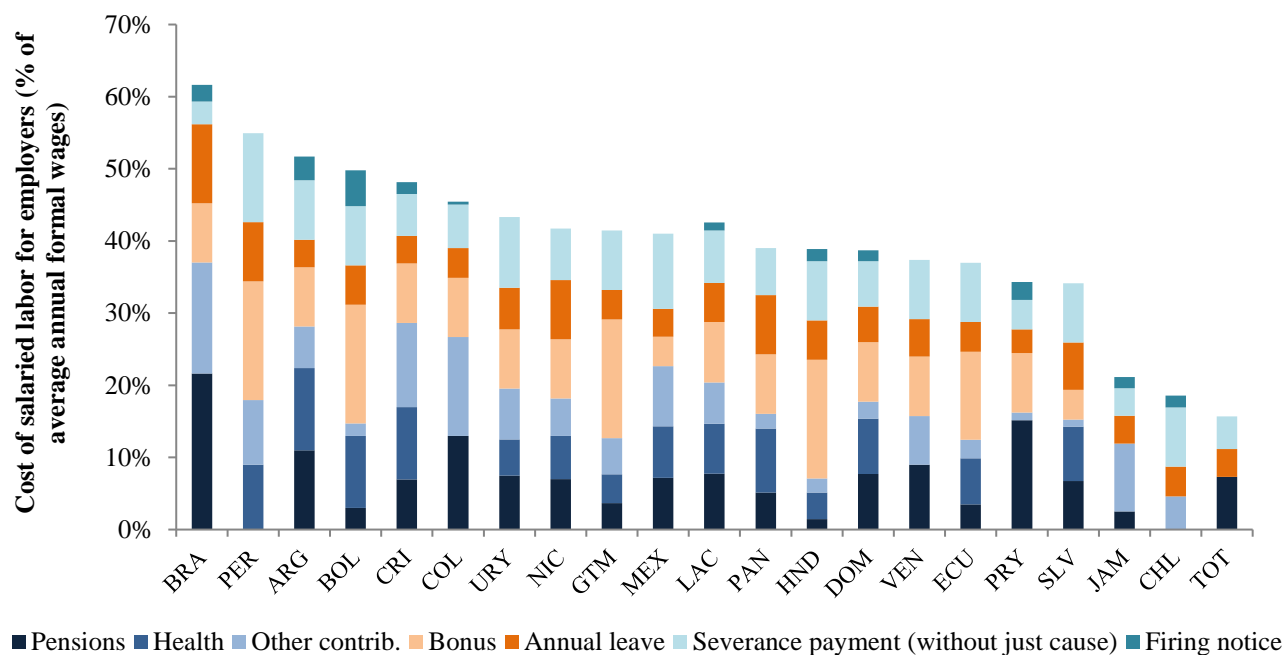
Source: Authors

Figure 10: The minimum cost of salaried labor: Employees contributions



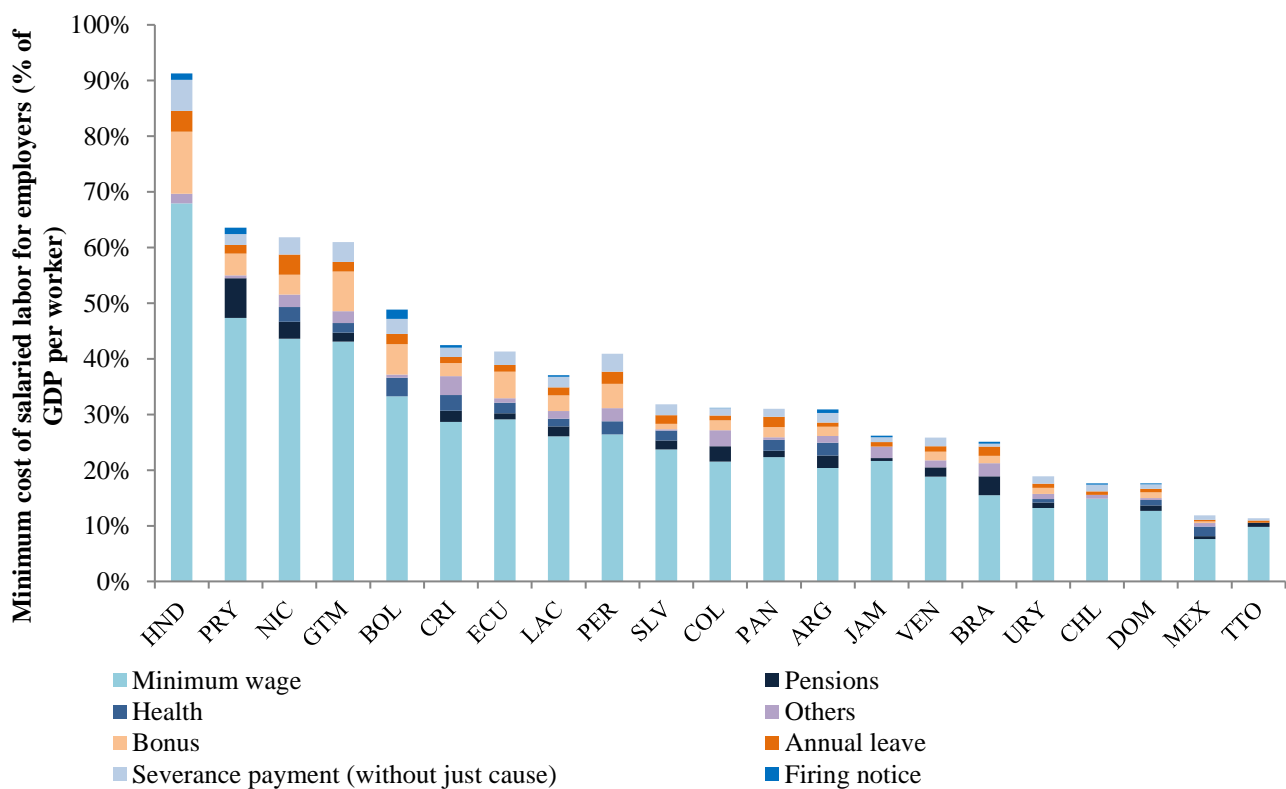
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Figure 11: Average non-wage cost of salaried labor: Employers contributions



Source: Authors

Figure 12: The minimum cost of salaried labor: Employers contributions



Source: Authors

c) Job security provisions: a broader view.

Both our indicators assume that job security provisions can be converted into monthly contributions. This is useful to compare the level of job security provisions with the other components of the cost of salaried labor. However, there are important drawbacks with this approach. The restrictions that job security provisions impose on the cost of salaried labor may not be well captured by just looking at the monetary cost of dismissing a worker. Other types of costs related to dismissal of workers are not easily quantifiable, such as the possibility of reinstatement of the worker following an unfair dismissal, periods of litigation, and the actual definition of unfair dismissal.

To address those concerns we present an additional measure aimed at capturing a broader extent of job security provisions. We use a component of the IDB-OECD's Employment Protection Legislation index for Latin America and Caribbean countries for individual dismissal.¹⁶ As we mentioned above, the EPL index aims at summarizing all related costs of dismissal in a single measure (including the costs included in our measures). It captures three components of the dismissal costs; (a) procedural inconveniences (notification procedures and delay to start a notice), (b) notice and severance pay for non-fault dismissals and (c) the difficulty of dismissal (definition of unfair dismissal, trial period, compensation for unfair dismissal, reinstatement and maximum time for claim). The index assigns a score to different legislation settings and weighs all three components equally.¹⁷ In all, the index ranges from 0 (low employment protection) to 6 (high employment protection). This allows a broader set of variables relevant to the dismissal procedure to enter the analysis. It also allows comparing the ranking of countries resulting from our quantitative measure to a broader measure of job security provisions. However, the general caveats of such indexes remain, such as how to translate legal provisions into values and how to weigh different factors into a single index.¹⁸

Figure 13 shows the resulting EPL index for individual dismissals of workers with regular contracts. According to this index Venezuela is the country in the region where dismissing a single employee is the most difficult, followed by Bolivia and Chile. In these countries dismissing a worker

¹⁶ The OECD also compiles EPL indexes for restrictions on temporary employment and collective dismissals. Since our analysis focuses on individual permanent salaried workers we do not present those indexes but they are available upon request.

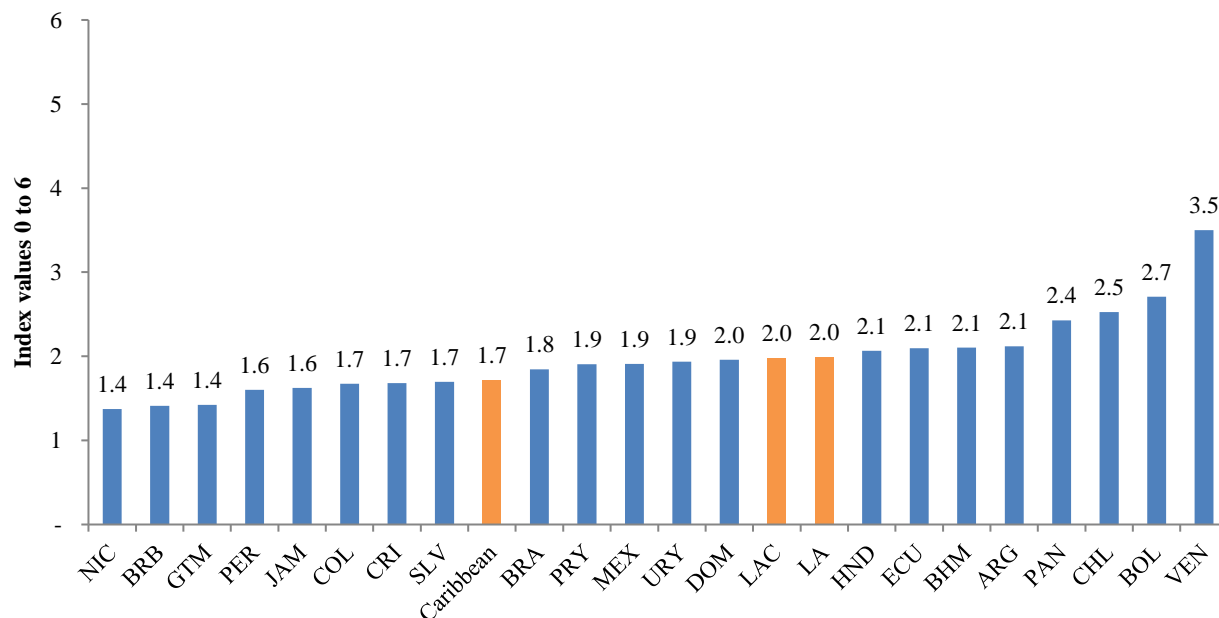
¹⁷ See the methodology here: <http://tinyurl.com/hnhvf4s> (in English) and <http://tinyurl.com/zn9e64t> (in Spanish).

¹⁸ Perhaps the most notable example of the difficulty of measuring job security provisions is the possibility that workers are reinstated in the firm after an unfair dismissal; which in some settings it makes virtually impossible for firms to dismiss workers. In practice, this could be interpreted as infinity cost, as firms might not be able to make workers redundant. This does not translate well into any of the measures here proposed. The existence of this provision does not affect our measure of cost of job security provisions (since we only compute advance notice and severance payments) and just increases the EPL index according to the established value and weights, but it does not capture how bidding this could be for hiring salaried permanent labor.

is difficult in aspects such as notification procedures, the delay before the notice can start, and the length of the trial period and the likelihood of reinstatement of the employee.

The correlation of this index with our measure of job security provisions is relatively high, around 0.5. If we exclude Venezuela, is 0.72 (Figure 14). This suggests that countries with higher severance payments (and firing notice) would also present higher additional administrative restrictions to fire workers. Indeed, if we divide the index by component, it is components a) procedural inconveniences and c) difficulty of dismissal that present highest correlation (around 0.3). However, surprisingly, component b) which should be measuring the actual monetary cost of dismissal (very close to our measure) presents 0 correlations. This result comes from small differences in how both measures are compute (see appendix for a detailed explanation), and it highlights the caution that must be taken when drawing conclusions from these indicators to make cross-country comparisons.

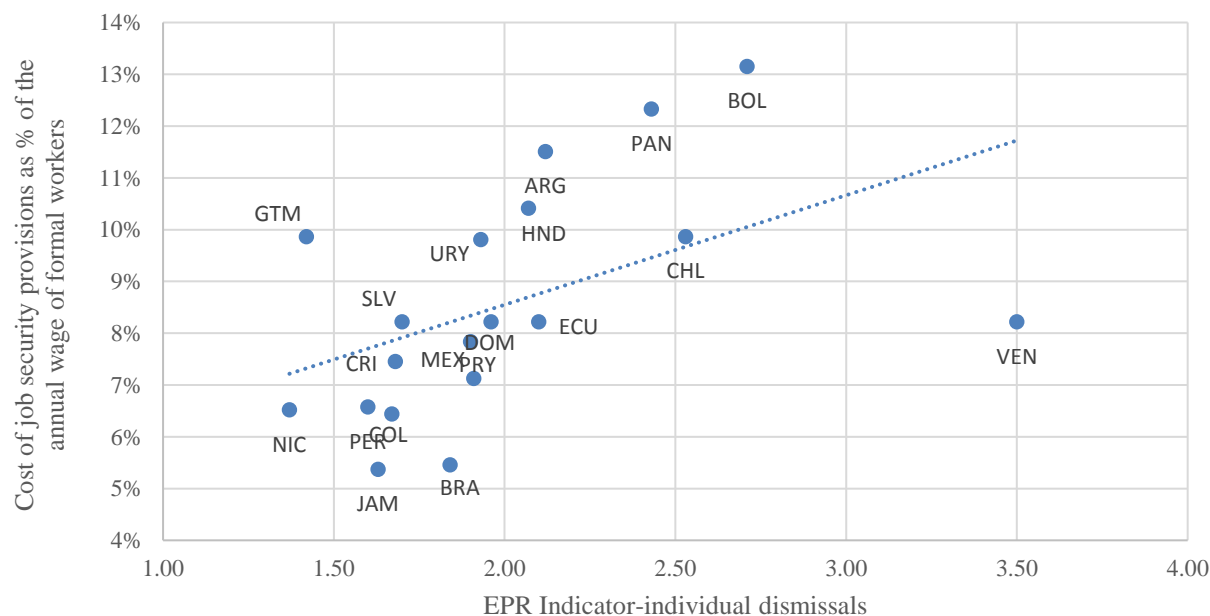
Figure 13. Protection of permanent workers against individual dismissals.



Source: OECD-IDB (2015)

Note: the information to calculate the EPR indicator corresponds to 2013, except for Brazil that is 2012.

Figure 14: Relationship between cost of job security provisions as share of wages (firing notices and severance pay) and the EPR index



Source: Authors

4. Conclusions

This paper presents new data documenting the cost of salaried labor in 20 Latin American and Caribbean countries. It contributes to the literature at least four ways: (i) it provides an up-to-date current status of labor regulations in the region; (ii) it presents two new indicators, the average non-wage cost of salaried labor as percentage of wages, and the minimum cost of hiring a formal worker, which includes paying the minimum wage plus all other wage and non-wage costs, as a percentage of GDP per worker; (iii) it presents a comparable measure across countries of job security provisions for a worker with five years of tenure, and it presents it in a way that can be added up to other wage and non-wage costs; and (iv) it compares this monetary measure of job security with a well-known qualitative measure designed for developed countries by the OECD and applied to LAC countries in a joint effort OECD-IDB.

We highlight seven important facts; (i) The *average non-wage cost of salaried labor (NWC)* for the region is 49% of wages. (ii) There is a large dispersion across countries like Argentina, Brazil and Peru with costs around 70% of wages and countries like Trinidad and Tobago, Jamaica and Chile with cost less than 40% of wages. (iii) Mandatory contributions are the most important component of the NWC with 27.3% of wages followed by additional benefits with 13.8% of wages and job security provisions account for another 8.4%. (iv) On average, mandated contributions from employers amount to 17.5% of average annual wages, versus 9.8% of mandated contributions from employees. (v) The *minimum cost of salaried labor (MCSL)* is on average 39% of GDP per worker. (vi) Variation of the MCSL across countries is even larger. For countries like Mexico, Trinidad and Tobago or the Dominican Republic the MCSL it is below 15% of GDP per worker while the minimum cost of hiring a salaried worker in Honduras is 95% of GDP per capita. (vii) Despite having below average NWC, the five poorest countries in our sample are those presenting the highest MCSL. This is because relatively poor countries in the region are those presenting higher minimum wages relative to GDP per worker.

The comparison between the monetary and more qualitative measures of job security provisions (such as the EPL index) highlights the caution that must be taken when drawing conclusions from these indicators to make cross-country comparisons. The definitions, assumptions and methodology used all three influences the final ordering of countries. It is therefore recommended to fully understand what is being measured when drawing conclusion for policy reform.

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Appendix 1: Data and sources of information for each country

[VER EXCEL ADJUNTO]

Appendix 2: Example of the construction of equations 1 and 2: Colombia

To compute the “Cost of salaried labor” (Indicator 1), we base our calculations on the average annual wage of formal salaried workers (base wage). For the “Minimum cost of salaried labor” (Indicator 2), the base wage is the annual minimum wage. When estimating the monetary value of the bonus, paid leave, and job security provisions, we transform the annual base wage of each indicator into a daily wage, and after we multiply by the days granted by law for each item.

In the case of mandatory contributions, to calculate the monetary value, we apply the rates to the taxable base. As Table 1 shows, some countries have as taxable base the net wage, that in our case would be the base wage; but others have as a taxable base the gross wage which is equal to the base wage plus the bonus.

Finally, to calculate the percentage value of the indicator 1, we divide the monetary value of each item by the base wage. In the case of indicator 2, we divide by the GDP per worker.

The following example corresponds to the Colombian case.

Table A.2.1. Data

	Value	Unit
Tax days in the fiscal year	365	Days
Bonus (aguinaldo)	30	Days
Paid leave	15	Days
Severance payment	110	Days
Firing notice	7.5	Days
Average annual wage of formal workers	14,931.69	US\$PPP
Annual Minimum wage	6,017.74	US\$PPP
GDP per worker	27,979	US\$PPP

- **Calculations:**

Bonus: the “*aguinaldo*” is equivalent to one month of salary (30 days). To transform this to a monetary value we transform the base wage into a daily wage (base wage/365 days of the year) and then we multiply it by the number of days for *aguinaldo*:

$$\text{Cost of aguinaldo (US$PPP)} = \frac{\text{Base wage}}{365 \text{ days}} * 30 \text{ days}$$

In this way, the monetary value of each indicator would be:

$$\text{Indicator 1} = (14931.69 \text{ (US$PPP)} / 365) * 30 = 1227.26 \text{ (US$PPP).}$$

$$\text{Indicator 2} = (6017.74 \text{ (US$PPP)} / 365) * 30 = 494.61 \text{ (US$PPP)}$$

The percentage value of each indicator would be:

Indicator 1 = 1227.26/14931.69 =8.22% (of base wage)

Indicator 2 = 494.61/ 27979 =1.77% (of the GDP per worker)

Paid leave: in Colombia, workers are granted 15 days of paid leave. Likewise, we compute this item as we do with the bonus:

$$\text{Cost of paid leave (US\$PPP)} = \frac{\text{Base wage}}{365 \text{ days}} * 15 \text{ days}$$

The monetary value of paid leave for each indicator would be:

Indicator 1 = (14931.69 (US\$PPP)/365)*15= 613.6 (US\$PPP).

Indicator 2 = (6017.74 (US\$PPP)*365)*15= 247.3 (US\$PPP)

The percentage values:

Indicator 1 = 613.6/14931.69 =4.11% (of base wage)

Indicator 2 = 247.3/ 27979 =0.88% (of the GDP per worker)

Taking into account these two items, so far the “Cost of salaried labor” represents 12.3% of the base wage. The “Minimum cost of salaried labor” represents 2.65% of the GDP per worker.

Mandatory contributions: in LAC countries, mandatory contributions can represent up to an additional 30 percent of extra labor costs payable by employers and employees. We calculate the monetary value of each contribution considering the contribution bases and the lower bounds determined by law; usually these bounds are equal to the minimum wages.¹⁹ These calculations are totalized for employees and employers considering different rates for each item. The monetary values are transformed into PPP US Dollars.

For example, in Colombia, employees contribute for pensions and health benefits, while employers contribute to pensions, health, work injury risks, unemployment insurance, social protection, training and other (see Table A.2.2).

Table A.2.2. Mandatory contributions in Colombia, 2014

Contribution	Description	Employee's contribution	Employer's contribution	Contribution base
Pensions	Old age, disability and survival	4%	12%	Net wage for employees, gross wage for employers.
	Solidarity fund	0-2%		A rate of 0% is applicable for workers that earn less than 4 minimum wages (28 million of pesos approximately)

¹⁹ Our calculations exclude extra in-kind payments such as food, housing, apparel, etc., as well as income transfers.

Health	Sickness and maternity	4%		Net wage for employees, gross wage for employers.
Labor	Work injury	-	0.348%	Applicable for workers that earn more than 2 minimum wages
	Unemployment savings (cesantías)	-	8.30%	Net wage for employees, gross wage for employers.
Social protection	Child care services (Instituto Colombiano de Bienestar familiar, ICBF)	-	3%	Applicable for workers that earn more than 10 minimum wages
Training	Finances the national training agency (Servicio Nacional de Aprendizaje, SENA)	-	2%	Applicable for workers that earn more than 10 minimum wages
Other	Compensation Fund (subsidies for housing, education, etc.)	-	4%	Net wage for employees, gross wage for employers.

Employers' contributions add up to 29.648% of gross wages for workers making more than 10 minimum wages. However, the total applicable for workers that earn the average wage is 24.648% (SENA and ICBF contributions are not applicable). Additionally, for workers on minimum wage, employers do not have to pay work injury, so the total mandatory contributions are 24.3% of gross wage.

Gross wage for Indicator 1 is average annual wage plus the bonus, so it is 16,158.96 USD PPP. For the Indicator 2, it is the minimum annual wage plus the bonus, which is equal to 6,512.35 USD PPP. Therefore, in the first case mandatory contributions are 24.648% of 16,158.96 USD PPP, that is, 3,982.86 USD PPP. This amount represents 26.7% of the base wage. For the Indicator 2, mandatory contributions are 24.3% of 6,512.35, which is 1,582.5 USD PPP, and represent 5.7% of the GDP per worker.

Employees' contributions can add up to 10% of net wages for workers that earn more than 4 minimum wages. For workers with the average wage or the minimum wage, there is no contribution to the solidarity pension fund, so their contribution equals 8% of the base wage. In the first case (indicator 1), the value is 1,194.5 USD PPP. For the Indicator 2, the value is 481.42 USD PPP. These represent 8% of the base wage and 1.7% of the GDP per worker, respectively.

In sum, mandatory contributions represent 34.7% of the base wage (Indicator 1) and 7.4% of the GDP per worker (Indicator 2).

Job security provisions (JSP): We monetize the costs of firing notice and severance pay in the same way we compute the cost of bonus and paid leave, which is the proportion of the base wage that must be paid to cover these costs. We estimate two measures: the stock that the employer must pay at the time of dismissal, and the flow that the employers would need to save annually to cover this event.

$$JSP (stock) = \frac{Base\ wage}{365\ days} * 117.5\ days$$

The monetary value of JSP would be:

$$\textbf{Indicator 1} = (14931.69\ (\text{US\$PPP})/365)*117.5= 4806.78\ (\text{US\$PPP}).$$

$$\textbf{Indicator 2} = (6017.74\ (\text{US\$PPP})/365)*117.5= 1937.22\ (\text{US\$PPP})$$

The percentage values:

$$\textbf{Indicator 1} = 4806.78/14931.69 = 32.2\% \text{ (of base wage)}$$

$$\textbf{Indicator 2} = 1937.22/ 27979 = 6.9\% \text{ (of the GDP per worker)}$$

And since we use the case of a worker with 5 years of tenure, the flow is just the stock divided by 5. Indicator 1 would be 6,4% (961.36 USD PPP) and Indicator 2, 1.4% (387.44 USD PPP).

An additional component of the Indicator 2 must be computed, this is the percentage value that correspond to the minimum annual wage. So, for Colombia it is 6017.74 (USD PPP)/ 27979 (USD PPP), that is 21.5%.

After computing all the items of the two indicators the final values are:

- **The cost of salaried labor in Colombia (Indicator 1): 53.4%** of the base wage (8.22% bonus; 4.11% paid leave; 34.7% mandatory contributions; and 6.4% JSP-flow).
- **The minimum cost of salaried labor in Colombia (Indicator 2): 32.9%** of the GDP per worker (minimum wage 21.5%, bonus 1.77%, paid leave 0.88%, mandatory contributions 7.4%, and 1.4% JSP-flow).

Table A.1. Minimum wages in Latin American countries

Country	Frequency	Monthly value 2013 (local currency)	Monthly value 2013 (US\$ PPP)	Notes
Argentina	Monthly	3,229	882.77	Average monthly wage for the semester
Bolivia	Monthly	1,200	371.40	
Brazil	Monthly	678	411.91	
Chile	Monthly	210,000	605.83	
Colombia	Daily	589,500	501.48	Daily value (19,650) multiplied by 30 days.
Costa Rica	Monthly	282,042	777.74	Minimum wages are set according to economic activity. The average presented in the table includes wages for unqualified workers, semi-qualified, skilled, specialized and the average for agricultural workers.
Dom. Rep. (1)	Monthly	6,880	341.37	Value from the ILO.
Ecuador	Monthly	318	578.18	
El Salvador	Daily	189	383.02	Monthly average wage (daily wage multiplied by 30 days) of each industry.
Guatemala (2)	Daily	2,363	631.55	Monthly average wage (daily wage multiplied by 30 days) including wages of agricultural workers and non-agricultural workers (1)
Honduras	Monthly	6,770	673.11	Minimum wages are set according to economic activity. The value in this table corresponds to the average of monthly wages of each economic activity.
Jamaica (3)	Weekly	21,500	380.08	Weekly value multiplied by 4.3 weeks per month.
Mexico	Daily	1,970	252.89	Minimum wages are set according to geographical zone. The value presented is the average of the three zones.
Nicaragua (3)	Monthly	3,802	405.36	Minimum wages are set according to economic activity. The value in this table corresponds to the average of monthly wages of each economic activity.
Panamá	Hourly	460	777.03	Minimum wages are set according to economic activity. The value in this table corresponds to the average of monthly wages of each economic activity. The hourly wage is multiplied by 8 hours per day and by 30 days per month.
Paraguay	Monthly	1,658,232	729.50	
Peru	Monthly	750	492.45	
Trinidad & Tobago	Monthly	2,167	564.38	
Uruguay	Monthly	7,920	457.99	
Venezuela	Monthly	2,711	685.44	Minimum wages are set according to geographical zone (urban and rural).The value presented corresponds to the monthly average of the second semester in the two zones.

Notes: (1) The minimum wage was obtained from ILO. (2) In Guatemala, for labor costs calculations, the minimum wage includes the annual bonus of 250 quetzales. (3) The data for Nicaragua and Jamaica are presented for 2012 due to availability of Household Surveys.

Table A.2. Other contributions: rates applicable to average wages

	Others Employee's contributions					Others Employers' contributions					Others Total				
	Work injury	Unemployment insurance	Training	Others	Total	Work injury	Unemployment insurance	Training	Others	Total	Work injury	Unemployment insurance	Training	Others	Total
ARG					-		0.9%		4.4%	5.3%	-	0.9%	-	4.4%	5.3%
BOL					-	1.7%				1.7%	1.7%	-	-	-	1.7%
BRA					-	1.0%	8.0%	1.0%	4.2%	14.2%	1.0%	8.0%	1.0%	4.2%	14.2%
CHL		0.6%		1.5%	2.1%	1.0%	2.4%		1.3%	4.6%	1.0%	3.0%	-	2.7%	6.7%
COL					-	0.3%	8.3%	0.0%	4.0%	12.6%	0.3%	8.3%	0.0%	4.0%	12.6%
CRI				1.0%	1.0%	0.3%	3.0%	1.5%	6.0%	10.8%	0.3%	3.0%	1.5%	7.0%	11.8%
DOM			0.5%		0.5%	1.2%		1.0%		2.2%	1.2%	-	1.5%	-	2.7%
ECU		2.0%		0.8%	2.8%	0.6%	1.0%		0.8%	2.3%	0.6%	3.0%	0.0%	1.6%	5.2%
GTM	1.0%				1.0%	3.0%		1.0%	1.0%	5.0%	4.0%	-	1.0%	1.0%	6.0%
HND				1.1%	1.1%	0.1%		0.7%	1.1%	2.0%	0.1%	-	0.7%	2.2%	3.1%
JAM				4.3%	4.3%			3.0%	6.5%	9.5%	-	-	3.0%	10.8%	13.8%
MEX					-	2.0%			6.0%	8.0%	2.0%	-	-	6.0%	8.0%
NIC					-	1.5%		2.0%	1.5%	5.0%	1.5%	-	2.0%	1.5%	5.0%
PAN				1.3%	1.3%	0.4%			1.5%	1.9%	0.4%	-	-	2.8%	3.2%
PER					-	0.6%	8.3%			9.0%	0.6%	8.3%	-	-	9.0%
PRY					-			1.0%		1.0%	-	-	1.0%	-	1.0%
SLV					-			1.0%		1.0%	-	-	1.0%	-	1.0%
TOT					-					-	-	-	-	-	-
URY				0.1%	0.1%	6.9%			0.1%	7.0%	6.9%	-	-	0.3%	7.2%
VEN			0.5%	1.5%	2.0%	0.8%	2.0%	2.0%	2.0%	6.8%	0.8%	2.0%	2.5%	3.5%	8.8%

Table A.3. Other contributions: rates and description

Country	Employee	Employer
Argentina		Unemployment insurance 0,9% Family allowances 4,4%
Bolivia		Work injury 1,7%
Brazil		Work injury - 1% Salario Educación - 2,5% FGTS - 8% Servicio Nacional de Aprendizaje - 1% Servicio Social - 1,5% Instituto Nacional de Colonización y Reforma Agraria - 0,2%
Chile	Unemployment insurance 0,6% Comisión para AFP's - 1,48%	Work injury 1% Unemployment insurance 2,4% Disability insurance - 1,26%
Colombia		Unemployment insurance 8,3% Work injury 0,3% Instituto Colombiano de Bienestar Familiar - 3% (applicable for workers that earn more than 10 minimum wages). Servicio Nacional de Aprendizaje - 2% (applicable for workers that earn more than 10 minimum wages). Cajas de Compensación Familiar - 4%
Costa Rica	Cuota Banco Popular -1%	Work injury 0,3% Unemployment insurance 3% Family allowances 5% Cuota Banco Popular - 0,5% Instituto Nacional de Aprendizaje - 1,5% Instituto Mixto de Ayuda Social -0,5%
Ecuador	Unemployment insurance 2% Seguro Social Campesino - 0,35% Ley orgánica de discapacidad - 0,10% Administration fee - 0,36%	Work injury 0,55% Unemployment insurance 1% Seguro Social Campesino - 0,35% Administration fee - 0,44%
Guatemala	Work injury 1%	Work injury 3% Instituto Técnico de Capacitación y Productividad - INTECAP - 1% Instituto de Recreación de trabajadores del sector privado - IRTRA - 1%
Honduras	Fondo Social para la Vivienda - FOSOFI - 1,5%	Work injury 0,2% Instituto Nacional de Formación Profesional - INFOP - 1% Fondo Social para la Vivienda - FOSOFI - 1,5%
Jamaica	National Housing Trust - NHT - 2% Education tax - 2,25%	National Housing Trust - NHT - 3% Education tax - 3,5% HEART Trust - 3%
México		Work injury 1,98% Day care centers and social contributions - 1% INFONAVIT (Vivienda) - 5%
Nicaragua		Work injury 1,5% Víctimas de guerra - 1,5% Instituto Nacional Tecnológico (INATEC) - 2%

Panamá	Education insurance - 1,25%	Work injury 0,42% Education insurance - 1,5%
Perú		Compensación por tiempo de Servicios-8,3% Work injury 0,6%
Paraguay		Sistema Nacional de Formación y Capacitación Laboral - SINAFOCAL- 1%
Dom. Republic	Instituto de Formación Profesional - INFOTEP - 0,05%	Work injury 1,2% Instituto de Formación Profesional - INFOTEP - 1%
El Salvador		INSAFORP - 1%
Uruguay	Fondo de Reconversión Laboral (FRL) - 0,125%	Work injury 6,9% Fondo de Reconversión Laboral (FRL) - 0,125%
Venezuela	Family allowances 0,5% Instituto Nacional de Cooperación Educativa - 0,5% Subsistema de Vivienda y Habitat - 1%	Work injury 0,75% Unemployment insurance 2% Instituto Nacional de Cooperación Educativa - 2% Subsistema de Vivienda y Habitat - 2%