

RELATIONSHIP OF MATERNITY AND PATERNITY
LEAVE WITH FEMALE UNEMPLOYMENT IN LATIN
AMERICA

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2018-2

I. Introduction

Currently there is vast literature available regarding the role of women in the global economy and gender inequality that affects them in several ways (Cazzola, Pasquini, & Angeli, 2016; Ramírez, Tribín, & Vargas, 2016). Women are strongly penalized in the labor market due to gender issues (Albanesi & Şahin, 2018; Olivetti & Petrongolo, 2008; Yoo, 2003). Penalization for gender issues is no different from discrimination, since women cannot exercise any control over their biological characteristics, such as their gender and a woman's unique ability to sustain a pregnancy.

Different studies have been conducted concerning the consequences of gender inequality in the economy, such as gender discrimination in the labor market. This kind of discrimination may be motivated by many different reasons like educational level, physical and biological characteristics, cultural influences or geographical origin. Nonetheless the reported results all converge to one same conclusion: gender inequality has a negative impact on economic development and, thus, on economic growth (Cuberes & Teignier, 2015; Quentin & De La Briere, 2018).

The objective of this analysis is to draw a comparison between the different family protection legislations in Latin American countries with their respective maternity and paternity leave lengths, and their female unemployment rates over time, assuming that pregnant women are victims of labor market discrimination due to the extra costs an employer acquires when women leave their jobs temporarily to enjoy prenatal and postnatal leave. This study also seeks to determine if there is a relationship between changes in the maternity and paternity leave extension and the rate of female

unemployment across countries, while seeking to establish the influence of such relationship.

II. Female Unemployment in Latin America

An individual is considered as unemployed when he or she, despite being available, is not involved in any economic activity for at least one paid hour weekly and is actively looking for a job. When the unemployed population is compared to the economically active population, the outcome is the unemployment rate. The unemployment rate is affected by different economic factors. Changes in the amount of labor supply and demand have a main role in determining the unemployment rate in a country (Hassan, 1973). Different factors affect both labor supply and demand at the macroeconomic level, the most common ones being population growth, gross domestic product variations, real exchange rate, investment and inflation (Hassan, 1973; Maqbool, Mahmood, Sattar, & Bhalli, 2013).

Historically for Latin America, unemployment has declined but continues to be a persistent phenomenon. Factors such income growth per capita and its distribution, the fast increase in population growth, along with the incapability of the non-agricultural sector to absorb the increasing labor force, have been great contributors to such a persisting high rate of unemployment in the region (Hassan, 1973). Likewise, a high rate of unemployment could be explained mainly by the wage differentials between the agricultural and non-agricultural sectors, which could, in turn, be caused by productivity differentials between both (Hassan, 1973).

Low relative participation of women in the labor market, along with low wages and considerably fewer hours worked than men, are important elements that lead to gender inequality in the labor market, particularly targeting women, since they are often pressured by society to engage in domestic work (Angel-Urdinola & Wodon, 2003). Similarly, it has been suggested that apart from the lower supply of labor by women, the female/male unemployment rate differential is caused, to some extent, by the fact that women are deliberately less attached to jobs than men (Myatt & Murrell, 1990). In short, the latter is mainly due to a wider range of limitations, or culturally imposed constraints, faced by women such as household work and child and elderly care (Casas & Herrera, 2012; Myatt & Murrell, 1990; Pena-Parga & Glassman, 2004)

Female unemployment rates registered in the countries considered for this study from 1992 to 2016 report a concerning high level of unemployed women in the region. Table 1 displays female unemployment rate in the countries considered for this analysis in 6 different periods of time. On the one hand, Bolivia, El Salvador, Guatemala, Honduras, Mexico, and Peru displayed lower female unemployment rates that did not reach two digits during the period considered. On the other hand, the most alarming rates of female unemployment were registered in Argentina, Colombia, Nicaragua, Panama and Uruguay, where female unemployment rate not only reached the two digits but exceeded 20% in some years. The higher ones corresponding to Colombia during the years 1999 and 2000, when female unemployment rate rose to a whopping 24.2% and 25.6% respectively.

Table 1. Female Unemployment Rate, Latin America 1992 to 2016

| Country | 1992 | 1995 | 2000 | 2005 | 2010 | 2016 |
|-----------|------|------|------|------|------|------|
| Argentina | 6.7 | 22.3 | 16.4 | 13.6 | 9.2 | 9.6 |

| | | | | | | |
|---------------------|------|------|------|------|------|------|
| Bolivia | 5.6 | 4.1 | 5.6 | 6.0 | 3.1 | 4.1 |
| Brazil | 8.1 | 7.3 | 12.6 | 12.3 | 9.9 | 13.5 |
| Chile | 5.3 | 5.3 | 10.0 | 9.8 | 9.9 | 7.3 |
| Colombia | 14.4 | 12.1 | 25.6 | 16.1 | 14.2 | 10.7 |
| Costa Rica | 5.3 | 6.5 | 6.6 | 9.3 | 11.1 | 11.4 |
| Dominican Republic | 10.1 | 10.4 | 10.2 | 9.5 | 7.0 | 8.0 |
| Ecuador | 13.6 | 8.9 | 13.2 | 10.9 | 5.0 | 5.9 |
| El Salvador | 7.1 | 5.9 | 3.7 | 4.8 | 4.2 | 3.8 |
| Guatemala | 4.3 | 3.6 | 2.0 | 3.4 | 4.3 | 3.9 |
| Honduras | 2.9 | 3.4 | 3.9 | 6.5 | 5.4 | 5.5 |
| Mexico | 4.1 | 8.6 | 3.3 | 3.9 | 5.2 | 3.9 |
| Nicaragua | 17.7 | 20.6 | 11.2 | 5.8 | 8.6 | 5.5 |
| Panama | 22.4 | 20.2 | 18.0 | 14.0 | 8.5 | 5.7 |
| Paraguay | 3.6 | 3.8 | 8.9 | 6.3 | 6.1 | 6.7 |
| Peru | 6.3 | 5.4 | 5.9 | 4.9 | 3.8 | 3.6 |
| Uruguay | 12.0 | 13.0 | 16.9 | 15.5 | 9.5 | 9.4 |
| Regions | | | | | | |
| East Asia & Pacific | 3.7 | 3.8 | 4.1 | 4.0 | 3.7 | 3.7 |
| European Union | 11 | 12.3 | 10.6 | 9.7 | 9.5 | 8.7 |
| Latin America | 8 | 9.6 | 11.4 | 10.3 | 8.6 | 9.2 |
| North America | 7.4 | 6.0 | 4.4 | 5.2 | 8.5 | 5 |

Note: Compiled by author based on World Bank data

Table 2. Male Unemployment Rate, Latin America 1992 to 2016

| Country | 1992 | 1995 | 2000 | 2005 | 2010 | 2016 |
|--------------------|------|------|------|------|------|------|
| Argentina | 6.1 | 16.5 | 14.0 | 10.0 | 6.7 | 8.1 |
| Bolivia | 5.5 | 3.4 | 3.6 | 4.4 | 2.1 | 2.3 |
| Brazil | 5.5 | 5.2 | 7.9 | 7.1 | 5.3 | 10.2 |
| Chile | 3.9 | 4.4 | 8.7 | 7.0 | 7.4 | 6.4 |
| Colombia | 7.4 | 7.2 | 17.7 | 9.2 | 8.5 | 6.6 |
| Costa Rica | 3.4 | 4.6 | 4.3 | 5.0 | 7.7 | 7.5 |
| Dominican Republic | 5.0 | 5.1 | 5.0 | 4.7 | 3.8 | 3.7 |
| Ecuador | 6.2 | 5.6 | 6.3 | 5.6 | 3.5 | 3.7 |
| El Salvador | 8.3 | 8.7 | 9.1 | 8.9 | 5.4 | 4.8 |
| Guatemala | 2.3 | 2.0 | 1.1 | 1.9 | 3.4 | 2.3 |
| Honduras | 3.1 | 3.2 | 3.9 | 4.2 | 3.4 | 4.2 |
| Mexico | 2.7 | 6.1 | 2.2 | 3.4 | 5.4 | 3.8 |

| | | | | | | |
|---------------------|------|------|------|-----|------|-----|
| Nicaragua | 13.0 | 14.9 | 9.2 | 5.1 | 7.3 | 3.8 |
| Panama | 10.8 | 10.8 | 11.1 | 8.2 | 5.3 | 3.5 |
| Paraguay | 5.8 | 3.2 | 6.8 | 3.9 | 3.6 | 4.3 |
| Peru | 6.1 | 5.0 | 5.7 | 4.9 | 3.2 | 3.5 |
| Uruguay | 6.9 | 7.9 | 10.7 | 9.6 | 5.3 | 6.5 |
| Regions | | | | | | |
| East Asia & Pacific | 4.0 | 4.2 | 4.7 | 4.4 | 4.4 | 4.4 |
| European Union | 8.5 | 9.7 | 8.2 | 8.3 | 9.5 | 8.4 |
| Latin America | 5.5 | 6.7 | 7.8 | 6.5 | 5.8 | 6.8 |
| North America | 8.3 | 6.0 | 4.2 | 5.3 | 10.3 | 5.2 |

III. Parental Leave Legislation in Latin America

The length of maternity leave in Latin America has changed throughout the period of study. The International Labour Organization (ILO) has adopted, since the first session of the International Labour Conference (ILC) in 1919, three versions of the Maternity Protection Convention. The first Maternity Protection Convention C003 (ILO, 1919), established a minimum maternity leave period of six weeks for women in time of childbirth, and has been ratified by four countries of those considered for this study.¹ Since 1952, Bolivia, Brazil, Chile, Ecuador, Guatemala and Uruguay have ratified the Maternity Protection Convention C103 (ILO, 1952), adopted by the ILC that same year, pledging to integrate a minimum of twelve weeks for maternity leave period in their national legislation. Ultimately, on the year 2000 the ILC adopted the Convention C183 (ILO, 2000), setting up a maternity leave length of fourteen weeks. The latter has only been ratified by three Latin American countries, of which two are considered for this study.² Finally, it is important to highlight that ratifying an international treaty, such as the previously mentioned Conventions, implies that a state approves and officializes

¹ Argentina, Colombia, Nicaragua and Panama

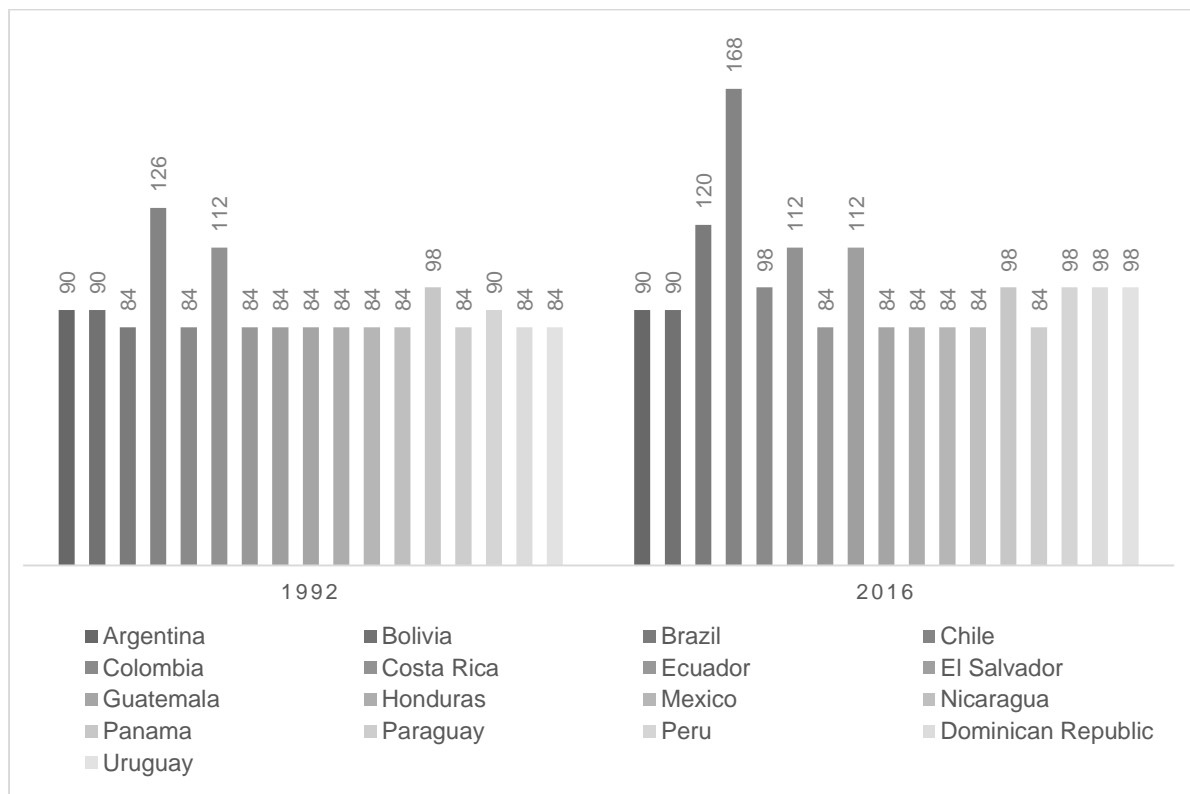
² Dominican Republic and Peru.

the document according to national procedures. With the ratification a state agrees to be bound by the treaty as a whole, which may explain why, in some cases, the national legislation of a particular country considers a maternity leave period equal or higher to that established by the Convention but is not listed as a ratifying state, well it fails to comply with additional requirements.

The lowest period of maternity leave currently provided by the national legislations of the countries included in this study is 84 days. The last-mentioned countries are Honduras, Ecuador, Guatemala, Mexico and Nicaragua, followed by Argentina and Bolivia, where national legislation provides 90 days of maternity prenatal and postnatal leave for new mothers. Dominican Republic, Panama, Peru and Uruguay each contemplate a 98-day maternity leave in their legislation, while Costa Rica and El Salvador grant 112 days. On the other hand, the national legislations of Colombia and Paraguay establish maternity leave length of 126 days. Only two of the seventeen countries considered in this study provide a maternity leave longer than twenty weeks. Such countries are Brazil and Chile, where maternity protection legislation provides a term of 180 and 168 days, respectively.

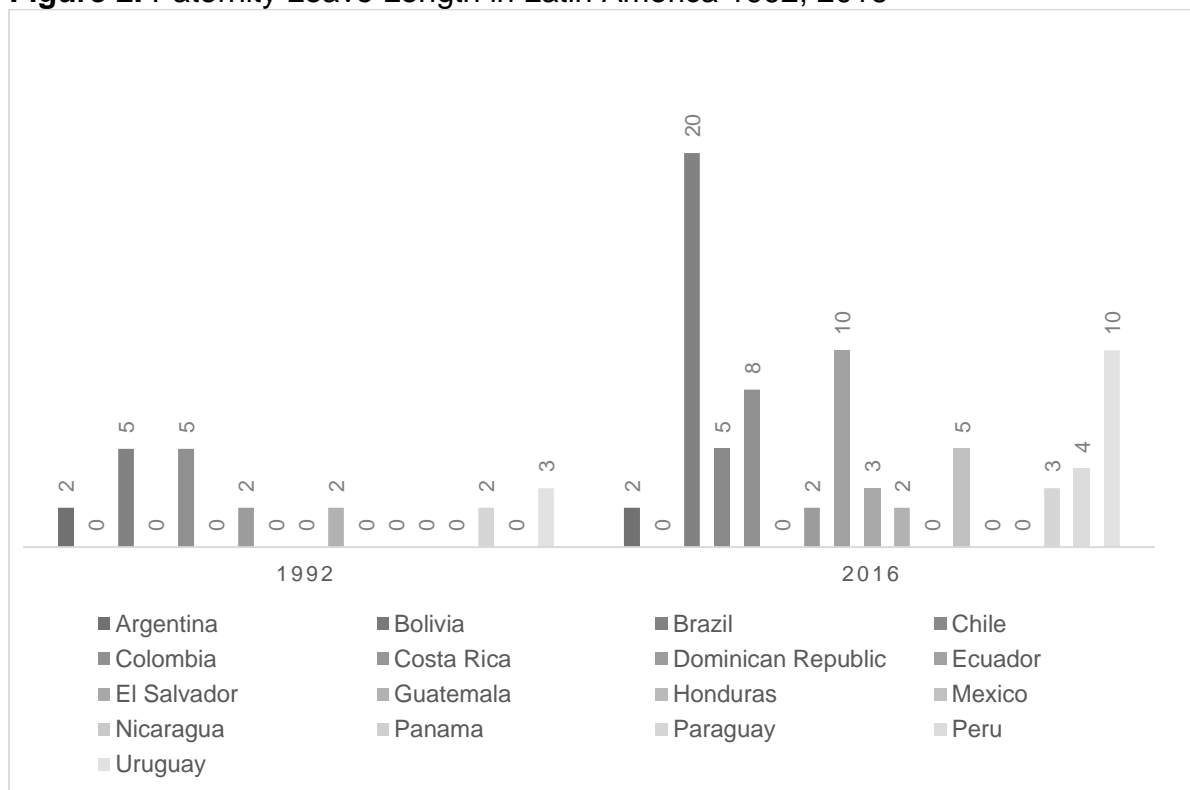
In contrast to maternity leave legislation, paternity leave, is barely being incorporated in national legislations as an instrument to promote gender equality in the household and the protection of the family. Of the seventeen countries considered in this analysis, only seven had any paternity leave provision in their legislation during 1992, whereas as of 2017 only four did not provide paternity leave as a men's right. In this regard, the leading countries nowadays in the region are Brazil with 20 days and Ecuador, Peru and Uruguay all with a paternity leave of 10 days.

Figure 1. Maternity Leave Length in Latin America 1992, 2016



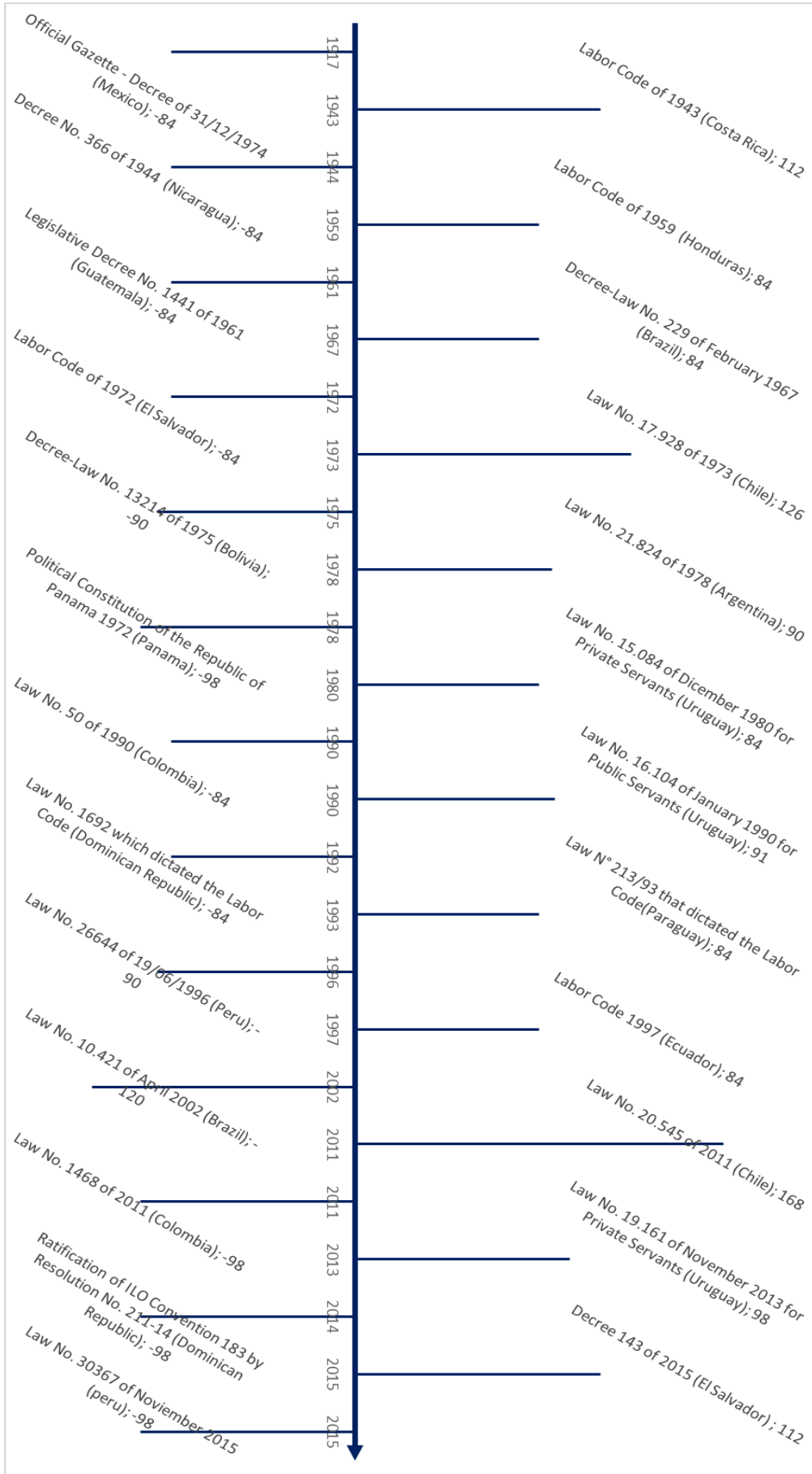
Note: Compiled by the author based on the national legislation of each country.

Figure 2. Paternity Leave Length in Latin America 1992, 2016



Note: Compiled by the author based on the national legislation of each country.

Figure 3. Adoption and changes of maternity leave legislations in Latin America



The historic conditions of paternity leave are less promising. Although paternal leave is not included in any international treaty or convention, ILO's Recommendation No.191 and Recommendation No. 165 contemplate provisions for paternity leave without indicating a particular extension, advising it be established by each country's national legislation (ILO, 2010). The main purpose of a recommendation is to provide the international community with a roadmap for any specific subject that, unlike conventions, is not binding for any actor. Despite the fact that it is not mandatory for governments to comply with these recommendations, the Latin American countries considered for this analysis show progress regarding paternal leave provisions. Thirteen countries currently provide paternity leave in their national legislation, of which those of Bolivia, Colombia, Ecuador, El Salvador, Mexico, Panama, Paraguay, Peru and Uruguay have increased since 1992.

IV. Theoretical Framework and Related Literature

Different approaches have been considered by researchers who seek to explore gender inequality. Gender inequality in poverty and matters related to race, income and national institutions are examples of approaches taken by scholars (Elmelech & Lu, 2004; Espinoza-Delgado & Klasen, 2018; Quentin & De La Briere, 2018; Ramírez et al., 2016; Rojas-Hayes, 2008). A recent study published by the World Bank sought to evaluate the economic cost generated by gender inequality through losses on national wealth caused by income gaps occasioned by gender questions. As a result of this study, it was obtained that, if equality of income were achieved between men and women, countries would benefit from an increase in their human capital wealth, which, in turn, would increase their total wealth, considering that such income gap

could account for a loss of up to \$23,620 USD per capita globally (Quentin & De La Briere, 2018).

It has been established that women, in general, receive a lower salary than men merely because they are women (Blau & Kahn, 2000; Goldin, 1991; Mayer Foulkes & Cordourier Real, 2001; Olivetti & Petrongolo, 2008). A channel through which discrimination against women in the labor market occurs is maternity leave periods. As presented by Ramírez et al. (2016), only women are biologically able to carry out a pregnancy and, therefore, “legislation that focuses solely on mothers and not on fathers reinforces a biological imbalance that affects female labor outcomes” (p. 268).

Similarly, the effects of maternity leave legislation on women wages haven been attributed to two main aspects. One affects wages through the disincentive of labor that the maternity leave can represent to a mother, postponing her return to the company and incurring in an opportunity cost with respect to acquiring new sets of skills. On the other hand, evidence has pointed out that such legislations may cause companies to hire women unlikely to become pregnant (Schoenberg & Ludsteck, 2007, pp. 19-20).

Additional findings suggest that employers, or human resources staff, see female mother candidates for a job as less qualified and engaged with paid work than non-mothers, whereas for men applicants being a father becomes an advantage, since they are considered to be more committed to paid work and were offered higher salaries, generating discrimination against mothers in the labor market, chiefly for cultural and social beliefs (Correll, Benard, & Paik, 2007).

Becker (1985) proposed that division of labor to explain the reasoning behind the persistent earnings gap between women and men, and particularly between married women and not-married women during the increase of labor force participation of women during the last decades of the 20th century. The argument of his research is that child care responsibility and other housework that falls upon mothers, prevents them from registering a rapid increase in their earnings, such as that of men and non-mothers. Hence, participation of women in the labor market is also affected. Even when they wish to be as involved in the labor force as men the responsibilities they have regarding child care and household activities restricts their allocation of energy, causing them to be more likely unproductive compared to men, and non-mothers (Becker, 1985).

Additionally, Becker's introduces the term "taste for discrimination" that establishes that discrimination against a particular group or individual is translated into an additional psychic cost, given that the taste for discrimination depends on individuals' psychological preferences towards others (Becker, 1971). Such theory is useful for the evaluation of discrimination experienced by women in the labor market for maternity reasons since they are considered to be potentially less productive than men because of their *implicit* household responsibilities when they become, or wish to become, mothers. The previously exposed theories, along with the additional organizational costs incurred by the employer when a woman employee is on maternity leave, are crucial to the argumentation of this research's purpose.

V. Methodology

A. Data

To understand the relationship of maternity and paternity leave with female unemployment rate, this study analyzes data for 17 countries between 1992 and 2016.³ The countries included in the sample are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru and Uruguay. Most of the data come from the World Bank data base. The outcome variable analyzed is female unemployment rate, and the key independent variable is the length of maternity leave. Data regarding maternity leave were compiled by reviewing national policies for each Latin American country included in the sample. Table 2 summarizes national legislations.

As displayed by Table 1 and Table 2, legislation in Uruguay provides different lengths of maternal and paternal leave to private and public employees in different moments of time. For maternity leave the first legislation approved by the government, Law No. 15.084 in 1980 provided private employees with eighty-four days of paid maternity leave, followed by Law No. 16.104 which established a paid maternity leave of ninety-one days for public servants. Later, with the approval of Law 19.161 in 2013, maternity leave for private servants was expanded to ninety-eight days. The case for paternity leave legislation is similar to that of maternity leave. For the sake of simplicity only the changes in the legislation covering private servants, men and women, will be considered for the empirical model, since, according to a 2017 report by the National

³ The year 2017 is excluded from the sample due to limitations in the data availability of the control variables. However, the year is intended to be included in further studies in order to account for legislation changes in Brazil, Colombia and Panama.

Office of Civil Service, public servants account for approximately 17% of the active population (Oficina Nacional del Servicio Civil, 2017).

Alternatively, the legislation in Honduras contemplates and additional fourteen days to a paid maternity leave of seventy days for women who are beneficiary of the Honduran Institute of Social Security (IHSS by its acronym in Spanish). According to an interview by the inspector of the IHSS to the newspaper La Prensa, 732,000 Hondurans are affiliated to the IHSS (Méndez, 2017). Moreover, the Statistics National Institute reported that 1,576,038 of the total economically active population are women, and that over 1,833,000 of all employed people earn wages (Instituto Nacional de Estadística, 2016). Therefore, it is appropriate to consider the paid maternity leave of seventy days for the empirical analysis.

The model also includes macroeconomic variables to control for unemployment rate such as population, growth of gross domestic product (GDP), inflation rate and fertility rate (Maqbool et al., 2013).⁴ The length of paternity leave of the countries considered for this analysis is included as a control variable in order to assess the possible influence this policy could have on female unemployment rate.

Table 3. Maternity Leave Legislation and Length over time

| Country | Year | Legislation | Days |
|-----------|------|-------------------------------------|------|
| Argentina | 1978 | Law No. 21.824 of 1978 | 90 |
| Bolivia | 1975 | Decree-Law No. 13214 of 1975 | 90 |
| Brazil | 1967 | Decree-Law No. 229 of February 1967 | 84 |
| | 2002 | Law No. 10.421 of April 2002 | 120 |

⁴ Changes in population may affect maternity and paternity leave legislations due to the fact that different levels of fertility rate may encourage governments to increase or decrease the length of maternity and paternity leave in order to stimulate or inhibit pregnancy among nationals.

| | | | |
|--------------------|------|---|-----|
| | 2017 | PLS 72 of 2017 | 180 |
| Chile | 1973 | Law No. 17.928 of 1973 | 126 |
| | 2011 | Law No. 20.545 of 2011 | 168 |
| Colombia | 1990 | Law No. 50 of 1990 | 84 |
| | 2011 | Law No. 1468 of 2011 | 98 |
| | 2017 | Law No. 1822 of 2017 | 126 |
| Costa Rica | 1943 | Labor Code of 1943 | 112 |
| Dominican Republic | 1992 | Law No. 1692 which dictated the Labor Code | 84 |
| | 2014 | Ratification of ILO Convention 183 by Resolution No. 211-14 | 98 |
| Ecuador | 1997 | Labor Code 1997 | 84 |
| El Salvador | 1972 | Labor Code of 1972 | 84 |
| | 2015 | Decree 143 of 2015 | 112 |
| Guatemala | 1961 | Legislative Decree No. 1441 of 1961 | 84 |
| Honduras | 1959 | Labor Code of 1959 | 70 |
| Mexico | 1917 | Official Gazette - Decree of 31/12/1974 | 84 |
| Nicaragua | 1944 | Decree No. 366 of 1944 | 84 |
| Panama | 1978 | Political Constitution of the Republic of Panama 1972 | 98 |
| Paraguay | 1993 | Law N° 213/93 that dictated the Labor Code | 84 |
| Peru | 1996 | Law No. 26644 of 19/06/1996 | 90 |
| | 2015 | Law No. 30367 of November 2015 | 98 |
| Uruguay | 1980 | Law No. 15.084 of December 1980 for Private Servants | 84 |
| | 1990 | Law No. 16.104 of January 1990 for Public Servants | 91 |
| | 2013 | Law No. 19.161 of November 2013 for Private Servants | 98 |

Note: Compiled by the author based on national legislation for each country.

Table 4. Paternity Leave Legislation and Length over time

| Country | Year | Legislation | Days |
|-----------|------|---|------|
| Argentina | 1976 | Law No. 20.744 of 1976 - Employment Contract Act | 2 |
| Bolivia | - | - | - |
| Brazil | 1988 | Constitution of the Federative Republic of Brazil | 5 |
| | 2016 | Law No. 113.257 of March 2016 | 20 |
| Chile | 2005 | Law No. 20.047 of September 2005 | 4 |

| | | | |
|--------------------|------|---|----|
| | 2006 | Law No. 29137 of December 2006 | 5 |
| Colombia | 1990 | Law No. 50 of 1990 | 5 |
| | 2002 | Law No. 755 of 2002 - Law María | 8 |
| Costa Rica | - | - | - |
| Dominican Republic | 1992 | Law No. 16-92 that dictated the Labor Code | 2 |
| Ecuador | 2009 | Supplement to Official Gazette No. 528 of February 2009 | 10 |
| El Salvador | 2013 | Decree No. 332 of 2013 | 3 |
| Guatemala | 1961 | Legislative Decree No. 1441 of 1961 | 2 |
| Honduras | - | - | - |
| Mexico | 2012 | Official Gazette - Decree of 31/11/2012 | 5 |
| Nicaragua | - | - | - |
| Panama | 2017 | Draft Law No. 476 approved on April 2017 | 5 |
| Paraguay | 1993 | Law N° 213/93 that dictated the Labor Code | 2 |
| | 2007 | Law No. 3384 of 2007 | 3 |
| Peru | 2009 | Law No. 29409 of September 2009 | 4 |
| Uruguay | 1990 | Law No. 16.104 of January 1990 for Public Servants | 3 |
| | 2008 | Law No. 18.345 of September 2008 for Private Servants | 3 |
| | 2013 | Law No. 19.121 of August 2013 for Public Servants | 10 |
| | 2015 | Law No. 19.161 of November 2013 for Private Servants | 7 |
| | 2016 | | 10 |

Note: Compiled by the author based on national legislation for each country.

B. Empirical Model

For the purpose of this research the empirical method used is panel data, which takes into consideration individual heterogeneity. Additionally, country and time fixed effects are included with the purpose of controlling for a possible correlation between countries' error term and predictor variables. By using fixed effects estimation, the unobserved effect c_i is treated as a parameter which is estimated for each cross-

section observation, assumed to be correlated with the additional control variables, but that does not vary over time (Wooldrige, 2011).

$$Y_{it} = \beta_1 MLL_{it} + \beta_2 PLD_{it} + \beta_3 I_{it} + \beta_4 Growth_{it} + \beta_5 P_{it} + \beta_6 \pi_{it} + \beta_7 FR_{it} + c_i + \lambda_t + \mu_{it} \quad (1)$$

Where $i = 1, \dots, 17$, and $t = 1, \dots, 25$

Equation 1 is the specification of the model used for this estimation, where the dependent variable, female unemployment rate, is represented by Y_{it} . Maternity leave length over time is represented as MLL_{it} . The variable PLD_{it} corresponds to a dummy variable for paternity leave, where $PLD_{it} = 1$ when $PLL_{it} > 0$, while I_{it} corresponds to an interaction between MLL_{it} and PLD_{it} of the way $I_{it} = MLL_{it} \times PLD_{it}$. Growth of gross domestic product (in PPP units) is displayed as $Growth_{it}$. Both inflation rate and fertility rate are included in the estimated model, represented by π_{it} and FR_{it} respectively. Finally, population is represented on Equation 1 as P_{it} . The estimated model considers country fixed effects (c_i) and time fixed effects (λ_t). The stochastic error term for this model is μ_{it} .

Table 5. Descriptive statistics

| Variable | Obs. | Mean | Std. Dev. | Min | Max |
|------------------------------|------|----------|-----------|---------|----------|
| Dependent variable | | | | | |
| Female unemployment | 468 | 8.7 | 4.75 | 2 | 26 |
| Independent variables | | | | | |
| Maternity leave | 468 | 94.7 | 20.3 | 70 | 182 |
| Paternity leave | 468 | 2.2 | 3.3 | 0 | 20 |
| GDP growth (PPP) | 466 | 0.04 | 0.06 | -1 | 0.2 |
| Population | 468 | 2.91e+07 | 4.52e+07 | 2576018 | 2.09e+08 |
| Inflation | 447 | 22.2 | 141.4 | -1 | 2076 |
| Fertility rate | 468 | 2.9 | 0.82 | 2 | 5 |

VI. Analysis and Results

The panel dataset for this analysis is strongly balanced, meaning that each panel has the same period of time. However, it is important to point out that the availability of data for inflation rate goes until 2016 only. Therefore, the final dataset comprehends data for 17 countries through a time span of 25 years (1992–2016). Table 5 displays the resulting coefficients and standard errors of the model using three different estimation methods: ordinary least squares, random effects, and fixed effects. Ordinary least squares (OLS) and random effects estimators are presented to illustrate the differences between methodologies. However, in this case the Hausman test favors fixed effects estimations over random effects estimations. For the fixed effects model, the test `xttest3` is statistically significant, pointing out heteroskedasticity. Therefore, the model is estimated using Huber-White standard errors clustered by country.

Focusing on column three, the fixed effects coefficient for maternity leave is negative and statistically significant at the 0.05 level. In addition, based on these results, there is a positive interaction effect between the existence of paternity leave policies and maternity leave length. The coefficient for the multiplicative term *Interaction* is positive and statistically significant at the 0.01 level. Therefore, when the relationship between maternity leave length and female unemployment is tested assuming that paternity leave is provided in national legislation, the resulting coefficient changes to -0.019 without reaching any statistical significance.

Table 6. Female unemployment rate in Latin America, 1992–2016

| | OLS | Random Effects | Fixed Effects |
|-----------------|-------------------|---------------------|----------------------|
| Maternity leave | 0.038 (-0.053) | -0.150* (-0.077) | -0.149** (-0.053) |

| | | | |
|------------------|-----------------------|-----------------------|------------------------|
| Paternity leave | 7.487 (-5.492) | -11.456* (-6.378) | -12.179** (-5.07) |
| Interaction | -0.068 (-0.052) | 0.100* (-0.053) | 0.130*** (-0.043) |
| GDP growth (PPP) | -22.337** (-7.668) | -28.143*** (-6.02) | -26.233*** (-6.317) |
| Population | 0 (0.000) | 0 (0.000) | 0.000** (0.000) |
| Fertility rate | -1.595* (-0.901) | 0.547 (-0.823) | -1.755 (-1.206) |
| Inflation rate | 0 (-0.002) | -0.002*** (-0.001) | 0 (-0.001) |
| Observations | 422 | 422 | 422 |
| Countries | | 17 | 17 |
| R-squared within | 0.135 | 0.15 | 0.366 |

Note: Table 5 shows the results using panel dataset. The dependent variable used in this analysis is female unemployment rate. Paternity leave (PLD) is a dummy variable that takes the value of 1 when paternity leave > 0 and zero otherwise. Interaction is a multiplicative term between Maternity leave and PLD. Estimators for country and year fixed effects are not displayed. Huber-White standard errors are displayed in parenthesis below the reported coefficients. *** $p < 0.01$ ** $p < 0.05$ * $p < 0.10$.

Moreover, having paternity leave included in national legislation also reports to have a statistically significant relationship with considerably high level of decreases in female unemployment rate over time. The results suggest that just by having a paternity leave policy, the female unemployment rate could decrease by 12.18 points on average, in comparison to countries without paternity leave legislation. When taking into account the interaction effect in the analysis, the relationship between the existence of paternity leave provisions and increases of maternity leave from 70 to 130 days, the coefficients report a statistically significant and progressively negative relationship with the female unemployment rate, going from a coefficient of -22.6 to -31.6. This result means that as maternity leave length increases, the effect of having paternity leave legislation on female unemployment rate increases.

The estimated coefficients for both inflation rate and fertility rate with fixed effects estimation do not reach statistical significance at a 0.05 level. According to the fixed effects estimations, the GDP growth ($Growth_{it}$) has a strong negative relationship with the female unemployment rate, with a statistical significance of 0.05 for the OLS estimation and 0.01 for the random effects and fixed effects estimations. The coefficient of $Growth_{it}$, as displayed in Table 5, suggests that an increase of 1 point in the total economic growth of the national economy, female unemployment rate would decrease by a whopping 26.23 points. As it is expected from increases in population, the fixed effects estimation has a positive and statistically significant relationship with female unemployment rate. Fertility rate results show a negative relationship with the dependent variable for all model specifications, but only the OLS estimation reports statistical significance at a 0.10 level, while inflation rate fails to reach statistical significance at any level.

VII. Concluding Remarks

This study parts from the idea of exploring the relationship between the female unemployment rate in 17 Latin American countries throughout 25 years (1992–2016) and the different maternity and paternity leave lengths in every country, taking into account additional macroeconomic elements that could influence the female unemployment rate in a country. Although the female unemployment rate has decreased over time, the increase in the maternity leave has not been very substantial when analyzing the region as a whole. Only 7 out of the 17 countries considered for this study have had legislative changes increasing the time granted to women for

prenatal as postnatal break, and only 7 currently provide a paternity leave higher than five days.

Female unemployment is mainly challenged by motherhood and domestic responsibilities women take on, due to societal and cultural pressure. Contrary to the hypothesis of this study, the findings suggest that increasing the length of the maternity leave for women in time of childbirth could lead to a decrease in the female unemployment rate. One could relate this result to the theory proposed by Myatt & Murrell (1990), which considers the female/male unemployment ratio to be partly caused by the fact that women are more prone to be voluntarily unattached to the labor market than men are, mostly because of the wider range of time limitations they face. In other words, increasing the lengths of maternity and paternity leave would give more women the possibility to find a balance between domestic work and their jobs, making it less attractive to resign.

The result recovered for changes in maternity leave length could be reflecting some deep-rooted country-specific situations. Factors such as culture, political institutions and a country's historic position regarding family protection policies and gender equality could be associated with this result. It is important to acknowledge that this analysis does not seek to establish causal relationships between the female unemployment rate and the maternity or paternity leave lengths. Therefore, future studies should test the existence of unidirectional causality or double causality between the levels of female unemployment rate and changes in the maternity protection legislation. However, endogeneity issues between the dependent variable and maternity leave and paternity leave, as well as with population, could be disturbing the results. Therefore, with the purpose of reducing some of the issues caused by the

endogeneity between the dependent variable and the exogenous variables, for future studies, an instrument for maternity and paternity leave, that does not affect the female unemployment rate directly, is paramount.

VIII. References

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