

THE IMPACT OF LABOR MARKET REFORMS IN INCOME INEQUALITY

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ABSTRACT

This paper explores the impact of changes in the rigidity of labor market legislation on income inequality. Although traditional scholarship has focused on the impact of institutional arrangements on a selection of economic outcomes such as unemployment and labor force participation, comparably little attention has been paid to the effects arising from the rigidity of existing labor market institutions and its implications for income inequality. To date little is known about how and through which channels changes and overall rigidity of labor markets impact income inequality. In order to investigate this relationship, I compile a unique dataset based on the Labor Market Rigidity Index (LAMRIG) constructed by Campos and Nugent (2012), which covers over 140 countries between 1950 and 2004, as well as a composite measure of Gini coefficients for the same period. I further refine my analysis to examine wage dispersions through which labor market legislation affects, contracting or widening, incomes in different countries as well as the impact of the substitution of labor for capital. My results confirm previous findings on the negative association between labor market rigidity, wage dispersion, the financialization of the economy, and income inequality. Moreover, I find that positive changes in labor market legislation, i.e. greater labor market protections and centralization are associated with negative changes in intra-country differences between top and low-wage earners. These estimation results are robust to different model specifications and assumptions. From a policy perspective, my findings imply that labor market reforms might produce undesirable side effects in aggravating wage dispersion and income inequality.

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I. INTRODUCTION

Earlier last year, recently elected French President Emanuel Macron unveiled his proposal to reform the highly detailed French labor code, which dates back to the Napoleon years. His attempt to liberalize French labor markets has been met both with praise and protest from different groups in French society. The debate in France is not an isolated one. In Brazil, after the impeachment of President Dilma Rousseff in 2016, one of the first orders of business on the new government's legislative agenda was the flexibilization of the labor market.¹ Starting in the 1990s, under the guidance of the Bretton Woods institutions such as the IMF and the World Bank, many countries began to reform their economies to facilitate the flow of capital, reduce barriers, increase trade, and promote a global marketplace. During this time, policymakers often opted for standardized macroeconomic recipes and implemented substantial labor institutional reform to address rising unemployment while promoting economic growth. The reasoning behind this approach was that higher labor costs reduce the demand for labor, lower employment mobility, and lead to higher unemployment. Thus, labor market rigidities push workers into informality aggravating working conditions since informal employment offer no safety nets, and no protection. The OECD's 1994 Jobs Study directed the attention of policy makers that European labor institutions contributed to high unemployment due to their lack of employment flexibility (OECD 1994a, 1994b). The study recommended that countries deregulate labor markets to increase flexibility in working time, make wages and benefits more responsive to market necessities, and weaken employment security provisions.

Employment legislation is directly associated with labor costs because it regulates the way, or the setting, in which wages, and employment benefits are negotiated. Furthermore, it sets the rules for basic contractual agreements, and formal dismissal and hiring procedures. For example, in France, massive lay-offs are not permitted under the French labor code unless approved before hand by a French government agency. In case of a wrongful dismissal, for example, the employer may be required to take up employee's severance charges, as well as the judicial proceedings costs associated with the litigation process. At its core, labor legislation and the required structural reforms associated with, involve a wide ranging of economic and political actors that include government, firm and labor organization, and consumers that affect the very nature of the way one economy operates. Thus, it is no surprise that such reforms are implemented more slowly and more comprehensively than others (Campos and Nugent, 2012).

Coincidentally, at the same time as these reforms were taking place, another important phenomenon began to take shape around the globe: rising income inequality. According to different studies, most notably, by Stiglitz (2012), and Piketty (2014), income inequality has increased to historical heights in the last 30 years. Most of these referenced works point out that rising inequality results from an increasing level of global division of labor, different levels of investment in human capital, and distinct levels of productivity. In this paper, I attempt to add to the literature on institutions, and inequality by investigating the consequences of labor market flexibilization and the increased

¹ Both of these countries' labor code have an extensive legislative body that organizes relations between employers and employees. For example, a recent study that examines the legal origins of various countries' constitutional arrangements, suggested that this shared legal commonality may be the product of countries which trace the basis of their legal code from Roman civil law such as France, Spain, Portugal, and its former colonies (References). This is in opposition to countries which have adopted or inherited English common law as their main source of jurisprudential construction such as the United States, or the United Kingdom, where labor market legislation is more flexible, and less stringent.

dispersion of wages, which coupled with the substitution of labor for capital helps to increase the gap in income, and wealth distribution.

First, increased income inequality can derive from greater dispersion of wages impacted by labor market legislation in several different ways. For instance, more restrictive labor market legislation tends to centralize, and institutionalize wage setting which can incentivize more equitable distribution of wages in distinct firms in forcible broad cross industries contractual agreements. On the other hand, more flexible labor markets disperse wage setting creating inequities in the number of firms which adjust wages in unionized industries, and firms with lower unionizing participation, which don't, or are not required by law to do so. Furthermore, labor market legislation also dictates how benefits are set, such as unemployment benefits, which can raise total labor costs, and reduce the employment of new workers, impacting the number of persons engaged at the macro level, but increase the incentive for firms to relocate, and train already employed workers. Additionally, more stringent labor markets tend to better align interests between market participants in anticipation of economic shocks. For example, workers can halt bargaining for higher wages in exchange for greater firm performance if the costs of other inputs, or price of imports increase, and that of exports fall in certain industries.

Second, labor market protections can also create a more equitable distribution of not only wages, but the share of labor in the economy as whole. Greater restrictions in the labor market not only can increase the cost of labor as detailed above, but also increase the substitution cost of labor for capital halting the incentive for firms to replace one for the other. More restrictive labor markets increase the cost of capital and reduce the returns to non-productive assets in the economy by reducing the financialization of the economy. Therefore, depending on the macroeconomic orientation of government, it can be expected that structural changes in the economy can precede changes in the structure of labor markets. In fact, Campos and Nugent (2012) find a positive correlation in previous periods of trade liberalization, and financial reforms and current levels of labor market legislative restriction. Nonetheless, higher degrees of capital utilization, and financialization of the economy, increase returns to capital in detriment of returns to labor, which will tend to lead to greater concentration of wealth on the top percentiles of the income distribution, or asset holders, increasing inequality.

Conclusively, this paper attempts to show, using a broad cross-country analysis, how more encompassing labor legislation can reduce the dispersion of wages while deferring the exchange of labor for capital, reducing the gap between the rich, and the poor, and between the interest, and wage earner.

II. THEORETICAL CONSIDERATIONS

a) Labor Market Legislation and Political Contestation

It is necessary to consider employment protective legislation, and labor institutions separately, albeit intuitively endogenous to one another. Influence over legislative decisions, as the name suggests, require active political participation from all involved political actors: workers, employers, and all invested parties directly lobbying, and applying pressure over lawmakers. On

the other hand, these very same legislations can alter the composition, structure, and organization of institutions by drafting new, or redesigning existing legislation.

In this paper, we utilize Campos and Nugent's (2012) Labor Market Legislation Index (LAMRIG) as a proxy for the changes in labor market legislative reforms. According to the proposed construction of the LAMRIG by Campos and Nugent (2012), the index is based on four broad pillars: (i) cost of increasing hours worked, (ii) cost of firing workers, (iii) dismissal procedures, and (iv) alternative employment contracts (part time or fixed term versus regular full-time). Given these main categories, which are based on the Botero et al (2004) index, they proceed to focus on the following categories extracted from NATLEX²: conditions of work ("Hours of work, weekly rest and paid leave"), employment security, termination of employment, conditions of employment ("Labor contracts", "Wages" and "Personnel management") and general provisions ("Labor codes, general labor and employment acts"). Additional considerations must be made when looking at the construction of such indices. Most notably, countries do vary a lot in what they include in their body of legislation pertaining to institutions that may fall beyond the ones considered broadly in indices. In France, and in Brazil, for instance, labor market legislation includes not only the categories proposed here, but also the regulation of labor unions (the number of confederations, the right to strike in the public, and private sector, or how labor unions are financed, among others).

However, generalizations can, and should be considered when considering the impact of labor institutions. In broad terms, we find evidence that more rigid labor market legislation is significantly associated with: a greater probability that the government participates directly in wage bargaining (triparty bargaining, as in social pacts); a decreased probability that bargaining predominantly takes place at the local or company level; a decreased probability that agreements contain crisis-related opening clauses;³ a decreased probability that mandatory extension of collective bargaining agreements are exceptional; an increased probability that mandatory extension of collective bargaining agreements is used in many industries; social pacts which do not include tax-based income policy, or are unknown, and a decreased probability that there are no social pacts, while with an increased probability that social pacts are about wages; a decrease in probability of the existence of a tripartite council with various societal interests representatives including unions and employers, and a decreased probability that works councils (etc.) are voluntary, i.e. even where they are mandated by law, and with lower levels of involvement of these same councils in wage negotiations; an increased probability with medium (only one sided, no joint institutions) sectoral organization of employment relations, and a decreased probability with strong institutions in sectoral organization of employment relations; with lower levels of restrictions, if any, over collective bargaining for government employees, and in their rights to strike (see Table A4 in the appendix section for detailed regression coefficients).

It is clear that labor market legislation offers protection to worker enforceable by law. But, as noted above, legislation is malleable to the actors involved in their design, and application. Given the

² NATLEX is available at < <http://natlex.ilo.org/>> It is maintained by the International Labor Organization (ILO)'s International Labor Standards Department and has extensive and detailed records of most labor laws of more than 150 countries since the late 1940s. The World Law Guide (LEXADIN at www.lexadin.nl) was also used, but we found it to be less comprehensive and well-organized than NATLEX. LEXADIN is organized by country (and within each country there are relevant entries under "Labor law".)

³ Defined by Jelle Visser (2008) as temporary change, renegotiation or suspension of contractual provisions, under defined hardship conditions.

broad scope of what labor market encompasses, the large portion of productive sectors of the economy it covers, and the immense number of lives it impacts, these reforms have always been a controversial axis of conflict, both politically and economically. There is a vast body of literature dedicated to study the political contestation of legislative protection. In their seminal paper “Protection for Sale”, Gene M. Grossman and Elhanan Helpman develop a model to demonstrate how special interests’ groups make political contributions in order to influence a government’s choice of public policy (Grossman and Helpman 1992). Such groups do not only comprise of firms looking for more beneficial trade legislation, but also workers, or organized workers who wish to protect labor institutions that ensure benefits and protects employment. During the post war period with the consolidation of social democracies, workers’ rights and labor institutions became an important contesting political agent influencing the way groups attempt to influence government. Therefore, suggesting and implementing labor market reforms, or any reform that impacts these disputing factions, turned highly controversial. In her 2007 book “The Politics of Labor Reform in Latin America: Between Flexibility and Rights”, Professor Maria Cook analyzes the political processes in the implementation of such reforms in Latin America during the 1990s. Professor Cook shows that in countries like Chile and Peru, authoritarian governments were able to impose reforms more “easily” than in places like Argentina and Brazil, where labor movements were able to oppose these reforms more efficiently (Cook 2007).

In the preceding section, we briefly considered the interactions between the main political actors in determining legislative reforms. Next, we will discuss the several theoretical implications of labor institutions in the setting of wages, benefits, and other labor market outcomes.

b) The Role of Labor Institutions in Shaping Outcomes

Until recently, comparably few economists attributed much importance to the impact of labor legislation, and institutions on the dispersion of wages, and income inequality. The prevailing view has been that labor institutions are only peripheral, and not the among the key drivers of economic performance (Freeman 2008).⁴ However, economic models predict that institutions can impact labor relations outcomes by altering wage and employment at the firm level, the inclusion of employment benefit in the negotiation, the participation of government in mediating conflict, or the requirement of employee’s representatives in strategic decision-making of the firm when considering external shocks.

Freeman (2008) argues institutions will affect wage negotiation, economic efficiency, and alter incentives for the unemployed in the economy. First, according to Freeman, labor unions will bargain for over above market wages, but not necessarily over employment. Given increased labor costs, firms in highly unionized sectors reduce employment reallocating labor to lower paid activities in otherwise nonunion sectors which will impact efficiency and inequality depending on the presence of union, and its corresponding bargaining power (Freeman 2008). Saavedra, and Torero (2005) find evidence that highly unionized sectors in Peru have a negative impact on

⁴ During much of the second half of the 20th century, economists have, for the most part, neglected the study of labor unions and its impact on labor markets and income distribution. The number of papers and academic articles concerning unionism published in major academic journals in the United States such as the American Economic Review, Journal of Political Economy, and the Quarterly Journal of Economics have greatly diminished from the 1940s onwards (Johnson 1975). In the 1940s, 9.2% of articles published in these academic outlets dealt with unionism. This number fell to 5% in the 1950s, and to 2.3% in the 1960s.

company profits, and productivity albeit less significant. Conversely, firms in more well-regulated labor markets and higher firing costs, can have a positive productivity outcome by investing in, and reallocating currently employed workers instead of opting for outright dismissal (Gosling and Lemieux, 2004). Second, unemployed workers can raise their reservation wages and reduce search for new employment resulting in higher persistent unemployment in economies with more generous unemployment packages. Still according to Freeman (2008), reallocation of labor can be greater if firms have a higher elasticity of demand for labor.

Firms, and governments alike, can attempt to improve labor incentives by sharing the decision-making process with workers in employee-ownership settings by improving the flow of communication within the firm (Freeman 2010). Workers, and labor organizations can agree to longer term production goals, and shorter-term market adjustments such as temporary cut in pay or benefit by aligning interests between the involved parties. In turn, this will also depend on the degree to which the given body of workers (firm-level, sector-level, or aggregate-level) are protected under collective bargaining agreements present in employment protective legislation. By looking at changes in pay over time, and across industries, cross-country studies have noted that countries with centralized bargaining, like Northern Europe and Scandinavia have wages closer to equilibrium than changes in segmented markets, with more disperse bargaining like the U.S (Bruno and Sachs, 1985; Holmlund and Zetterberg, 1991).

In addition, workers can use firm-level, or aggregate-level institutions to mediate disputes rather than quit their jobs, which should reduce turnover costs, incentivize firms to invest in firm-specific skills, and workers to seek longer term career goals. This is particularly important when considering external shocks, and macroeconomic adjustments to the economy. The Scandinavian Model, cited previously, posits that unions and employers' associations negotiate changes in wages equal to productivity growth in the sector-level according to changes in global market prices for those goods (Milner and Wadensjö, 2001). Centralized bargaining along with the presence of workers' councils, and employee ownership align disputing interests and improve efficiency by adjusting short-term expectations with long-term objectives (Freeman 2010). By contrast, firm-level wage-setting risks inflationary pressures, with wage increases in different sectors inducing wage increases in sector that exceed productivity growth that do not adjust for increases in global prices. More recent studies have found similar conclusions. The ILO for instance, has always advocated for at least some sort of social dialogue between economic agents since its ratification of tripartite consultation for good governance.⁵ The bottom line is that labor market institutions can affect economic outcomes differently given the legislative arrangements present in each country. After trade liberalization policies were implemented in Brazil in the 1990s, workers in some export-oriented industries were able to better adapt and capture greater wage benefits than others in other industries helping to increase the total wage dispersion in the labor market (Arbache and Carneiro, 1999; Arbache 2004).

One issue to be considered is that countries may differ in many other dimensions and in their economic, and political arrangements. Moreover, the availability of data that assesses these various institutional compositions, limits cross-country research to those countries which reliable data is more readily available, namely the OECD countries for instance. Finally, the changes in the

⁵ C144 Tripartite Consultation (International Labour Standards) Convention, 1976 <<http://www.ilo.org/ilolex/cgi-lex/convde.pl?C144>>

macroeconomic environment and the stability of political institutions in the developing world make it hard to draw more precise conclusions in comparison to those countries with more well-established economies. Therefore, there is limited potential to pinpoint direct conclusion from broad multi-country analysis without accounting for the peculiarities of individual in-country labor markets.

In summary, changes towards stronger institutions in the labor market will tend to lead to lower employment turnover, higher persistent unemployment (depending on the composition and structure of the labor market), better wage adjustments to reflect long-term shocks to the economy, lower wage dispersion, and better distribution of incomes. As stated above, firms will prefer to invest in house training for firm-specific skills rather than to fire employees. At the same time, the improved flow of information, and worker participation in decision-making, can improve shared interests leading to improved long-term planning between employers, and employees. Surely, all of these theoretical outcomes will depend on a multitude of labor market, and macroeconomic characteristics inherent to individual economies.

III. REVIEW OF THE LITERATURE ON INSTITUTIONS AND INEQUALITY

The previous section highlights the critical theoretical considerations of legislative disputes over the composition of labor institutions, and the interactions among competing factions over a nation's broad economic outcomes. This paper attempts to utilize the existing debate to frame the discussion over the uneven, or unequal distribution of incomes, one of the possible resulting issue of such disputes.

Campos and Nugent (2012) explore how changes in employment protective legislation can impact income inequality simply by using measurements of the Gini Coefficient. However, they never examine the channels through which the flexibilization of labor markets can alter income inequality such as the increased dispersion of wages, or in-country institutions that govern labor relations. Freeman (2008), on the other hand, provides valuable insights on growing income inequality through widening of wage dispersions but dispossesses a more robust dataset that covers an increased number a wider range of countries, a greater time period, and a time changing measurement for the rigidity of labor markets such as the LAMRIG constructed by Campos and Nugent. This paper, therefore, attempts to pick up where these previous authors left off. First, by utilizing a more robust dataset of cross-country observations that pick up the changes in labor market dynamics in different nations, and its impact on income inequality. And second, by applying this methodology to the analysis of not only income inequality, but also the dispersion of wages, and the increase substitution of labor for capital, increasing the returns to capital in exchange for greater labor participation in the economy. government, employers, and employees, and the authority of such institutions in collective bargaining, as well as wage, and benefit setting

An initial wave of studies to zoom in on labor institutional outcomes, and income inequality, attempted to pair countries with similar overall economic, and political arrangements that specifically diverge in their composition of labor market institutions. In their 2001 paper, Gosling and Lemieux (2004) center their attention specifically to labor reforms that took place in the U.K.

and the U.S. between the years of 1979 and 1998 and its relationship to increases in wage inequality. In comparison to other industrialized nations, like Germany and France, which did not experience neither the changes in their labor market institutions nor the sharp increases in wage inequality during the same period, the authors find a high degree of association between labor market reforms and inequality in the U.S. and the U.K. In the 1990s, both labor markets in the U.S. and in the U.K looked very similar. These authors also point out that, confirming an initial hypothesis, that firms in the U.K. presented lower job turnover, and greater investment in-house training for firm-specific skills.

Since the availability of reliable data is restricted, analysts are often limited to a number of countries that offer sufficient data on institutions, and economic outcomes leaving open the possibility that an omitted cross-country factor, or a specific in-country variable, inside or outside the particular labor market underlies the pattern. In hopes to correct for such potential endogenous variations that impact outcomes, a third strain of studies attempt to focus on individual countries utilizing as many control variables as possible considering detailed information on the peculiarities of an individual economy. Kim and Skott (2014), for instance, look at labor market reforms in Korea in 1998 and find that country specific issues such as the demand for labor, or the substitution of labor for capital, play an important role in the determinants of wage inequities. Another substitution factor observed in this paper is the replacement of long-term contract workers by short-term or temporary workers. Long-term employees tend to have easier access to raises, and benefits, whereas temporary workers have more difficult access to benefits and better in-house wages.

Similarly, Frossard Barbosa (2016) analyses the impact on trade union membership on mean hourly wages, and income inequality in Brazil from 1994 to 2014 utilizing counterfactuals in the trends of unionization for the period. Although unions have expanded, demographically and geographically - including more women, people of color, and rural workers - the more well-established, better organized, and higher paid unions such as that of the public sector were able to capture the increments to wages in detriment of unions with less political power. Furthermore, the organizational structure of unions in Brazil contributed to the loss of bargaining power with several union confederations competing for union membership with conflicting interests, and for leadership in negotiations with employers and the government. According to Barbosa, had unions retained a more centralized, and cohesive administration at the same time as becoming more democratic, the impact of wages dispersion, and income inequality would have been much more significant (increasing wages to lower pay unions, reducing wage dispersion).

IV. PRINCIPAL VARIABLES OF INTEREST: THE GINI COEFFICIENT AND THE LABOR MARKET LEGISLATION RIGIDITY INDEX (LAMRIG)

First, the Gini coefficient as a measure of inequality is satisfactory as a standardized measure of inequality that can be used to compare and contrast levels of income disparities across countries, and within countries. Incomes reported based on household surveys are better equipped to capture lower tiers of income from a society, but poor capturing top income tiers. Inversely, income tax-based reporting does a better job to capture the incomes from the top earners of society, but a worse

job to fully account for lower income earners as they often do not report income taxes, especially in poorer underdeveloped countries.

Second, the available literature on EPL (our main determinant variable of interest) presents features that differ in their construction of measurement indices of labor legislation restrictiveness. In recent years, we find an index by Nickell (1997) based on labor turnover, the number of strikes, labor force participation rates, and unemployment rates; and Nickell and Nunziata (2001) based on tax wedges on workers and other labor market institutions such as the minimum wage, and unemployment benefits; or Botero et al (2004) which focused on features of labor market legislation such as legal origins of labor legislation, collective legislation (coverage and bargaining attributes), and social security legislation. Therefore, there are many distinct ways in which economists can build indices capable of measuring different aspects of employment protection legislation. Yet, until recently, there has been no single broad measuring index able to cover all of the previous characteristics combined. LAMRIG, by Campos and Nugent (2012), as detailed in previous sections, is based on Botero et al (2004) index and the NATLEX and it is designed to be consistent with cross country comparisons over time.

LAMRIG also differs from previous indices, including Botero et al., as it focuses on changes in labor legislations over periods of 5 years, instead of focusing on levels of EPL at a given point time. Furthermore, it extends both the time period it covers, stretching as far back as 1960 (compared to Botero et al that covers a period of 20 years from 1975 to 1995), and the number of countries included from 85 to 145.

V. CONCEPTUAL FRAMEWORK

This paper performs several pieces of empirical/statistical analysis split into three main models. First, we begin by looking at labor market deregulation and its impact on income inequality, and in a second step, the relationship between these policies and their effect on wage dispersion. Finally, we investigate the relationship between the changes in labor market legislation on different measurements of share of labor, and capital, in the economy. If our initial hypothesis is confirmed, we will first see that greater levels of labor market rigidity is negatively associated with changes in the Gini Coefficient. Second, we propose that greater levels of employment protection are negatively associated with increased dispersion of wages in a given economy. Finally, we shall demonstrate that increased labor protection is negatively associated with several measurements of the financialization of the economy, and the substitution of labor for capital.

Since labor market rigidities defined by the levels of, and the changes in flexibility of labor market legislation do vary over time, we rely on an index of EPL that accounts for changes in EPL in considerable time intervals to capture my main independent variable. In model (1), we utilize Campos and Nugent (2012) labor market legislation rigidity index (LAMRIG) which covers more than 150 countries since the 1940s in intervals of four years.¹ A distinct advantage of using the LAMRIG over other comparable measures is that it provides one of the most comprehensive measures of labor market rigidity over time and across a wide set of countries.⁶ As a measure of

⁶ In the early 2000s, efforts were made to construct indices that would reflect the rigidity of individual labor market structures in different countries (Blanchard and Wolfers 2001; OECD 2004; Botero et al 2004). The problem was that these earlier indices were

income inequality, we construct a composite Index of Gini coefficients that are drawn from Deininger & Squire (DS Gini), the World Bank’s World Development Indicators (WDI), the United Nations Human Development Reports, and the Standardized World Income Inequality Database compiled by Solt.^{7 8} Additionally, for measuring wage dispersion, we use the Occupational Wages around the World (OWW) Database from 1983-2008 with country specific calibration by Oostendorp from the University of Amsterdam.⁹

Based on the specifications detailed in Table 7 presented in Campos and Nugent (2012, p.44), the basic model for estimating the impact on the levels of LAMRIG on income inequality is defined as:

$$(1) y_{it,j} = \alpha_{it,j} + \beta_1 * LAMRIG_{it,j} + \beta_i \sum_{i=2}^n K_{it,j} + \theta + \tau + \varepsilon_{it,j}$$

where $y_{i,j}$ represents a composite index of Gini coefficients constructed of Gini coefficients from different sources, $\alpha_{i,j}$ represents the constant from the regression results, β_1 is the beta coefficient associated with the levels of the LAMRIG index, β_i is the beta coefficient associated with a vector of $K_{i,j}$ explanatory variables, θ and τ reflect country-specific and time-specific fixed effects, and $\varepsilon_{i,j}$ is the error term from the regression. For each of these terms, i represents the period ranging from 1960 to 2004, and j represents one of the 140 countries covered in the regression.

We then proceed to expand this basic model to include control variables that represent structural changes in the national accounts such as the size of the population, GDP per capita, the volume of trade in each country accounted by the level of exports and imports, the size of government consumption, and the share of labor income as a percentage of GDP. The size of the population impacts the calculation of the distribution of incomes per capita. The performance of the economy, measured by GDP per capita, represents levels of incomes, serving as measurement of Gini coefficient for that country. The volume of trade of an economy can also reflect changes in incomes especially if the country’s productive factors are allocated to sectors of the economy dependent on international trade. The size of government consumption can offer a prospective on the degree of direct government participation in the economy. Finally, the share of labor income is essential to this analysis since it deals directly with the hypothesis of this paper, which considers that labor market legislation can shape the degree to which this variable is a component of the economy in comparison to the share capital.

static in nature and did not measure changes in employment protection legislation over time (Bertola 2009; Djankov and Ramalho 2009; Freeman 2010). In order to correct for these shortcomings, and to produce an index that would capture the changes, and not the levels, in employment protection over time, more recent studies have focused on constructing indices that would cover longer periods of time within 5-years changes (Campos and Nugent 2012).

⁷ The QOG Standard Dataset 2017 Teorell, Jan, Stefan Dahlberg, Sören Holmberg, Bo Rothstein, Anna Khomenko & Richard Svensson. 2017. The Quality of Government Standard Dataset, version Jan17. University of Gothenburg: The Quality of Government Institute, <http://www.qog.pol.gu.se> doi:10.18157/QoGStdJan17

⁸ Solt, Frederick. 2016. “The Standardized World Income Inequality Database.” *Social Science Quarterly* 97(5):1267-1281.

⁹ For more information on wage specifications, see “The Occupational Wages around the World (OWW) Database: Update for 1983-2008” by Remco H. Oostendorp VU University Amsterdam Tinbergen Institute Amsterdam Institute for International Development.

This initial assessment provides us with a good understanding of how labor reforms, captured by the changes in the levels of the LAMRIG index, affect income inequality across countries over time. However, a more interesting contribution to the literature would be to investigate through which channels these changes occur. For this reason, we include model (2) to account for the levels in wage dispersion between the top and the bottom percentile wages in each country over time, covering 1983 to 2004 provided by the OWW database and the levels of labor market rigidities over the same period of time in the following fashion:

$$(2) \ y_{it,j} = \alpha_{it,j} + \beta_1 * LAMRIG_{it,j} + \beta_i \sum_{i=2}^n K_{it,j} + \theta + \tau + \varepsilon_{it,j}$$

where $y_{i,j}$ represents the ratio between the 90th and the 10th percentile of wage earners in country i and time j provided by the OWW database, $\alpha_{i,j}$ represents the constant from the regression results, β_1 is the beta coefficient associated with the levels of the LAMRIG index, β_i is the beta coefficient associated with a vector of $K_{i,j}$ explanatory variables, θ and τ reflect country-specific and time-specific fixed effects, and $\varepsilon_{i,j}$ is the error term from the regression.

Finally, we apply a similar model to measure the impact of changes in labor market regulation on different variables that measure the degree of financialization of the economy, and the share of participation of labor in the economy.

$$(3) \ y_{it,j} = \alpha_{it,j} + \beta_1 * LAMRIG_{it,j} + \beta_i \sum_{i=2}^n K_{it,j} + \theta + \tau + \varepsilon_{it,j}$$

where $y_{i,j}$ represents each individual variable of interest that measure the degree of financialization of the economy (domestic credit provided by the private sector as a percentage of GDP, the amount of money and quasi-money [M2] as a percentage of GDP, and financial system deposits to GDP in percentage terms), and the share of the participation of labor in the economy (number of persons engaged in millions of people, the average number of weekly work hours, and the investment in machinery and equipment at current national prices), $\alpha_{i,j}$ represents the constant from the regression results, β_1 is the beta coefficient associated with the levels of the LAMRIG index, β_i is the beta coefficient associated with a vector of $K_{i,j}$ explanatory variables, θ and τ reflect country-specific and time-specific fixed effects, and $\varepsilon_{i,j}$ is the error term from the regression.

VI. PRINCIPAL RESULTS

a) Gini Coefficient

Figure 1 demonstrates the regression results from the changes in the LAMRIG on the different measures of the Gini Coefficient constructed for this analysis. To construct our Gini coefficient database, we first take the Deininger and Squire Dataset (DS 1996), and the World Bank's World Development Indicators (WDI) available in the 2017 Quality of Government Standard Dataset and add Gini coefficients from the United Nations dataset (2013), and Frederick Solt SWIID database (SWIID 2016). Gini coefficients from the UN, and SWIID databases are added if data from one country or one year is missing from the DS or WDI datasets. We do this in order to increment the number of available data existing to a greater number of countries covering a larger period of time.

In this section, we report our main empirical findings. Table 1 provides the summary statistics for the different Gini coefficients used in the analysis. As explained previously, we use four main sources for the basis of the construction of a main Gini variable. We do this to create a main dependent variable with as many observations as possible accounting for possible gaps in the data that perhaps may not include Gini coefficients from a particular country in a given year. By combining the Gini coefficients from Deininger and Squire (DS Gini), and from the World Bank’s World Development Indicators (WDI) plus the United Nations as well as Frederick Solt’s SWIID database we arrive at 760 observations for 134 countries covering the period of 1950 to 2004. Table A1 in the appendices section provides the same regression results in Figure 1.

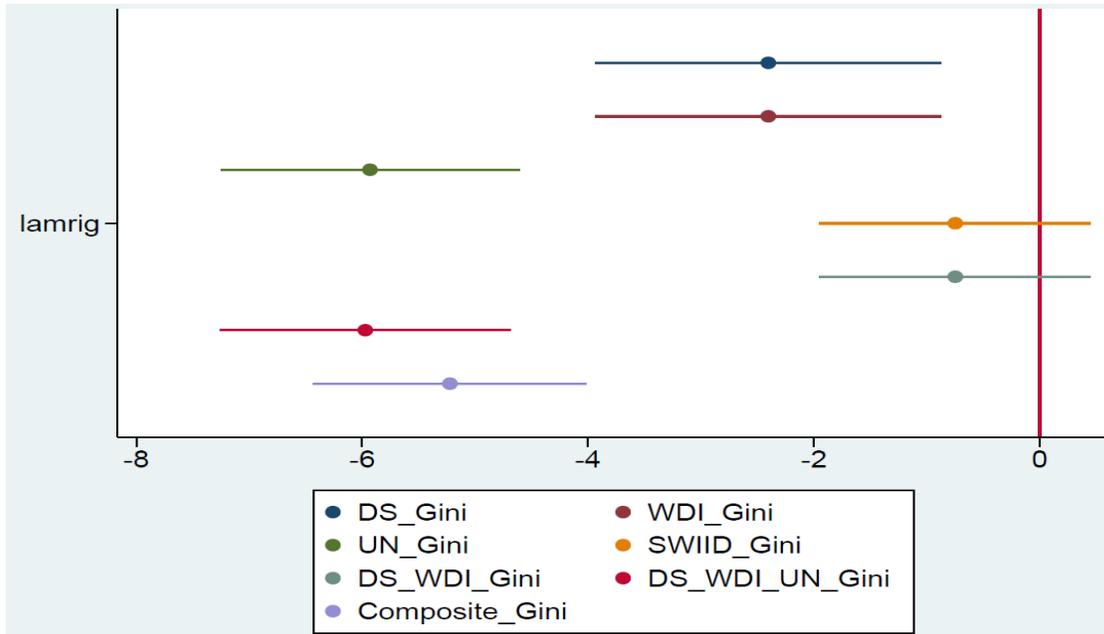


Figure 1 - Regression Estimates of the LAMRIG Index on the different measures of the Gini Coefficient

Dependent variable:

Deininger & Squire Ginis (DS_Gini) Dataset (1996)	[1]
World Development Index Gini (WDI_Gini)	[2]
United Nations Gini (UN_Gini)	[3]
Frederick Solt SWIID	[4]
DS and WDI Ginis Combined	[5]
DS, WDI, and UN Ginis Combined	[6]
DS, WDI, UN, and SWIID Combined (Composite Gini)	[7]

Table 1 provides the regression results from model (1) described above and includes the described control variables. As expected, higher levels in the LAMRIG are strongly, and significantly associated with decreasing changes in the Gini coefficient. Column 1 reflects a regular OLS (ordinary Least of Squares) regression, column 2, a panel data regression with time-fixed effects, column 3, panel data regression with country-fixed, and time-fixed effects, column 4, panel data regression with one lag of the Composite Gini, country-fixed, and time-fixed effects. By holding time, and country fixed, this analysis infers the effect of policy by comparing the changes in outcomes in the country in which policy has changed to the country in which policy that has not. But developments in other countries are not necessarily a good measure of what might happen in another country. This is why, in column 5, we add additional control variables detailed in the

previous section in panel data regression with one lag of the Composite Gini, country-fixed, time-fixed effects. Institutions that work in one way in one country, might work differently in another country. The organization of labor institutions in France, for instance, are very different from those in Germany, which in turn affect outcomes distinctively. In the appendix, Table A1 provides the regression results for the different measures of the Gini coefficient attesting for the resilient of the results across different indices.

Table 1 - Regression Estimates of the LAMRIG Index on the Composite GINI Coefficient

	[1]	[2]	[3]	[4]	[5]
LAMRIG	-2.1973 *** [0.6278]	-3.3501 *** [1.3058]	-3.3827 *** [1.5598]	-2.9358 *** [0.9683]	-3.7569 *** [1.0552]
First Lag of Composite Gini				0.4359 *** [0.0634]	0.4616 *** [0.0718]
Log of size of population					-3.0130 [2.7397]
Log GDP Per Capita					0.0184 [1.4487]
Log of the volume of trade					-0.4676 [0.8778]
Log of government consumption					0.3462 [1.0868]
Share of labor					1.1566 [8.8763]
Constant	43.4716 *** [0.9995]	50.2078 *** [2.9707]	50.0436 *** [2.7450]	30.0638 *** [3.8060]	59.8869 *** [26.5192]
Observations	760	760	760	619	523
No. of countries		134	134	130	104

Notes: the dependent variable in the columns above is the composite of Gini coefficients from the DS, and WDI available in the 2017 Quality of Government Standard Dataset plus Gini coefficients from the UN dataset, and Frederick Solt SWIID database. GDP per capita, and level of international trade is also taken from WDI. Data is reported using an unbalanced panel from 140 countries between 1960 and 2004 non-overlapping 5 year averages (each column varies in the number of countries included due to the availability of information for each country). *** denotes statistically significant at 1%, ** denotes statistically

[1] OLS regression

[2] Panel data regression with time-fixed effects

[3] Panel data regression with country-fixed, and time-fixed effects

[4] Panel data regression with one lag of the Composite Gini, country-fixed, and time-fixed effects

[5] Panel data regression with one lag of the Composite Gini, country-fixed, time-fixed effects, and additional control variables

b) Wage Dispersion

In this section, we depart from the overall analysis of levels of labor market legislation represented by the LAMRIG on income inequality represented by the widening of the Gini coefficient. As previously noted, our findings in part A of this section confirms the findings of Campos and Nugent (2012), and Freeman (2008, 2010). Freeman (2008) presents evidence that show that labor institutions reduce the dispersion of earnings and income inequality by using wage ratios of the 90th over the 10th percentile, which are replicated here. However, we substantially increase the sample used by Freeman by including over 20 years of data. On the one hand, Freeman (2008)

does not account for changes in labor market institutions over time as do Campos and Nugent (2012), who, on the other hand, do not use wage dispersions in their analysis. Here we set out to bridge the two approaches by using the changes in wage dispersion, and changing levels of employment protection legislation across countries, over time.

Table 2 provides the regression results from model (2) in the preceding section. As expected, higher levels in the LAMRIG are strongly, and significantly associated with decreasing changes in wage dispersion. Column 1 reflects a regular OLS (ordinary Least of Squares) regression, column 2, a panel data regression with time-fixed effects, column 3, panel data regression with country-fixed, and time-fixed effects, column 4, panel data regression with one lag of the Composite Gini, country-fixed, and time-fixed effects. In column 5, we replicate the same control variables as model (1). The log of the size of the population is also strongly and significantly associated with decreasing levels of wage dispersion resulted from the impact of the size of the population on the distribution of wages. Conversely, the log of the volume of trade is positively, and strongly significantly associated with greater levels of wage dispersion. The intuition here is that benefits from increased trade are captured by top wage earners in detriment of lower wage earners. As discussed in the theoretical considerations section, unions in the export industry, which are better positioned than unions in different sectors, can benefit from trade liberalization better than others (Arbache and Carneiro, 1999). Also, these workers can also already be in the top percentiles of the wage distribution. Workers on the lower end of the wage distribution, and in industries that may be negatively impacted by increased trade liberalization, such as rural workers have their wages stagnated or decreased. Combining these two factors, we have a positive contribution to wage dispersion.

Table 2 - Regression Estimates of the LAMRIG Index on Wage Dispersion

	[1]	[2]	[3]	[4]
LAMRIG	-0.3235 *** [0.1248]	-0.3664 *** [0.1442]	-0.2777 * [0.1637]	-0.2787 * [0.1601]
Log of size of population				-1.4588 *** [0.4692]
Log GDP Per Capita				0.2486 [0.2971]
Log of the volume of trade				0.4893 *** [0.1428]
Log of government consumption				0.0546 [0.1734]
Share of labor				2.0295 [1.4946]
Constant	-0.8031 *** [0.1935]	-1.1741 *** [0.2276]	-1.2267 *** [0.2543]	4.7747 [5.2229]
Observations	354	354	354	291
No. of countries		119	119	97

Notes: the dependent variable in the columns above is the ration of the 90th percentile over the 10th percentile using the OWW database from 1983-2008. Data is reported using an unbalanced panel from 140 countries between 1983 and 2004 non-overlapping 5 year averages (each column varies in the number of countries included due to the availability of information for each country). *** denotes statistically significant at 1%, ** denotes statistically significant at 5%, and * denotes statistically significant at 10%

[1] OLS regression

[2] Panal data regression with time-fixed effects

[3] Panal data regression with country-fixed, and time-fixed effects

[4] Panal data regression with country-fixed, time-fixed effects, and additional control variables

c) Financialization, and Returns to Labor and Capital

In this section, we review the impact of labor market legislative reforms on the financialization of the economy (Table 3), and the share of labor in the economy (Table 4). Data in Table 3 is provided by the World Bank Finance Data, and in Table 4 by the Penn World Tables 9.1 capital, and labor detail.

As we can observe, higher levels of the LAMRIG are strongly, and significantly associated with lower levels of domestic credit provided by the private sector, lower levels of money, and quasi-money (M2) in circulation in the economy, which potentially suggests that labor market reforms are negatively associated with expansive monetary policy. This is an important facet of this model. The main channels that have been suggested in the literature through which monetary policy might affect inequality include the inflation tax, savings redistribution, interest rate exposure, earnings heterogeneity, and income composition.

Increases in inflation disproportionately diminish the purchasing power of households that rely on cash-based transactions such as lower-income household, as opposed to higher-income ones which possess greater amounts of financial assets and tend to have higher percentages of cash from wages as a composition of their income (Amaral 2017). Erosa and Ventura (2002) suggest that expected

inflation exercises a regressive consumption tax which in turn may lead to an increase in inequality. At the same time, increases in unexpected inflation lower the real value of assets and liabilities, making borrowers better off at the expense of lenders, as the real value of debt decreases. The effect on income and wealth inequality will depend on the way in which those assets and their different maturities are distributed across households. Doepke and Schneider (2006) look at asset holdings by age and wealth distributions and the effects of an increase in inflation showing that the group that would experience larger net wealth increases is middle-aged, middle-income households. This implies that in such case, monetary policy will have a negative impact on the dispersion of income, and wealth.

Auclert (2016) looks at the redistribution effects resulting from changes in real interest rates. A fall in real interest rates increases financial asset prices to the extent that the interest rate used to discount dividends increasing the wealth of financial asset holders in detriment of wage earners. In such case, debt borrowers, such as fixed-rate mortgage holders, and savers whose wealth is concentrated in short-duration assets such as CDs or T-bills will tend to benefit from expansionary monetary policy at the expense of savers whose wealth is concentrated at long-duration assets, as treasury bond holders, when interest rates fall. This will however depend on the composition of household wealth in the economy. Table A5 in the appendix section provides the distribution of household wealth composition in the United States in 2013 by quintiles according to Kuhn and Rios-Rull (2013). As one can observe, the top 5th quintile holds the lowest rate of debt-to-savings (represented by household and car mortgage and financial assets respectively). However, the top quintiles also hold 14 times as much capital as share of their income sources as all other quintiles combined. Furthermore, the top quintile holds as much as 20 times more debt as the bottom quintile, 10 times as the second, three times as the third, and twice as much as the fourth. Taking all of this information combined, we see that lower interest rates are likely to impact the top quintile much more likely than the bottom since they comprise a large chunk of debtors, and savers. More significantly, lower interest rates are likely to have a net positive impact since they are twice as much invested in savings as they are in debt and have a larger portion of their combined income in capital as do the bottom quintiles.

Finally, more restrictive levels of labor market regulation are associated with lower levels of financial deposits, or the demand, time and saving deposits in deposit money banks and other financial institutions as a share of GDP. The extent to which bank loans, and deposits will impact inequality will depend on the types of lending provided by the private sector. Loans to micro, small, and medium-sized enterprises can contribute to reduce income inequality but business loans to larger corporations as well as consumer loans can increase income inequality (Pamungkas, Rugemintwari, Tarazi, and Trinugroho 2016). By looking again at table A5, it is possible to see that the top quintile holds as much as nine times more income in businesses than the bottom. If businesses can indeed benefit from greater financialization of the economy as the literature suggests, depending on the composition of loans to the size of business and business-owners' wealth, the impact on income inequality can be significant.

Table 3 - Regression Estimates of the LAMRIG Index on Various Measurements of Financialization of the Economy

	Domestic credit provided by the private sector (% of GDP)		M2 money - money and quasi-money as % of GDP		Financial system deposits to GDP (%)	
	[1]		[2]		[3]	
LAMRIG	-0.1263	**	-0.3014	***	-0.3545	***
	[0.0652]		[0.0665]		[0.1181]	
Log GDP Per Capita	0.0442		0.0181		-0.0596	
	[0.1551]		[0.0833]		[0.0985]	
Log of the volume of trade	0.022		0.0276		0.2657	
	[0.1004]		[0.1244]		[0.1635]	
Log of government consumption	0.2412	***	0.1784	***	0.1243	
	[0.0923]		[0.0578]		[0.0926]	
Constant	3.2144	***	3.4234	***	1.9393	
	[0.9065]		[0.6853]	***	[1.0078]	**
Observations	842		804		756	
No. of countries	135		135		130	

Note: the dependent variables in the above table are sourced from the World Bank Finance Data, and represent: [1] domestic credit provided by the private sector (% of GDP); [2] M2 money, or money and quasi-money as % of GDP; and [3] financial system deposits to GDP (%), or Demand, time and saving deposits in deposit money banks and other financial institutions as a share of GDP. *** denotes statistically significant at 1%, ** denotes statistically significant at 5%, and * denotes statistically significant at 10%

Table 4 shows that greater legislative protection is associated with, as expected, lower numbers of persons engaged in the economy, lower number of average weekly hours of work, and lower levels of investment in machinery and equipment at current national prices. We can see that better economic performance, measured by GDP per capita is significantly, and negatively associated with greater number of persons engaged, and that higher volume of trade is positively, and significantly associated with greater number of average of weekly hours worked.

Table 4 - Regression Estimates of the LAMRIG Index on Various Labor Market Indicators

	Number of persons engaged (in millions of persons)		Average number of hours		Investment at current national prices in machinery and equipment	
	[1]		[2]		[3]	
LAMRIG	-0.2373	***	-42.0685	**	-1.7956	***
	[0.0449]		[20.5330]		[0.5633]	
Log GDP Per Capita	-0.1835	*	-42.8602		0.2167	
	[0.0446]		[31.4425]		[0.7375]	
Log of the volume of trade	0.0631		61.9869	***	-0.2346	
	[0.0357]		[24.0710]		[0.4173]	
Log of government consumption	-0.0388		-28.9009		0.9672	
	[0.0407]		[31.4771]		[0.7221]	
Constant	1.6226	***	2031.236	***	6.6362	
	[0.2470]		[225.3598]		[4.6601]	
Observations	938		439		974	
No. of countries	138		61		137	

Note: the dependent variables in the above table are sourced from the Penn World Table 9.1 labor, and capital details, and represent: [1] the number of persons engaged in the labor market (in millions of persons); [2] average number of hours worked per week; and [3] investments in machinery and (non-transport) equipment at current national prices. *** denotes statistically significant at 1%, ** denotes statistically significant at 5%, and * denotes statistically significant at 10%

VII. CONCLUSIONS AND ADDITIONAL RESEARCH

In this paper, we have explored the impact of changes in the rigidity of labor market legislation on income inequality. Although traditional scholarship has focused on the impact of institutional arrangements on a selection of economic outcomes such as unemployment and labor force participation, we show that the rigidity of existing labor market institutions has substantial positive implications for income inequality. Overall, our findings show an evident inverse association between changes in labor market rigidity and widening wage dispersion. As discussed throughout this paper, this increased dispersion can be the result of less efficient allocation of existing employment and the inefficacy of wage, and benefit setting between labor and employer's organization. There are several possible explanations for this including the absence of government intervention in negotiations, or the lack of enforceable legislation for new contractual agreements. However, the availability of such legislation will depend on continuous political contestation between major economic agents present in the country. Additionally, our findings confirm the assumption that stronger legislation is associated with lower numbers of persons actively engaged in the economy. However, the exact predictable outcome from institutional intervention requires additional in-depth analysis in country specific analysis. Finally, our empirical results indicate the existence of a significant substitution effect between labor and capital through which income inequality is augmented. These results help to indicate that a flexibilization of labor relations constitutes an important contributing factor for explaining increasing income inequality. Moving forward in this research, two important factors must be considered.

First, it is paramount to consider that cross-country analysis permits researchers to identify broad trends but prevents them from making decisive conclusions. To this end, we must check the additional hypothesis of incremental economic performance being captured by returns to capital in detriment of returns to labor, while also testing for the persistence of wage stagnations and whether or not they are evenly distributed across percentiles over time. Finally, as more reliable data becomes available, especially considering developing economies, it is important to add them to the model as our research is rather limited to the OECD and developed nations.

Second, it is equally important to recognize that we are only utilizing data for wage earners in this analysis. But as it has been demonstrated by previous works, there exists an increasing trend of wages being substituted by capital (Stiglitz 2012; Piketty 2014). This means that the very top of the pyramid is not reflected in this analysis, potentially provoking an underestimation of our results. On the other hand, by using a cross-country macro panel data, we could be overestimating our firm-level, and country level data considering the mechanics of wage setting. To better comprehend the impact of the changes in labor legislation flexibility, individual datasets are more suited to account for each country's individual intricacies of wage determination in collective bargaining using matching household or labor surveys separately on a case by case study. Since Brazil recently approved an overhaul of its labor market legislation, we should have solid data reflected in the next few household, and firm-level surveys conducted by IBGE (Brazilian Institute for Geography and Economics)¹⁰. It would be interesting to compare pre, and post income data for different jobs in different industries using these surveys for years before, and after 2017 in country-

¹⁰ IBGE (Brazilian Institute for Geography and Economics) conducts annual household surveys, the PNAD, which often serves as measure for wage distributions in the country, as well as the industry surveys which collect firm-level data on thousands of firms throughout the country.

specific analysis. In line with previous works the availability of finer grained and potentially better data would allow us to capture these trends, especially when accounting for unemployment, and the shares of economic growth and wage changes (Freeman 2008). This is one area in which future research can be conducted as to increase the reliability of the model in regards to its outcomes. From a policy perspective, an important take-away from our research is that labor market reforms have substantial redistributive consequences. Thus, policy makers are well advised to take into considerations these distributional concerns and develop strategies to mitigate unwanted side effects of labor market flexibilization, when designing and implementing labor market reforms.

VIII. APPENDICES

Table A1 - Regression Estimates of the LAMRIG Index on Different Measures of GINI Coefficients

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
LAMRIG	-3.6223 ***	-4.97846	-2.86 ***	-2.011 *	-3.505 ***	-2.9576 ***	-3.0329 ***
Lagged DS_Gini	[1.3562]	[3.6531]	[1.0846]	[1.0453]	[1.4179]	[1.0752]	[0.9631]
Lagged WDI_Gini	0.2292						
	[-0.1619]						
Lagged WDI_Gini		-0.0999					
		[0.0590]					
Lagged UN_Gini			0.3972				
			[0.0778]				
Lagged SWIID_Gini				0.5629			
				[0.0581]			
Lagged DS_WDI_Gini					0.1531		
					[0.0732]		
Lagged DS_WDI_UN_Gini						0.3885	
						[0.0773]	
Lagged DS_WDI_UN_SWIID_Gini							0.4468
							[0.0676]
Constant	33.0117	52.9481	30.7497	19.7337	36.6231	31.2039	28.5352
	[6.4379]	[6.0199]	[4.1746]	[2.5334]	[3.8767]	[4.1641]	[3.7700]
Observations	154	184	510	485	308	527	585
No. of Countries	52	81	112	128	102	118	130
Dependent variable:							
Deininger & Squire Ginis (DS_Gini) Dataset (1996)	[1]						
World Development Index Gini (WDI_Gini)		[2]					
United Nations Gini (UN_Gini)			[3]				
Frederick Solt SWIID				[4]			
DS and WDI Ginis Combined					[5]		
DS, WDI, and UN Ginis Combined						[6]	
DS, WDI, UN, and SWIID Combined (Composite Gini)							[7]

Table A2 - Summary of Gini Coefficients

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Albania	-	-	-	-	-	-	-	-	-	28.6	30.4
Algeria	-	-	-	-	-	-	-	36.2	30.7	33.0	35.0
Angola	-	-	-	-	-	-	-	-	-	47.4	57.1
Argentina	-	-	-	36.3	35.4	38.5	40.7	43.6	45.1	48.4	52.0
Armenia	-	-	-	-	-	-	-	26.1	32.1	46.9	41.5
Australia	29.9	27.6	29.1	29.4	26.5	27.1	27.0	31.7	34.1	37.0	34.5
Austria	-	-	-	-	28.0	27.8	31.1	25.4	26.4	26.0	28.4
Azerbaijan	-	-	-	-	-	-	-	-	-	42.3	34.2
Bangladesh	-	-	-	34.2	32.7	38.9	36.8	31.3	32.9	37.7	38.2
Belarus	-	-	-	-	-	-	-	-	28.4	29.7	29.4
Belgium	-	-	-	34.3	43.8	38.1	25.5	23.6	28.3	27.4	30.8
Benin	-	-	-	-	-	-	-	-	-	-	38.6
Bolivia	-	-	-	49.6	-	-	-	52.6	49.8	56.8	58.7
Botswana	-	-	-	-	57.4	52.0	-	52.6	52.3	51.1	56.0
Brazil	-	-	54.2	-	57.5	55.9	57.1	59.3	58.3	59.0	58.2
Bulgaria	-	-	-	19.0	19.8	21.2	24.5	22.3	28.0	34.3	33.9
Burkina Faso	-	-	-	-	-	-	-	-	54.8	51.3	45.9
Burundi	-	-	-	-	-	-	-	-	33.9	38.0	35.4
Cambodia	-	-	-	-	-	-	-	-	38.5	41.0	40.9
Cameroon	-	-	-	-	-	-	49.0	-	-	47.1	41.1
Canada	35.8	32.0	31.5	33.3	32.5	30.7	31.6	31.9	32.4	34.0	36.1
Central African Republic	-	-	-	-	-	-	-	-	55.1	48.4	44.3
Chad	-	-	-	-	-	-	-	-	-	-	38.9
Chile	-	-	46.2	44.6	45.4	50.6	53.5	54.1	54.1	54.8	54.0
China	-	-	30.5	30.8	27.6	23.8	21.5	25.9	29.3	31.9	38.6
Colombia	-	-	57.9	47.0	51.1	52.3	51.0	50.2	54.9	55.9	54.3
Comoros	-	-	-	-	-	-	-	-	-	-	52.9
Congo, Democratic Republic	-	-	-	-	-	-	-	-	-	-	42.2
Costa Rica	-	-	50.6	51.0	43.6	47.0	45.4	42.5	44.4	45.1	47.9
Cote d'Ivoire	-	-	-	-	-	50.0	-	44.7	36.7	41.3	43.8
Croatia	-	-	-	-	-	-	-	25.4	27.9	30.5	29.8
Czech Republic	-	-	-	-	-	-	-	19.6	23.3	26.1	28.2
Denmark	41.3	39.2	38.0	35.4	25.4	34.7	30.9	28.1	31.6	29.5	30.3
Djibouti	-	-	-	-	-	-	-	-	-	37.8	39.2
Dominican Republic	-	-	-	47.4	-	45.0	43.0	48.2	47.7	47.8	51.5
Ecuador	-	-	-	-	65.4	-	-	46.5	51.4	53.2	52.7
Egypt	-	-	-	-	-	35.4	35.5	-	46.2	47.2	49.5
El Salvador	-	-	51.6	49.0	-	44.2	-	41.6	49.1	49.9	49.4
Estonia	-	-	-	-	-	-	-	-	-	36.6	37.0
Ethiopia	-	-	-	-	-	-	-	-	-	34.7	28.4
Finland	41.0	48.0	49.0	37.5	35.6	32.6	31.9	27.7	27.6	29.8	30.9
France	-	-	-	28.0	38.7	30.3	30.1	28.7	28.3	28.6	27.7
Gambia	-	-	-	-	-	-	-	-	62.0	43.3	47.0
Georgia	-	-	-	-	-	-	-	-	34.6	43.2	41.5
Germany	42.3	44.7	39.4	32.4	32.8	31.2	30.1	30.0	27.3	28.5	29.7
Ghana	-	-	-	-	-	-	-	43.3	37.4	37.0	38.1
Greece	-	39.4	43.3	44.6	41.7	-	34.9	34.5	33.9	34.8	34.7
Guatemala	-	-	-	30.0	-	45.2	-	55.7	51.2	51.4	52.9
Guinea	-	-	-	-	-	-	-	-	49.8	36.1	40.6
Guyana	-	-	-	-	-	-	-	-	50.1	43.6	38.8
Haiti	-	-	-	-	-	-	-	53.6	54.4	54.0	57.0

Table A2 - Summary of Gini Coefficients Cont.

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Honduras	-	-	-	53.2	-	-	-	55.8	53.8	54.3	55.4
Hungary	-	-	-	-	-	-	-	-	28.8	27.7	28.7
Iceland	-	-	-	-	-	-	-	-	20.4	21.3	26.4
India	-	-	-	-	31.1	37.1	31.6	32.2	32.2	34.6	41.1
Indonesia	-	-	-	34.3	37.2	38.2	31.9	30.9	31.5	31.5	30.2
Iran	-	-	-	-	-	-	-	-	43.9	42.4	41.5
Ireland	-	-	-	-	35.8	-	37.3	36.8	34.1	33.3	33.1
Israel	26.5	30.8	33.3	38.4	-	33.4	-	36.9	35.3	38.3	38.2
Italy	-	-	-	40.0	39.8	36.6	33.0	32.6	32.5	34.8	35.5
Jamaica	-	-	-	-	65.1	44.5	65.5	45.0	47.4	51.4	54.5
Japan	31.0	33.5	36.6	36.1	35.0	33.8	29.6	30.9	30.4	32.2	34.7
Jordan	-	-	-	-	37.6	-	34.9	36.0	41.2	37.7	39.4
Kazakhstan	-	-	-	-	-	-	25.7	26.9	30.0	37.4	34.2
Kenya	-	-	59.9	61.2	69.5	59.5	54.6	-	50.0	51.2	44.7
Korea, North	-	-	-	32.9	35.3	38.9	36.5	32.9	33.7	34.0	31.6
Kyrgyzstan	-	-	-	-	-	-	24.3	27.3	42.2	42.8	39.1
Latvia	-	-	-	-	-	-	24.8	24.4	28.1	33.0	34.8
Lebanon	-	-	52.7	-	-	-	-	-	-	41.5	39.7
Lesotho	-	-	-	-	-	-	-	58.5	57.9	62.2	51.9
Lithuania	-	-	-	-	-	-	24.4	24.0	33.1	34.1	35.2
Luxembourg	-	-	-	-	-	-	-	24.9	23.7	26.7	28.6
Macedonia	-	-	-	-	-	-	-	-	26.7	31.3	33.0
Madagascar	-	-	-	-	-	-	47.9	-	47.6	38.9	43.6
Malawi	-	-	57.2	49.6	49.9	52.0	50.0	50.9	53.0	50.2	41.7
Netherlands	43.7	-	43.3	44.3	44.7	45.1	42.8	41.3	41.0	41.2	41.0
Mali	-	-	-	-	-	-	-	36.5	47.1	40.1	38.7
Mauritania	-	-	-	-	-	-	-	56.3	46.9	34.1	38.0
Mauritius	-	-	-	-	-	41.9	45.7	39.8	37.7	38.4	37.3
Mexico	-	-	-	56.5	51.9	52.1	45.3	50.0	51.2	51.0	50.0
Moldova	-	-	-	-	-	-	22.9	24.6	35.1	41.9	39.1
Mongolia	-	-	-	-	-	-	-	-	-	30.8	33.1
Morocco	-	-	-	53.0	54.5	59.0	45.8	37.3	37.0	37.9	39.5
Mozambique	-	-	-	-	-	-	-	-	-	40.9	42.6
Namibia	-	-	-	-	-	-	-	-	69.3	63.9	63.6
Nepal	-	-	-	-	-	-	-	-	-	41.2	44.1
Netherlands	-	-	-	40.2	32.1	25.9	27.0	29.2	30.3	29.5	29.6
New Zealand	66.6	60.3	59.3	47.8	47.1	42.0	33.6	32.9	36.2	35.5	37.4
Nicaragua	-	-	-	-	-	-	-	-	54.5	53.2	53.0
Niger	-	-	-	-	-	-	-	-	38.9	45.8	42.1
Nigeria	-	-	-	-	57.9	39.3	38.7	40.6	45.4	48.6	42.8
Norway	-	40.0	37.1	30.2	30.6	32.8	34.2	31.0	31.4	30.2	31.5

Table A2 - Summary of Gini Coefficients Cont.

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Pakistan	-	-	-	-	32.5	34.3	-	33.9	32.7	31.1	31.0
Panama	-	-	43.0	46.9	46.6	47.0	47.5	52.8	53.0	54.6	54.6
Papua New Guinea	-	-	-	-	-	-	-	-	-	47.8	49.8
Paraguay	-	-	-	-	-	-	45.1	-	44.1	53.8	53.9
Peru	-	-	59.5	44.7	54.1	-	57.0	46.2	46.9	50.8	50.5
Philippines	-	-	48.0	48.8	47.3	45.3	-	42.3	44.3	45.2	44.8
Poland	-	-	26.8	26.0	23.4	24.8	22.7	24.4	27.7	31.9	36.0
Portugal	-	-	-	20.7	31.9	-	35.3	30.1	33.7	36.4	38.8
Romania	-	-	-	-	-	-	-	22.1	25.5	31.1	33.7
Russia	-	-	-	-	-	-	25.1	25.3	39.6	41.4	42.5
Rwanda	-	-	-	-	-	-	28.9	25.4	-	43.5	47.9
Senegal	-	-	55.7	-	49.5	-	-	-	45.1	40.5	38.1
Seychelles	-	-	-	-	-	46.0	47.0	-	-	42.8	43.1
Sierra Leone	-	-	-	55.7	-	49.0	-	62.9	57.3	50.4	43.0
Singapore	-	-	-	47.8	42.9	40.8	-	42.5	43.6	45.9	42.6
Slovakia	-	-	-	-	-	-	-	19.6	21.1	24.1	29.1
Slovenia	-	-	-	-	-	-	-	21.3	26.1	26.5	26.9
South Africa	-	-	-	-	51.0	47.0	-	46.0	57.7	57.9	57.1
Spain	-	-	-	36.7	34.7	-	32.3	27.2	33.1	31.3	32.8
Sri Lanka	-	-	-	-	35.7	44.0	41.9	36.7	36.1	38.1	40.7
Suriname	-	-	-	-	-	-	-	-	-	60.4	51.2
Swaziland	-	-	-	-	63.7	-	-	-	60.5	54.2	49.1
Sweden	51.6	54.4	48.3	46.0	43.9	27.0	26.5	27.1	27.0	26.5	28.9
Switzerland	-	-	-	-	-	31.2	34.1	-	31.3	29.1	29.4
Syria	-	-	-	-	-	-	-	-	-	32.4	35.1
Taiwan	-	-	-	-	-	-	-	29.0	30.8	31.1	33.2
Tanzania	-	-	47.6	51.7	-	52.0	52.0	-	42.3	34.7	35.5
Thailand	-	-	-	43.5	43.8	42.3	43.7	46.4	47.3	46.1	42.1
Trinidad and Tobago	-	-	-	48.7	50.0	-	41.7	40.8	43.7	40.0	41.0
Tunisia	-	-	-	49.0	49.3	-	40.3	39.3	39.1	40.1	37.7
Turkey	-	-	52.3	56.5	-	47.8	49.6	43.7	45.1	42.7	42.7
Uganda	-	-	-	-	-	-	-	38.9	40.6	38.9	43.6
Ukraine	-	-	-	24.6	25.0	24.2	29.1	24.9	26.7	39.3	37.0
United Kingdom	40.0	37.5	32.2	30.2	30.2	27.5	25.9	33.4	36.8	34.4	38.1
United States	42.3	41.8	42.3	41.0	41.1	40.7	40.2	39.3	39.1	40.8	41.2
Uruguay	-	-	38.7	43.2	-	42.8	41.3	40.7	42.1	42.7	45.3
Uzbekistan	-	-	-	-	-	-	-	-	-	36.6	37.9
Venezuela	-	-	-	-	55.0	43.3	41.9	42.3	44.1	48.4	46.4
Vietnam	-	-	-	-	-	-	-	-	34.6	35.6	36.9
Yemen	-	-	-	-	-	-	-	-	37.7	33.7	35.6
Zambia	-	-	-	-	59.4	55.3	-	-	59.1	54.7	49.9
Zimbabwe	-	-	-	63.8	-	-	-	-	50.1	55.9	50.6

Table A3 - Summary of Country LAMRIG

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Albania	-	-	-	-	-	-	-	-	-	1.40	1.50
Algeria	-	-	-	-	-	-	-	1.05	0.75	0.75	0.75
Angola	-	-	-	-	-	-	-	-	-	2.40	2.45
Argentina	-	-	-	1.50	1.50	1.55	1.65	1.75	1.65	1.55	1.45
Armenia	-	-	-	-	-	-	-	1.94	1.94	1.88	1.50
Australia	-	-	-	-	-	0.35	0.39	0.54	0.84	1.05	1.05
Austria	-	-	-	-	0.80	1.20	1.25	1.37	1.54	1.52	1.48
Azerbaijan	-	-	-	-	-	-	-	-	-	1.72	1.72
Bangladesh	-	-	-	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Belarus	-	-	-	-	-	-	-	-	2.47	2.47	2.47
Belgium	-	-	-	0.41	0.46	1.31	1.44	1.47	1.39	1.54	1.77
Benin	-	-	-	-	-	-	-	-	-	1.82	1.85
Bolivia	-	-	-	2.20	-	-	-	1.85	1.77	1.30	1.98
Botswana	-	-	-	-	0.90	0.90	-	1.00	1.30	2.40	0.88
Brazil	-	-	2.34	-	2.34	2.34	2.29	2.37	2.45	1.74	2.25
Bulgaria	-	-	-	1.48	1.48	1.48	1.48	1.53	1.71	1.65	1.74
Burkina Faso	-	-	-	-	-	-	-	-	1.50	1.76	1.65
Burundi	-	-	-	-	-	-	-	-	1.76	1.49	1.92
Cambodia	-	-	-	-	-	-	-	-	1.49	1.89	1.37
Cameroon	-	-	-	-	-	-	1.89	-	-	0.78	1.89
Canada	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.78	0.78	1.76	0.78
Central African Republic	-	-	-	-	-	-	-	-	1.76	1.56	1.76
Chad	-	-	-	-	-	-	-	-	-	-	1.83
Chile	-	-	0.77	1.39	1.39	0.99	0.80	1.07	1.50	1.62	1.38
China	-	-	2.50	2.50	2.50	2.30	2.30	2.10	1.90	1.99	1.42
Colombia	-	-	1.85	2.00	2.00	2.00	2.00	2.36	1.99	2.10	1.70
Comoros	-	-	-	-	-	-	-	-	-	-	2.30
Congo, Democratic Republ	-	-	-	-	-	-	-	-	-	-	1.90
Costa Rica	-	-	2.20	2.20	2.10	2.10	2.10	2.10	2.14	1.53	2.24
Cote d'Ivoire	-	-	-	-	-	1.53	2.47	1.53	1.53	2.12	1.53
Croatia	-	-	-	-	-	-	-	1.95	2.05	1.31	2.12
Czech Republic	-	-	-	-	-	-	-	2.00	2.00	1.72	1.26
Denmark	0.75	0.75	0.86	0.79	1.07	1.74	1.40	2.53	1.72	1.70	1.72
Djibouti	-	-	-	-	-	-	-	-	-	1.50	1.70
Dominican Republic	-	-	-	1.30	-	1.35	-	1.40	1.53	1.86	1.50
Ecuador	-	-	-	-	2.00	-	-	2.10	1.89	1.78	1.98
Egypt	-	-	-	-	-	1.70	1.78	-	1.78	1.76	1.48
El Salvador	-	-	1.75	1.75	-	1.60	1.90	1.60	1.76	2.40	1.78
Estonia	-	-	-	-	-	-	-	-	-	1.53	2.40
Ethiopia	-	-	-	-	-	-	-	-	-	2.21	1.10
Finland	0.00	0.00	0.10	0.21	0.96	1.33	-	2.10	2.21	2.23	2.21
France	-	-	-	0.62	0.97	1.45	1.94	1.86	2.23	1.29	2.23
Gambia	-	-	-	-	-	-	-	-	1.29	1.80	1.29
Georgia	-	-	-	-	-	-	-	-	1.72	2.10	1.80
Germany	0.92	1.11	1.11	1.15	2.03	2.68	2.68	2.63	2.40	1.13	1.94
Ghana	-	-	-	-	-	-	-	1.10	1.13	1.56	1.13
Greece	-	0.70	0.70	0.70	0.70	-	1.02	1.53	1.56	1.44	1.56
Guatemala	-	-	-	1.36	-	1.36	-	1.36	1.44	1.60	1.34
Guinea	-	-	-	-	-	-	-	-	1.60	1.31	1.45
Guyana	-	-	-	-	-	-	-	-	1.20	1.17	1.31

Table A3 - Summary of Country LAMRIG Cont.

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Haiti	-	-	-	-	-	-	-	1.17	1.17	1.00	1.17
Honduras	-	-	-	0.94	-	-	-	1.00	1.00	1.74	1.04
Hungary	-	-	-	-	-	-	-	-	1.74	2.00	1.50
Iceland	-	-	-	-	-	-	-	-	2.00	1.30	2.00
India	-	-	-	-	1.23	1.25	1.30	1.30	1.30	1.75	1.53
Indonesia	-	-	-	1.50	1.50	1.50	1.50	1.50	1.50	1.94	1.58
Iran	-	-	-	-	-	-	-	-	1.94	1.03	1.94
Ireland	-	-	-	-	0.49	-	0.95	0.95	0.93	1.28	0.90
Israel	0.85	0.99	1.05	1.10	-	1.10	-	1.15	1.28	1.95	1.40
Italy	-	-	-	1.52	1.63	2.02	2.02	2.07	2.07	1.16	1.85
Jamaica	-	-	-	-	1.05	1.10	1.10	1.16	1.16	0.49	1.16
Japan	0.45	0.45	0.45	0.53	0.55	0.55	0.55	0.61	0.55	1.46	0.46
Jordan	-	-	-	-	1.70	1.10	1.70	1.70	1.70	2.07	1.52
Kazakhstan	-	-	-	-	-	-	2.06	2.06	2.06	1.21	2.10
Kenya	-	-	0.95	0.95	1.10	1.44	1.18	1.55	1.21	1.36	1.32
Korea, North	-	-	-	1.44	1.44	-	1.44	-	1.60	2.01	1.19
Kyrgyzstan	-	-	-	-	-	-	2.06	2.06	1.71	1.77	2.04
Latvia	-	-	-	-	-	-	2.06	2.06	1.98	1.20	1.39
Lebanon	-	-	1.15	-	-	-	-	-	-	1.29	1.25
Lesotho	-	-	-	-	-	-	-	1.27	1.29	1.81	1.29
Lithuania	-	-	-	-	-	-	2.06	2.06	1.81	2.00	1.70
Luxembourg	-	-	-	-	-	-	-	2.00	2.00	1.65	2.00
Macedonia	-	-	-	-	-	-	-	-	1.65	2.01	1.65
Madagascar	-	-	-	-	-	-	1.95	-	1.95	1.72	2.01
Malawi	-	-	1.70	1.72	1.72	1.72	1.72	1.72	1.72	0.87	1.81
Malaysia	-	-	-	0.80	0.80	0.80	0.87	0.80	0.80	1.72	0.87
Mali	-	-	-	-	-	-	-	1.50	1.65	1.82	1.72
Mauritania	-	-	-	-	-	-	-	1.82	1.82	1.19	1.82
Mauritius	-	-	-	-	-	1.08	1.15	1.19	1.19	2.01	1.24
Mexico	-	-	-	2.01	2.01	2.01	2.01	2.01	2.01	1.90	2.01
Moldova	-	-	-	-	-	-	1.90	1.90	1.90	1.38	1.76
Mongolia	-	-	-	-	-	-	-	-	-	1.28	1.41
Morocco	-	-	-	1.15	1.19	1.21	1.28	1.28	1.28	2.23	1.37
Mozambique	-	-	-	-	-	-	-	-	-	1.06	2.25
Namibia	-	-	-	-	-	-	-	-	1.06	1.90	1.06
Nepal	-	-	-	-	-	-	-	-	-	2.18	1.90
Netherlands	0.86	0.14	1.23	1.62	1.72	1.99	2.26	2.29	2.00	0.48	2.29
New Zealand	0.14	1.22	0.14	0.14	0.28	0.48	0.48	0.48	0.48	0.72	0.50
Nicaragua	-	-	-	-	-	-	-	-	0.75	1.71	1.00
Niger	-	-	-	-	-	-	-	-	1.56	1.35	1.71
Nigeria	-	-	-	-	1.10	1.10	1.10	1.10	1.10	2.06	1.35
Norway	-	-	1.22	1.60	2.13	2.13	2.13	2.13	2.10	1.17	2.06

Table A3 - Summary of Country LAMRIG Cont.

	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
Pakistan	-	-	-	-	1.00	1.17	-	1.17	1.17	2.38	1.10
Panama	-	-	2.40	2.40	2.44	2.44	2.50	2.59	2.49	1.01	2.38
Papua New Guinea	-	-	-	-	-	-	-	-	-	1.71	1.01
Paraguay	-	-	-	-	-	-	1.50	-	1.71	1.67	1.71
Peru	-	-	1.60	1.80	1.95	-	1.81	1.78	1.60	1.61	1.67
Philippines	-	-	1.40	1.40	1.60	1.60	-	1.69	1.69	2.32	1.61
Poland	-	-	2.50	2.50	2.50	2.50	2.50	2.50	2.32	2.43	2.10
Portugal	-	-	-	0.31	1.28	-	2.30	2.39	2.49	1.76	2.43
Romania	-	-	-	-	-	-	-	1.48	1.64	2.21	1.86
Russia	-	-	-	-	-	-	2.05	2.06	2.12	1.76	2.41
Rwanda	-	-	-	-	-	-	1.76	1.76	1.76	1.66	1.80
Senegal	-	-	1.41	-	1.41	-	-	-	1.66	1.40	1.67
Seychelles	-	-	-	-	-	1.20	1.20	-	-	1.81	1.40
Sierra Leone	-	-	-	1.81	-	1.81	-	1.81	1.81	0.85	1.81
Singapore	-	-	-	0.75	0.85	0.85	0.85	0.85	0.85	2.02	0.89
Slovakia	-	-	-	-	-	-	-	2.06	1.86	2.00	2.27
Slovenia	-	-	-	-	-	-	-	1.80	1.80	1.24	2.08
South Africa	-	-	-	-	0.84	0.84	1.01	1.01	1.01	2.23	1.24
Spain	-	-	-	2.27	2.22	-	3.50	3.03	2.98	1.60	2.18
Sri Lanka	-	-	-	-	1.50	1.50	1.60	1.60	1.60	0.85	1.64
Suriname	-	-	-	-	-	-	-	-	-	1.00	0.85
Swaziland	-	-	-	-	0.80	-	-	-	0.90	2.22	1.00
Sweden	1.11	1.11	1.11	1.11	1.51	2.71	2.77	2.80	2.61	1.36	2.15
Switzerland	-	-	-	-	-	0.45	0.45	-	1.07	1.45	1.36
Syria	-	-	-	-	-	-	-	-	-	1.75	1.47
Taiwan	-	-	-	-	-	-	-	1.75	1.75	1.68	1.85
Tanzania	-	-	1.10	1.35	-	1.50	1.50	-	1.50	1.78	1.70
Thailand	-	-	-	1.53	1.60	1.74	1.74	1.74	1.74	0.58	1.78
Trinidad and Tobago	-	-	-	0.55	0.58	0.58	0.58	0.58	0.58	1.68	0.58
Tunisia	-	-	-	1.60	1.85	1.85	1.85	1.85	1.80	1.74	1.68
Turkey	-	-	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.71	1.68
Uganda	-	-	-	-	1.50	-	-	1.71	1.71	2.24	1.71
Ukraine	-	-	-	1.92	1.92	2.06	2.06	2.06	2.18	0.85	2.28
United Kingdom	0.06	0.06	0.06	0.32	0.40	0.98	0.90	0.83	0.83	0.65	0.90
United States	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.22	0.65	1.27	0.65
Uruguay	-	-	1.20	1.20	-	1.00	1.00	1.27	1.27	1.55	1.27
Uzbekistan	-	-	-	-	-	-	-	-	-	2.32	1.56
Venezuela	-	-	-	-	2.45	2.45	2.45	2.45	2.45	1.83	2.32
Vietnam	-	-	-	-	-	-	-	-	1.56	1.52	1.86
Yemen	-	-	-	-	-	-	-	-	1.52	1.15	1.52
Zambia	-	-	-	-	1.05	1.05	-	-	1.30	0.87	1.25
Zimbabwe	-	-	-	0.66	-	-	-	-	0.83	-	0.87

Table A4 - Regression Results of the LAMRIG on Selected Labor Institution Variables

	Government participation in wage bargaining		Firm level bargaining		Agreements with crisis-related clauses		Exceptionality of mandatory extension of collective bargaining agreements		Mandatory extension of collective bargaining agreements used in many industries	
LAMRIG	0.1421	*	-0.1524	**	-0.1016	**	-0.1097	**	0.1182	***
	[0.0826]		[0.0737]		[0.0507]		[0.0551]		[0.0499]	
Constant	-0.0383		0.3814	***	0.0864	***	0.3148	***	-0.0611	
	[0.0890]		[0.0501]		[0.0319]		[0.0433]		[0.0733]	
No. of Observations	299		298		206		259		259	
Countries	43		46		32		45		45	

Table A4 - Regression Results of the LAMRIG on Selected Labor Institution Variables Cont.

	Social pacts which do not include tax-based income policy, regulatory or reforms, or are unknown		No social pact		Social pacts about wages		Existing Triparty Council		Voluntary work councils (or no legal sanctions)	
LAMRIG	0.0937	**	-0.0771	*	0.0773	*	-0.1218	*	-0.2612	***
	[0.0451]		[0.0437]		[0.0436]		[0.0660]		[0.0988]	
Constant	0.0004		1.028	***	-0.0442		0.3339	***	0.6469	***
	[0.0424]		[0.0391]		[0.0393]		[0.0455]		[0.1096]	
No. of Observations	246		246		244		282		229	
Countries	36		36		36		41		35	

Table A4 - Regression Results of the LAMRIG on Selected Labor Institution Variables Cont.

	Work councils participation in wage negotiations		Strong existent sector- employment relations institutions		Confederal power over strikes by affiliates		Restrictions over collective bargaining for government employees		Restrictions over strikes for government employees	
LAMRIG	-0.1796	***	-0.2128	**	0.1711	***	0.3043	**	0.2748	*
	[0.0946]		[0.1091]		[0.0907]		[0.1328]		[0.1437]	
Constant	0.5602	***	0.5472	***	0.0694	*	0.8619	***	0.6345	***
	[0.2232]		[0.0937]		[0.0912]		[0.1813]		[0.1914]	
No. of Observations	231		234		283		366		367	
Countries	35		34		42		46		46	

Table A5 - Composition of Income According to Quintiles in the United State, 2013

	Quintiles				
	1st	2nd	3rd	4th	5th
Asset classes					
Housing and cars	-180.6	280.2	140.9	83.6	23.4
Business and non-financial	-15.3	10.6	12.1	13.4	36.1
Financial assets	-23.8	48.6	36.5	41.5	48.5
Collateralized debt	301.5	-227.8	-86.2	-36.9	-7.6
Uncollateralized debt	18.2	-11.6	-3.2	-1.5	-0.3
Shares of Total Sample (%)					
earnings	7.6	10.1	13.8	17.7	50.7
income	7.4	9.2	12.8	17.3	53.3
wealth	-0.7	0.6	3.2	9.8	87
Shares of Total Sample (%)					
Housing and cars	3.4	5	12.6	22.7	56.4
Business and non-financial	0.3	0.2	1.2	3.9	94.4
Financial assets	0.3	0.7	2.5	8.5	88.1
Collateralized debt	12.3	8.9	16.8	21.9	40.1
Uncollateralized debt	17	10.4	14.3	20	38.2
Income Sources (%)					
labor	73.2	78.3	77.2	70.8	52
capital	0.1	0.1	0.5	1.6	14.4
business	3	3.4	3.1	5.5	20.8
transfer	17.6	15.4	17.6	19.9	11
other	6.1	2.8	1.5	2.3	1.8
Age (%)					
Under-31	28	24.9	9.9	3.9	1.1
31-45	31.9	34.4	27.8	21.3	15.8
46-65	30.2	29	39.5	41.2	51.1
over-65	9.9	11.6	22.8	33.6	31.9
average	42.9	43.9	52.3	57.6	59
Education (%)					
Dropouts	16.1	16.3	11.4	9.2	1.9
High-school	33.6	38.4	37.4	31.6	15.4
Some-college	23.3	21.7	18.5	18.2	12.9
College	26.9	23.6	32.7	41	69.7
Employment Status (%)					
Workers	58.7	65.9	59.9	53.3	46.7
Self-employed	5.4	5.8	6.3	8.8	22
Retired	10.2	11.7	22.7	32	27.3
Nonworkers	25.7	16.6	11.1	5.8	3.9
Marital Status (%)					
Married	36.7	50.9	54.9	66.1	77.2
Single-wdep	31.7	24.6	16.7	8.5	6
Single-wo-dep	31.6	24.6	28.4	25.4	16.8
Family-size	2.51	2.77	2.56	2.49	2.55
Marital Status Excluding Retired Widows					
Single-wdep	31	23.2	14.8	6.9	5.3
Single-wo-dep	28.9	21.1	22.6	18.2	12.5

Notes: Table provided by Moritz Kuhn and Jose-Victor Rios-Rull (2013) "2013 Update on the U.S. Earnings, Income, and Wealth Distributional Facts: A View from Macroeconomics" Federal Reserve Bank of Minneapolis Quarterly Review Vol. 37 No. 1 ISSN 0271-5287. Income sources include labor income (wages and salaries), capital or financial income, business income (from proprietorships), and transfer income (such as unemployment benefits). Household net wealth results from subtracting households' liabilities (mortgages, car loans, credit card debt, etc.) from assets (not only financial assets, but also business assets, and crucially, housing).

IX. BIBLIOGRAPHY

- Amaral, Pedro (2017) “Monetary Policy and Inequality” Federal Reserve Bank of Cleveland Economic Commentary No. 2017-01 January 10, 2017 available at <<https://www.clevelandfed.org/newsroom-and-events/publications/economic-commentary/2017-economic-commentaries/ec-201701-monetary-policy-and-inequality.aspx#D4>>
- Arbache, Jorge “Does Trade Liberalization Always Decrease Union Bargaining Power?” SSRN Electronic Journal · September 2004
- Arbache, Jorge and Galrao Carneiro, Francisco. “Unions and Interindustry Wage Differentials” World Development · February 1999.
- Auclert, A., 2016. “Monetary Policy and the Redistribution Channel,” unpublished manuscript, Stanford University.
- Barros, R. & and Corseuil, C. (2004). “The impact of regulations on Brazilian labor market performance”, in Heckman, James J., and Carmen Pages, eds. Law and employment: Lessons from Latin America and the Caribbean. New York: University of Chicago Press, 273-350.
- Bertola, G. (2009) Labor market regulation: Motives, measures, effects, Conditions of Work and Employment Series No.21, Geneva: International Labor Office, 2009.
- Bertola, G.(1999). “Microeconomic perspectives on aggregate labor markets”, in Handbook of Labor Economics, v 3, O. Ashenfelter and D. Card, eds, Elsevier Science, 2985-3027.
- Botero, J., S. Djankov, R. La Porta, F. Lopez-de-Silanes & A. Shleifer (2004). “The regulation of labor,” Quarterly Journal of Economics 119: 1339-1382.
- Bruno, Michael and Sachs, Jeffrey D. (1985) “Economics of Worldwide Stagflation” Basil Blackwell 1985
- Cook, Maria L. (2007) “The Politics of Labor Reform in Latin America: Between Flexibility and Rights” The Pennsylvania State University Press 2007
- Djankov, S. & Ramalho, R. (2009). “Employment laws in developing countries,” Journal of Comparative Economics 37(1), 3-13.
- Djankov, S., R. La Porta, F. Lopez-de-Silanes & A. Shleifer (2004), “The regulation of labor,” Cambridge MA: NBER Working Paper 9756.
- Doepke, M., and M. Schneider, 2006. “Inflation and the Redistribution of Wealth,” Journal of Political Economy, 114(6):1069–97.
- Erosa, A., and G. Ventura, 2002. “On Inflation as a Regressive Consumption Tax,” Journal of Monetary Economics, 49(4):761–795.

Forteza, A. & Rama M. (2006). "Labor market "rigidity" and the success of economic reforms across More than 100 Countries," *Journal of Policy Reform* 9 (1) 75-106.

Freeman, R. (2008). "Labor market institutions around the world." London, LSE CEP Discussion Paper No 844.

Freeman, R. (2010), "Labor regulations, unions, and social protection in developing countries: Market distortion or efficient institutions," in D. Rodrik & M . Rosenzweig (eds) *Handbook of Development Economics Volume 5* (Elsevier): 4657-4702.

Frossard Barbosa, Gabriel (2016) "The Impact of Labor Unions on Inequality in Brazil" Working Paper Georgetown University

Goldberg, P. & N. Pavcnik (2007). "Distributional effects of globalization in developing countries," *Journal of Economic Literature*, XLV (2): 39–82

Gosling, Amanda and Lemieux, Thomas (2004) "Labor Market Reforms and Changes in Wage Inequality in the United Kingdom and the United States" *Seeking a Premier Economy: The Economic Effects of British Economic Reforms, 1980-2000*, Card, Blundell, and Freeman. 2004

Grossman, Gene M. Grossman, and Helpman, Elhanan "Protection for Sale" *The American Economic Review*, Vol. 84, No. 4. (Sep., 1994), pp. 833-850.

Helpman, E. & O. Itskhoki (2010). "Labor market rigidities, trade and unemployment," *Review of Economic Studies*, 77(3):1100–1137.

Henisz, W. (2000). "The institutional environment for multinational investment", *Journal of Law Economics and Organization*, 16 (2), 334-364.

Holmlund, Bertil and Zetterberg, Johnny (1991) 'Insider Effects in Wage Determination: Evidence from Five Countries', *European Economic Review*, July 1991

Saavedra, Jaime and Torero, Máximo "Union Density Changes and Union Effects on Firm Performance in Peru" included in "What Difference Do Unions Make? Their Impact on Productivity and Wages in Latin America" 2005 Inter-American Development Bank 1300 New York Avenue, N.W. Washington, DC 20577 pp. 33-76

Johnson, George E. (1975) *Economic Analysis of Trade Unionism*. *The American Economic Review*. Vol. 65, No.2 pp. 23-28

Kim, Hyeon-Kyeong and Skott, Peter, "Labor Market Reform and Wage Inequality in Korea" (2014). *Economics Department Working Paper Series*. 198. Retrieved from https://scholarworks.umass.edu/econ_workingpaper/198

Kucera, D. (2002). "Core labour standards and foreign direct investment" *International Labour Review* 141 (1-2), 31-69. Ladjevardi, H. (1985). *Labor unions and autocracy in Iran*. Syracuse: Syracuse University Press.

Kuhn, Peter Kuhn Márquez, Gustavo Editors. "What Difference Do Unions Make? Their Impact on Productivity and Wages in Latin America" *Inter-American Development Bank Washington*, D.C. 2005

Kuhn, Moritz and Rios-Rull, Jose-Victor (2013) "2013 Update on the U.S. Earnings, Income, and Wealth Distributional Facts: A View from Macroeconomics" *Federal Reserve Bank of Minneapolis Quarterly Review* Vol. 37 No. 1 ISSN 0271-5287

NATLEX (2012). *International Labour Organization*, www.natlex.ilo.org

Nickell, S. (1997). "Unemployment and labor market rigidities: Europe versus North America" *Journal of Economic Perspectives* 11, 55-74.

Nickell, S., L. Nunziata, W. Ochel & G. Quintini (2003). "The Beveridge curve, unemployment and wages in the OECD from the 1960s to the 1990s" in P. Aghion, R. Frydman, J. Stiglitz & M. Woodford, eds. *Knowledge, Information and Expectations in Modern Macroeconomics: In Honor of Edmund S. Phelps*. Princeton: Princeton University Press.

OECD (2004). *OECD Employment Outlook 2004*. Paris: OECD.

OECD Jobs Study, Evidence and Explanations, Part II: The Adjustment Potential of the Labor Market. Paris: OECD.

Oostendorp, Remco H. (2012) "The Occupational Wages around the World (OWW) Database: Piketty, T., and Goldhammer, A. (2014). "Capital in the twenty-first century." Cambridge Massachusetts: The Belknap Press of Harvard University Press. Quarterly 97. SWIID Version 5.1, July 2016.

Pamungkas, Putra Rugemintwari, Putra Tarazi, Amiine and Trinugroho, Irwan (2016) *Bank Lending and Income Inequality: Evidence from Indonesia*. 2016.

Saif, I. & El-Rayyes, T. (2010). "Labour markets performance and migration flows in Jordan", in *European Commission, Labor markets performance and migration flows in Arab Mediterranean countries: Determinants and effects*, Vol. 3, 119-155.

Schultz, T. Paul (1999) "Labor Market Reforms: Issues, Evidence, and Prospects" *Center Discussion Paper No. 802 Yale University*

Sicat, G. (2004). "Reforming the Philippine labor market," *The Philippine Review of Economics*. Volume XLI, No 2, pp. 1-36.

Solt, Frederick. 2016. "The Standardized World Income Inequality Database." *Social Science*

Stiglitz, J. E. (2012). “The price of inequality: How today's divided society endangers our future.” New York: W.W. Norton & Co.

Teorell, Jan, Stefan Dahlberg, Sören Holmberg, Bo Rothstein, Anna Khomenko & Richard Svensson. 2017. “The Quality of Government Standard Dataset, version Jan17”. University of Gothenburg: The Quality of Government Institute, <http://www.qog.pol.gu.se>
doi:10.18157/QoGStdJan17 Update for 1983-2008” VU University Amsterdam Tinbergen Institute Amsterdam Institute for International Development

Visser, Jelle (2015) “Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2014 (ICTWSS) Version 5.0” University of Amsterdam

Wacziarg, R. & Welch, K. (2008). “Trade liberalization and growth: New evidence.” World Bank Economic Review, 22 (2): 187-231.

World Bank (1990) “World Development Report 1990”. New York: Oxford University Press.

World Bank (2004). “Doing business in 2004: Understanding regulation”. Washington, D.C.: Oxford University Press.

World Bank (2006). “Doing business 2007: How to reform.” Washington, D.C.: Oxford University Press.
