
Labor Market Regulations: What do we know about their Impacts in Developing Countries?

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Labor market regulation is a high-profile, and often contentious, area of public policy. Although these regulations have been studied most extensively in developed countries, there is a growing body of literature on their effects in developing countries. This paper reviews that literature and focuses on the impacts of two important types of labor market regulation, minimum wages and employment protection legislation (EPL), on employment, earnings, and productivity. Strong and opposing views exist regarding the costs and benefits of these regulations, but the results of this review suggest that their impacts are generally smaller than the heat of the debates would suggest. Efficiency effects are found sometimes, but not always, and the effects can be in either direction and are usually modest. The distributional impacts of both minimum wage and employment protection legislation are clearer, with two effects predominating: an equalizing effect among covered workers, but with groups such as youth, women, and the less skilled disproportionately outside the coverage and its benefits. Although the overall conclusion is one of modest effects in most cases, the policy implication is not that these regulations do not matter. On the one hand, both minimum wages and EPL can affect distributional objectives. On the other hand, these regulations can generate undesirable economic or social impacts if they are established or operate in ways that exacerbate the labor market imperfections that they were designed to address. JEL codes: J08, J38, J58, J88

Labor market regulation is a contentious area of public policy debate in many developing countries. To inform this debate, this paper reviews the evidence on the impacts of two important types of labor market regulation: minimum wages and employment protection legislation (EPL). This paper aims to make two contributions to

the existing literature. First, particular attention is paid to research findings in the context of developing countries; less is known about these countries than is known about developed countries. Second, this review attempts to bridge two segmented bodies of literature, one based on competitive labor market models and the other based on the role of institutions, that have dominated research and policy debate in this field.

Labor market regulations determine *inter alia* what types of employment contracts are permissible, set boundaries for wages and benefits, hours, and working conditions, proscribe certain employment practices, and can provide social protection for workers. The rationale for these regulations can be attributed to various labor market imperfections: imperfect information, uneven market power (between employers and workers), discrimination, and inadequacies of the market to provide insurance for employment-related risks. Societies almost always introduce labor market regulations to protect workers or to redistribute income to them. However, there may be efficiency considerations because institutions can affect the functioning of the labor market and the productivity of firms.

Regulations constitute an important part of the institutional framework around the labor market, which can also include rules for trade unions and collective bargaining, unemployment insurance, active labor market programs, and equity legislation. In the three decades following World War II, a “modern” institutional framework was completed in developed countries, although approaches differed significantly, especially between Anglo-Saxon countries and continental Europe. Developing countries introduced similar institutions that were often patterned after their colonizers’ laws and traditions (Botero et al. 2004). By the 1980s, debates over labor market regulations and other institutions began to intensify as employment performance began to diverge across developed countries. In particular, the strong record of job creation and low unemployment in the United States relative to much of Europe raised questions about whether Europe’s more stringent labor regulations, more powerful unions, more extensive collective bargaining, and more generous unemployment insurance regimes might be contributing factors.

Since then, accelerating globalization and technological change have exposed countries at all stages of development to greater competition and more structural change and have raised the stakes for identifying the optimal institutional framework for the labor market (Hayter 2011). Throughout this period, the body of empirical evidence on the impacts of labor market institutions has continued to grow. Research in the 1990s, which was largely based on cross-country regressions in the developed world, typically found that strong protective legislation and generous unemployment insurance slowed job growth and increased unemployment. These conclusions motivated the influential OECD (1994) Jobs Study, which took a largely deregulation stance, recommending flexible rules for protecting employment and setting wages and hours as well as unemployment and welfare systems that

minimized work disincentives. A parallel body of evidence did not yet exist for developing countries, but the dominant policy message was similar: although institutions might be introduced with good intentions and theoretically had a role in addressing market failures, in practice, they often had unintended negative consequences in terms of both efficiency and equity (World Bank 1990, 1995).

This is not the end of the story, however. As methods have improved and as better data have become available since the mid-1990s, the impacts of many labor market regulations and institutions seem to have become less—not more—clear. Indeed, in its assessment of labor market developments since the Job Strategy, the OECD (2006) was more equivocal about almost all of its recommendations than it had been 12 years earlier. Moreover, in the wake of the global recession, the stubbornly high unemployment rates in the U.S. and other less-regulated countries weakened the *prima facie* case for deregulation and less intervention in the labor market. The case for a “single peak” of superior labor market performance (e.g., deregulation, “light” institutions) has been supplanted by arguments for “dual” or even “multiple” peaks, where comparable levels of performance can be reached using various regulatory and institutional combinations (Eichhorst et al. 2008).

Where does this situation leave us in assessing labor market regulations, especially in the context of developing countries?

First, debates remain hotly contested and are driven by two fundamentally opposed intuitions. These are what Freeman (1993) once called “institutionalism” (institutions can reduce inequality and cut transaction costs, thereby enhancing productivity) and “distortionism” (institutions impede economic efficiency and can have perverse equity effects). The theoretical starting points, the research methods, and even what constitutes the evidence often differ between the two literatures. Each is limited in its own way. The institutionalist research often downplays the value of sound empirical analysis that challenges its assumptions. The distortionist research tends to be ahistorical, clinically measuring the impacts of institutions without appreciating that they have evolved through a social and political process as part of a given society’s social contract.

Second, whether the situations of developed countries apply to developing countries remains an open question. Labor regulations were designed for wage and salary work and presume widespread compliance, either voluntarily or through the enforcement capacity of the state (or trade unions). Both assumptions are obviously shakier in developing countries than in more developed ones. Employment forms are more diverse, with large shares of workers in non-wage activities such as self-employment and family enterprise work. Even many wage employees are in the informal sector. The nature of employment, coupled with limited administrative and enforcement capacities, raises questions about how labor market regulations actually function in developing countries and, thus, how the regulatory framework should look.

Given all of these questions about how labor markets should be regulated in developing countries, what can be learned from the growing empirical evidence on the effects of minimum wages and employment protection legislation in these settings? This paper focuses on the effects on employment, earnings, and productivity. Efficiency effects, as revealed through employment and productivity, are found sometimes, but not always. The effects can be in either direction and are usually modest. Distributional impacts of both minimum wages and employment protection legislation are clearer, with two effects predominating: an equalizing effect among covered workers, with groups such as youth, women, and the less skilled disproportionately outside the coverage and its benefits. Although the overall conclusion is one of modest effects in most cases, the policy implication is not that these regulations do not matter. On the one hand, as noted, both minimum wage and EPL can affect distributional objectives. On the other hand, these regulations can generate undesirable economic or social impacts if they are established or operate in ways that exacerbate the labor market imperfections that they were designed to address.

The remainder of this paper is organized as follows. Methodological points that should be considered in assessing the impacts of labor market regulation are raised in the next section. The two following sections review the empirical evidence on the impacts of minimum wage and employment protection rules. In these sections, we begin with the main findings from the extensive literature in the developed countries and then focus on what is now known from the less advanced, but growing, body of research in developing countries. In the final section, conclusions are drawn, and policy implications are discussed.

Some Notes on Methodology

Qualitative analysis of labor regulations (and other institutions) has been important historically, especially among researchers with an institutionalist perspective. However, the literature is now dominated by quantitative analysis, typically using econometric techniques to isolate the impacts of regulation. Studies have been limited to a narrow set of economic impacts, including employment, unemployment, earnings, job and labor turnover, and productivity. Although it is reasonable to expect that labor regulations might also have effects on social variables such as inclusion and fairness, these relationships have not been directly analyzed.¹

The first generation of quantitative research was based almost exclusively on reduced-form models that used aggregate data to explain the cross-country variation in outcomes by differences in national labor market institutions. This approach remains prevalent, but it increasingly shares the stage with a second generation of research that uses longitudinal micro-data to estimate fixed-effects models that isolate the variation in outcomes in a single jurisdiction over a period during which regulatory change has occurred.

Regardless of the method, reliably isolating the impacts of labor market regulations is complicated by challenges that researchers face in terms of identification, measurement, and modelling and interpretation.

Identification issues result from both the endogeneity of labor market institutions and the interactions between them. The endogeneity problem stems from the fact that institutions themselves are not exogenous variables but reflect the legal and cultural fabric of the societies in which they have evolved (Botero et al. 2004; Algan and Cahuc 2006; Aghion et al. 2010; Alesina et al. 2010). This situation can make it difficult to attribute variations in outcomes to the institutions themselves. This is especially problematic when analysis is based on cross-country aggregate data. Although single-country panels avoid this source of misidentification, they are not immune from endogeneity issues stemming from time-based sources. For example, certain institutional changes that are likely to be introduced at a particular point in the business cycle may be associated with outcomes that may be due to the cyclical factors themselves. Interactions between different labor regulations and institutions add to the identification challenge. Countries typically have packages of interdependent rules and institutions (e.g., the lightly regulated Anglo-Saxon model and the Northern European flexicurity model). The impact of a rise in the minimum wage, for example, might be intrinsically different in countries with different labor market models. The existence of packages of regulations and institutions raises a legitimate question about whether the real policy-relevant task for researchers should be to study the impact of different models rather than individual features. Thus far, however, there has been very little serious empirical analysis of overall packages.²

Measurement issues stem from the fact that it is difficult to quantify many regulations. Measuring minimum wages is relatively straightforward, although this measurement can be complicated when countries have multiple minimum wages (by sub-national jurisdiction, industry, occupation, or age). In contrast, employment protection rules are less easily reduced to numerical values. Analysts have developed various EPL indices that have extended the possibilities for quantitative analysis. However, these are not without controversy regarding what they actually measure and how well they do so.³ In any event, both EPL indices and minimum wages are problematic in a *de facto* sense because they cannot easily incorporate enforcement or adjudication, which can be critical to capturing real effects of laws and policies (Bertola, Boeri, and Cazes 2000). This gap between law and practice is especially relevant in the case of developing countries with large informal sectors and limited administrative and judicial capacity. There are examples of studies that attempt to incorporate the application of regulations and policies into the analysis of the impacts of institutions (e.g., Boeri and Jimeno 2005; Micco and Pagés 2006; Almeida and Carneiro 2009). However, these studies are very few in number.

There are also a number of challenges related to the *structure and scope of models* and the *interpretation* of results. First, models tend not to accommodate the

possibility that the impacts of regulations may be non-linear. It may well be that the effects of minimum wages or job security rules are different at the tails of the distribution (i.e., very high or protective or very low or unregulated) than they are around the mean. Second, models have tended to focus on short-run effects with less consideration of long-run implications. However, there is a growing body of evidence of persistence in labor market outcomes, which can be affected by regulations and other institutions. Third, much of the research concentrates on whether specific regulations have statistically significant effects on outcomes and does not consider the magnitude of the effect (i.e., paying attention to significance tests more than the size of the coefficient). The magnitude of the effect is clearly important for assessing trade-offs in making policy.

This literature review conducted for this paper considered the quality of the evidence presented in the various studies and how well the methodological challenges noted above were addressed. Studies that did not meet the conventionally held standards of sound empirical analysis, which are a valid measure of the policy variable and model specifications that control for other potential explanatory factors, were excluded. Both cross-country and single-country panel studies were included if they met these standards. It is fair to say that, on balance, the research community is more skeptical of cross-country analysis because of the endogeneity issue. However, given the importance of some of these studies (especially those conducted by the OECD), they were included in the review unless they had some evident methodological flaw. Evidence on developing countries largely comes from single-country panel studies. Although there are a few studies with special features to address some of the methodological challenges, the literature reviewed here is fairly homogeneous in terms of research design. In the future, new insights could be gained by research innovations such as those proposed by [Freeman \(2005\)](#) and [Heckman \(2007\)](#).⁴

Minimum Wages

Most countries have some form of minimum wage, although the institutional arrangements may vary. Although minimum wages are most often established through laws or regulations, in some countries, minimum wages are set through a bargaining process involving employers and unions. A single national rate is most common, but many countries have sub-national, regional, industrial, or occupational rates. In some countries, sub-minimum wages exist for certain groups, such as teenagers or trainees. Some types of workers may be completely excluded; agricultural and domestic labor are common examples. Moreover, minimum wage rules are not designed to cover the self-employed or family enterprise workers. In developing countries with large informal sectors, the reach of minimum wage regulations may be quite limited even among wage employees because of non-compliance.

Minimum wages are controversial, reflecting [Freeman's \(1993\)](#) institutionalist-distortionist divide. The institutionalist perspective provides the rationale for minimum wage policies: to counter exploitation by providing all workers with a “fair” wage and, more generally, serving as an anti-poverty policy ([Eyraud and Saget 2008](#)). The distortionist perspective emphasizes the negative employment effects when the minimum wage prices low-productivity workers out of the (formal) labor market.

The level at which the minimum wage is set is critical and can vary considerably, especially in developing countries. The [ILO \(2013\)](#) recently estimated the ratio between the minimum wage and the median wage of workers covered by minimum wages for 11 developing countries and found that this measure ranges from above 1.0 in South Africa, Philippines, and Indonesia to approximately 0.4 in Mali, Vietnam, and Mexico. In developed countries, in contrast, the ratio tends to be lower and has less cross-country variation – from approximately 0.35 to 0.60.

Impacts on Employment

The impact on employment has been the overwhelming focus of minimum wage studies. Research conducted through the 1980s was primarily based on U.S. time-series data and typically found negative employment impacts. The consensus emerging from that research was that the elasticity of teenage employment with respect to the minimum was in the -0.1 to -0.3 range (i.e., a 10% increase in the minimum wage reduced teenage employment by 1%–3%) ([Brown et al. 1983](#)). However, beginning in the early 1990s, a wave of studies led to serious questioning of this view. This “new minimum wage research” used new data sources and research designs that were typically based on exploiting the widening differentials between U.S. state minimum wages. The most influential of these studies were the Card-Krueger-Katz investigations, which found some positive employment effects of minimum wages.⁵ More recent research that extends the analysis of state differentials also disputes the earlier consensus, concluding that modest increases in the minimum wage have no detectable impact on teenage employment in the U.S. ([Dube et al. 2010](#); [Allegretto et al. 2011](#)).

Although this “new minimum wage research” research has been influential, it has also been criticized on methodological grounds, most notably by [Neumark and Wascher \(2007\)](#), with a critique of the more recent research in [Neumark et al. \(2013\)](#). These reviews find that the weight of the evidence – when impacts are measured properly – still supports the negative employment conclusion, with magnitudes similar to the consensus estimates of [Brown et al. \(1983\)](#).

In any event, there is no question that economists are now more divided about the employment effects of minimum wages, at least in developed countries, than they once were.⁶ If there is a consensus view now, it is likely similar to the conclusion drawn by the OECD in its reexamination of the Job Strategy: “the considerable

number of studies [that] have found that the adverse impact of minimum wages on employment is modest or non-existent” (2006: 86).

What about developing countries? Here, dynamics are more complicated because of the existence of a formal sector where the minimum wage applies and an informal sector where it does not. Therefore, according to conventional wisdom, the expected effects of a rise in the minimum wage in developing countries would be a decrease in employment in the formal sector and, because of an increase in the supply of labor due to workers displaced from the formal sector, reduced wages and increased employment in the informal sector.⁷

Research on the impacts of the minimum wage in developing countries largely comes from Latin America, although there are now a few studies in Southeast Asia, East Asia, Central Europe, and Sub-Saharan Africa. The evidence is heavily based on single-country studies that estimate effects due to within-country differences where multiple minimum wages exist or effects over time resulting from changes in the national minimum wage. Researchers have focused on impact levels, but there has been no attention to effects on employment dynamics, such as whether minimum wages have an effect on the way that labor markets respond to shocks or the speed of labor reallocation.

The clear majority of developing-country studies find some adverse employment effects, but this is not always the case. Where significant effects are found, they are most often modest. Examples of research that finds negative employment effects of increases in the minimum wage include studies for Brazil (Lemos 2004; Fajnzylber 2001; Neumark et al. 2006); Colombia (Bell 1997; Maloney and Nunez Mendez 2004; Arango and Pachon 2004); Trinidad and Tobago (Strobl and Walsh 2003); Indonesia (Rama 2001; SMERU 2001; Alatas and Cameron 2003; Del Carpio et al. 2012); Costa Rica (Gindling and Terrell 2007); Nicaragua (Alaniz et al. 2011); and Hungary (Kertesi and Kollo 2003).⁸ However, there are a few examples of studies that find no employment impact (e.g., Bell 1997 for Mexico; Lemos 2009 for Brazil). Some studies are now being conducted on the employment impacts of minimum wages in China, with results suggesting that increases in the minimum wage have had a negative effect in the more prosperous eastern provinces but not in the western region (Ni et al. 2011; Fang and Lin 2013).

Not surprisingly, researchers tend to find that employment effects are generally more significant at the segment of the wage distribution where the minimum wage actually “bites”. For example, in their study of Nicaragua, Alaniz et al. (2011) find that a 10% increase in the minimum wage is associated with a 5% greater probability that a worker earning within 20% of the minimum wage will not be employed in the formal sector, compared with 3% for formal sector workers overall. A negative employment effect can extend beyond workers earning around the minimum wage, but it tends to dissipate as one moves up the wage distribution.

As a result, the employment effects of minimum wage are most evident for those types of workers who tend to have lower wages. A number of studies have found that youth or teenage employment is reduced by minimum wage increases (e.g., [SMERU 2001](#); [Montenegro and Pagés 2003](#) for Chile; [Arango and Pachon 2004](#); [Muravyev and Oshchepkov 2013](#) for Russia). The employment of women has been found to decrease, in several cases, as a result of minimum wage increases (e.g., [Feliciano 1998](#) for Mexico; [Arango and Pachon 2004](#)), although [Montenegro and Pagés \(2003\)](#) identified a shift in employment toward women in Chile. Where researchers have examined the employment impacts of minimum wage increases on the less skilled, they typically find negative effects (e.g., [SMERU 2001](#); [Montenegro and Pagés 2003](#); [Kertesi and Kollo 2003](#); [Arango and Pachon 2004](#); [Bhorat et al. 2012](#) for agricultural workers in South Africa). In general, workers in small firms are most likely to be affected by employment losses due to increases in the minimum wage ([Rama 2001](#); [Kertesi and Kollo 2003](#); [Del Carpio et al. 2012](#)).

We would expect to find that the compositional impact of minimum wage increases would be a shift in employment from the formal sector to the informal sector. Some studies do find a decrease in formal employment and an increase in informal employment (e.g., [Maloney and Nunez Mendez 2004](#); [Jones 1998](#) for Ghana; [Muravyev and Oshchepkov 2013](#)). However, this is not always the case. [Gindling and Terrell \(2007\)](#) find negative employment impacts in the formal sector but no effect on informality in Costa Rica, and [Fajnzylber \(2001\)](#) actually finds a stronger negative employment effect of increased minimum wages in Brazil on wage workers in the informal sector than in the formal sector. How could such a finding be possible? [Fajnzylber \(2001\)](#) notes that this finding is consistent with informal workers moving into the formal sector because minimum wage increases make it more attractive. Alternately, informal workers may leave the labor force if other household members earn more because of the increase. Although neither possibility is formally tested in the paper, these hypotheses illustrate that minimum wage dynamics are more complicated than conventional competitive or dualist theories would suggest.

In the final analysis, the empirical literature indicates that, in most cases, low-wage employment is reduced when the minimum wage is increased. However, the magnitude of that reduction is often small. An important question, posed by [Brown \(1999\)](#), is why these effects tend to be so modest. It is possible that the actual effects are more substantial than researchers have generally been able to detect. For example, in almost all studies, the labor demand variable is measured by employment. However, hours would be a more complete measure because employers can adjust to higher minimum wages through the number of jobs as well as through working time. It is also possible that the typical short-term time horizon for minimum wage research misses effects that increase over time. Indeed, research in

Canada and the U.S. has found significantly stronger lagged than contemporaneous negative employment effects (Baker et al. 1999; Neumark and Nizalova 2007).

Assuming, however, that employment effects are generally as modest as the research suggests, two potential explanations could be considered. One explanation that is especially relevant in developing countries is non-compliance because of large informal sectors and weak enforcement in the formal sector.

The second possible explanation involves the level at which minimum wages are usually set. Where significant negative employment effects have been observed, the minimum wage tends to be quite high or out of line with economic conditions. In Nicaragua, for example, formal sector employment suffered when the minimum wage was set at 86% of the median wage (Alaniz et al. 2011). Colombia experienced negative employment effects after a substantial minimum wage increase in the late 1990s when labor demand was weak (Kucera and Roncolato 2008). Examples such as these notwithstanding, it is more typical, as Freeman (2010) noted, that policy-makers are aware of the potential harm of very high minimum wages, so they tend to set them at a reasonable level, roughly in line with prevailing market wages for unskilled workers.

Impacts on Earnings

Virtually all studies that estimate the wage effect find, not surprisingly, that formal-sector wages rise with higher minimums. As expected, the positive impact is strongest around the minimum wage, persisting somewhat above the minimum because wage relativities are maintained and diminishing as one moves further up the wage distribution (e.g., Gindling and Terrell 1995; Fajnzylber 2001; Maloney and Nunez Mendes 2004).⁹

More surprising is the observation that increases in the minimum wage often raise, rather than depress, wages in the informal sector. This finding is most common in studies of Latin American countries (e.g., Foguel et al. 2001 for Brazil; Fajnzylber 2001; Maloney and Nunez Mendes 2004; Banaante 2004 for Peru; Gindling and Terrell 2004; Lemos 2004 and 2009). It has usually been attributed to the "*Efeito Farol*", or "lighthouse effect", whereby the minimum wage is seen as a benchmark wage for unskilled labor throughout the economy, including the informal sector where it is not binding.

The empirical research is also consistent in demonstrating that the minimum wage compresses wage distributions and reduces earnings inequality. For example, Lemos (2004, 2009) and Fajnzylber (2001) find wage compression in Brazil as a result of minimum wage increases. Gindling and Terrell (1995) and Banaante (2004) report similar findings for Costa Rica and Peru because positive wage impacts are strongest for low-wage workers. However, in their review of minimum wages in the Latin America and Caribbean region, Kristensen and Cunningham (2006) note that the effects of the minimum wage on the distribution of wages

depends on where the minimum wage is set. When it is set at a relatively low level, it compresses the distribution. When it is set at a higher level, it can widen distributions by primarily benefiting higher-wage workers.

An important question concerns the role of minimum wages in the long-run increases in earnings inequality that have been observed in many countries. In a recent cross-country analysis of inequality, the [OECD \(2011\)](#) has estimated that policies and institutions accounted for the largest share in the increase in the 9th/1st earnings decile ratio, more than technological change and much more than globalization. Declining real minimum wages are one of the institutional changes driving this inequality. This finding has been established for developed countries for a number of years (e.g., [DiNardo, Fortin, and Lemieux 1996](#) for the U.S.). This is not a topic that has been researched extensively in developing countries. One exception is a study by [Bosch and Manacorda \(2010\)](#), who find that the steep decline in the real minimum wage accounted for a substantial part of the growth in inequality in urban Mexico between 1989 and 2001.

Do the equalizing effects of minimum wages translate into poverty reduction? Advocates often present minimum wage increases as an anti-poverty tool. However, some economists are more skeptical, partly because of disemployment effects but even more because of the targeting of minimum wage rules (i.e., many workers covered by minimum wage legislation are not in poor households, whereas the poorest households often do not have members in the formal sector covered by minimum wage rules). In a theoretical exposition, [Fields and Kanbur \(2007\)](#) show that the poverty impacts of the minimum wage are indeterminate and depend on the degree of poverty aversion, the elasticity of labor demand, the relationship between the minimum wage and the poverty line, and the extent of income sharing within the household.

The empirical evidence on the minimum wage-poverty relationship in developing countries comes from Latin America. The conclusions vary. Some find that increases in the minimum wage reduce poverty (e.g., [Morley 1995](#); [Lustig and McLeod 1997](#)). [Gindling and Terrell \(2006\)](#), using micro-data for Honduras, estimate that a 10% increase in the minimum wage reduced the likelihood of extreme poverty by 1.8% and poverty by 1% in that country. A study by [Alaniz et al. \(2011\)](#) on Nicaragua has also found a positive relationship between the minimum wage and the incidence of poverty, but only when the household head was affected. In contrast, some studies find no connection between minimum wages and poverty reduction (e.g., [Neumark et al. 2006](#) for Brazil). Even where researchers do find such a link, they do not necessarily advocate minimum wages as an anti-poverty tool. [Lustig and McLeod \(1997\)](#) note that their results should not be seen “as a flat endorsement of minimum wages as a cost effective policy to reduce poverty” because of potential negative employment and growth effects, particularly in the long run.

Nonetheless, they argue that reducing minimum wages in developing countries will hurt the poor, at least in the short run.

Impacts on Productivity

The effects of the minimum wage on productivity have been infrequently considered by researchers. [Bassanini and Venn \(2007\)](#), using aggregate cross-country data for 18 OECD countries from 1979–2003, estimated that a 10 percentage point increase in the minimum wage-to-median wage ratio was associated with an increase of between 1.7 and 2.0 percentage points in long-run labor productivity and multi-factor productivity levels. No estimates for developing countries could be found for this review.

There are two likely reasons for a positive productivity effect. The first is the substitution of more skilled for less skilled labor due to the decreased demand for unskilled labor as minimum wages rise. To the extent that employers make this substitution, productivity levels will rise without any change in employment levels. The second possible reason is that employers could make productivity-enhancing adjustments (e.g., increased investments in training or new technologies) in response to the higher labor costs due to increases in the minimum wage.¹⁰ As [Bassanini and Venn \(2007\)](#) note, these two reasons have very different implications. The substitution effect is essentially a shuffling of employment opportunities with undesirable distributional consequences. In contrast, increased training or technological innovation suggests real efficiency gains. Although the authors are unable to disentangle the effects of these two factors, they speculate that substitution may be a large part of the story. Unfortunately, pertinent evidence cannot be found from other studies that might provide more insight into the substitution versus training/technology hypotheses.

The only other evidence from the literature that is potentially relevant in assessing productivity effects relates to the impacts of minimum wages on the size structure of firms. To the extent that (lower-productivity) small firms are disproportionately affected compared to medium- and large- size firms, as shown in studies for Indonesia (e.g., [Rama 2001](#); [Alatas and Cameron 2003](#); [Del Carpio et al. 2012](#)), it is possible that minimum wage increases might lead to a reallocation of resources toward more productive (larger) enterprises.

Finally, it should be noted that any possible productivity effects need to be considered in conjunction with output effects due to changes in employment levels to evaluate the overall impact of minimum wages on economic production. This issue has not been addressed empirically in the literature.

Summary

The impacts of minimum wages are summarized in [Table 1](#).

Table 1. Summary of impacts of minimum wages

<i>Indicator</i>	<i>Findings</i>	<i>Comments</i>
Aggregate employment	Modest negative impact or insignificant impact.	Where the minimum wage set is important.
Employment for particular groups	Groups most likely to have negative impact are youth and low skilled.	A few studies show a positive employment effect.
Wages	Positive effect.	Effect strongest around minimum. Some evidence of positive effect in the informal sector.
Wage distribution	Reduces wage inequality.	Where the minimum wage set is important.
Poverty	Reduces poverty.	Some studies find no effect.
Productivity	Unclear.	No evidence for developing countries.

Employment Protection Rules

Employment protection legislation (EPL) refers to the rules governing the initiation and termination of employment contracts. EPL is fundamentally about determining the degree of job security, which it does in two ways: by restricting the ability of employers to hire workers on an explicitly non-permanent basis and by making dismissal costly. Governments introduce these rules to provide insurance for workers against the uncertainty of job loss and to ensure that employers meet a standard of social responsibility by assuring some commitment to employees (OECD 2004). However, EPL is controversial because of sharp differences in views about overall efficiency and distributional effects. Once again, these differences reflect the institutionalist-distortionist divide, with the former emphasizing the protection and security afforded to workers and the latter focusing on employment and efficiency losses and privileging “insiders” who are covered by these rules.

Different countries (and, sometimes, jurisdictions within countries) have different EPL arrangements. These are often characterized along a continuum ranging from protective to unregulated or rigid to flexible. At the more protective end of the scale, non-permanent employment contracts (temporary, fixed term) are restricted; limitations are placed on employer dismissal rights¹¹; compulsory severance payments are substantial; and administrative requirements for layoffs (e.g., advance notice, government approval) are significant. At the less regulated end, few restrictions exist with respect to non-permanent forms of contracting or employer dismissal rights, and the administrative and monetary costs of layoffs are minimal.

What determines the job security rules that a country adopts? Botero et al. (2004) analyze labor legislation in 85 countries and conclude that the level of development did not matter and the strongest determinant was the country’s legal

tradition. Generally, countries with civil law traditions have more extensive job security protections than common law countries. However, it may be that the determining factors also include more intangible variables. For example, [Algan and Cahuc \(2006\)](#) and [Aghion et al. \(2010\)](#) demonstrate that the level of trust and civic virtue inversely affect a society's demand for labor market regulation.

Although substantial differences exist across countries in terms of employment protection rules, there seems to be a convergence over time toward less restrictive EPL ([ILO 2012](#); [OECD 2013](#)). For reasons of political expediency, the first stage of this deregulation involved expanding the scope for temporary contracts rather than reducing job security for permanent employees. The inadvertent result of this stage was to increase the share of non-permanent employment and to intensify the phenomenon of “two-track” labor markets characterized by these (growing) precarious jobs and (shrinking) permanent jobs.¹² Given these undesirable consequences, more recent reforms have involved easing dismissal protections for permanent workers ([ILO 2012](#); [OECD 2013](#)).

Economic theory does not lead to clear predictions about the employment effects of EPL. Some models (e.g., [Bentolila and Bertola 1990](#)) show that more costly job security provisions should increase average employment within a given firm, whereas others (e.g., [Hopenhayn and Rogerson 1993](#)) demonstrate that they reduce employment on the extensive margin by lowering firm entry and job creation rates. However, theory predicts that stricter EPL should moderate employment fluctuations over the business cycle and should reduce turnover (e.g., [Bentolila and Bertola 1990](#)). Some models (e.g., [Kugler 2004](#)) show that job security rules create incentives for high-turnover firms to operate in the informal sector. Theoretical expectations about productivity effects are indeterminate ([OECD 2007a](#)). On the one hand, strict EPL could constrain the flow of workers into emerging high-productivity sectors and discourage technological change that is labor saving. On the other hand, because of commitment signals and expected tenure effects, strict EPL could increase worker effort and incentives to invest in human capital. At the same time, it could motivate productivity-enhancing investments to compensate for additional costs associated with job security rules.

Employment protection rules are not easily reduced to a single number, such as the minimum wage. Therefore, cross-country analysis typically relies on constructed indices that characterize a country's EPL in a single quantitative measure. The most widely used is the OECD EPL index, which assesses countries in terms of the strictness of their provisions for protecting permanent workers against individual dismissal, for collective dismissal requirements, and for regulations governing temporary forms of employment ([OECD 2013](#)). Other approaches estimate the monetary costs that an employer can be expected to incur in complying with job security regulations ([Heckman and Pagés 2004](#)), combine both indices and expected costs of compliance (e.g., [Botero et al. 2004](#)), or use qualitative assessments by managers

on the flexibility of hiring and firing arrangements (e.g., [DiTella and MacCulloch 2005](#); [Feldmann 2009](#)). Admittedly, all of these indicators have limitations in terms of rigor or their ability to capture the real impact of EPL “on the ground”, largely because of incomplete enforcement (see [Bertola, Boeri, and Cazes 2000](#)).

The empirical literature on the impacts of EPL reflects the preponderance of evidence from OECD countries. Although increasing, there is less analysis pertaining to developing countries, with most of the research on Latin America. For the most part, researchers have concentrated on the effects of EPL on employment levels and dynamics.

Impacts on Employment Levels

Studies on the employment impact of EPL are divided between those finding no significant effect and those finding a modest negative effect (i.e., higher unemployment and/or lower employment).¹³ Moreover, the results can be characterized as fragile in the sense that findings are often sensitive to model specification and the treatment of data ([Glyn et al. 2004](#); [Howell et al. 2007](#)). Researchers in different studies of a common set of countries have sometimes found different employment impacts. For example, using cross-sectional data for the 1980s and 1990s for Latin American and OECD countries, [Heckman and Pagés \(2000\)](#) find a negative employment effect of stricter job security rules. In a subsequent study (2004), they find no significant employment impact.

Much of the research in developed countries has tested the relationship between EPL (often using the OECD’s EPL index) and labor market outcomes by using cross-sectional national data. Interestingly, most of the earlier studies found a negative effect on employment and, in some cases, unemployment (e.g., [Scarpetta 1996](#); [Nickell 1997](#); [Elmeskov, Martin, and Scarpetta 1998](#); [Nickell and Layard 1999](#)). More recent studies using this approach have found no significant employment impact (e.g., [Baccaro and Rei 2005](#); [Bassanini and Duvall 2006](#)).

There has been some skepticism about whether cross-country regressions using aggregate data can accurately identify the impacts of EPL (and other labor market institutions). In recent years, a number of researchers have examined the effect of a regulatory change in a single country using panel data (household or firm) and time-series models. Some of this research has been conducted on developing countries. A collection of these studies was compiled for a number of Latin American and Caribbean countries in [Heckman and Pagés \(2004\)](#). The results were not conclusive, with some studies identifying a negative employment effect of job security rules (e.g., [Kugler 2004](#) for Colombia; [Saavedra and Torero 2004](#) for Peru; [Mondino and Montoya 2004](#) for Argentina) and others ([Paes de Barros and Corseuil 2004](#) for Brazil; [Downes, Mamingi, and Antoine 2004](#) for three Caribbean countries) finding no significant effect. Using a similar approach, [Petrin and Sivadsadan \(2006\)](#) find that

changes in EPL in Chile had no significant impact on employment. Using a sample of developed and developing countries, [Micco and Pagés \(2006\)](#) show that negative employment effects are concentrated in more volatile sectors. They also identify the driving force as a decline in the entry of new firms rather than decreased firm size.

Outside Latin America, there has been very little analysis of the employment impact of EPL in developing countries. The major exception is India, where a number of studies have been conducted (see Box 1).

Box 1: Does India's EPL have Harmful Effects?

India has a widely held reputation for restrictive job security rules that constrain output, productivity growth, and job creation while encouraging informality. Indeed, India's labor regulations are often considered one of the major obstacles limiting the country's progress, specifically by discouraging the creation of labor-intensive manufacturing jobs that have been to the key to the rapid development of other labor-abundant Asian countries. Emblematic of this view is [Panagariya's \(2008\)](#) assertion that the "most important factor that still holds back large firms from entering [labor-intensive] products is a set of draconian labour laws in India". Does the empirical evidence support this view?

When measured against other countries, India does offer substantial protection to regular workers against dismissal. For example, the [OECD \(2013\)](#) has applied its EPL index methodology to its 34 member countries and nine major emerging economies and rated India's rules for protecting permanent workers against dismissal as more stringent than all but one of the countries included.¹⁴ The legislation that is most relevant for dismissals is the Industrial Disputes Act (IDA), which governs procedures for layoffs and retrenchments and dispute resolution, among other things. The most controversial part of the IDA is Chapter VB, which imposes restrictions on the ability of firms to dismiss workers. Particular attention has been paid to amendments in 1976 and 1982 that required government approval for layoffs, retrenchments, and closures in the factory sector, initially for all firms with at least 300 employees and subsequently for firms with 100 workers.

Although the IDA is national legislation, states have the right to make amendments. This situation has led to variation within the country regarding the rigidity of India's EPL. Many researchers have exploited this variation to analyze the effects of job security rules. The starting point for this line of research was [Besley and Burgess \(2004\)](#), who reviewed amendments to IDA to classify states as pro-employer, pro-worker, or neutral in terms of their job security rules and then analyzed the effect of this classification on different economic outcomes. They found that states with pro-worker (more protective) reforms had lower output, investment, productivity, and employment growth in formal manufacturing than states with pro-employer (flexible) reforms. Although influential, [Besley and Burgess \(2004\)](#) were

criticized on various counts, most notably by [Bhattacharjea \(2006\)](#), who questioned the methodology for categorizing states and for ignoring important factors beyond IDA, such as other relevant laws and enforcement, which affect job security.

A number of subsequent studies have used the Besley-Burgess research strategy while responding to criticisms by adjusting the way in which state-level EPL is measured.¹⁵ Most studies that have used either the original index or a modified Besley-Burgess index have reached conclusions similar to Besley and Burgess. They have tended to find that states with more protective EPL have lower employment growth and slower labor adjustment in sectors covered by relevant legislation than states with more flexible rules (e.g., [Aghion et al. 2007](#); [OECD 2007b](#); [Adhvaryu et al. 2011](#)). Some studies have found an association between the strength of EPL and the size of the informal sector in manufacturing (e.g., [Ahsan and Pagés 2009](#); [Goldar and Aggarwal 2012](#)).¹⁶ Other studies have linked protective labor rules with lower productivity and output (e.g., [Aghion et al. 2007](#); [Ahsan and Pagés 2009](#); [Dougherty et al. 2011](#)). [Ahsan and Pagés \(2009\)](#) find that more protective EPL does not help workers in terms of a larger wage bill because any gains in wages are more than offset by employment losses. All of these negative outcomes tend to be most evident in labor-intensive industries ([Gupta et al. 2009](#); [Ahsan and Pagés 2009](#)). [Hasan and Jandoc \(2012\)](#) found that states with less flexible job security rules had a larger number of very small firms and fewer very large ones than states with flexible rules, but again only in labor-intensive sectors.

India's protective job security rules seem to have negative consequences. However, the more difficult question is how much of a barrier they really are to the country's economic development. For various reasons, some observers (typically within India) are skeptical of the view that these rules are a serious obstacle and that they should be a priority for reform. IDA and the state amendments that have been such a strong focus of the econometric research actually apply to only a very small organized manufacturing sector, so making EPL more flexible would hardly make a dent in addressing India's overall economic and employment challenges ([Bhattacharjea 2006](#)). Moreover, employers are able to use various strategies, such as relying on contract labor, capital substitution, and remaining small, to minimize the costs of the job security rules ([OECD 2007b](#)). Weak enforcement and employer tactics to avoid penalties are also important ([D'Souza 2010](#)). In fact, only a very small minority of firms (15%, according to Investment Climate Assessment) identify labor regulations as a major obstacle.

All of these points have some merit. Ultimately, electricity, tax administration, and corruption are likely to be more binding constraints to India's development than labor regulations. However, the stringent dismissal rules are an obstacle (if not the most important obstacle) to the process of creative destruction and, more specifically, to the expansion of labor-intensive manufacturing, in which India should have a comparative advantage. Strategies that employers are sometimes able to

adopt to bypass the rules only underline India's weak institutions. The empirical evidence leads to the conclusion that reforming the job security rules would not be a magic bullet but would be beneficial for the economy and its workers.

An important consideration in the context of developing countries concerns the differential effects of EPL on formal and informal employment. Conventional dual-sector theories predict that more costly job security rules would result in a shift from the formal to the informal sector. Studies that have examined this issue (almost exclusively in Latin America) do not lead to a clear conclusion. [Perry et al. \(2007, 121\)](#) conclude from the regional and country-level studies in [Heckman and Pagés \(2004\)](#) that “a credible case can be built that labor legislation had a substantial impact on the size of the formal sector”. However, taking a more critical look at this and other relevant research, [Kucera and Roncolato \(2008\)](#) find the evidence less conclusive, with results varying according to model specifications. Statistically significant findings are sometimes “borderline”, and there are several cases of no significant relationship.

More generally, the aggregate employment impacts of EPL can be affected by interactions with other labor market institutions. The union density and collective bargaining structure appear to be particularly relevant, at least in the OECD, although there is no consensus on exactly how these institutions influence the effects of EPL (e.g., [Elmeskov, Martin, and Scarpetta 1998](#); [Belot and van Ours 2000](#); [IMF 2003](#)). Although there is limited research on the subject in developing countries, interactions between institutions are evident from some studies. For example, [Ahsan and Pagés \(2009\)](#) find that the negative effects of EPL on employment are only important in Indian states where the costs of dispute resolution are high. Enforcement is another institutional feature that matters. [Almeida and Carneiro \(2009\)](#) show that across municipalities in Brazil, the negative effect of EPL depends on the strictness of enforcement.

The research has been quite consistent in identifying how the impacts of EPL vary for different types of workers. The effects are most favorable for those who are covered by job security rules, with prime-age males and the better educated overrepresented in this group. In contrast, the lower hiring rates associated with strong EPL may have a negative effect on those outside its protective umbrella (i.e., those who are not working or in non-covered jobs). Youth, women, and the less skilled are overrepresented in this group. [Montenegro and Pagés \(2003\)](#) found that the introduction of more protective rules in Chile had adverse effects for women relative to men, for youth relative to the more experienced, and for the less skilled relative to the skilled.

Thus, although strict EPL tends to create employment barriers for these groups, loosening these rules will not necessarily benefit these “outsiders” if reforms are only partial. Many countries, especially in the 1990s and early 2000s, attempted to remove these barriers by making temporary contracting less restrictive while

leaving permanent worker protections unchanged. The result was increases in precarious employment, especially for women, youth, and the less skilled (OECD 2004, 2006). Therefore, any overall employment gains for these groups may be offset by the increased likelihood that their employment will be in temporary rather than permanent jobs.

Impacts on Labor Market Dynamics

Job security rules have clear impacts on labor market dynamics. Empirical research confirms theoretical expectations that rules discouraging dismissals and temporary contracts lengthen durations in different labor market states (employment, unemployment, not in the labor force) and, accordingly, reduce flows between these states. A number of cross-country studies have shown that the strictness of EPL explains a significant part of country variation in job and worker flows (e.g., OECD 2004, 2010; Caballero et al. 2004; Micco and Pagés 2006; Haltiwanger, Scarpetta, and Schweiger 2008). Single-country studies using longitudinal data have come to similar conclusions. For example, Kugler (1999) found that the 1990 reduction in firing costs in Colombia increased the exit rate out of unemployment and employment and reduced average job tenure. Other studies in Latin America have linked reductions in EPL with lower average tenure and increased turnover (Saavedra and Torero 2004 for Peru; Hopenhayn 2004 for Argentina). Some studies have also shown that the strength of the relationship between EPL and labor market dynamics may depend on a country's rule of law. Cross-country analyses by Caballero et al. (2004) and Micco and Pagés (2006) find that the effect of EPL on job and worker flows is very important where the rule of law is strong and may largely disappear where the rule of law is weak. This is an important finding in the context of developing countries.

By affecting the process of job creation and destruction, employment protection legislation can have an impact on the way that labor markets adjust to external shocks, such as a recession or labor-saving technology. However, this relationship may be complicated. Whereas protective job security rules limit the ability of firms to lay off workers in the event of a shock, they may also increase unemployment by slowing the speed of firms' adjustment and extending the duration of jobless spells. Consistent with this phenomenon, empirical work in the OECD has found that stricter EPL may moderate the initial adverse effects of a shock but may subsequently contribute to its persistence (OECD 2006; Bassanini and Duvall 2006). Blanchard and Wolfers (2000) find that the second effect dominates, at least in Europe, concluding that strong job security rules increase the negative impact of shocks on unemployment. Examining the recent financial crisis, Bentolila et al. (2011) estimate that real differences in EPL (i.e., reflecting differences in enforcement) explain much of why the unemployment rate in France did not rise as much

as it did in Spain, where job security protections are stronger.¹⁷ Not all studies, however, support a negative relationship between strong EPL and adjustments to shocks. [Petrin and Sivadasan \(2006\)](#) find that 1991 and 1994 changes in Chile's EPL had no impact on the speed of adjustment. Additionally, [Eichhorst et al. \(2010\)](#), examining the way that different G20 countries adjusted to the recent financial crisis, find no systematic impact of different EPL levels.

Impacts on Earnings

Changes in EPL are mostly expected to affect employment, not wages. Accordingly, few studies have examined any earnings effects. The research that exists pertains to the distribution of wages and is essentially limited to developed countries. The most extensive analysis of this issue was conducted by the [OECD \(2011\)](#) in its recent study of inequality, which concluded that less strict EPL is associated with more wage dispersion.

Impacts on Productivity

Theoretical expectations about the productivity effects of job security rules are indeterminate. Empirical work, mostly limited to OECD countries, is somewhat inconclusive as well. Some researchers have identified a positive relationship between the level of EPL and productivity or productivity growth, although often with conditions. For example, analyzing OECD countries, [Belot, Boone, and van Ours \(2007\)](#) find that stricter EPL increased productivity, but only in environments where workers invested in firm-specific skills.¹⁸ [Nickell and Layard \(1999\)](#) and [Koeniger \(2005\)](#) identify positive relationships between EPL and both labor and multifactor productivity growth in OECD countries, although their results were generally weak and depended on model specifications. [Autor, Kerr, and Kugler \(2007\)](#) find that effectively stricter dismissal rules in some U.S. states (through exceptions to the at-will employment doctrine) were associated with a rise in labor productivity but a decrease in total factor productivity.

Other studies have found a negative relationship between the strictness of EPL and productivity. [Bassanini and Venn \(2007; OECD 2007a\)](#) and [Bassanini, Nunziata, and Venn \(2009\)](#) find that more protective job security for regular contracts reduced the annual growth rate for labor and multifactor productivity growth in OECD countries. However, their analyses do not find that restrictions on the use of temporary employment had any effect. In their analysis of 14 European countries, [Cingano et al. \(2010\)](#) find negative impacts of EPL on labor productivity, particularly in sectors with high rates of labor reallocation.

The very limited evidence for developing countries is also inconclusive. Analyzing a sample of both developed and developing countries, [Caballero et al. \(2004\)](#) find that increased employment protection has a significant negative impact on total

factor productivity growth (of approximately 1% annually) in countries with strong rule of law but no effect where the rule of law is weak (presumably, many developing countries). Using a similar sample of countries, [Micco and Pagés \(2006\)](#) conclude that stricter EPL does not robustly affect labor productivity, although it does affect output, primarily through a decline in firm entry.

These results reflect the diverse and often opposing ways in which EPL may affect productivity. By slowing labor reallocation, strict job security rules can limit the potential efficiency gains from the movement of workers from low- to high-productivity sectors and firms. Indeed, some researchers have established a link between strict EPL, reduced labor flows, and lower productivity (e.g., [Caballero et al. 2004](#)). However, productivity impacts are not always evident despite the clear dampening effect of job security rules on labor reallocation. [Martin and Scarpetta \(2012\)](#) note two possible reasons for this. First, a considerable amount of mobility in the labor market is “churning” and not reallocation from lower- to higher-productivity activities. Second, although firm entry and exit effects are important, productivity growth is largely driven by “within-firm” performance, at least among OECD countries.

Where positive productivity impacts have been found, this tends to be due to adjustments made by firms or workers in response to job security rules. For example, [Autor, Kerr, and Kugler \(2007\)](#) attribute higher labor productivity growth in states adopting stricter dismissal rules to capital and skills deepening on the part of firms. [Belot, Boone, and van Ours \(2007\)](#) link positive productivity impacts to more training resulting from longer expected tenure in high-EPL jurisdictions. Examining the U.S., Germany, India, the U.K., and France, [Acharya \(2010\)](#) finds that higher dismissal costs are positively related to innovation, which he attributes to the security this provides for employees to engage in risky activities. However, the relationship between job security and innovation is not straightforward: [Calmfors and Holmlund \(2000\)](#) find that high firing costs reduce employers’ incentives to introduce new technology.

Summary

The impacts of employment protection rules are summarized in [Table 2](#).

Conclusion

Setting labor market regulations is often a contentious area of policymaking. Ideally, empirical evidence on the impacts of these regulations could help settle these fundamentally ideological debates. Methodological and data challenges can be formidable, and coverage remains spotty outside Latin America. However, the available literature suggests some conclusions about how minimum wages and EPL affect labor market and productivity outcomes in developing countries.

Table 2. Summary of impacts of EPL

<i>Indicator</i>	<i>Findings</i>	<i>Comments</i>
Aggregate employment and unemployment	Either no impact or modest negative (positive) impact on employment (unemployment).	Both developed and developing countries (largely Latin America). Results tend not to be robust.
Employment for particular groups	Prime-age males positively affected. Youth, women, and low-skilled workers negatively affected.	“Partial” reforms for “two-track” labor markets lead to more precarious employment for these groups.
Labor market dynamics	Longer durations in employment, unemployment, and not in the labor force. Smaller flows between different labor market states.	
Adjustments to shocks	Increases negative impact of shocks.	Not all studies find this relationship.
Productivity	No consistent conclusion.	Evidence largely comes from developed countries.
Training	Positive effect.	Longer-duration employment associated with greater human capital investments.
Innovation	Unclear.	Very little evidence.
Reallocation of labor	Negative effect.	

Freeman (2000, 2005) concludes that labor market institutions have clear distributional effects but that efficiency effects are difficult to find. This paper suggests that he is largely correct with respect to minimum wages and employment protection rules in developing countries. These regulations reduce wage inequality for covered workers by narrowing wage differentials based on skill, gender, and age. However, their ultimate equalizing effect is diluted by the fact that the low skilled, the young, and women are less likely to be covered. To the extent that these institutions affect the composition of employment, they tend to be against these groups and in favor of prime-age males and the better educated.

Impacts on efficiency appear modest, with most studies showing no effect or small negative effects but some finding positive effects. EPL does not have a significant unidirectional impact on productivity. It seems that losses due to lower worker and job flows and the less-efficient reallocation of labor across firms and sectors because of job security rules are essentially cancelled out by institution-driven workplace gains due to the “voice” effect and longer tenures with greater investments in training and, perhaps, more innovation. Finally, a major question concerns the overall employment effects of minimum wages and EPL. On balance, the impact of these regulations tends to be either insignificant or modestly negative.

These conclusions do not mean that labor market regulations can never be costly in terms of productivity or employment losses or undesirable distributional

consequences. Minimum wage-setting and job security rules that interfere with the normal functioning of the labor market may reduce output or employment or may disadvantage certain groups. Although the potential impacts of such institutional failures are often mitigated in developing countries through low compliance, this is not a desirable approach because it does not address the underlying market imperfections that motivate the creation of institutions in the first place. A similar problem exists where regulation is minimal. This does not remedy information failures, asymmetric bargaining power, and inadequate risk management in the labor market.

The 2013 World Development Report on Jobs refers to these situations as the “cliffs”. Between these extremes, a “plateau” exists where rules enhancing and undermining efficiency operate side by side, and most of the effect is redistributive. The overall conclusion of this review is that regulations are often set in ways that place countries on a plateau, avoiding the consequences of being on one cliff or the other.¹⁹

Notes

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1. The 2013 World Development Report (World Bank 2012) proposes that jobs affect not only living standards and productivity but also social cohesion. To the extent that labor policies have an impact on jobs, a complete assessment of labor regulations should include effects on social cohesion.

2. One example of this type of analysis is [Eichhorst et al. \(2010\)](#).

3. IFC’s Doing Business “employing workers” index, which covers EPL as well as other regulations, has been particularly controversial in terms of what it measures and its implications for policy. See [Berg and Cazes \(2007\)](#) for an early discussion. In response to criticisms, the World Bank Group created a consultative group to study the index. It has also been assessed in the [Independent Panel Review of Doing Business Report \(2013\)](#). Because of the controversies, the employing workers index is not currently included in the overall Doing Business country scoring and ranking.

4. [Freeman \(2005\)](#) proposes laboratory experiments and simulations of artificial agent modelling as well as the use of micro data. [Heckman \(2007\)](#) sees the next steps as expanding the database and using cost-based measures of institutions as well as more sophisticated modelling.

5. For a complete treatment of this research, including the particularly influential New Jersey-Pennsylvania fast food study, see [Card and Krueger \(1995\)](#).

6. Although the vast majority of U.S. economists accepted the proposition a generation ago that higher minimum wages led to lower employment, there has recently been less consensus ([Fuller and Geide-Stevenson 2003](#)).

7. This is admittedly a somewhat simplified depiction of dual labor markets in developing countries. As [Fields \(2005\)](#) explains, there are variations of this model, with different assumptions about wages and unemployment in the two sectors.

8. An interesting, but rarely studied, question is how the labor supply of other household members adjusts to job loss when it occurs. One exception is [Neumark et al. \(2006\)](#), who found that other household members increased their participation in the labor force.

9. There is essentially no evidence on whether non-wage benefits decrease because of these wage gains.

10. The increased training incentives may be counteracted by the reduced room for employers to shift (specific) training costs onto workers through wage shifting if the minimum wage has been increased. Overall, the evidence on the relationship between minimum wages and training is inconclusive ([OECD 2007a](#)).

11. Particularly relevant are the rules governing whether and how workers can be dismissed for “economic” reasons (e.g., due to shrinking markets or increasing competitiveness). This class of terminations stands in contrast to dismissals for “noneconomic” reasons such as job performance.

12. There is now a body of literature on this so-called “partial reform” and new proposals to unify “insider-outsider” labor markets, especially in southern Europe, where this phenomenon is most prevalent (e.g., [Bentolila et al. 2011](#) for Spain; [Boeri 2011](#) for Italy; [Cahuc and Kramarz 2004](#) for France).

13. It should be noted that employment and unemployment impacts are not always the same. Where job security has a negative impact on labor demand, employment will almost certainly decrease, but unemployment may not be affected if the decreased labor demand leads to a reduced labor supply.

14. It should be noted that India’s scores on permitting temporary contracts, which is the other component of the OECD EPL index, were around the OECD average.

15. Examples of modified state indices include [Ahsan and Pagés \(2009\)](#), [OECD \(2007b\)](#), [Dougherty \(2009\)](#), and [Gupta et al. \(2009\)](#).

16. [Ahsan and Pagés \(2009\)](#) distinguish between EPL rules that make labor adjustment more costly and those that increase the cost of dispute resolution. They find that the former effect is more important.

17. They find that with the actual French EPL practice and taking into account its indirect effect on reducing mismatch, Spanish unemployment would have increased by 45% less than it actually did (i.e., from 8% to 14% rather than to 19%) between 2008 and 2009 ([Bentolila et al. 2011](#)).

18. However, as one reviewer noted, there may be less incentive for firms to support firm-specific skills investment in a strong EPL regime because one motivation for this type of investment is to discourage turnover.

19. Some of the practical considerations in determining where the plateau ends and the cliffs begin are discussed in [Betcherman \(2014, forthcoming\)](#).

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