The Paradox of Effective Labor Regulation

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Abstract

This paper collects administrative, legal and household survey data to emphasize a stylized fact about labor regulation that has been generally overlook: Countries with more protective employment regulations tend to enforce less, and usually focus the enforcement effort on large firms. Why some countries choose a combination of highly protective laws and little enforcement is a puzzle that cannot be rationalized with traditional explanations.

JEL codes:

Keywords: Labor Regulation, Enforcement, Firm Size

1 – Introduction

It is well known that there is substantial variation in labor laws across the world (World Bank, 2012). Some countries have protective laws (such as Bolivia and Congo), while others regulate relatively little (such as New Zealand and Singapore). Economists have exploited this variation to analyze the effects of regulations on outcomes; and political scientists have used it to test which factors explain differences in the extent of regulation. This literature usually assumes that regulations are enforced.[1] That is, it assumes that *de jure* regulations and *effective* regulations are basically equivalent. This might not be a completely unrealistic assumption when the analysis restricts to developed countries (such as in the usual comparison between the US and western European labor markets) given the relatively high level of compliance. But, this paper argues that those assumptions are misleading when applied to developing countries because countries that have more stringent de jure regulations tend to enforce less. The negative correlation between de letter of the law and enforcement implies that de jure regulations are a poor proxy for effective regulation.

We emphasize a key feature of how most developing countries regulate their labor market that has been largely ignored. On the one hand, they tend to have protective labor laws with *de jure* universal (or almost universal) coverage. On the other hand, they tend to devote very little resources to enforce the law, and those resources tend to be focused on inspecting large firms. These countries, unsurprisingly, generally have segmented labor markets where a small share of workers –usually employed in large firms or the

[1] See Botero et. al. (2004), Carnes (2014), Djankov and Ramalho (2009), Galli and Kucera (2004), Heckman and Pages (2004), Feldmann (2009), La Porta et al. (2008), and Murillo and Schrank (2005).

public sector- effectively have quite protective labor contracts while the remaining majority works without any protection in the informal sector.

The combination of stringent and universal de jure regulation together with little enforcement that we observe in most developing countries constitutes a puzzle to traditional explanations of regulation. First, if a society has a dislike for private markets outcomes, then, we would expect that country to have, not only stringent de jure laws, but also enforce them. In particular, how could we reconcile the claim that protective labor laws are introduced by democratic labor-based governments to redistribute towards the most disadvantaged workers, when in practice we observe that those workers usually end up working without any protection at all? Second, arguing that workers' rights are not enforced in developing countries because the State does not have resources to inspect firms is at least too simplistic. The amount of resources needed for a reasonable functioning labor inspectorate is minimal with respect to the total public sector budget even in the poorer countries, and the state can collect revenues from fines and the reduction in payroll tax evasion. This view is also naïve because it ignores the incentives of political and economic actors in shaping effective labor regulation.

Third, according to legal origin theory, actual labor regulations are strongly shaped by the legal tradition of the former colonizer, wherein common law countries have less protective labor regulations compared to civil law countries (La Porta et al., 2008). However, if legal tradition is the driving force, then why do we observe so different regulation strategies across countries that have the same legal tradition? Why New Zealand has little regulation and encompassing enforcement while Nigeria has stringent

laws and low enforcement if both are former colonies of the British empire and common law countries?

It is beyond the scope of this paper to fully understand this paradox. Our purpose is to provide empirical evidence showing that the puzzle exists. This task requires an important data collection effort. We collect a large amount of administrative and legal data and construct measures of government enforcement based on labor inspections and fines. We also compute rates of compliance with labor regulations by firm size and use it as a proxy of the distribution of enforcement activities within each country. All these measures are combined with available proxies of de jure labor regulations (i.e., Doing Business) to show the following three stylized facts: First, countries with more stringent de jure employment regulations tend to enforce less. Second, countries with more stringent regulations and lower enforcement tend to have lower levels of compliance. Third, employees working in small firms are less likely to earn the legal minimum compared to employees in large all around the world, but the difference is particularly high in countries with little enforcement.

2 – Measurement[2]

2.1 – Labor Inspection

There is no single source of information to measure labor inspection agencies' resources and activities across countries. The relatively new ILOSTAT database, for example, only provides information about labor inspection for 53 countries. Therefore, we compiled

[2] This section heavily relies on Ronconi (2015) and Kanbur and Ronconi (2016).

data and statistics from governments' websites, from reports produced by the International Labor organization (ILO), the U.S. Department of Labor, and the U.S. State Department. The first variable we construct is *Inspector* which is simply the number of labor inspectors in a country. To count the number of inspectors we follow the definition suggested in ILOSTAT, according to which a labor inspector is a public official responsible for securing enforcement of the legal provisions relating to wages, safety and health, hours, the employment of children, and other connected matters. The second variable we construct is *Inspections*, defined as the number of labor inspections conducted per year. To make the values comparable across countries, both variables are divided by the labor force in each country. The figures cover the period from 2000 to 2012, but for the majority of countries the collected data only covers the last three years (2010 to 2012). In case of conflicting information across sources, we take the average.

2.2 – Penalties

The penalty structures for labor law violation are highly varied across countries, and differ by type of regulation. Given the data sources, we focus on penalties for violations of regulations with wage provisions. Specifically, we construct a measure of penalties specified in the law in case of noncompliance with the minimum wage assuming the following: i) the employer is a first-time offender, ii) the offense committed is paying one employee during one month a salary 20 percent below the legal minimum, iii) the employer does not obstruct the work of the inspector, iv) the employer corrects the problem after receiving a notice from the enforcement authority, and v) the employer

does not retaliate against the employee. With these assumptions we can build a penalties schedule using the ILO TRAVAIL legal database, and country legislation.

Penalties typically take the form of financial fines, either set as a monetary amount or as a proportion of the minimum wage. Some countries set a single fine, while others set a minimum and a maximum, and others only set a maximum. But penalties can also include criminal fines. In almost one out of four countries around the world, the applicable legislation stipulates imprisonment. Finally, in some countries the legislation explicitly requires inspectors to notify the employer before issuing any penalty; fines can only be applied to employers who did not correct the violation.

We construct measures of de jure penalties for three alternative scenarios: low, medium and high penalties, and convert criminal penalties into a money metric by assuming that the cost for an employer of serving one year in prison equals 10 times GDP per worker. The *Low total penalty* scenario assumes a 10 percent probability of receiving the minimum financial fine and a 5 percent probability of receiving the minimum term in prison.[3] The *Medium total penalty* scenario assumes a 50 percent probability of receiving a medium financial fine and a 25 percent probability of receiving the medium term in prison.[4] Finally, the *High total penalty* scenario assumes a 100 percent probability of receiving the maximum financial fine and a 50 percent probability of serving 50 percent of the maximum term in prison. In this paper we always use the medium total penalty, although results are robust to the alternative scenarios. Finally, we create the *Enforcement*

[3] The minimum financial fine in countries that do not establish a minimum is assumed to be 50% of the maximum, and the minimum term in prison is 25% of the maximum.
[4] The medium financial fine is the average between the minimum and the maximum fine, and the medium term in prison is the average between the minimum and maximum terms.

index which is defined as the average of the normalized variables *Medium total penalty* and the number of *Inspectors* per worker.

2.3 – De Jure Employment Protection

We use the World Bank Doing Business database for the year 2011, and following a similar methodology as Botero et al. (2004), we create the *Employment law index*. The index measures the protection of employment laws as the average of the above five variables (1) alternative employment contract, (2) cost of increasing hours worked, (3) cost of firing workers, (4) dismissal procedures, and (5) minimum wage as shown in table 1.

Table 1 – Measuring de jure employment regulations

Variables	*Employment Laws*
Alternative employment contract	Measures the existence and cost of alternatives to the standard employment contract, computed as the average of (1) a dummy equal to one if fixed-term contracts are prohibited, (2) the normalized maximum duration of fixed-term contracts.
Cost of increasing hours worked	Measures the cost of increasing the number of hours worked, computed as the average of (1) the normalized maximum of working days per week, (2) a dummy equal to one if the workweek for a single worker can be extend to 50 hours per week (including overtime) for 2 months each year to respond to a seasonal increase in production, (3) a dummy equal to one if there are restrictions on night work, (4) a dummy equal to one if there are restrictions on weekly holiday work, (5) the normalized paid annual leave.
Cost of firing workers	Measures the cost of firing 20 percent of the firm's workers for redundancy. The cost of firing a worker is calculated as the sum of the notice period, severance pay and penalties for a worker with five years of tenure with the firm (except for the penalty which is the average for 1, 5 and 10 years of tenure). If dismissal is illegal, the cost of firing is assumed to be equal to the annual wage. The cost of firing workers is computed as the ratio of new wage bill (defined as the normal wage of the remaining workers and the cost of firing) to the old wage bill.
Dismissal procedures	Measures worker protection against dismissal. It is the average of the following seven dummy variables which equal one if (1) the employer must notify a third party before dismissing one redundant worker, (2) the employer needs the approval of a third party in order to dismiss one redundant worker, (3) the employer must notify or consult a third party prior to a collective dismissal (9 employees), (4) the employer must obtain prior approval from a third party before a collective dismissal, (5) there is a retraining or reassignment obligation before an employer can make a worker redundant, (6) there are priority rules that apply to redundancy dismissals or lay-offs, (7) there are priority

	rules applying to re-employment.
Minimum wage	The normalized ratio of the minimum wage to value added per worker.
Employment law index	Measures the protection of employment laws as the average of the above five variables (1) alternative employment contract, (2) cost of increasing hours worked, (3) cost of firing workers, (4) dismissal procedures, (5) minimum wage. The figures refer to the year 2011. Source: World Bank Doing Business.

2.4 – Enforcement across Firm Size

Our objective is to describe the distribution of enforcement across firm size. Given the lack of data, we compute rates of violations of the minimum wage by firm size. The rationale for using this proxy is that lower levels of compliance to some extent reflect more enforcement. That is, if the difference in the rate of compliance between small and large firms is higher in country *i* compared to country *j*, we interpret the result as suggestive evidence that the distribution of enforcement efforts is relatively more focused on large firms in country *i*.

We use household surveys where employees report their income and the number of workers employed in the firm. We restrict the sample to people who are currently employed as employees, are 18 years of age or more, and have positive earnings. We create a dummy equal to 1 if the worker earns below the minimum wage and 0 otherwise using the lowest minimum wage at the time the survey was conducted. We then categorize workers into three firm size groups (i.e., small, medium and large), where the first group is comprised by the 30% share of workers reporting the least number of coworkers in the firm, the second group includes the following 40% share, and the final group includes the 30% share of workers reporting the highest number of coworkers in the firm. Finally, we compute the rate of noncompliance by firm size defined as the share

of workers in each group earning below the legal minimum. More details about the methodology and the sources of information are in Appendix 1.

There are a number of reasons to expect measurement error. First, employees usually do not have enough information about the number of people employed in the firm. Second, some household surveys only provide data in intervals either for firm size or for earnings (e.g., between 15 and 40 employees). Third, self-report earnings usually contain substantial error. Household surveys, however, are presumably a better source compared to firm-level surveys because they are more likely to include a representative sample of the population and because employers have incentives to misreport violations of the minimum wage.[5] Furthermore, because one of our main objectives is to measure differences in the rate of compliance by firm size within countries, some country-level measurement errors are eliminated.

3 – Stylized facts

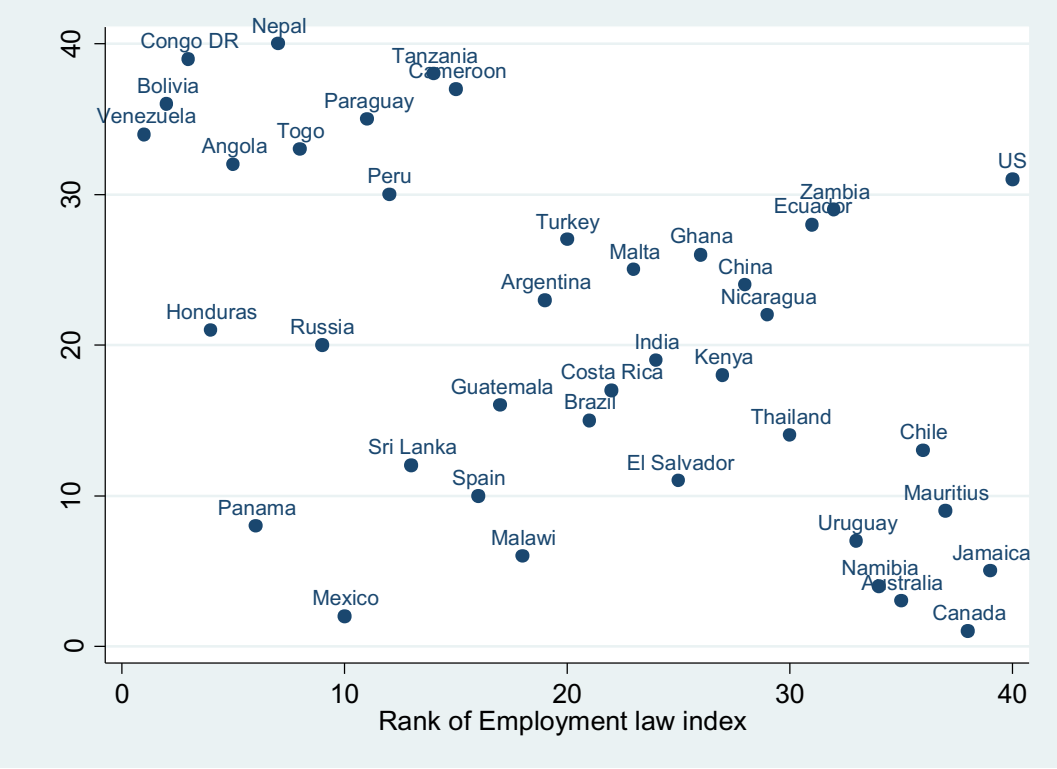
In this section we provide three stylized facts about effective labor regulation. In all cases we restrict the sample to the 40 countries for which we were able to gather measures of all of the variables (i.e., enforcement index, employment law index and the distribution of compliance by firm size). More details in appendix 2.

[5] The Enterprise Survey conducted by the World Bank is apparently a very useful source of information since the employer reports the number of employees in the firm, and whether it has been inspected or not by a labor and social security official during the previous year. Regrettably, however, the sample only includes registered firms, which in less developed countries usually represent a quite small share of the population of businesses. Furthermore, evidence indicates that in developing countries labor inspection agencies tend to exclusively focus on registered firms, implying that the inspection rate among registered firms is a poor proxy for the inspection rate among all firms (Almeida and Ronconi, 2015). Finally, the survey does not include any measure of labor law violations.

- Stylized fact 1: A negative correlation between Jure Employment Law and Enforcement. Countries that, according to the letter of the law, have more protective employment regulations tend to enforce less.

Figure 1 is a scatter plot that illustrates the negative correlation using rankings based on the previously defined measures of de Jure *Employment law index* and *Enforcement Index*. Countries with relatively flexible labor codes and high levels of enforcement, such as Australia and Canada, are located on the lower right corner, while countries with protective laws and little enforcement, such as the Democratic Republic of Congo and Bolivia are located in the upper left corner. The correlation, either using the rankings or the indexes, is in both cases negative and statistically significant, and remains so when the sample is restricted to developing countries.

Figure 1 - Negative Correlation across Countries between Enforcement and Labor Law

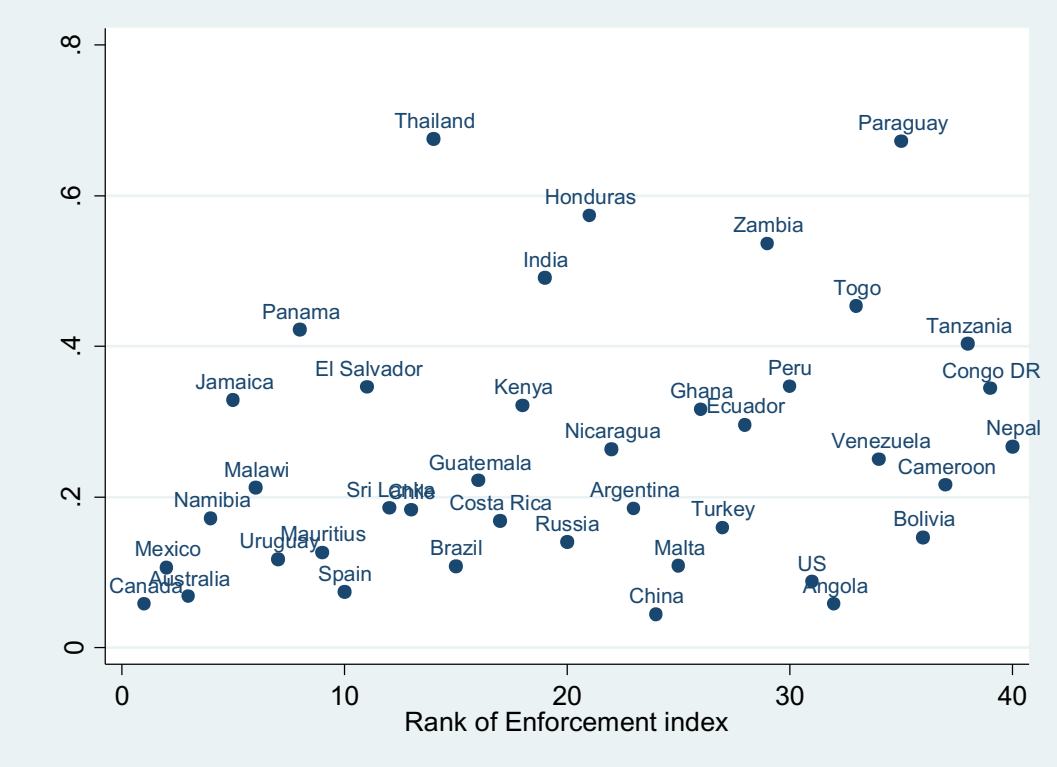


Notes: The horizontal axis is a ranking based on the de jure employment index wherein countries with more protective regulations have a higher ranking. The vertical axis is a ranking based on the enforcement index wherein countries with higher enforcement (labor inspectors and fines) have a higher ranking. The linear model between these variables equals *Ranking Enforcement index = 30.6 – 0.49*Ranking de Jure Employment law index*.

- Stylized fact 2: Compliance and Enforcement. Countries with higher levels of enforcement tend to have lower levels of minimum wage violations.

The scatter plot in Figure 2 illustrates this correlation which is statistically significant using either the ranking of enforcement or the index. The correlation between the level of noncompliance and the de jure employment law index is positive but statistically insignificant in the sample.

Figure 2 – Cross-country correlation between enforcement and minimum wage violations

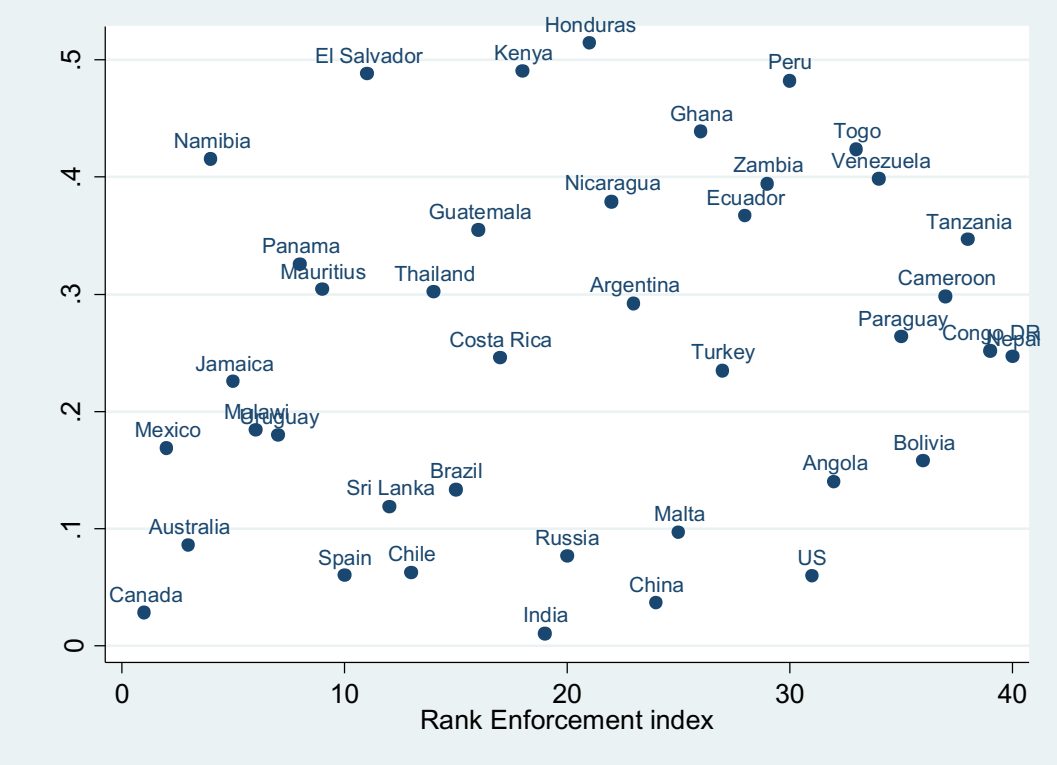


Notes: The horizontal axis is a ranking based on the enforcement index wherein countries with higher enforcement (labor inspectors and fines) have a higher ranking. The vertical axis is the share of employees with a salary below the minimum wage.

- Stylized fact 3: Distribution of Enforcement/Compliance. In countries where the level of enforcement is lower, there is a larger difference in the rate of compliance of small firms compared to big firms.

Employees working in countries with less enforcement are more likely to have salaries below the legal minimum, but the correlation is particularly large for employees in small firms. The latter result is consistent with the idea that countries with low enforcement tend to focus their little enforcement resources and efforts in larger firms. The scatter plot in Figure 3 shows that the difference in the rate of compliance between large and small firms is higher in countries with less enforcement.

Figure 3 – Enforcement and differences in compliance between small and large firms



Notes: The vertical axis is the difference in the share of employees with a salary below the minimum wage employed in small firms compared to those employed in large firms.

Table 2 presents cross-country correlation coefficients between rates of noncompliance with the minimum wage and the enforcement and de jure indexes. Robust standard errors are in parentheses. In all cases the sample includes the 40 countries listed above. Results change little when the sample is restricted to developing countries.

Table 2 – Correlation coefficients between regulation and compliance

	Total non compliance	Non compliance small firms	Non compliance large firms	Difference compliance large vs. small firms
Enforcement index	-1.390***	-1.953***	-0.843***	-1.110***
	(0.323)	(0.409)	(0.272)	(0.343)
Enforcement index ranking	0.004*	0.005**	0.002	0.003*
	(0.002)	(0.002)	(0.001)	(0.002)
Employment law index	0.268	0.377	0.151	0.226
	(0.180)	(0.236)	(0.128)	(0.157)
Employment law index ranking	-0.003	-0.003	-0.001	-0.002
	(0.002)	(0.003)	(0.002)	(0.002)

Notes: Statistically significant at the 0.1, ** 0.05, and *** 0.01 level.

4 – Conclusion

The construction of large cross-country legal datasets such as the World Bank Doing Business initiative provides very useful information describing differences in labor laws all around the world. But this data cannot be used as a reasonable proxy for effective

labor regulation because it only covers the letter of the law and –particularly in developing countries– there is a wide gap between actual practices and what is written in the codes. Furthermore, as this paper shows, countries with more protective employment laws tend to have lower levels of enforcement.

We consider that the stylized facts presented in this paper constitute a challenge to traditional explanations of labor regulation. Neither political power theory, nor legal origin, can account for the fact that most developing countries have a combination of protective employment laws and little enforcement and compliance. If a government has a dislike for unfettered labor markets outcomes, then, we would expect that government to have stringent de jure laws and enforce them. From this perspective, the effective regulation of labor in these countries is a paradox.

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Appendix 1 – Measuring compliance with minimum wages

Country	Household Survey	Year	Minimum Wage (local currency)	Observations
Angola	IBEP	2008	8,609 month	
Argentina	EPH	2012	2,670 month	
Australia	HILDA	2007	13.74 hour	
Bolivia	EH	2012	1,000 month	
Brazil	PNAD	2012	622 month	
Cameroon	EEI	2010	28,246 month	
Canada	LFS	2009	8.00 hour	
Chile	CASEN	2011	18,200 month	
China	CHIP	2002	250 month	
Congo, DR	ENTAM	2004	7,258 month	
Costa Rica	EHPM	2009	141,812 month	
Ecuador	ENEMDU	2012	292 month	
El Salvador	EHPM	2003	444 month	
Ghana	UHPS	2006	16,000 day	
Guatemala	ENCOVI	2006	960 month	
Honduras	EPHPM	2010	5,500 month	
India	NSS	2011	151 per day	
Jamaica	SLC	2010	4,070 per week	
Kenya	SSMS	2013	9,781 month	
Malawi	LFS	2013	317 per day	
Malta	EUROSILC	2012	685 month	
Mauritius	CMPHS	2012	4,714 month	
Mexico	ENIGH	2010	54.47 hour	
Namibia	LFS	2012	689 month	

Nepal	LSS	2010	4,600 month	
Nicaragua	EMNV	2005	1,013 month	
Panama	EH	2012	432 month	
Paraguay	EPH	2012	1,658,232 month	
Peru	ENAHO	2012	750 month	
Russia	RLMS	2009	4,330 month	
Spain	EUROSILC	2012	641 month	
Sri Lanka	LFS	2011	6,500 month	
Tanzania	NPS	2011	100,000 month	
Thailand	LFS	1995	3,770 month	
Togo	123	2001	23,100 month	
Turkey	LFS	2010	599 month	
United States	CPS	2013	7.25 hour	
Uruguay	ECH	2012	7,200 month	
Venezuela	EHM	2006	465,750 month	
Zambia	LFS	2012	700,000 month	

Notes: Data for Australia is from Nelms et al. (2011); data for Canada is from Statistics Canada (2010).

Appendix 2

country	Rank Employment index	Rank Enforcement index	Share of employees below minimum wage	Difference compliance large vs. small firms
Angola	5	32	0.0575	0.1398
Argentina	19	23	0.1847	0.2923
Australia	35	3	0.0679	0.0856
Bolivia	2	36	0.1464	0.1576
Brazil	21	15	0.1082	0.1335
Cameroon	15	37	0.2157	0.2984
Canada	38	1	0.0580	0.0283
Chile	36	13	0.1824	0.0623
China	28	24	0.0445	0.0364
Congo DR	3	39	0.3440	0.2516
Costa Rica	22	17	0.1678	0.2456
Ecuador	31	28	0.2960	0.3669
El Salvador	25	11	0.3461	0.4882
Ghana	26	26	0.3162	0.4391
Guatemala	17	16	0.2216	0.3549
Honduras	4	21	0.5736	0.5142
India	24	19	0.4908	0.0106
Jamaica	39	5	0.3286	0.2255
Kenya	27	18	0.3213	0.4905
Malawi	18	6	0.2124	0.1842
Malta	23	25	0.1084	0.0968
Mauritius	37	9	0.1258	0.3040
Mexico	10	2	0.1064	0.1689
Namibia	34	4	0.1719	0.4154
Nepal	7	40	0.2668	0.2468
Nicaragua	29	22	0.2634	0.3790
Panama	6	8	0.4219	0.3256
Paraguay	11	35	0.6724	0.2636
Peru	12	30	0.3470	0.4823
Russia	9	20	0.1402	0.0763
Spain	16	10	0.0737	0.0598
Sri Lanka	13	12	0.1853	0.1187
Tanzania	14	38	0.4033	0.3466
Thailand	30	14	0.6750	0.3019
Togo	8	33	0.4533	0.4237
Turkey	20	27	0.1591	0.2349
US	40	31	0.0871	0.0597
Uruguay	33	7	0.1173	0.1798
Venezuela	1	34	0.2500	0.3987
Zambia	32	29	0.5363	0.3943