

Minimum wage coverage and compliance in developing countries

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Abstract. *Using household and labour force survey data from 11 developing countries, the authors calculate rates of minimum wage compliance for formal/informal employees covered by current legislation and assess the average “depth” of violations. Though compliance is negatively related to the ratio of minimum to median wages, countries with a national minimum wage set at a meaningful level typically achieve higher compliance rates than countries with occupational or industry-specific minimum wage systems. However, better compliance – especially for women, ethnic groups, and unskilled and informal workers – also depends on contextualized yet comprehensive minimum wage policies combining union/employer involvement, awareness-raising and credible enforcement.*

Though wage employment accounts for a comparatively small share of total employment in many developing countries, their minimum wage regulations typically apply to informal as well as formal wage employment. Yet minimum wage coverage and compliance are often overlooked in the literature, although they are important determinants of the effective level of protection provided to low-paid workers and their families. In particular, the exclusion of vulnerable categories of workers from legal coverage defeats the very purpose of a policy instrument whose primary objective is precisely to protect workers at the bottom of the wage distribution. For example, out of the 52.6 million women and men above the age of 15 who were recorded as domestic workers globally in 2010, 22.3 million or 42.5 per cent were not covered by minimum wages; in most of the cases (21.5 million), this happened in spite of the fact that they lived and worked in countries where minimum wages did apply to other workers (ILO, 2013a).

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Responsibility for opinions expressed in signed articles rests solely with their authors, and publication does not constitute an endorsement by the ILO.

Compliance with minimum wage legislation should not be taken for granted, however, even when only a fraction of workers are covered. In many countries, the issue of enforcement presents a serious challenge due to lack of transparency and communication, insufficiently staffed labour inspectorates, weak sanctions, restrictions on freedom of association and/or weak trade unions, sometimes compounded by the existence of a large informal economy, with many casual wage earners deprived of effective protection (Ghosheh, 2013; Benassi, 2011).

The objective of this article is to highlight the gaps in minimum wage coverage and compliance across a diverse group of 11 developing and emerging countries in Africa, Asia and Latin America – namely, Brazil, Costa Rica, India, Indonesia, Mali, Mexico, Peru, the Philippines, South Africa, Turkey and Viet Nam. The article does not go into the controversial debate on the employment effects of minimum wages, on which there is an extensive literature. Nor does it attempt to examine empirically the theoretical frameworks of the compliance literature.¹ Instead, it provides empirical estimates of the proportions of wage earners that are in principle covered by minimum wage laws in the different countries, and of the proportions of those technically covered who are nonetheless paid less than the legal minimum. While earlier studies have measured coverage and compliance gaps in developing or emerging economies,² this has never been done on a comparative basis for as many countries and for two different time periods. Though the estimates we provide from household-based or labour force surveys are necessarily imperfect and subject to measurement errors, the results do provide striking support for the proposition that more efforts should be devoted to filling the coverage and compliance gaps in the future, in order to increase the effectiveness of minimum wages as a tool for social justice. As far as possible, the analysis brings out not only the levels of non-compliance as they affect working women and men, but also its incidence in respect of workers from particular social groups, including ethnic groups and indigenous peoples.³

The article is organized into four sections. The first and second provide empirical evidence on the extent of coverage gaps and gaps in compliance, respectively. The third section provides examples of strategies that have succeeded in raising compliance rates, even in countries where the minimum wage was already set at a meaningful level relative to median or average wages. The fourth section concludes.

¹ See, for example, Ashenfelter and Smith (1979); Squire and Suthiwart-Narueput (1997); Weil (2004 and 2005); Basu, Chau and Kanbur (2010).

² See, for example, Bhorat, Kanbur and Mayet (2012) on South Africa; Belser and Rani (2011) on India; Alaniz, Gindling and Terrell (2011) on Nicaragua; Gindling and Terrell (2010) on Honduras; Cunningham (2007) on Latin American and Caribbean countries; Lemos (2004) on Brazil; Jaramillo Baanante (2004) on Peru; and Harrison and Scorse (2010) on Indonesia.

³ While data disaggregated by sex were available for all 11 countries analysed in this article, data by ethnic or social origin were available only for Brazil, India, Peru, South Africa and Viet Nam (see Appendix, table 2).

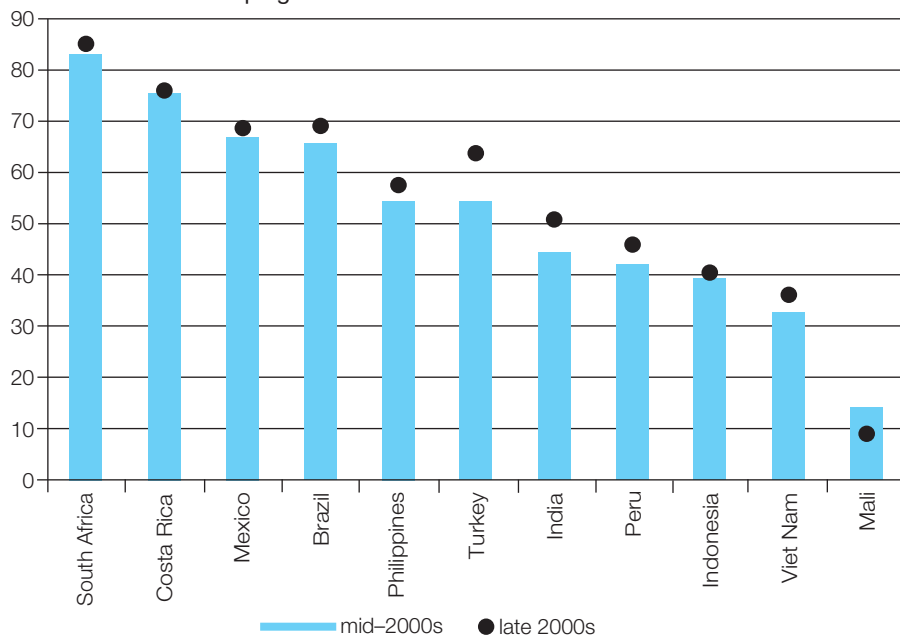
Minimum wage coverage

There is a widespread perception in many developing countries that minimum wage laws do not cover certain labour market segments, such as informal employment or non-unionized firms. In most countries, however, labour law also applies to informal wage workers, even if they have no written contract. In some of the countries analysed here, certain provisions of minimum wage legislation are in fact specifically targeted at unskilled and low-paid workers or those in the informal economy. In India, for example, the minimum wages specified in the statutory “schedules of employment” are set for unskilled workers, who are mostly employed in the informal economy. South Africa has “sectoral minimum wages” for workers who are not covered by collective bargaining. Similarly, many Latin American countries, including Brazil, Costa Rica, Mexico and Peru, have minimum wage legislation for all workers, irrespective of the sector or status of the enterprises that employ them.

When analysing legal coverage in developing countries, one must also remember that not all workers are wage earners. While partial coverage erodes the potential of minimum wages to redistribute resources in favour of all low-paid workers, the potential redistributive role of minimum wages in developing countries can be further undermined by the disproportionately high incidence of (informal) self-employment and unpaid family work, which is typical of the labour markets in these countries. In the 11 countries under analysis here, an average of 52 per cent of all workers are paid employees (i.e. in “dependent paid employment”). The proportion varies from 10–20 per cent in Mali to over 80 per cent in South Africa (figure 1). Irrespective of whether coverage is partial or universal, minimum wages may thus protect a much smaller proportion of workers than “coverage” suggests since this measures only a percentage of wage employment. Hence the need for developing countries to complement minimum wages with social protection policies in order to broaden the scope of their efforts to reduce poverty and inequality and to improve welfare. Overall, in the 11 countries under analysis here, there were 746 million workers in 2010, 387 million of whom were wage earners – with 326 million of them covered by minimum wage laws and the remaining 61 million, excluded and unprotected.

The extent of minimum wage coverage is measured as the proportion of wage-earning workers who are included within the scope of minimum wage regulations, and thus entitled to be paid at least the prescribed minimum. Our analysis is based on the most recent labour legislation, labour codes, wage decrees, etc. But we do not examine relevant case law, which may affect the interpretation and application of regulatory provisions and, by extension, expand or diminish the extent of coverage. The extent of coverage depends on whether a country has a broad national minimum wage system, which applies to all wage workers across the country (with possible exceptions), or a more complex (and partial) system of minimum wages that apply only to selected industries or occupations. Reviewing 151 countries and territories, the ILO (2013b) finds that about half of them implement a minimum wage system

Figure 1. Dependent paid employment as a percentage of total employment in 11 developing economies



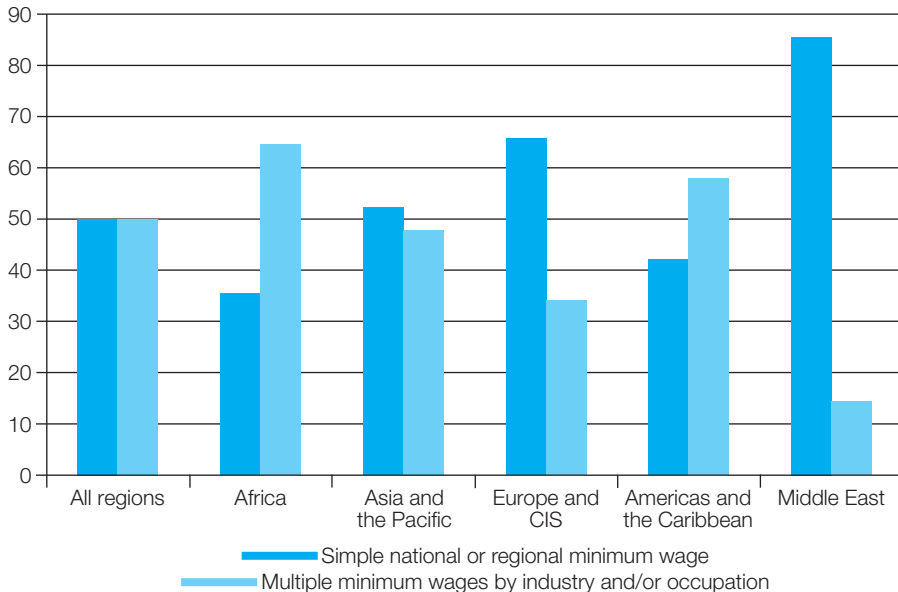
Source: Authors' analysis based on data from household and labour force surveys.

which applies uniformly on a national or regional basis. The remaining countries implement systems with multiple rates, which vary by industry and/or occupation (see figure 2).⁴ The proportion of wage earners covered by minimum wage regulations is generally higher in countries with national minimum wages than in those with industry-specific minimum wages.

Here, we estimate the extent of minimum wage coverage in 11 developing and emerging economies for which such information is not readily available. These countries were chosen because they feature different systems of minimum wages, different levels of development, different institutional environments and varying proportions of wage employment. To identify workers who are covered, the categories of workers covered by minimum wage legislation are matched with employment data from available surveys. For example, if minimum wage legislation applies to all wage earners except domestic workers, the coverage of minimum wages is estimated by calculating the ratio of non-domestic to total wage employment using household survey data. This methodology can be easily implemented in countries with a relatively uniform minimum wage system, but estimates are more complex when legislation targets different categories of workers. Our analysis captures two periods – the

⁴ Under these systems, minimum wages are fixed by government or in consultation either with workers' and employers' organizations, or with a specialized body (ILO, 2010).

Figure 2. Minimum wage systems across the world (percentages)



Source: Authors' estimates based on ILO (2013b).

mid-2000s and late 2000s – so as to examine how minimum wage coverage evolved over time.⁵

There is universal minimum wage coverage in two-thirds of the 11 countries we examine in this article.⁶ In Brazil, for example, the federal minimum wage applies to all wage workers, and collective agreements can only provide for “wage floors” that are equal to or higher than the federal minimum wage.⁷ The Philippines, Turkey and Viet Nam have also legislated universal minimum wages (figure 3).⁸ This implies that all workers in wage employment in these countries are legally entitled to minimum wages irrespective of sex, race or ethnicity and regardless whether they work in the formal or informal sector

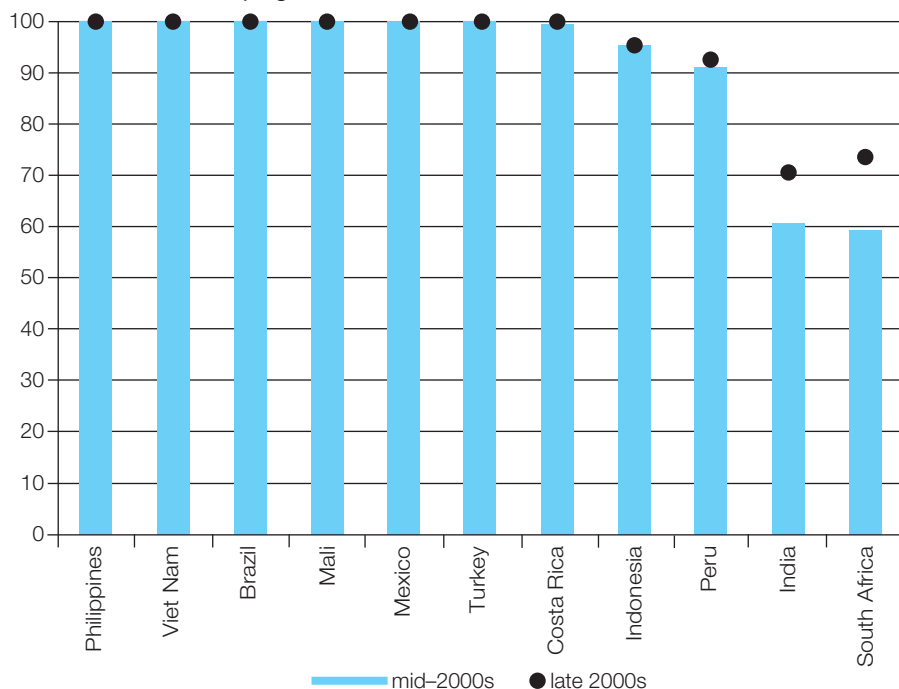
⁵ Table 1 in the Appendix provides the list of countries, the years for which analysis was undertaken and the household and labour force surveys used for analysis. For details about the “extent of coverage” of the workers included in the minimum wage legislation and workers excluded at the country level, see ILO (2013c, Chapter 3, Appendix B).

⁶ Although minimum wages for public-sector workers are set by discrete administrative procedures, we have included all public-sector employees in all countries under analysis on the assumption that all of these employees receive wages above the statutory minimum wage.

⁷ The legislation also provides that piece rates must be fixed at a level ensuring that the daily remuneration of piece-rate workers is not lower than the statutory daily minimum wage.

⁸ The Philippines' Regional Wage Boards have the authority to provide legal exceptions (e.g. small enterprises, retail or service establishments), which could compromise full coverage. Also, while the country's Wage Order does not include domestic workers, they are covered by a separate (lower) rate under the Labour Code and a new minimum wage under the recent Minimum Wage Act, 2013, which is more meaningful than the rate previously prescribed in the Labour Code.

Figure 3. Percentages of wage earners covered by minimum wage legislation in 11 developing economies



Note: Public-sector employees are included in the estimates for all countries.

Source: Authors' analysis based on legal information and data from household and labour force surveys.

(Appendix, table 2). In Indonesia, minimum wage coverage is almost universal (around 95 per cent) as minimum wages cover all employees except domestic workers, whose exclusion results in a comparatively smaller proportion of female workers and low-skilled workers being covered (Appendix, table 2).

In India and South Africa, by contrast, minimum wages are not universal and apply to specific groups of workers. In India, the Central Government sets 45 minimum wage rates for different job categories in agriculture, mining, oil extraction and state-owned corporations. State governments determine minimum wage rates for 1,679 job categories in "scheduled" industries. As a result, only around two-thirds of wage earners are covered by minimum wage legislation in India. Indeed, though this complex system takes account of industry characteristics in setting minimum wages, not only is it very costly and difficult to administer, but the level of awareness of its provisions is quite dismal.⁹

⁹ According to a 2007–08 evaluation of the implementation of the Minimum Wages Act, 1948, in the stone-breaking and stone-crushing industry in Karnataka, only 30 per cent of employers said they were aware of the Act and only 27 per cent, of the prescribed minimum wages to be paid to workers. Among workers, only 8.4 per cent were aware of the Minimum Wages Act and 18.5 per cent, of any inspection authority (India, 2009).

In South Africa, the Ministry of Labour sets minimum wages – so-called “sectoral determinations” – for vulnerable workers in industries not covered by collective agreements, one of them being domestic work. These sectoral determinations provide legal protection to more than half of all employees (figure 3). Though the focus on specific groups of workers leads to a better coverage of female workers, workers in the informal sector and disadvantaged groups in these two countries, comparatively large proportions of workers in urban areas in India and rural areas in South Africa are excluded from coverage (see Appendix, table 2). There are also differences in coverage across industries.

Not all countries have a clear-cut system, however. Costa Rica, for example, has a complex hybrid system of sectoral and occupational minimum wages, which nonetheless provides universal coverage because it is complemented by a national wage floor. The advantage of such a hybrid system could be that the national minimum wage floor sets the basic minimum for all workers, while allowing high productivity industries to set higher minimum wages. Peru provides near universal coverage (except for domestic workers), though it has a complex system of wage determination for certain occupational categories. The exclusion of domestic workers, however, results in a substantial proportion of female workers, disadvantaged groups and workers in the informal sector not being covered. Mexico also has a general minimum wage coupled with a complex system of minimum wages for more than 80 occupations with regional differentiation, which still provides full coverage.

Measuring the extent of compliance

The effectiveness of a minimum wage policy depends not only upon the coverage of its legal provisions, but also on the degree of compliance therewith. Compliance can be measured in a number of ways. An easy method, which is extensively used in empirical studies, is to calculate the percentage of workers earning less than the legal minimum wage.¹⁰ Borat, Kanbur and Mayet (2012), for example, measure the incidence of violation in South Africa using this method, but they also measure the depth and severity of violation.¹¹ A second measure is based on violations of minimum wage laws detected during workplace inspections.¹² For the countries under analysis here, however, an analysis based on labour inspections would be only partial because the informal economy in these countries is quite large and beyond the reach of labour inspection. Also, non-compliance with minimum wages can be difficult to detect

¹⁰ See, for example, Ashenfelter and Smith (1979); Harrison and Scorse (2010); Lemos (2004); Jaramillo Baanante (2004); Cunningham (2007); Gindling and Trejos (2010); Alaniz, Gindling and Terrell (2011); Belser and Rani (2011); Gindling, Mossaad and Trejos (2013).

¹¹ The indices used by these authors are similar to the family of poverty indices introduced by Foster, Greer and Thorbecke (1984).

¹² For examples of this approach, see Ronconi (2008) on Argentina; Vargas-Fernandez et al. (2009), Gindling and Trejos (2010) and Gindling, Mossaad and Trejos (2013) on Costa Rica; and Weil (2004) on the apparel industry in the United States.

in administrative records and data on wage-related violations are not readily available. A third possible measure would be the number of complaints made by workers to enforcement bodies and courts. To the best of our knowledge, however, no empirical study has ever used this method to measure compliance because it is difficult to obtain the necessary administrative data. Besides, even if the data were available, they would be very difficult to interpret.

In this article we adopt the first method and calculate the proportion of technically covered workers earning less than the legal minimum wage. We use information on wages from the household or labour force surveys in the countries under analysis, and then link it to the applicable legal minimum wages. Such a method allows systematic and consistent comparison across countries and over time.

Distribution of wages around minimum wages

Before we estimate rates of compliance, we examine the wage distribution around the minimum wages. There are a number of approaches to assessing the impact of legal minimum wages on wage distributions using kernel density estimates. Our simple method is to look for spikes in the wage distributions at or around the minimum wages to infer whether or not there is compliance with legislation. As a number of countries have multiple legal minimum wages, the kernel density estimates are simply calculated as log actual wage minus log minimum wage for each worker and plotted in figure 4 for the two periods under analysis.¹³ This method also provides insights into the ways in which the complex structure of minimum wages can affect the wage distribution. The “zero” line in the figure indicates that the worker is earning the legal minimum wage, and the values above (below) zero imply that workers earn above (below) the legal minimum. We have used bandwidths appropriate to each country for the estimated distributions in order to identify the multiple modes of the distribution.¹⁴ The estimated distributions help us to focus on the influence of minimum wages on the earnings distribution over the two time periods.

The evidence of spikes in the earnings distributions at the minimum wage levels is quite mixed across countries. There is a significant spike at or around the minimum wage level in Brazil, Costa Rica, India, Indonesia, the Philippines, South Africa and Turkey, but there is no evidence of a spike in Mexico or Viet Nam, while the evidence is ambiguous in Mali and Peru. When comparing the distributions over time, the spikes in the distributions near zero in the cases of Brazil and Costa Rica indicate that minimum wages became more binding at the end of the period. We also employ the “fraction at” measure developed by Dolado et al. (1996). This shows how binding the minimum wage is based on the proportion of workers who earn a wage at or near the minimum level, i.e. between 90 and 110 per cent of the minimum wage. The proportion of

¹³ This method is used in other studies; see, for example, Gindling and Terrell (2004).

¹⁴ In our analysis we have used the weighted kernel density estimation, using survey weights; and the optimal bandwidth is estimated using the robust plug-in method.

Figure 4. Wage distributions and statutory minimum wages of covered employees

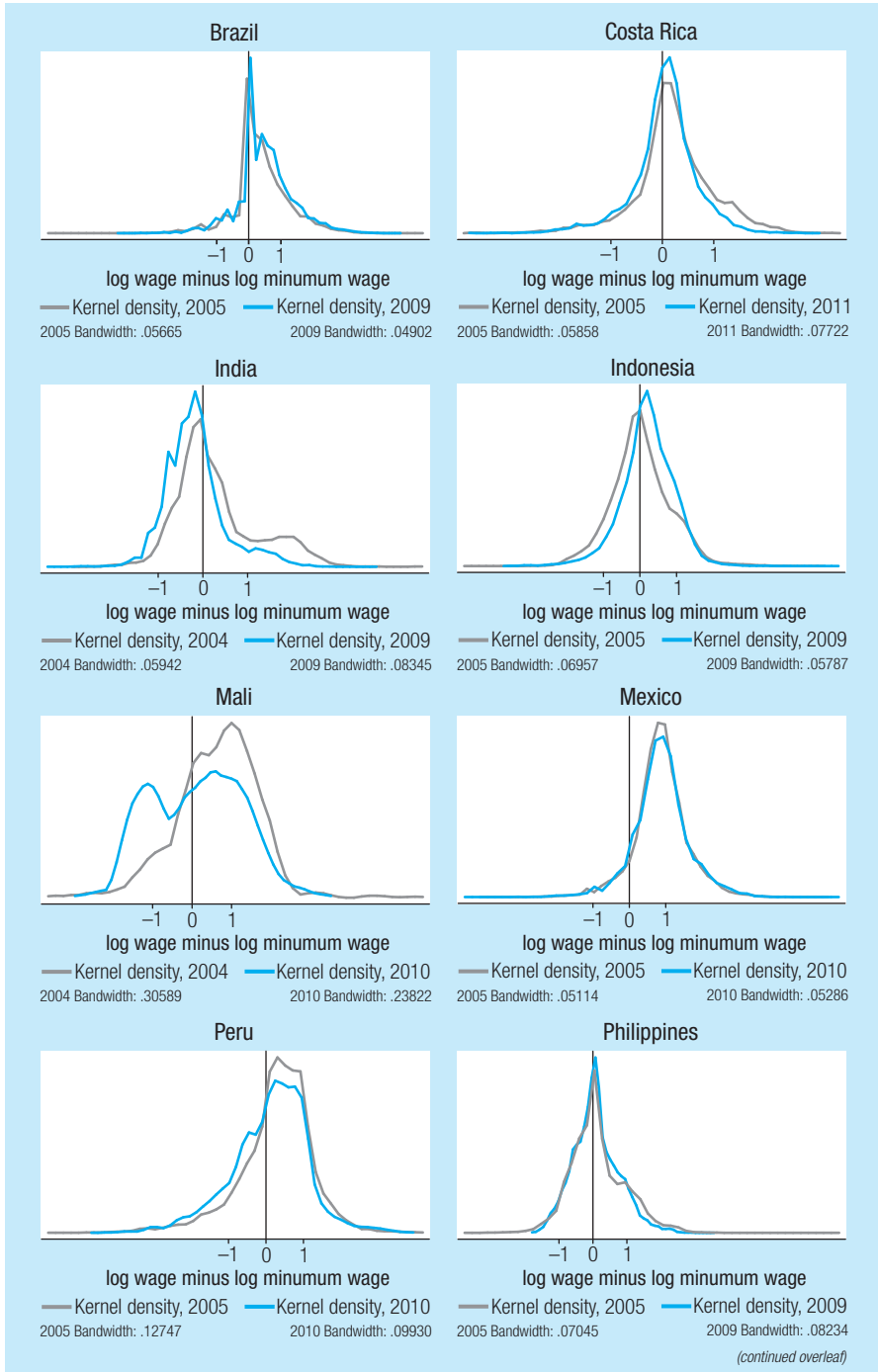
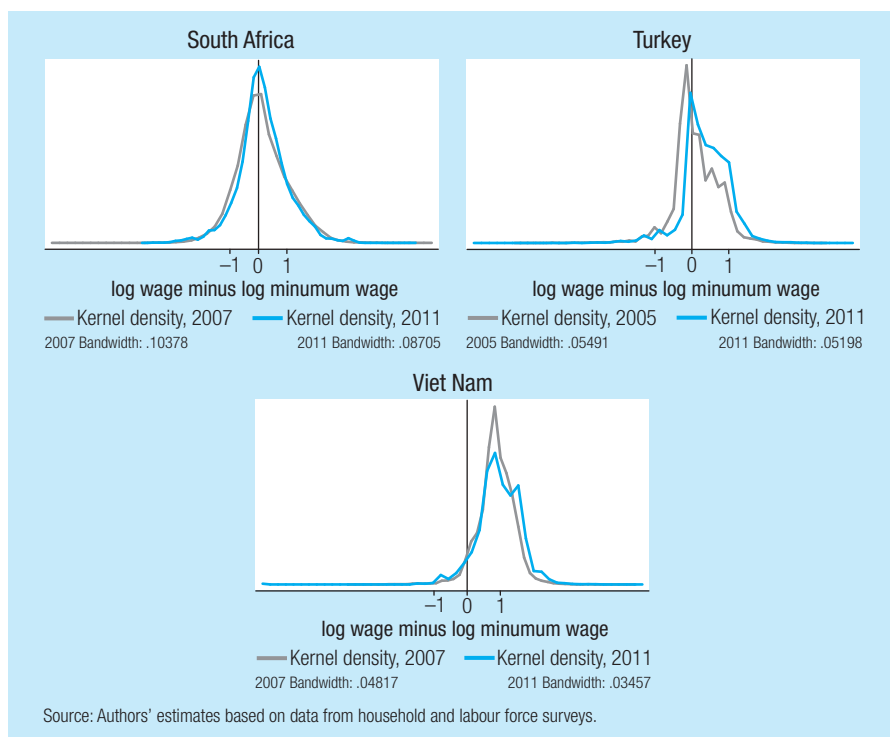


Figure 4. Wage distributions and statutory minimum wages of covered employees (*concl.*)



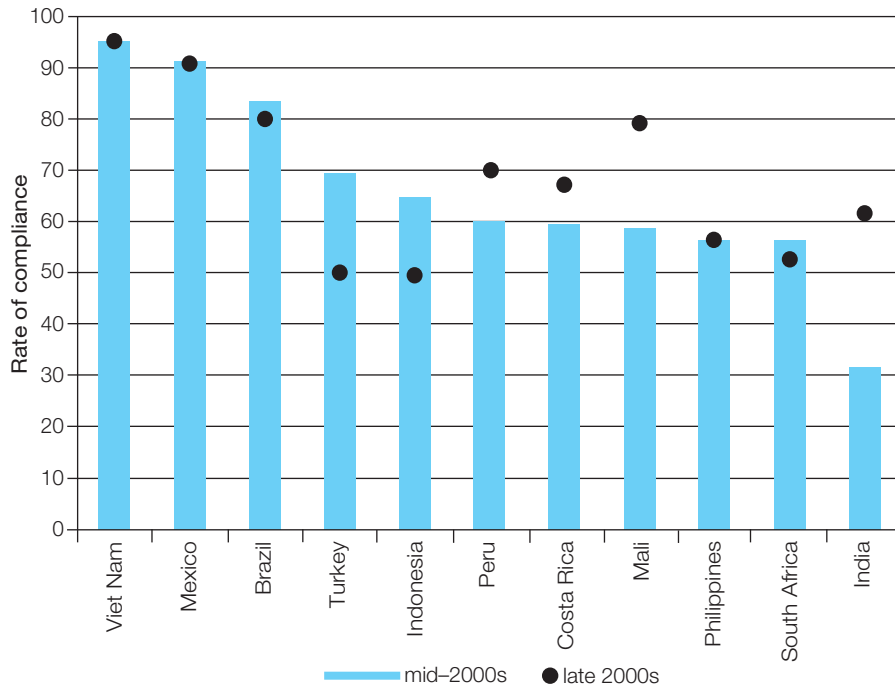
workers earning wages within this range increased from 18 to 20 per cent in Costa Rica and from 18 to 23 per cent in Brazil despite an increase in Brazil's real wages over the period. Indeed, Brazil witnessed strong compression towards the middle of the distribution, which indicates a reduction in wage inequality. Following action on compliance and enforcement, Costa Rica's minimum wages have become more binding. In India and Indonesia, the proportion of workers earning at or near the minimum wage remained nearly unchanged. In South Africa and Turkey, minimum wages became less binding in the late 2000s, and the proportion of workers earning at or near the minimum wage level in these two countries declined by 2 to 4 percentage points.

Workers earning below the minimum wage

To estimate the rate of compliance, we calculate the share of covered workers earning less than the legal minimum wage.¹⁵ In this article, the full complexity of minimum wages is taken into account, with each worker assigned a specific

¹⁵ The earnings of all wage earners are converted into the full-time equivalents for comparison with the legal minimum wage.

Figure 5. Rates of compliance with minimum wage legislation in 11 developing economies (percentages)



Source: Authors' estimates based on data from household and labour force surveys.

minimum wage.¹⁶ On this measure, the rate of compliance with minimum wage regulations ranged from 95 per cent in Viet Nam to 49 per cent in Indonesia in the late 2000s (figure 5). While relatively high in Brazil, Mali, Mexico and Viet Nam, the rates in most other countries were around 60 per cent. Despite the high overall rate of compliance observed in Brazil, compliance was significantly lower among women, in rural areas, among some ethnic groups, in agriculture and low-skilled services, and in the informal sector – and non-compliance among these groups increased over time (see Appendix, table 3). In Peru, there were significant differences in compliance across regions and by sex, ethnic group and sector: lower proportions of women and workers in rural areas, the agricultural sector and the informal sector were paid wages above the statutory minimum. This was also true in Indonesia and Turkey, except that Indonesia featured higher compliance in rural areas than in urban areas. In the Philippines compliance was high among women, probably because a large proportion of them work in

¹⁶ Most of the studies which analyse compliance or employment effects actually ignore the complexity of minimum wages and often consider the lowest level of minimum wage for analysis. There are a few exceptions, where the complexity of minimum wages is taken into account, such as Gindling and Trejos (2010) and Gindling and Terrell (2004) on Costa Rica; Alaniz, Gindling and Terrell (2011) on Nicaragua; and Borhat, Kanbur and Mayet (2012) on South Africa.

domestic service, which was assigned a low minimum wage under the Labour Code. In South Africa, where gender differences disappeared from the mid- to late 2000s, compliance was lower in rural areas and among disadvantaged groups and those in the informal sector. Overall, across all 11 countries, one-third of the 326 million wage earners who were in principle covered by minimum wage regulations were paid less than the legal minimum.

An important policy issue centres on the gap between the average of sub-minimum earnings and the minimum wage, which the literature refers to as the “depth of violation”. Following the method used by Borat, Kanbur and Mayet (2012), we estimate the depth of violation for the overall economy of each country, which we then disaggregate by region, sex, ethnic group, industry and formal/informal sector (Appendix, table 4). The estimates show that underpaid workers averaged about 30 to 40 per cent less than the applicable minimum wage in the majority of the countries in the late 2000s, the outliers being Turkey (24 per cent less) and Mali and Peru (47 per cent less). In all of the countries except South Africa and Viet Nam, the average wages of female workers earning sub-minimum wages are much lower than those of male workers paid below the minimum. The depth of violation is also more pronounced among informal-sector workers compared to their formal-sector counterparts, and among disadvantaged groups.

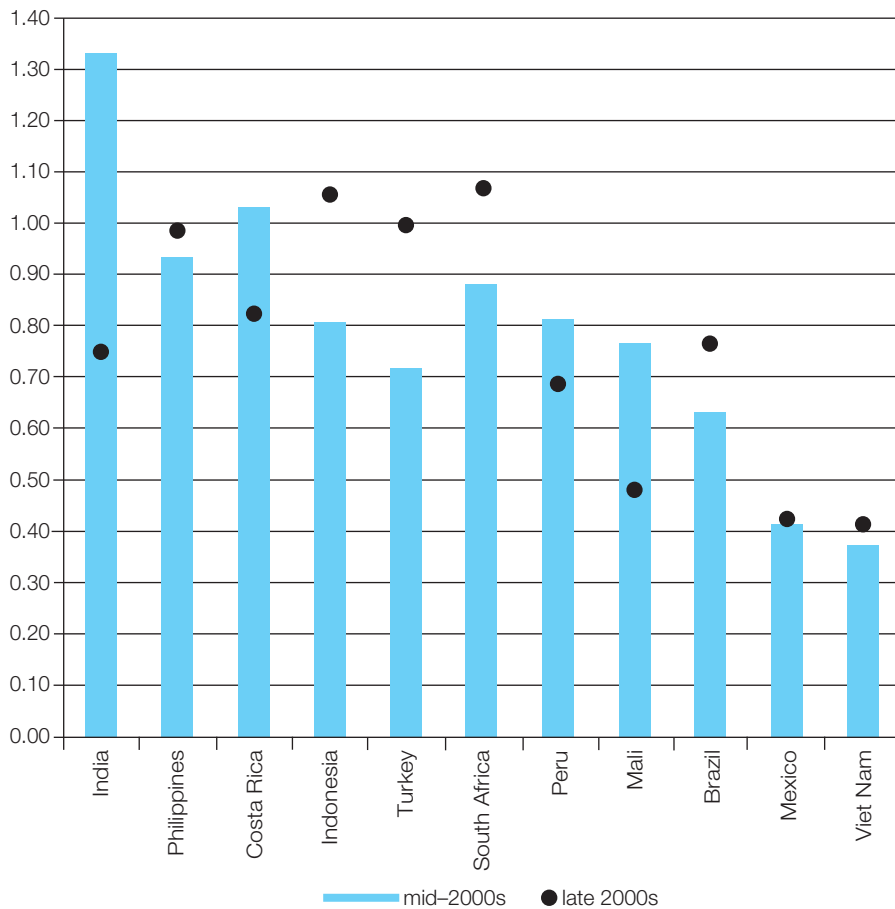
The rate of compliance may largely reflect the relative level at which minimum wages are set (Lee, 2012). Low minimum wages may thus quite naturally be associated with a relatively high degree of compliance: only when minimum wages truly “bite” does compliance become a challenge. To explore this possibility we have estimated the level of minimum wages both through the ratio of minimum to median wages (the so-called simplified Kaitz index) and through the ratio of minimum to mean wages in the 11 economies under analysis here. While this may seem like a simple endeavour, there are in fact many practical complications: How should the level of the minimum wage be calculated in countries where there are several rates? And whose wages should be counted in the estimation of median and mean wages? For countries that have multiple minimum wage rates – which vary by region, industry, occupation or enterprise size – we estimated the weighted average of those rates.¹⁷ This is then compared to the median and mean wages of employees aged 15–64 who are covered by minimum wage legislation.

Using national surveys and restricting analysis to full-time workers, the United Kingdom’s Low Pay Commission has estimated that among 13 advanced economies, minimum wages in 2010 ranged from 37 per cent of median wages in Japan to about 60 per cent of median wages in France, with the United Kingdom

¹⁷ The methodology involved assigning to each worker in the data set a legal minimum wage from the wage orders, sectoral wage determinations or executive decrees of each country. Every worker in the data set whose occupation or sector/industry was covered by such statutory instruments was thus assigned a legal minimum wage. For countries with multiple minimum wages, the assignment of a legal minimum is based on a comparison of the occupational classification used in the household or labour force survey and the categories specified in the minimum wage regulations.

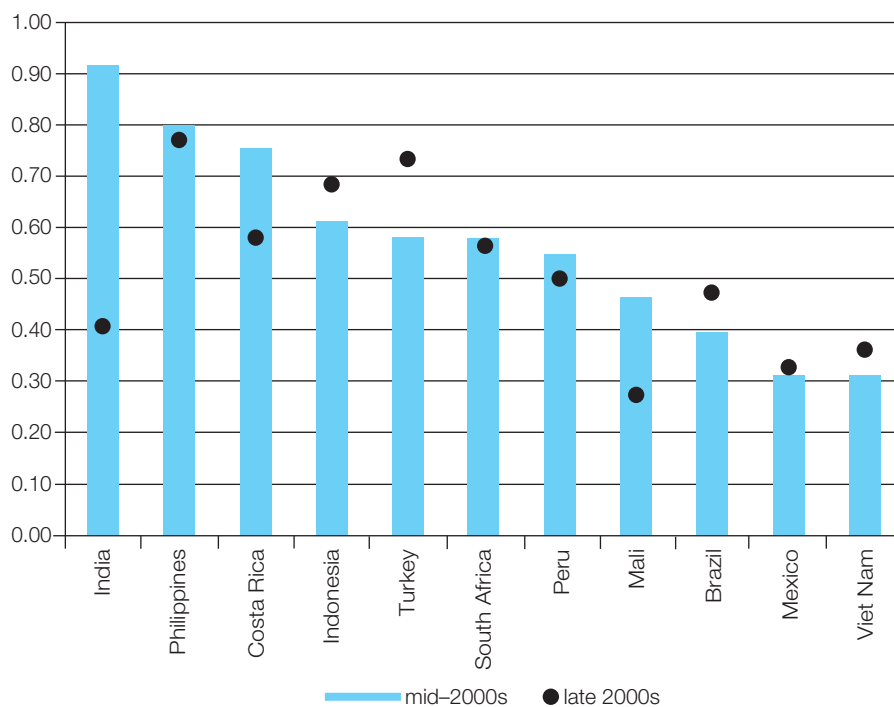
in the middle of the distribution at 46 per cent (Low Pay Commission, 2012). In the developing and emerging countries that we analyse here, the ratios of minimum to median wages are all above 60 per cent except in Mali, Mexico and Viet Nam, whose ratios are similar to those of developed economies (figure 6a). This suggests that the minimum wages of most developing economies are set at a relatively higher level than those of advanced economies. In Brazil, the ratio increased from 63 to 76 per cent of median wages in recent years, while the Philippines' weighted average of sectoral minimum wages is very close to the median wages of workers who are covered by those minima. The cases of Indonesia and South Africa, where minimum wages are actually higher than the median, point to a high rate of non-compliance. One possible reason why minimum wages are set higher in developing countries is the latter's wider income inequality.

Figure 6a. Ratios of minimum to median wages in 11 developing economies



Source: Authors' analysis based on data from household and labour force surveys.

Figure 6b. Ratios of minimum to mean wages in 11 developing economies



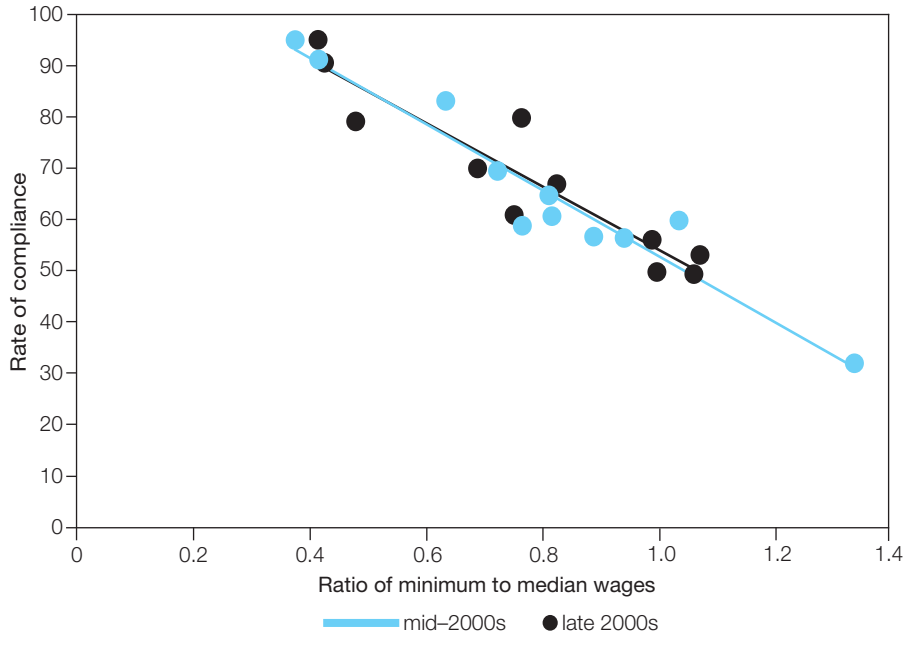
Source: Authors' analysis based on data from household and labour force surveys.

Looking at mean wages instead of median wages, we find that in about half of the countries the ratio of minimum to mean wages is around 50 per cent (figure 6b). This ratio is close to that observed in a number of advanced economies. Based on data for 75 countries, the ILO has found that “the levels of minimum wages relative to average [mean] wages vary widely across countries, but that there is a relatively high frequency at around 40 per cent of average wages” (ILO, 2008, p. 47). The fact that the mean is relatively far from the median in developing economies implies that the distribution of wages is heavily skewed, with the vast majority of workers earning low wages. Hence the higher ratios observed in some countries, like Indonesia, the Philippines and Turkey.

We are now in a position to look at the relationship between compliance and the relative levels of minimum wages. And indeed, a low level of minimum wages tends to be associated with a relatively high degree of compliance, as observed in Mali, Mexico and Viet Nam. Conversely, a higher level of minimum wages – as in Costa Rica, India, Indonesia, Peru, the Philippines, South Africa and Turkey – tends to be associated with lower rates of compliance.¹⁸ In Peru, the compliance rate was 60 per cent in 2005, when the minimum wage was set

¹⁸ The compliance rates estimated for Costa Rica and South Africa are similar to those found by Gindling and Trejos (2010) and Borat, Kanbur and Mayet (2012), respectively.

Figure 7a. Minimum wage levels and compliance rates in 11 developing economies



at 81.5 per cent of the median wage. But by 2010, the ratio of minimum to median wages had decreased and the rate of compliance had increased more or less proportionately. The negative relationship between minimum wage levels and compliance rates is presented in figure 7a, and was confirmed by means of probit models.¹⁹

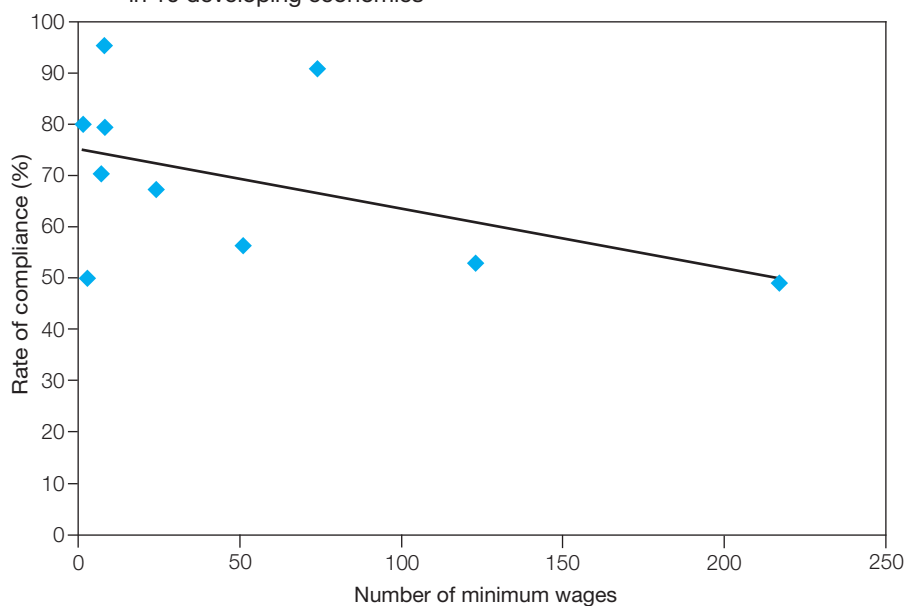
Reducing the minimum wage to some meaningless level or refraining from adjusting it regularly is clearly not a satisfactory response to the challenge of compliance. Indeed, if it is set too low, it will be ineffective in delivering a living wage to workers and their families and will fail to raise their consumption and reduce poverty. Hence the argument for a balanced approach (Belser and Sobeck, 2012), as prescribed in the ILO's Minimum Wage Fixing Convention, 1970 (No. 131). This provides that minimum wage setting should involve workers' and employers' organizations and independent experts, and take into consideration: (i) the needs of workers and their families, taking into account the general level of wages in the country, the cost of living, social security benefits and the relative living standards of other social groups; and (ii) economic factors, including the requirements of economic development, levels of productivity and the desirability of attaining and maintaining a high level of employment. Minimum wages should also be regularly adjusted to take account of fluctuations in the cost of living and other economic conditions.

¹⁹ The probit models are available from the authors on request.

Looking again at figure 7a, we can observe that the relationship between minimum wage level and compliance was somewhat weaker during the late 2000s, with a flatter fitted line, implying that the wage level lost part of its impact on compliance. It is also interesting to note that Brazil seems to have successfully combined a “biting” minimum wage with high compliance. This suggests that while non-compliance is associated with the level at which the minimum wage is set, it is also linked to the broader institutional environment.

The high level of compliance observed in Brazil could be due in part to the country’s simple national minimum wage system, which makes it easy to implement and administer. But Brazil is also a country where workers are organized and where the Government has made considerable investments in enforcement machinery. Trade unions in Brazil have indeed actively engaged in the processes of minimum wage setting and implementation. Not only has this combination secured a higher level of compliance, but it has also resulted in improvements in the wage distribution, as a considerable proportion of low-paid workers are covered by the minimum wage (Lemos, 2009). Indeed, it is important to note that Brazil is the only country to have maintained its rate of compliance despite its increasing Kaitz index, while all other countries (Costa Rica, India and Peru) increased compliance at the cost of a lower Kaitz index (figure 7b).

Figure 7b. Rates of compliance and numbers of minimum wages in 10 developing economies*



* India is excluded from this analysis, as it is considered an outlier with 1,679 occupational minimum wages.

Source: Authors’ estimates based on data from household and labour force surveys.

Though Costa Rica and India have complex minimum wage systems with fairly high minimum wage levels, the two countries actually improved their rates of compliance over the period, which is probably due to the enforcement strategies they have adopted. In Costa Rica, the rate of compliance increased from 59.6 per cent in 2005 to 67.1 per cent in 2011 because of improved-enforcement and a fall in real wages.²⁰ Across different groups, the rates of compliance are higher among women compared to men, and lower in rural areas and in the informal sector.

In India, the overall rate of compliance increased by 30 percentage points between 2004–05 and 2009–10, although non-compliance remained higher in agriculture, low-skilled services and manufacturing. Although India's Kaiz index declined, no doubt contributing to improved compliance, such progress may be at least partly attributable to the Mahatma Gandhi National Rural Employment Guarantee Act of 2005, which provided unskilled workers with employment at minimum wage rates and specified equal remuneration for male and female workers.²¹ As a result, a significant proportion of low-paid workers may have increased their average wage. This also resulted in higher rates of compliance in rural areas, among women, in the informal sector and among disadvantaged groups.

Our empirical analysis of compliance further shows that the rate of compliance tends to be higher in countries that have simple, economy-wide minimum wages rather than complex sectoral or occupational minimum wages. This is also illustrated in figure 7b, which shows that the level of compliance decreases as the number of minimum wages increases. Though national or regional minimum wages are simpler to administer, a regularly adjusted national minimum wage floor can usefully be combined with sectoral or occupational wages in developing economies where collective bargaining is weak and trade union density is low. Costa Rica is a case in point: its hybrid system produces a rate of compliance higher than in countries with just sectoral minimum wages but lower than in those with national minimum wages.

Lastly, in all of the countries we analyse, compliance remains considerably lower in the informal economy and among low-skilled workers, despite relatively complete legal coverage. In most countries, agriculture and low-skilled employment are characterized by particularly low compliance. In the late 2000s, women also were affected by lower compliance rates than men in all of the countries examined, except in Costa Rica and the Philippines. In Costa Rica compliance for women was still lower than for men in the mid-2000s, but this pattern was subsequently reversed. Perhaps not surprisingly, the data show greater compliance gaps for particular disadvantaged groups, including ethnic minorities, indigenous peoples and rural workers, with women

²⁰ This finding is quite similar to the results of Gindling, Mossaad and Trejos (2013), who use a different measure.

²¹ The minimum wage acted as a binding floor for these workers, who could bargain for similar or higher wages in agricultural and non-agricultural occupations thus improving their wage levels (Rani and Belsler, 2012; Jeyaranjan, 2011; Dasgupta and Sudarshan, 2011).

in these groups often facing compounded disadvantage. This may be explained by their high representation in low-skilled work, informal work and low-compliance industries, but also by barriers to information on labour rights (including language barriers) and inadequate policy targeting of the areas where they live and work.²²

Towards “tailored strategies” for improving compliance

Non-compliance with minimum wage standards has immediate negative social consequences not only for workers and their families, but also for compliant employers, because it gives non-compliant enterprises an illegitimate cost advantage. Enhancing compliance can thus be seen as motivated by reasons that range from upholding the rule of law and fairness, to social protection and respect for human rights.²³

Our analysis has shown compliance to be intrinsically linked to the design of the minimum wage system. So one of the key questions for policy-makers in developing economies is to set minimum wages at a realistic but sufficient level to enable this policy to play its redistributive role (with the support of appropriate proactive measures to ensure effective observance in practice).²⁴ As demonstrated by the case of Brazil, the right policy mix can deliver a strong increase in the ratio of minimum to median wages while maintaining a relatively stable compliance rate, around 80 per cent in this case (figures 6a and 5). Similarly, Peru’s active minimum wage policy helped to achieve a reasonable minimum wage level, while improving overall compliance from 60 to 70 per cent despite upward adjustments in minimum wages in both nominal and real terms (Díaz, 2013).

But as these two examples also show, compliance-enhancing strategies need to be comprehensive, addressing issues throughout the design, adjustment and implementation of the minimum wage policy. For countries with similar systems, it is thus implementation strategies that can make a difference in raising or reducing compliance levels. Reviewing different complementary aspects of such strategies, Benassi (2011) recommends five types of measures, namely: (i) building public support; (ii) capacity building to inform workers and employers; (iii) reinforced labour inspections; (iv) higher sanctions; and

²² This pattern is broadly mirrored in a study on Israel by Gottlieb (2000) who found that minimum wage compliance was lowest among male migrants, followed by female migrants, Arab women and Arab men, while government enforcement failed to focus on these groups.

²³ As at 1 November 2013, 160 States were parties to the International Covenant on Economic, Social and Cultural Rights, which provides that “States Parties ... recognize the right of everyone to the enjoyment of just and favourable conditions of work, which ensure, in particular: (a) Remuneration which provides all workers, as a minimum, with: ... (ii) A decent living for themselves and their families ...”.

²⁴ For further elaboration on this point, see Lee and Sobeck (2012) and Belser and Sobeck (2012).

(v) empowering of workers through individual complaints procedures and collective action.

This last point is particularly important since workers are ultimately the beneficiaries of minimum wages and should thus be able to contribute to enforcing their rights at the workplace. At the individual level, this requires that underpaid workers should be able to report violations and bring claims to recover back wages. At the collective level, laws and policies are required that allow workers to organize and to demand their rights. In fact, in several of the countries under study, including Brazil, Indonesia and South Africa, trade unions have been instrumental in implementing minimum wage policies, at the forefront of related campaigning and awareness raising. One key challenge for workers' organizations is to reach out to marginalized workers, and while there have been important advances in this respect – e.g. union engagement with multinational companies in the apparel industry, or their organization of precarious workers in supply chains or plantation workers – much remains to be done to bring wage workers in non-standard employment or the informal economy under the effective protection of the law.

From the broader policy perspective, the challenge is to find the right combination of policies and interventions to arrive at effective compliance strategies in respect of minimum wages, adapted to the country-specific environment. There is an ongoing debate on the merits of different approaches to labour inspection, enforcement and sanctions in general (see Piore and Schrank, 2008; Pires, 2008; Vega and Robert, 2013). However, this literature tends to consider working conditions generally, rather than focus more specifically on minimum wages. Besides, the economic literature on minimum wage compliance has mainly relied on sanctions, thereby constructing methodologies around a narrow focus on enforcement (Lee and McCann, 2011).

Some studies, however, have looked into the effects of “tailored approaches” to enhancing minimum wage compliance. Gindling, Mossaad and Trejos (2013) show that Costa Rica's rate of compliance was improved by a National Minimum Wage Campaign undertaken in 2010, which combines sustained awareness raising, facilitation and encouragement of complaints, and increased wage inspections.²⁵ A central feature of the campaign was a new telephone hotline allowing workers to report wage violations in a simple and anonymous manner, which received tens of thousands of calls. In the same vein, Lee and McCann (2011) found evidence that awareness of statutory labour rights among low-paid workers in the United Republic of Tanzania has a positive effect on actual working conditions, including wages. Benassi (2011) highlights the role of workers' organizations in enhancing minimum wage compliance. Analysing the role of compliance agreements between manufactures and contractors in Los Angeles' apparel sector, Weil (2004) found that such agreements also have a favourable effect on minimum wage compliance. The

²⁵ While based on a different methodology, their findings confirm the trend we identify here, i.e. an overall improvement from 59.6 to 67.1 per cent between 2005 and 2011.

findings of these studies highlight the need for comprehensive and tailored compliance strategies, stressing the potential of worker empowerment approaches and regulatory schemes creating compliance incentives. Public procurement schemes, for instance, can require minimum wage compliance of enterprises wishing to supply goods or services to government agencies, as envisaged in the ILO Labour Clauses (Public Contracts) Convention, 1949 (No. 94). Corporate social responsibility initiatives, including self-assessments and public reporting, are seen by enterprises as valuable tools for communicating their commitment to respect for labour standards, but few studies have examined their impact on wages.²⁶ By contrast, compliance programmes combining public and private approaches, such as “Better Factories Cambodia” and “Better Work Vietnam”, have been assessed as having positive effects on wages in export industries in developing countries, though it is difficult to say whether this is due to increased compliance controls or productivity gains (Oka, forthcoming; Brown, Dehejia and Robertson, forthcoming).

ILO standards on minimum wages, wage protection and labour inspection go beyond enforcement in the narrow sense of imposing penalties in case of infringement.²⁷ They also focus on information and awareness building, advice, cooperation of enforcement agencies with workers’ and employers’ organizations, and cooperation between these agencies and other public bodies which may have to deal with wages, including the judiciary, social security institutions or tax authorities. Indeed, the ILO has frequently stressed that compliance strategies should be comprehensive and balanced, combining preventive and punitive approaches.²⁸

In other words, diversification of approaches is no substitute for further reflection on how to design and operate dissuasive sanctions regimes to address and deter violations, an issue that has been extensively studied (Ashenfelter and Smith, 1979; Squire and Suthiwart-Narueput, 1997; Basu, Chau and Kanbur, 2010; Weil, 2004 and 2005). Indeed, the threat of sanctions remains the necessary backbone of any credible compliance system, particularly where supply chain pressures draw employers into a race to the bottom and workers lack collective representation or are otherwise vulnerable, such as low-skilled migrant workers and undocumented migrants (Weil, 2004; Epstein and Heizler, 2007; Amengual, forthcoming). Yet, Costa Rica, for example, is one of several countries in our sample where labour inspectorates are not authorized to impose fines for labour law violations, including in regard to wages (Vega and Robert, 2013). As a rule, inspections in Costa Rica can lead to imposition of a

²⁶ One such study is Newitt (2012).

²⁷ See, for example, the Labour Inspection Convention, 1947 (No. 81), the Protection of Wages Convention, 1949 (No. 95), the Minimum Wage Fixing Convention, 1970 (No. 131), the Protection of Wages Recommendation, 1949 (No. 85), and the Minimum Wage Fixing Recommendation, 1970 (No. 135).

²⁸ See, for example, the International Labour Conference’s 2009 Conclusions on labour administration and inspection, paragraph 12. For a recent review of national law and practice in regard to sanctions imposed through labour inspection, see Vega and Robert (2013).

fine only once a follow-up inspection has found that the violation persists. In such cases, the labour inspectorate must then submit the case to the court for a fine to be imposed. Similarly, workers are required to claim outstanding wage payments in court. However, judicial proceedings are lengthy and only a small proportion of cases result in fines and back-payment of underpaid wages (Trejos, 2013). This obviously raises the question of whether further gains in minimum wage compliance could be made by strengthening the sanctions regime.²⁹

However, given the widespread non-compliance observed in the informal economy, it is clear that traditional enforcement approaches alone will not be sufficient to make significant progress in closing the compliance gap. The sheer size of the informal economy, compounded by the dispersion of its workplaces and the informal nature of enterprises, makes inspections on any meaningful scale difficult and most often unfeasible. Yet, several countries were able to improve compliance in the informal economy, such as Costa Rica, where broad-based awareness raising was a central component of its National Minimum Wage Campaign. Since this Campaign also included increased and targeted inspections of wages in formal enterprises, there are grounds to consider that this had a positive spillover effect on the informal sector.³⁰ In Peru, formalization of employment has provided an entry point for extending the reach of the government authorities responsible for compliance. Under an electronic worker registration system (*Planilla Electronica*) introduced in 2007, enterprises with three or more workers are required to make monthly social security declarations online. Díaz (2013) shows that minimum wage compliance is higher among enterprises which have made online declarations. The current focus of the labour inspectorate on enterprises that have not done so can therefore be expected to have a positive effect on compliance.³¹

In India, where the 2005 Mahatma Gandhi National Rural Employment Guarantee Act reached out to workers in rural areas, compliance improved in those areas and among female workers. This programme seems to have

²⁹ Although it is not one of the countries covered by this article, Israel recently took an initiative whose effectiveness in this regard will be worth monitoring over the coming years. Specifically, under its new Act to increase the enforcement of labour laws of 5772/2011 (Official Gazette, No. 2326, 19 December 2011, p. 62), its labour administration agencies have been empowered to fine employers for minimum wage violations through fast-track administrative proceedings, whereas criminal prosecution was the only recourse until the Act's entry into force in mid-2012. This legislation also provides for employer self-assessment through a scheme involving Government-certified private "wage inspectors" and for the joint liability of private employment agencies offering security, cleaning and catering services and service recipients. Also, its enactment was supported by the recruitment of 120 additional labour inspection staff. Although it is too early to assess the effectiveness of this new regulatory framework, preliminary information provided to us by the Ministry of the Economy in mid-October 2013 suggests that enforcement has improved, notably with the launching of 1,400 minimum wage investigations since July 2012.

³⁰ Evidence to that effect for Brazil is presented by Almeida and Carneiro (2011).

³¹ This system provides the labour inspectorate with better data on workplaces and the workers they employ, while enterprises are apparently more aware that they could be subject to inspections. As reported by Díaz, labour inspection action has resulted in some 10,000 workers annually being newly registered over recent years, which is considerable keeping in mind the human resource constraints facing the inspectorate (2013, p. 43).

effectively redistributed resources to low-paid workers, including disadvantaged groups classified as “scheduled castes and tribes” (see Appendix, table 3).

One of the lessons learned from this experience is that transparency regarding wages and wage payments can improve observance of minimum wages. On the one hand, the Act relies on a legislated right to information and social audits, while, on the other, it requires that all wage payments made to the workers employed under the scheme be effected by transfer to each worker’s bank account. While the operation of this system and its replicability in other contexts will have to be examined in more detail, electronic wage payments and associated monitoring could indeed provide an avenue for enhanced compliance elsewhere, while also promoting the access of women and men living and working in rural areas to financial services (see Dupas et al., 2012). In this regard, the wage protection system introduced in the United Arab Emirates in 2009 could offer further insights into the effectiveness of electronic monitoring of wage payments. In this country, the labour authorities have cooperated with the Central Bank to set up an electronic system that logs wage payments made by private sector enterprises to migrant workers, allowing the authorities to monitor whether payments are made in full and on time (United Nations, 2012).³²

Concluding remarks: The way forward

This article has examined the extent of minimum wage coverage and compliance in 11 developing and emerging countries. Our analysis shows that 61 million workers in these countries (16 per cent of the wage earners) are not covered by minimum wage legislation, and that significant proportions of them are women or members of vulnerable groups, such as domestic workers or informal sector workers. Moreover, roughly one-third of wage earners in these countries are covered but paid less than minimum wages. On average, such underpaid workers receive only about 50 to 75 per cent of the applicable minimum wage, which often amounts to much less than the minimum living wage required by these workers and their families.

Our analysis brings out two important findings. First, countries that have a simple national minimum wage system have higher compliance rates than those with innumerable sectoral or occupational minimum wages. In between these two extremes there are also countries with a hybrid system combining a national minimum wage floor with sectoral minimum wages, which have increased compliance over time. However, for this system to work effectively, greater efforts are required to make both workers and employers aware of the rates that apply to them. Information and awareness raising are indeed essen-

³² Under the scheme, non-payment of wages is sanctioned by a denial of new work permits, in addition to the penalties prescribed by applicable labour laws. According to figures published in November 2012, some 3,548,000 workers in 215,681 enterprises were covered by the system (United Nations, 2012).

tial to this process, including through public statements by top-level officials against non-compliance, as is evident from the Costa Rican example we give.

By focusing on specific industries and different groups of workers, this article has shown that strategies for enhancing minimum wage compliance should be comprehensive. Ensuring minimum wage compliance is not only a matter of putting in place a well-equipped labour inspectorate that has the technical skills and resources to detect and sanction violations through effective procedures, though this can be a challenge in itself in developing countries. Rather, improved compliance depends on the effectiveness of the entire process of designing and implementing minimum wage policies, starting from determination of the right level and rate structure in consultation with employers' and workers' organizations. Another of our findings is indeed that the rate of compliance is dependent on the level at which minimum wages are set. This has to be meaningful. Countries that set minimum wages at a lower level and do not adjust it regularly have higher compliance, but their minimum wages then become ineffective as a redistributive policy instrument and lose credibility as a means of improving the welfare of society at large. Conversely, countries that set the level too high – close to the median or above it – have lower compliance rates. However, there are countries that have set their minimum wages at 70–80 per cent of median wages and succeeded in maintaining a high compliance rate. This is typically the case of countries where workers' organizations are actively engaged in both setting and implementing minimum wages, thereby creating an environment of “ownership” and social responsibility for implementation that can make a difference.

Penalties for non-compliance should obviously be dissuasive. This requires that they too should be set at an appropriate level and that effective institutions and procedures be set up to administer and enforce them. In particular, relying primarily on criminal liability and court proceedings can mean that sanctions are in practice rarely imposed because such proceedings are costly and lengthy. Ensuring that workers fully recover outstanding amounts is essential both as a remedy for the workers concerned and as an economic disincentive for employer non-compliance. However, the literature reviewed in this article suggests that employer decisions regarding wages are not exclusively motivated by short-term financial cost–benefit analysis, but that they take broader considerations into account, including “reputational risks”. While the impact of corporate social responsibility initiatives on wage compliance requires further examination, employers' interest in such initiatives suggests that ensuring a level playing field and protecting workers' rights can be interconnected and shared objectives. This, in turn, suggests that greater attention might usefully be devoted to joint compliance strategies combining public and private inputs.

In addition to being comprehensive, approaches to compliance also need to be tailored to the specific circumstances of high-risk industries and vulnerable groups of workers, particularly those in the informal economy. Workers' organizations have a unique opportunity to reach out to marginalized and

vulnerable workers in the informal economy and thus contribute to better compliance by assisting and empowering them. Interestingly, there is evidence suggesting that investment in enhancing compliance in the formal sector has a positive spillover effect on the informal sector. Indeed, not only do international labour standards recommend that minimum wage schemes should have the broadest possible coverage,³³ but as shown in this article, the prevalence of informality in a given labour market segment is no reason for excluding it from coverage, not least because progress in compliance is possible in spite of informality. Lastly, given that women and disadvantaged groups such as indigenous peoples, minorities and migrants are strongly represented in low-skilled and low-paid jobs, better enforcement in the industries that employ them can significantly reduce poverty and narrow the gender and ethnic pay gaps.

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³³ See the ILO's Minimum Wage Fixing Recommendation, 1970 (No. 135), Para. 4.

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Appendix

Table 1. Sources of the data on coverage of minimum wages

Country	Data source	Years
Brazil	Pesquisa Nacional por Amostra de Domicílios (PNAD), IBGE	2005 and 2009
Costa Rica	Encuesta de Hogares de Propósitos Múltiples, INEC for 2005; Encuesta Nacional de Hogares (ENAH), INEC for 2010	2005 and 2011
India	Employment–Unemployment Survey, NSSO, Government of India	2004–05 and 2009–10
Indonesia	National Labour Force Survey (Survei Angkatan Kerja Nasional) (SAKERNAS), BPS-Statistics	2005 and 2009
Mali	Enquête Permanente Emploi Auprès des Ménages (EPAM)	2004 and 2010
Mexico	Encuesta Nacional de Ocupación Y Empleo (ENOE), INEGI	2005 and 2010
Peru	Encuesta Nacional de Hogares, INEI	2005 and 2010
Philippines	Labour Force Survey, National Statistics Office	2003 and 2009
South Africa	Labour Force Survey, Statistics South Africa for 2007, Labour Market Dynamics (LMD) Survey for 2011	2007 and 2011
Turkey	Household Labour Force Survey, Turkish Statistical Institute	2005 and 2011
Viet Nam	Labour and Employment Survey, General Statistics Office, Ministry of Planning and Investment	2007 and 2011

Table 2. Wage earners covered by minimum wage legislation in 11 developing economies (across different groups)

Mid-2000s

Country	Region		Sex					Ethnic groups*					Industry					Sector		
	Overall	Rural	Urban	Male		Female		E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
				Male	Female	Male	Female													
Brazil	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Costa Rica	99.8	99.9	99.7	99.7	99.8	—	—	—	—	—	—	100.0	93.4	99.7	100.0	100.0	100.0	99.9	99.7	99.9
India	60.8	43.7	46.9	59.5	63.8	51.8	64.8	64.9	58.3	—	—	80.7	58.6	44.0	15.5	36.3	75.8	57.4	62.4	62.4
Indonesia	95.3	96.9	94.2	98.0	89.1	—	—	—	—	—	—	100.0	100.0	100.0	100.0	78.6	100.0	95.1	95.8	
Mali	100.0	100.0	100.0	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Mexico	100.0	—	—	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Peru	91.0	93.5	90.5	99.2	77.5	86.6	92.2	95.7	94.2	91.0	—	100.0	100.0	100.0	100.0	71.7	100.0	98.7	78.6	
Philippines	100.0	—	—	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
South Africa	59.3	—	—	54.5	65.8	31.7	64.8	56.2	54.1	—	—	19.0	27.4	35.4	65.1	72.7	66.5	63.4	39.9	
Turkey	100.0	100.0	100.0	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Viet Nam	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Late 2000s

Country	Region		Sex					Ethnic groups*					Industry					Sector		
	Overall	Rural	Urban	Male		Female		E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
				Male	Female	Male	Female													
Brazil	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Costa Rica	99.7	100.0	99.5	99.5	99.8	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	99.7	99.5	
India	70.7	76.1	58.0	65.3	85.6	65.9	76.5	73.3	70.3	—	—	93.4	68.7	48.7	30.5	66.5	68.6	65.7	73.1	
Indonesia	95.3	93.5	97.7	98.5	88.9	—	—	—	—	—	—	100.0	100.0	100.0	100.0	80.6	100.0	94.6	97.1	
Mali	100.0	100.0	100.0	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Mexico	100.0	—	—	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Peru	92.9	90.5	92.6	99.5	83.1	91.0	91.2	85.3	93.5	93.1	—	100.0	100.0	100.0	100.0	77.0	100.0	99.0	79.6	
Philippines	100.0	—	—	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
South Africa	73.6	59.3	71.2	70.9	76.9	52.3	79.0	71.2	57.4	—	—	94.4	29.8	34.0	94.1	92.3	68.8	70.6	89.3	
Turkey	100.0	100.0	100.0	100.0	100.0	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Viet Nam	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	—	—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Ethnic groups for the various countries are the following: Brazil (E1: White, E2: Black, E3: Amarela, E4: Parda, E5: Indigenus); India (E1: Forward castes, E2: Scheduled tribes, E3: Scheduled castes, E4: Other Backward castes); Peru (E1: Quechua, Aymara, E2: Indigenus, E3: Black, E4: Mixed race, E5: White); South Africa (E1: White, E2: African/Black, E3: Coloured, E4: Indian/Asian); Viet Nam (E1: Kinh, E2: Khmer, E3: Uplands, E4: Others).

— = no data available for these categories.

Source: Authors' analysis based on data from household and labour force surveys as detailed in Appendix, table 1.

Table 3. Estimated rate of compliance with minimum wage legislation in selected developing economies (across different groups)
Mid-2000s

Country	Region		Sex		Ethnic groups*					Industry					Sector			
	Overall	Rural	Urban	Male	Female	E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
Brazil	83.4	64.3	85.7	86.9	78.8	88.4	79.8	93.2	77.4	84.3	59.7	96.4	92.8	82.0	75.1	93.7	98.0	59.4
Costa Rica	59.6	48.6	66.0	59.2	60.2	—	—	—	—	—	36.5	83.7	62.9	55.2	56.7	72.3	65.0	41.0
India	31.9	26.4	53.6	39.8	14.2	46.5	22.2	26.8	30.8	—	22.7	50.2	39.6	36.8	37.3	73.3	56.3	22.6
Indonesia	64.9	57.6	70.2	70.7	50.2	—	—	—	—	—	46.2	81.1	64.0	82.4	58.4	80.9	66.6	60.3
Mali	58.6	61.0	57.8	71.1	37.0	—	—	—	—	—	46.9	91.8	66.9	43.9	35.2	88.9	89.9	31.9
Mexico	91.3	—	—	93.6	87.3	—	—	—	—	—	81.6	99.4	94.4	96.1	86.9	96.4	93.7	82.1
Peru	60.4	28.8	66.7	62.5	55.9	60.8	40.1	71.1	73.1	70.3	16.7	84.6	64.8	56.1	55.0	81.3	79.4	22.5
Philippines	56.6	—	—	50.5	66.7	—	—	—	—	—	16.3	63.7	56.5	52.6	64.8	76.6	65.9	37.4
South Africa	56.4	—	—	62.4	50.0	92.8	50.6	72.9	82.7	—	50.6	82.1	77.2	28.7	51.3	71.8	61.8	23.9
Turkey	69.6	58.0	73.1	71.3	62.8	—	—	—	—	—	24.4	85.5	69.4	58.7	64.2	80.6	81.4	42.6
Viet Nam	95.0	92.7	98.1	95.9	93.8	95.4	83.7	93.6	85.6	—	86.4	97.6	96.1	98.8	97.0	94.3	98.9	92.5

Late 2000s

Country	Region		Sex		Ethnic groups*					Industry					Sector			
	Overall	Rural	Urban	Male	Female	E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
Brazil	79.8	61.4	81.9	84.8	73.6	84.6	76.8	90.7	74.6	79.5	55.1	95.2	90.3	79.6	70.1	90.4	95.1	49.9
Costa Rica	67.1	56.7	72.0	65.0	70.3	—	—	—	—	—	43.6	86.8	63.7	56.4	61.2	86.0	71.6	44.8
India	61.0	49.8	84.7	69.0	45.8	76.5	51.7	54.1	56.9	—	33.7	83.1	69.4	73.3	68.8	96.6	87.6	41.8
Indonesia	49.2	56.5	39.9	53.8	38.7	—	—	—	—	—	25.5	67.1	43.6	63.9	46.0	70.9	54.8	35.1
Mali	79.3	70.9	84.4	84.9	63.4	—	—	—	—	—	72.9	94.7	62.9	83.8	76.3	90.9	89.7	67.4
Mexico	90.6	—	—	92.7	87.2	—	—	—	—	—	78.1	98.9	94.7	95.0	86.5	96.3	93.7	79.9
Peru	70.2	35.3	76.0	74.3	62.9	70.0	56.4	79.7	71.6	79.2	22.0	85.8	76.4	76.9	62.0	84.6	84.1	32.2
Philippines	56.2	—	—	49.2	66.8	—	—	—	—	—	12.8	57.1	57.2	48.9	66.7	74.3	64.4	37.6
South Africa	52.9	34.6	58.6	53.2	52.5	89.3	46.7	59.1	79.8	—	39.3	84.1	70.4	24.9	51.6	67.9	57.7	36.4
Turkey	50.1	38.4	52.8	52.0	44.0	—	—	—	—	—	16.2	65.7	38.2	47.5	40.8	68.0	58.9	18.6
Viet Nam	95.2	94.5	96.1	96.1	93.8	95.6	86.3	93.1	89.6	—	89.4	98.3	96.2	98.9	95.8	93.7	—	—

* Ethnic groups for the various countries are the following: Brazil (E1: White, E2: Black, E3: Amarela, E4: Parda, E5: Indigenus); India (E1: Forward castes, E2: Scheduled tribes, E3: Scheduled castes, E4: Other Backward castes); Peru (E1: Quechua, Aymara, E2: Indigenous, E3: Black, E4: Mixed race, E5: White); South Africa (E1: White, E2: African/Black, E3: Coloured, E4: Indian/Asian); Viet Nam (E1: Kinh, E2: Khmer, E3: Uplands, E4: Others).

— = no data available for these categories.

Source: Authors' analysis based on data from household and labour force surveys as detailed in Appendix, table 1.

Table 4. Depth of minimum wage violation among underpaid workers (across different groups)
Mid-2000s

Country	Region		Sex		Ethnic groups*					Industry				Sector				
	Overall	Rural	Urban	Male	Female	E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
Brazil	42.3	45.4	41.4	39.6	44.4	39.6	40.7	40.2	44.4	43.0	43.3	28.2	40.3	36.7	44.8	34.0	17.9	44.3
Costa Rica	32.2	30.7	34.0	28.9	36.2	—	—	—	—	—	34.1	23.1	25.4	28.7	36.4	26.9	29.6	37.2
India	36.9	37.1	35.9	31.1	45.9	36.9	40.2	36.3	36.6	—	36.5	43.9	37.3	29.6	29.2	39.3	37.9	36.7
Indonesia	33.9	38.1	29.5	30.5	39.6	—	—	—	—	—	39.6	32.9	29.4	28.0	30.1	36.8	31.1	40.1
Mali	69.9	52.1	62.1	50.6	67.7	—	—	—	—	—	64.9	29.7	49.6	45.7	65.4	36.1	35.9	63.0
Mexico	36.2	—	—	32.6	39.4	—	—	—	—	—	34.1	20.0	41.6	36.1	35.5	37.4	34.3	38.9
Peru	48.9	57.8	45.1	47.3	51.6	54.9	53.9	39.1	45.1	48.2	57.6	36.6	42.9	42.3	45.7	44.2	39.6	53.8
Philippines	35.2	—	—	33.0	40.6	—	—	—	—	—	40.3	33.0	33.6	22.6	36.1	33.2	33.5	37.1
South Africa	35.8	—	—	35.5	36.0	27.0	36.1	32.3	36.7	—	24.2	18.9	28.4	46.4	34.2	34.8	33.1	43.8
Turkey	21.1	26.0	18.7	19.0	27.2	—	—	—	—	—	42.0	7.3	13.9	27.0	17.9	23.4	6.0	32.1
Viet Nam	33.6	33.8	32.9	35.6	31.7	34.1	29.3	33.6	26.9	—	32.6	21.4	33.0	26.0	30.4	37.8	30.9	33.9

Late 2000s

Country	Region		Sex		Ethnic groups*					Industry				Sector				
	Overall	Rural	Urban	Male	Female	E1	E2	E3	E4	E5	Agriculture	Mining	Manufacturing	Construction	Low skill	High skill	Formal	Informal
Brazil	40.0	46.6	38.2	38.1	41.3	34.6	40.4	40.0	43.7	35.1	46.7	31.9	32.0	34.8	42.5	30.2	12.4	45.2
Costa Rica	32.8	31.3	34.9	25.8	40.1	—	—	—	—	—	29.7	25.1	24.2	23.8	37.9	26.3	30.9	37.1
India	29.9	30.3	27.0	25.0	35.1	26.3	30.3	29.3	31.5	—	29.9	30.9	28.8	26.9	35.0	15.9	28.8	30.1
Indonesia	37.9	35.2	40.4	34.1	44.4	—	—	—	—	—	41.2	34.9	35.0	24.4	36.5	46.2	37.6	38.5
Mali	47.2	49.1	45.0	35.8	60.5	—	—	—	—	—	54.6	33.1	36.6	59.6	51.1	21.7	50.0	46.2
Mexico	34.6	—	—	32.7	36.4	—	—	—	—	—	33.8	43.9	34.9	30.9	35.0	35.4	32.8	36.6
Peru	46.9	54.4	43.5	46.2	47.8	53.7	51.6	49.8	42.5	46.1	54.0	33.4	45.0	45.4	45.6	40.4	38.5	52.4
Philippines	36.9	—	—	34.2	42.7	—	—	—	—	—	41.5	34.5	37.4	22.2	39.9	33.2	35.5	38.6
South Africa	38.9	43.0	36.9	39.3	38.4	38.0	39.5	33.1	38.7	—	27.4	37.1	33.0	50.0	39.2	34.0	36.5	44.3
Turkey	24.4	29.3	22.9	22.6	29.2	—	—	—	—	—	41.2	18.1	21.2	24.3	23.8	26.2	18.0	35.9
Viet Nam	28.8	29.8	27.0	29.6	28.1	29.1	23.9	27.1	28.9	—	28.1	23.0	27.9	26.7	22.9	32.7	—	—

Notes: The figures in this table indicate the proportion by which underpaid workers' wages fall short of the minimum wage. * Ethnic groups for the various countries are the following: Brazil (E1: White; E2: Black; E3: Amarela; E4: Parca; E5: Indigenous); India (E1: Forward castes; E2: Scheduled tribes; E3: Scheduled castes; E4: Other Backward castes); Peru (E1: Quechua; Aymara; E2: Indigenous; E3: Black; E4: Mixed race; E5: White); South Africa (E1: White; E2: African/Black; E3: Coloured; E4: Indian/Asian); Viet Nam (E1: Kinh; E2: Khmer; E3: Uplands; E4: Others).

— = no data available for these categories.

Source: Authors' analysis based on data from household and labour force surveys as detailed in Appendix, table 1.