# A Race to the Bottom in Labour Standards?

# An Empirical Investigation

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**Abstract:** Among the many concerns over globalization is that as nations compete for mobile firms, they will relax labour standards as a method of lowering costs and attracting investment. Using spatial estimation on panel data for 148 developing countries over 18 years, we find that the labour standards in one country are positively correlated with the labour standards elsewhere (i.e. a cut in labour standards in other countries reduces labour standards in the country in question). This interdependence is more evident in labour practices (i.e. enforcement) than in labour laws. Further, competition is most fierce in those countries with already low standards.

**JEL Codes:** J83; F23; O19

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## 1. Introduction

While many concerns have been expressed over the impact of increasing globalization, many of them centre on the possibility of a race to the bottom in which governments seek to attract foreign direct investment (FDI) by removing policies that, although potentially socially desirable, are viewed as unattractive to firms. This worry has been expressed in the arenas of taxation, environmental regulation, and labour standards, among others. While there is a growing literature estimating the extent of the race to the bottom in international taxation and environmental policies, to our knowledge to date there is no evidence on the potential race to the bottom in labour standards. This is the gap the current paper fills. Using panel data on 148 developing countries from 1985 to 2002, we utilize spatial econometric methods to estimate whether the Mosley (2011) and Mosley and Uno (2007) measure of labour rights in one country depends on those elsewhere. For the full sample, we find a significant and positive spatial lag, which is consistent with strategic complements and a necessary condition for there to be a race to the bottom. In particular, this seems to be driven primarily by competition in labour practices rather than labour laws, suggesting that competition is driven less by a failure to institute regulations than by an unwillingness to enforce them. Since there is a noticeable downward trend in both of these measures over the sample period, we take this as evidence of a race to the bottom.

Although there has been less attention paid to the potential for a race to the bottom in labour standards as compared to one in taxes or environmental policies, the essence of the argument is the same. Labour standards such as the right of collective bargaining result in higher labour costs. All else equal, mobile investment would prefer a location with weaker standards and lower costs. Evidence of FDI being deterred by labour standards is provided by Görg (2002),

Javorcik and Spatareanu (2005), and Dewit, et al. (2009). It should be noted, however, that there is disagreement on this issue, with Kucera (2002) and Rodrik (1996) providing dissenting opinions.[1] The issue of how FDI depends on standards, however, is a very different question from the one we ask, which is whether labour standards in one location depend on those in another.[2] In particular, even if FDI does not flow in as a result of a country's reduction in labour standards, if politicians believe that it does then this alone could result in a race to the bottom.

Although to our knowledge no one has attempted to estimate the extent of the race to the bottom in labour standards before, spatial econometrics have been used to look for a race to the bottom in taxes and in environmental standards. The first group of work includes Devereux, Lockwood, and Redoano (2008), Davies and Voget (2008), Overesche and Rinke (2009) and others. Generally, this work has focused on tax competition between developed countries where there is some evidence of a positive spatial lag, meaning that as tax rates fall in one nation, this lowers tax rates elsewhere. An exception to this is Klemm and van Parys (2009) who focus on Latin America and Africa, finding that they compete in tax holidays. In the environmental literature, the focus has been on two issues: the joint adoption of environmental agreements (including the work of Beron et al. (2003), Murdoch et al. (2003) and Davies and Naughton (2006)) and interaction in environmental policies (which includes Fredriksson and Millimet (2002), Levinson (2003) and Fredriksson et al. (2004)). These studies tend to find evidence consistent with the race to the bottom. However, due to data limitations, many of them either restrict their attention to developed countries or to competition across US states. Davies and

[1] One possible reason they provide is that operating in a high standards location provides consumers a guarantee on how a firm treats its workers. As such, they may be willing to pay more for the firm's product on humanitarian grounds. See Greenhill, et. al (2009) for a full discussion. In addition, there is evidence that increased FDI may improve labour standards (Mosley, 2011; Davies and Voy, 2009; Neumayer and de Soysa, 2005).

[2] Greenhill, et. al (2009) do test to see whether the "practice content of trade" is a predictor for a given nation's labour standards. However, although they do control for the potential endogeneity of trade volumes, they do not deal with potential endogeneity in standards that would result from competition.

Naughton (2006) are an exception to this, who find that developed countries affect the treaty participation of both developed and developing nations whereas the developing nations only tend to impact themselves.

For our full sample using GDP weights (which assume that a given nation pays more attention to the standards in larger economies), our estimates find that a standard deviation decline in labour standard elsewhere leads a given country to lower its own standards by 3.8%. Although this magnitude varies somewhat when weighting by per-capita GDP or trade openness, the qualitative result is the same. When we decompose our measure of labour standards into its components – the laws guaranteeing labour rights (laws) and the enforcement of those laws (practices) – we find evidence primarily when using labour practices. This holds for both significance and magnitude of the estimated impact. This suggests that while countries may well attempt to "put on a good face" by instituting labour-friendly laws for reasons similar to those discussed by Kucera (2002), they may then be competing for FDI by simply turning a blind eye towards violations of those laws (or are simply unable to adequately enforce them). This finding is also notable because both laws and practices have similar trends, indicating our finding for practices is causal rather than the result of an uncontrolled for time trend. We also estimate our model for subsamples of the data. These estimates reveal that the competition is primarily driven by countries with weak standards, occurs both in relatively poor and relatively rich countries, and is strongest for Latin America and the Middle East. Again, these differences stand out against a similar downward trend in standards for each group and region, suggesting that we are capturing evidence of interdependence in standards instead of a mere trend.

The paper proceeds as follows. Section 2 describes both our data and our methodology. Section 4 discusses the results and Section 5 concludes.

## 2. Empirical Methodology and Data

In this section, we describe both our data, which is a panel data set across 148 countries from 1985 to 2002, and our estimation specification.

### *2.1 Estimation Specification*

Our baseline specification estimates the labour standards in country *i* in year *t* as a function of a set of exogenous variables $X_{i,t}$ (which includes a lagged dependent variable):

$$LR_{i,t} = \beta_i + \beta X_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $\beta_i$ is the country-specific constant and $\varepsilon_{i,t}$ is the error term. Our control variables are drawn from the existing literature and are described below. To this baseline, we then introduce the labour rights in other countries in year *t*, a variable known in the literature as the spatial lag. Specifically, we estimate:

$$LR_{i,t} = \beta_i + \rho \sum_{j \neq i} \omega_{j,i,t} LR_{i,t} + \beta X_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $\sum_{j \neq i} \omega_{j,i,t} LR_{i,t}$ is the spatial lag, i.e. the weighted average of labour standards in the other countries. As our baseline weights, we utilize $\omega_{j,i,t} = \frac{GDP_{j,t}}{\sum_{k \neq i} GDP_{k,t}}$. In words, the share that country *i* gives to country *j* is equivalent to *j*'s share of the total GDP across countries not including country *i*.[3] Our rationale for using GDP as the weight is two-fold. First, one might anticipate that country *i* pays more attention to what is taking place in larger countries rather than small ones. Second, if the goal of manipulating labour standards is to attract FDI, the choice of labour standards will depend on the elasticity of FDI to a given country's policies. With this in mind, if country *j* is already attractive to FDI relative to country *k*, then a change in *j*'s labour standards

[3] As described by Anselin (1988), it is common to "row standardize" the weights so that the sum of the weights adds up to one.

may have a larger impact on the allocation of FDI than a comparable change in *k*. This in turn would make *i* more responsive to *j*'s labour standards than to *k*'s, a difference that (2) reflects by giving a greater weight to *j*.[4] Since, as confirmed in many studies and reviewed by Blonigen (2005), FDI is attracted to larger countries, this would imply a greater sensitivity on the part of country *i* to the labour standards of a large country. GDP has been used as a weight in several papers estimating the race to the bottom in taxation (Devereux, Lockwood, and Redoano, 2008, for example). In addition, we check our results by using two additional weights, $\omega_{j,i,t} = \frac{\text{per-capita GDP}_{j,t}}{\sum_{k \neq i} \text{per-capita GDP}_{k,t}}$ and $\omega_{j,i,t} = \frac{Openness_{j,t}}{\sum_{k \neq i} Openness_{k,t}}$ where $Openness_{j,t}$ is the sum of exports plus imports relative to GDP (a common proxy for the inverse of trade costs in the empirical FDI literature). For both of these, our rationale is comparable to the choice of GDP since FDI is often attracted to wealthier and more open countries. Nevertheless, since high per-capita GDP can be correlated with wage costs thus deterring vertical FDI (in which MNE output is intended for export out of the host) and greater openness reduces the need for horizontal FDI (in which FDI is intended to replace exports to the host), the net impact of these factors is less clear-cut than GDP. Indeed, as discussed by Blonigen (2005), the literature finds mixed results for these variables. We therefore rely on the GDP weights for our primary results and use these alternatives as robustness checks.

The difficulty with the spatial lag is that if labour standards in *i* depend on those in *j* and vice versa, the spatial lag is endogenous. We deal with this and the lagged dependent variable by using the Blundell and Bond (1998) SYS-GMM estimator accounting for the Windmeijer (2005)

[4] Baldwin and Krugman (2004) provide a model of precisely this issue for tax competition in which a large country, by virtue of its attractive domestic market, has a greater impact on FDI flows than a small country does.

correction.[5] In addition to using lagged values of the endogenous variables as instruments, we also follow standard spatial econometric procedure and use $\sum_{j \neq i} \omega_{j,i,t} X_{j,t}$ ,that is, the weighted average of the other nations' exogenous variables (but excluding their lagged dependent variables).[6] The intuition behind doing so is that for a given country *j*, its exogenous variables directly impact its own labour standards but are not directly dependent on those in *i*. Therefore they are correlated with the endogenous variable but are themselves exogenous, making them suitable instruments. Within the literature on the SYS-GMM estimator, there is concern regarding the potential inclusion of too many instruments (Roodman 2009a, 2009b). Therefore, in the reported results, we restrict the lag structure to *t-3* and *t-5*. The reason for using these years is that, when including *t-2* lags, our instruments failed to pass the exogeneity tests. Nevertheless, we experimented with a number of alternative sets of instruments (such as excluding some or all of the weighted average of the other nations' exogenous variables) and found qualitatively similar results in all cases.[7]

This baseline specification is modified to explore the robustness of our findings. The specifics of these modifications are described below.

***2.2 Data***

We use annual data for 148 countries from 1985 to 2002. The list of countries is in the appendix. For our dependent variable, we use Mosley (2011) and Mosley and Uno's (2007) all-

[5] In unreported results, we also utilized IV GMM estimation rather than one which deals with lags. The primary difference is that when doing so, we typically found a significantly positive spatial lag when using GDP weights. Thus, on the whole, our results are robust to alternative methods of controlling for endogeneity. These alternative results are available on request.

[6] In addition to the variants described below, we estimated a set of regressions in which all control variables, including the instruments for the spatial lag, were lagged one period. This was done in order to alleviate potential concerns that variables such as GDP (both in country *i* and elsewhere) might be affected by the labour standards *i* uses in year *t* (such as might be the case if it is able to attract FDI to the benefit of its GDP and the detriment of others). These alternative regressions yielded qualitatively identical results to those presented.

[7] These alternate results are available on request.

inclusive Labour Rights index constructed annually from 1985 to 2002 for 148 countries. This composite index, capturing "basic collective labour rights", follows the template of Kucera (2002), which covers 37 types of violations of labour rights under six different categories.[8] These six categories are (a) freedom of association and collective bargaining-related liberties, (b) the right to establish and join worker and union organizations, (c) other union activities, (d) the right to bargain collectively, (e) the right to strike, and (f) rights in export processing zones.[9] It is noteworthy however that the Mosley index does not capture aspects of labour standards such as minimum wages or individual labour rights like employment benefits and working conditions.

In each of these above mentioned six categories, violations of labour rights by the government or employers (be they local or foreign firms) are identified as an absence of legal rights, limitations on legal rights and/or a violation of those legal rights. The index then accounts for both the *de jure* (laws) labour standards and the *de facto* (practices) standards prevailing in a country. The law component of the index, which covers 21 of the 37 categories in the index, captures whether or not the required laws to safeguard the collective rights of workers, for example whether an industry is allowed to impose limits on workers' right to strike or bargain collectively, are in place. The practices component, meanwhile, captures the actual number of violations observed in the labour rights prescribed in the laws. Thus, the practices component captures whether there are any registered acts of violations of the laws governing labour standards.

[8] As such, it is an improvement over other measures of labour rights or standards which capture only a single factor, such the number of ILO conventions (Botero et al., 2000), rate of worker injuries (Bonnal, 2008) or a single subjective index (Cingranelli and Richards, 1999).

[9] These categories are line with those laid out by the *Declaration on Fundamental Principles and Rights at Work* adopted by ILO member states in June 1998. This declaration identified the core or fundamental labour rights as including the freedom of association (right to unionize), effective recognition of the right to collective bargaining (right to bargain and protest), elimination of all forms of forced or compulsory labour, effective abolition of child labour, elimination of discrimination with respect to employment and occupation and respect to minimum wages and hours of work.

To construct the index, Mosley and Uno (2007) drew upon information from the US State Department's annual country reports on human rights practices, reports from both the Committee of Experts on the Application of Conventions and Recommendations (CEACR) and the Committee on Freedom of Association (CFA), and the annual surveys on violations of trade union rights which published by the International Confederation of Free Trade Unions (ICFTU).[10] If the information from all three sources displays violation of labour rights over the year, Mosley and Uno (2007) assigned a score of 1 for the relevant one of the 37 indicators for a country. If this is not the case a score of 0 is assigned.[11] Then, using the recommendation of two experts and following Kucera's (2002) methodology, weights were assigned to each of the indicators and the index was constructed. This resulted in a labour rights index which was coded on a scale of 0 – 28.5 and a labour practices rights index ranging from 0 – 27.5 wherein higher values represent upholding respect for labour laws/practices. The sum of these category scores is then the annual measure of labour rights violations, which, in our sample of developing countries has a mean of 25.7 and a maximum of 37. Contrasting this with developed countries, where scores reach 76.5, illustrates the relatively weak protections developing country workers are provided. Overall, the Mosley and Uno (2007) comprehensive measure is a huge improvement on previous indices, such as those used by Cingranelli and Richards (2006) and Bohning (2005), because of the multiple sources of information, sophisticated weighting methodology and reliability of the information.

[10] The US report exclusively covers violations on labour rights in each country related to freedom of association, right to bargain collectively and strike, and export processing zones. The CEACR and CFA reports, both of which are associated with the ILO, are based on the information provided by the respective governments on complaints filed by unions, workers' organizations and other employee associations. The ILO mandates that these are submitted annually and that they include progress reports how grievances are being addressed. These reports are then reviewed by two independent experts to deal with potential misrepresentation. The ICFTU, rechristened the International Trade Union Confederation (ITUC) in 2006, surveys provide information on legal barriers to unions, violations of rights, murders, disappearances and detention of members associated with labour unions.

[11] If violation of labour rights in respective indicators is recorded more than once, in either one source or in multiple sources, the maximum value according to Mosley and Uno (2007) remains 1.

Having both the overall index and its two components provides us with two advantages. First, it permits us to examine whether there is any evidence of a race to the bottom in one component or the other, that is, whether governments appear to be competing by altering legal frameworks or simply by turning a blind eye towards violations. This latter is of particular concern since a nation may bow to international pressure and introduce legal labour rights but then simply fail to enforce them. Alternatively, strong laws may be undermined by weak enforcement, resulting in a low practices score. As shown in Table 1, the correlation between the two measures is 0.20, suggesting that this is indeed a possibility. Second, although a positive spatial lag is suggestive of a race to the bottom, it could also signify a race to the top. In particular, one might expect that workers in one country might observe superior labour standards in other countries and demand similar treatment (and thus introducing the possibility of yardstick competition rather than competition for mobile firms).[12] In this case, one might expect an improvement in laws over time even as violations rise as more demanding workers file more registered complaints against their employers. This idea of diffusion through 'public awareness' and the spread of 'norms and ideas' is explored by Neumayer and de Soysa (2006), Baghwati (2004) and Finnemore and Sikkink (1998). As shown in Figure 1, however, we find that both laws and practices have worsened over time, suggesting both an erosion of legal protections and increased violations of those weakened standards although it is indeed practices that have fallen fastest. In Figure 2, where we report sample averages weighting by GDP (as is done in the spatial lag), these declines are even more pronounced.[13]

[12] Within the taxation literature, Salmon (1987) was the first to develop a theory of "yardstick competition" in which the tax authority in one jurisdiction depends on that elsewhere not because officials use taxes to attract mobile factors, but because voters in their jurisdiction judge the performance of the authority by comparing the local tax rate to those elsewhere. Bordignon, Cerniglia, and Revelli (2003) and Allers and Elhorst (2005) utilize spatial econometrics to find positive spatial lags which they interpret as evidence of yardstick competition.

[13] These diffusion of norm effects are found to be much stronger in bilateral trade (see the 'California effect' in Greenhill et al. (2009)).

In choosing our vector of control variables ($X_{i,t}$), we follow the work of Caraway (2009), Greenhill et al. (2009), Mosley and Uno (2007), Neumayer and de Soysa (2005, 2006, 2007), Busse (2004), Arestoff and Granger (2004), Brown (2001) and others. Among the standard controls in the literature are measures of economic development. With this in mind, we include logged per capita GDP (measured in constant 2000 US dollars) and its growth rate (ERS, 2010).[14] We also include $\text{Openness}_{i,t}$ to control for a country's exposure to world markets. Following Neumayer and de Soysa (2006), we utilize the manufacturing value added share in GDP, which is included since labour rights in manufacturing are likely better reported than those in agriculture. We also follow their lead and include the total labour force participation rate which is intended to capture the idea that higher the participation would mean greater demand for protective labour rights. Following Boockman (2006) and others, we control for two political variables. The first is $Democracy_{i,t}$, which is the average score from Freedom House's civil and political liberties ranking and ranges 0 (full liberties) to 7 (severely limited liberties).[15] We also include a variable from Beck et al. (2001) that captures the ideology of the incumbent government. We recode this measure so that it ranges between -1 and 1, with higher numbers indicating a more leftist (and therefore potentially pro-labour) government.

Additionally, we account for the ratification of key ILO conventions to measure whether these agreements have had any measurable impact. Rodrik (1996), Busse (2002) and Neumayer and de Soysa (2006) fail to find any impact of these agreements on labour rights in developing countries. We follow Neumayer and de Soysa (2006) to include a dummy variable one equal to one when a nation has ratified ILO convention number 87, which deals with freedom of

[14] We also use constant 2000 US dollars in constructing our weights.

[15] The Polity IV measure could not be considered because our sample includes many small countries such as Barbados, Antigua and Barbuda, for which the Polity IV index is absent. In order to avoid losing too many observations, we opt for the Freedom House score. Alternatively, when using the Polity IV index we could not find any significant changes in our main results.

association, and if a country has ratified convention number 98 which secures the right to collective bargaining. The variable is constructed using the information from ILO's Database of International Labour Standards (www.ilo.org/ilolex/english/). In addition, we also include a dummy variable capturing whether a country has signed a Structural Adjustment Facility program with the IMF or otherwise, obtained from Dreher (2006) and Boockmann and Dreher (2003). For details on summary statistics, the measurement of our data, or their sources, please see the appendix.

## 3. Empirical Results

### *3.1 Baseline Results*

Table 2 presents our baseline results. Column 1 shows results not including the spatial lag or the lagged dependent variable to ease the comparison between our results and those of others studying the determinants of labour rights. As expected, we find that countries with faster growing GDPs, less open economies, better democracies and that have ratified the ILO conventions tend to have better labour rights. Of additional note is the significant downward trend in labour rights over time. After controlling for country-specific fixed effects, however, our other controls are insignificant. Column 2 modifies this by including the one year lag of labour rights (and thus moving from fixed effects to SYS-GMM estimation). In addition, as discussed by Beck and Katz (1995), it aids in controlling for potential dynamic effects of the exogenous variables on the dependent variable. As can be seen, the coefficient on the lag is significantly positive and its confidence interval ends well before one rejecting a unit root. Column 2 then forms our preferred specification.

Columns 3 through 5 add to Column 2 by including the spatial lag term using GDP, per-capita GDP, and Openness weights respectively. With regards to the controls, this results in more

significance, with smaller, industrialized, left-leaning countries having significantly better rights. Turning to the coefficient of interest, in each case, we find a positive and significant spatial lag. A rough interpretation of the coefficient on the spatial lag for the GDP weights, is that if all other countries lower their labour rights by one point, the country in question would lower its labour rights by 0.41 points.[16] Alternatively, a standard deviation reduction in the spatial lag (a reduction of 2.4) would then reduce those in the country in question by 0.984, a 3.8% decline at the sample mean. This lies in between the estimated impact when per-capita GDP weights are used (a 6.1% decline) and when Openness weights are used (a drop of 2.5%).[17] Another way to interpret the coefficient on the spatial lag is to calculate the change in country *i*'s labour rights from a change in another country *j*'s labour rights, which is equal to $\omega_{j,i,t}\rho$. This is then the slope of the *i*'s best response and is a measure of the degree of labour standards competition between countries. Since the spatial lag is positive, this can be interpreted as evidence of strategic complementarity. While strategic complements can theoretically result in a race to the bottom or the top, since the trend in labour rights is downward, we interpret our results as evidence of an economically meaningful race to the bottom in labour rights.

This, however, is only a part of the total effect, however, since there is also an indirect effect arising from how a change in the spatial lag affects labour rights for country *i* which in turn affects those in *j*, further impacting *i*. This also applies to changes in the exogenous variables. Rewriting (1) in its matrix form,

$$Y = A + \rho WY + \beta X + \varepsilon \tag{3}$$

[16] Note that in this and in the Openness weighting scheme, we find spatial lags that are statistically significantly less than 1. This is yet another reason to prefer the GDP weighting scheme over the per-capita GDP one since the game theoretic interpretation of a coefficient greater than one would be that of an unstable Nash equilibrium.

[17] Note that these difference result from not only different coefficients but also different standard deviations in the spatial lag (1.62 for the per-capita weights and 1.82 for the Openness weights).

where $A$ is a vector of country specific intercepts and $W$ is the weighting matrix with $\omega_{j,i,t}$ in the $i,j$th element and zeros elsewhere (i.e. so that the country rights for country $i$ in year $t$ do not predict itself and that values for years other than $t$ are given zero weights in predicting the labour rights in $t$). define $M = I - \rho W$. Then (3) can be rewritten as:

$$Y = M^{-1}A + M^{-1}\beta X + \varepsilon \tag{4}$$

implying that the effect of an exogenous variable is $\left(I - \rho W\right)^{-1}\beta$.[18] This too, however, is only a portion of the impact, since it only captures the static effect. In addition, there is a dynamic effect since the change in year $t$ has both direct and indirect implications for future years through the lagged dependent variable. Since the weights vary by year, the total impact would depend on all of these issues as well as the time path of the weights. Since there is no obvious choice to make regarding the future path of the weights (since to calculate the long-run effects would require us to make out of sample forecasts on the weights), we are unable to calculate the total effects. Nevertheless, it is worth noting that our estimates suggest that the adoption of the ILO conventions does not significantly impact labour rights, something we return to below. Finally, with respect to our instruments, we use Hansen's J-test (Hansen, 1982) which shows that the null-hypothesis of exogeneity cannot be rejected at the conventional level of significance.[19]

In Table 3, we repeat the specification for Table 2 columns 3 through 5 but use the two sub-indices of labour rights: labour practices (columns 1-3) and labour laws (columns 4-6). For the control variables, as with the combined index, smaller, democratic, and left-leaning states

[18] Note the importance of having $\rho<1$ for the calculation of this effect.

[19] As discussed by Roodman (2009a, 2009b), the Blundell-Bond estimator can fall prey to an overabundance of instruments, inflating the J-test results. As noted above, in alternate specifications, we explored alternative sets of instruments. In these unreported results, we found comparable results for the spatial lags. When including t-2 instruments for the GMM-style variables, we were not always able to reject endogeneity. In addition, when using some of the subsamples, we were forced to drastically reduce the number of instruments in order to achieve J-test values less than 1. However, since we still found results comparable to those reported here, we opted to maintain a consistent set of instruments across the regressions in order to simplify the presentation and avoid confusion.

have higher labour practices and labour laws. In addition, wealthier, less open, and more industrialized countries have better labour practices although this has no impact on labour laws. Finally, unlike the combined index where the ILO treaties had no significant effect (a result mirroring that of Rodrik (1996), Busse (2002) and Neumayer and de Soysa (2006)), these treaties now raise labour laws but lower labour practices. This latter result would be consistent with these agreements leading countries to pass more laws protecting workers but turning an increasingly blind eye to violations of those laws.

Turning to the spatial lag, for labour practices, we find results that are comparable to those for the combined index results with a standard deviation decline in all other nations' labour practices leading to a decline in those of the country in question of 3% (using GDP weights), 5.6% (per-capita GDP weights), and 2.6% (Openness weights). For labour laws, however, we only find significance for the per-capita GDP and Openness weighting schemes. Thus the results are somewhat less robust for labour laws. This would be reasonable if nations find it more difficult to compete for FDI in laws (since doing so may draw international criticism) than in how they choose to apply the laws they have on the books. This also mirrors the differences across the two measures regarding the ILO labour rights conventions. For those two schemes resulting in a significant lag for laws, the predicted percentage changes in labour laws from a standard deviation decline in the spatial lag are 2.3% (per capita GDP weights) and 2.2% (Openness weights), again suggesting that the responsiveness of labour laws in a given country to those elsewhere is less than the responsiveness in the application of those laws.

In Table 4, we restrict our attention to the non-OECD countries out of the concern that the results may be driven by the OECD members, i.e. relatively advanced countries with strong labour standards. Since, as argued by Mosley and Uno (2007), these countries are perhaps less

likely to compete for FDI using labour standards as opposed to other means, if they are behind our significant spatial lag then this would call into question the interpretation of our results. Note that in this (as well as in all subsamples below), when we create a subsample we recalculate the spatial lag and the traditional IV-style instruments using only those nations in the subsample, i.e. assigning those outside of the subsample zero weight. This then assumes that the non-OECD subsample does not respond to OECD member labour rights. As can be seen, our results for this non-OECD only subsample are comparable to those for the main sample, indicating that our results are not being driven by the relatively advanced nations. Also, although from this point forward we only report the results for our preferred GDP weights for parsimony, when using the alternative weighting schemes, we found results comparable to the GDP weights with the exception that as above we often obtained significantly positive spatial lags when using the labour laws index as our dependent variable.[20]

### *3.2 Results for different country categories*

The above results provide evidence consistent with a race to the bottom both in the overall labour rights index, labour practices, and, to a lesser extent, in labour laws. In Table 5, we explore this further by separating our countries into two categories: those for which the mean labour rights index over the sample period was below the median and those for which their mean was above the median. We do this to investigate whether it is the case that the extent of competition differs between developing nations with relatively weak standards and those with relatively strong standards. Note that as in the non-OECD sample, we recalculate the spatial lags using only within group countries, implying that below the median countries do not respond to those above the median and vice versa. As can be seen, we find much stronger evidence of competition among countries with relatively low standards where the coefficients are somewhat

[20] These results are available on request.

greater than those in the full sample. This, combined with the lower average level of standards means that a one standard deviation decline in the spatial lag would lower the combined index by 5.1% and practices by 4.3% with no significant effect for laws. In contrast, we only find a significant coefficient on labour practices for the high standard group with its coefficient being much smaller than its counterpart for the low standard group, which when combined with the greater average level of practices, results in an estimated 0.8% decline in a given country's standards when the spatial lag falls by a standard deviation. It is also worth noting that if our results were simply capturing an overall trend in labour standards, one would expect similar results for the above and below median groups because their trends are comparable. The fact that we find distinct results suggests that we are capturing something other than a mere trend in the dependent variable.

Table 6 repeats the estimates of Table 5 but also includes the other group's spatial lag, i.e. it allows for countries below the median to respond to those above and vice versa.[21] For those below the median, we find a picture similar to that before with respect to within group competition, but no evidence for competition across groups. For those with relatively high standards, we do find some evidence suggesting that the above median countries respond to those below the median. The estimated effect of a one standard deviation decline in the spatial lag for below median countries is -1.7% for both above median labour rights and practices. Thus, to the extent that high standard countries do compete with low standard countries, the extent of this competition appears to be less severe than that between low standard nations. Again, however, there is little evidence of competition among the strong standards countries.

[21] Ideally, we would choose to estimate the above and below median specifications simultaneously. However, to our knowledge, such an estimator does not exist.

Tables 7 and 8 again split our sample into two groups but delineate countries according to whether their sample average of per-capita income was above or below the median.[22] Note that since per-capita GDP is generally insignificantly correlated with labour standards (something that holds true even in a univariate regression), that this is a different classification of countries from that above. Table 7 corresponds to Table 5 in that it assumes no cross-group interactions. For the relatively poor countries, we only find a significant spatial lag for labour practices where a one standard deviation decline in the spatial lag results in a 2.5% decline in practices. We find more significance in the wealthier group of countries, where the estimated impacts of a standard deviation decline in the spatial lag results in a 3.9% decline in labour standards and a 3.2% drop in practices.[23] Table 8 modifies the estimation of 7 by introducing cross-group spatial lags. This addition does not affect the estimated pattern of within-group competition. Further, with one exception, we find no evidence of cross-group competition.

The above results suggest that competition is relatively fiercest between nations with already low standards (which may be those which have competed heavily along this dimension in the past) and those with above average incomes. Further, there is little evidence of cross-group competition, suggesting that these nations may be competing for different types of investment (for example, unskilled labour intensive FDI may primarily consider low income countries whereas skilled labour intensive FDI may only consider high income countries when deciding where to locate). Furthermore, the greatest evidence is for competition in practices rather than

[22] In unreported results, we classified countries into three categories corresponding to a country's 2002 World Bank classification into the lower income, lower middle income, and upper middle income categories. In these results, we found strong evidence for within group competition by the middle income countries, limited evidence of such competition for the lower income countries, and no significant competition in the upper middle income countries. Further, we found no consistent evidence of cross-category competition.

[23] In unreported results, resource rich countries were removed from the high income country category. Nevertheless, a positive coefficient on the within group was found, indicating that the result is not driven by high per-capita income, low labour protection resource rich economies.

laws. This would be consistent with nations "putting on a good face" by instituting labour laws, but allowing firms to bypass those laws in practice.

### *3.3 Results for different regions*

In addition to splitting our sample along the above characteristics, we do so across regions. There are two primary reasons for doing so. First, one might expect that countries within a region are much more likely to be competing with one another for FDI. This is one reason Klemm and van Parys (2009) separate their sample when looking for evidence of tax competition in developing nations. Second, as discussed by Mosley and Uno (2007) and Neumayer and de Soysa (2006) there may be religious and cultural differences across countries which influence the decision of what level of labour standards to enforce.[24] With this in mind, Table 9 presents the estimated coefficient for the spatial lag using each of the dependent variables across five regions: Asia, Sub-Saharan Africa, Europe, Latin America, and the Middle East and Northern Africa. Note that these regressions include the full set of controls but that these are not reported for ease of presentation.[25]

In comparison to the full sample results, we generally find less significant results. Given the large drop in the number of observations, this is perhaps unsurprising. Nevertheless, we do find significant differences across regions. Latin America exhibits coefficients most in line with the full sample results, that is, a significantly positive spatial lag for the combined index and practices. The Middle East and African nations also exhibit a positive spatial lag, although only for practices. Neither Europe nor Sub-Saharan Africa result in significant spatial lags. Perhaps most remarkable are the results for Asia where we find a significantly *negative* spatial lag

[24] Also, see Cho (2010) for these arguments with respect to womens' labour rights.
[25] The full set of estimates are available on request. Note that we do not estimate cross-group interactions for these region subsamples since to do so required us to include five spatial lags which, given the sample sizes, resulted in little of interpretive value.

regardless of the measure of labour standards used. However, in unreported results dropping China from the set of Asian countries, we no longer found a significant spatial lag for labour rights or labour laws. When India (the second largest GDP in this subsample) is also excluded, we did not obtain significant spatial lags for any of the measures of labour standards. This suggests that the inclusion of these two large outliers is driving the unexpected negative coefficient.

Finally, it is important to comment on our use of a time trend rather year-specific constants. There are two reasons for doing this, both related to the fact that when including year-specific effects, the variation the estimation utilizes is that relative to the within-year average. First, from a game theoretic perspective, one would expect that when countries are very similar, their Nash labour standards may be similar. In the extreme, if all countries are identical, theory can easily obtain the result that equilibrium policies are identical. When estimating such a relationship with year dummies, however, this will drive down the significance on the spatial lag because it varies little across countries within a year. As a result, even if competition is driving the data generation process, the estimation can obscure that fact. Second, one must keep in mind the construction of the spatial lag, which is the weighted average of other countries' policies. Consider two countries with equal GDPs, *i* with a high labour rights index and *j* with a low index. By construction, the spatial lag for *i* will be less than that of *j* because the only difference in their lags is that *i*'s includes *j*'s index in the summation whereas *j*'s includes *i*'s (with the difference between the two being the difference in their index numbers multiplied by the common weight). As a result, countries with strong policies will tend to have small spatial lags whereas countries with weak policies will tend to have large spatial lags simply by construction. When using year dummies where variation in the spatial lag is relative to the yearly average

drives the coefficient, this creates a downward pressure on the estimated coefficient since high index countries will have below average spatial lags within a given year. In fact, when we estimate our results in Tables 2 and 3 but use year dummies instead of the time trend, we find significantly negative coefficients on the spatial lag which were all significantly less than -1 (for the GDP weights these were -5.829, -8.231, and -4.944 for the combined index, practices, and laws respectively). Thus, because of the nature of the spatial lag variable, it is generally unwise to use year dummies (see Klemm and van Parys (2009) for more discussion on this issue).

**4. Conclusion**

The goal of this paper was to present the first set of empirical results exploring the possibility of a race to the bottom in labour standards. Using the Mosley (2011) measure of labour rights as well as its components of labour practices and labour laws, we utilize a spatial econometrics approach to estimate the extent of interdependence of labour standards across countries. We find a robustly positive and significant spatial lag which is consistent with strategic complements in both practices and the combined labour rights index. Notably, this pattern is less evident in labour laws, suggesting that competition is less in the institution of standards, but in their enforcement. Since all three measures declined over time, we interpret this as competition for FDI as opposed to labour rights diffusion which would result in an improvement of laws, possibly even as practices declined as more workers sought to assert their rights. This does not imply that such competition is universal, however. We find that it is concentrated in the countries with relatively weak standards and that it is focused in particular parts of the world, notably the Middle East and Latin America.

These results suggest several potential policy considerations. First, we often find that international labour agreements, particularly those championed by the ILO, tend to raise labour

laws but not practices. This suggests that international coordination on these measures may need to follow up and ensure that laws which are adopted are then enforced. Second, the ability of a nation to attract FDI via this (or any other measure) is contingent on the other factors that attract investment such as domestic market size, institutional quality and the like. In particular, the evidence reviewed by Blonigen (2005) indicates that multinationals are often attracted by lower trade barriers. As such, if the developed world signs a free trade agreement with a low labour standard country, thereby increasing its trade openness, our estimates indicate that this would force others to respond by competing more fiercely in labour standards to avoid losing investment. This suggests that it may be important to be mindful of such implications, particularly in Latin America and the Middle East, when pursuing international agreements or other policies that might affect the distribution of FDI.

**Figure 1:** Labour Standards, Practices and Laws over Time

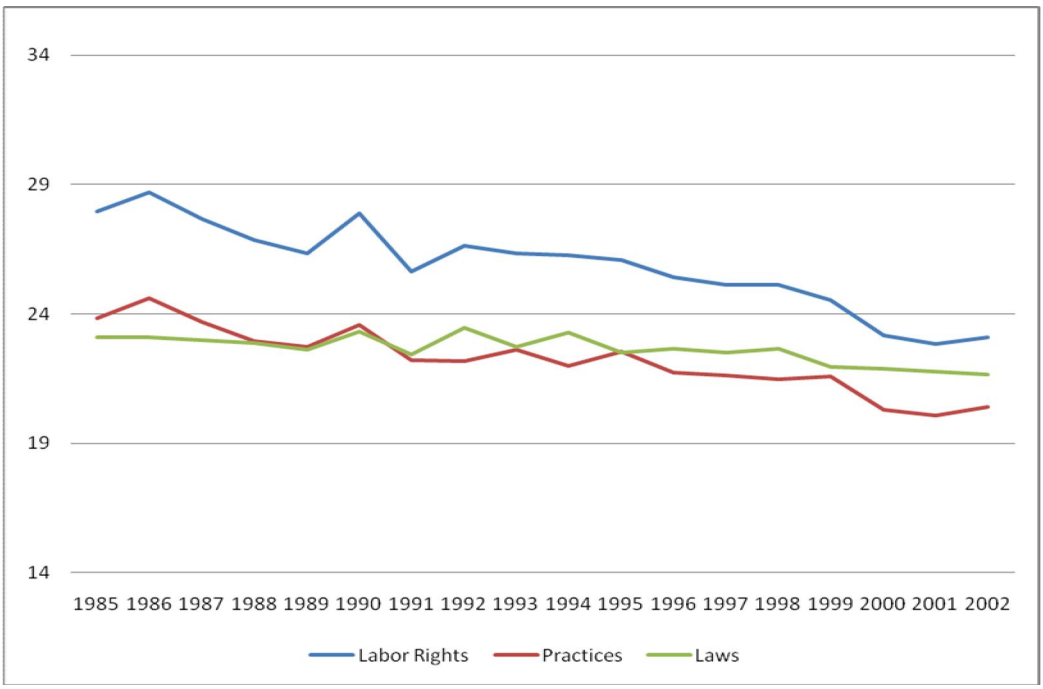


**Figure 2:** GDP-Weighted Labour Standards, Practices and Laws over Time

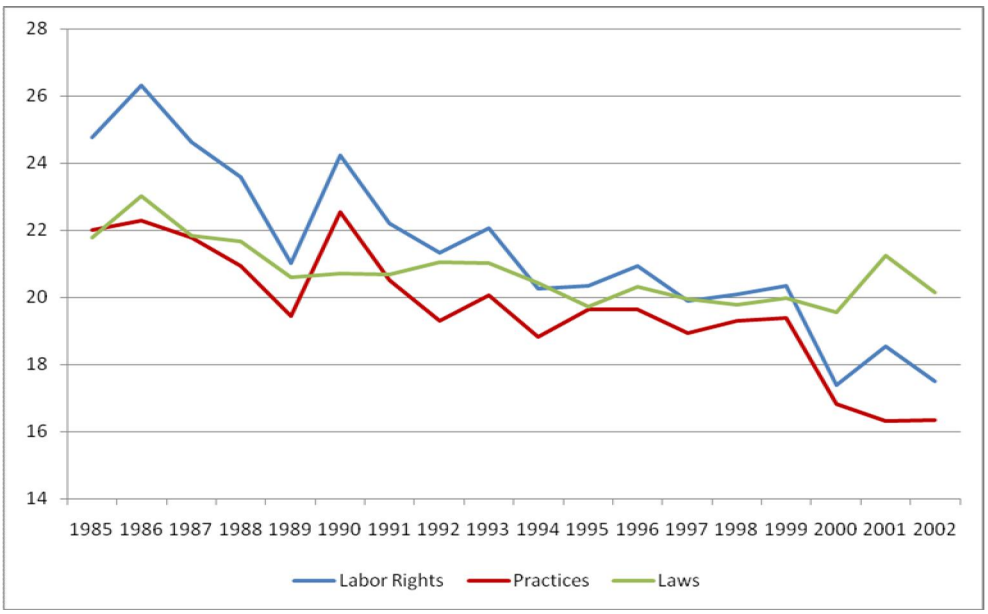

Table 1: Bivariate Correlations across Measures of Labour Standards

| | Labour Rights Index | Labour Rights Laws | Labour Rights Practices |
|---|---|---|---|
| Labour Rights Index | 1.0000 | | |
| Labour Rights Laws | 0.8277 | 1.0000 | |
| Labour Rights Practices | 0.7197 | 0.20600 | 1.0000 |

**Table 2: Baseline Results**

| | (1) | (2) | (3) | (4) | |
|---|---|---|---|---|---|
| *Weighting Scheme* | | | *GDP* | *Per-Capita GDP* | *Openness* |
| Spatial Lag | | | 0.410*** | 0.972*** | 0.359*** |
| | | | (0.103) | (0.164) | (0.117) |
| Lagged Dep. Var. | | 0.723*** | 0.748*** | 0.754*** | 0.749*** |
| | | (0.023) | (0.043) | (0.037) | (0.042) |
| Per capita GDP (log) | -0.834 | -0.205 | -0.032 | -0.009 | -0.036 |
| | (0.655) | (0.927) | (0.116) | (0.111) | (0.113) |
| GDP (log) | 0.200 | -0.079 | -0.607*** | -0.605*** | -0.591*** |
| | (0.805) | (0.918) | (0.096) | (0.100) | (0.102) |
| GDP growth rate | 0.007*** | 0.005** | -0.002 | -0.000 | -0.002 |
| | (0.002) | (0.002) | (0.003) | (0.002) | (0.004) |
| Openness | -0.010*** | -0.007** | -0.005** | -0.005** | -0.004* |
| | (0.003) | (0.003) | (0.002) | (0.002) | (0.002) |
| Industry Share in GDP | -0.017 | 0.012 | 0.031*** | 0.030*** | 0.029*** |
| | (0.020) | (0.020) | (0.011) | (0.010) | (0.011) |
| Labour Force Participation | -0.024 | -0.004 | 0.001 | 0.002 | 0.002 |
| | (0.050) | (0.046) | (0.009) | (0.009) | (0.009) |
| Democracy | 1.128*** | 0.666*** | 0.480*** | 0.472*** | 0.485*** |
| | (0.129) | (0.115) | (0.103) | (0.099) | (0.102) |
| Government Ideology | 0.287 | 0.243 | 0.473*** | 0.511*** | 0.504*** |
| | (0.186) | (0.185) | (0.181) | (0.171) | (0.182) |
| IMF SAF participation | 0.254 | 0.323 | 0.295 | 0.163 | 0.186 |
| | (0.286) | (0.267) | (0.347) | (0.341) | (0.352) |
| ILO 87 and 98 Treaties | 0.807*** | 0.338 | 0.005 | 0.033 | 0.007 |
| | (0.280) | (0.246) | (0.143) | (0.139) | (0.142) |
| Trend | -0.467*** | -0.293*** | 0.096** | 0.218*** | 0.040 |
| | (0.031) | (0.031) | (0.046) | (0.052) | (0.042) |
| Constant | 971.862*** | 209.160*** | -186.272** | -447.759*** | -77.199 |
| | (57.707) | (49.148) | (94.200) | (108.339) | (86.463) |
| Observations | 2458 | 2334 | 2334 | 2334 | 2334 |
| R-squared | 0.701 | | | | |
| Hansen J-stat. (p-value) | | .145 | .574 | .380 | .178 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 3: Practices and Laws**

| | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| | Practices | | | Laws | | |
| *Weighting Scheme* | *GDP* | *Per-Capita GDP* | *Openness* | *GDP* | *Per-Capita GDP* | *Openness* |
| Spatial Lag | 0.374*** | 1.096*** | 0.473*** | 0.129 | 0.928*** | 0.688*** |
| | (0.069) | (0.148) | (0.118) | (0.106) | (0.198) | (0.175) |
| Lagged Dep. Var. | 0.590*** | 0.648*** | 0.576*** | 0.803*** | 0.751*** | 0.700*** |
| | (0.051) | (0.043) | (0.047) | (0.040) | (0.048) | (0.051) |
| Per capita GDP (log) | 0.194** | 0.180** | 0.194** | -0.119 | -0.131 | -0.135 |
| | (0.089) | (0.078) | (0.090) | (0.081) | (0.100) | (0.115) |
| GDP (log) | -0.510*** | -0.463*** | -0.511*** | -0.196*** | -0.246*** | -0.301*** |
| | (0.074) | (0.066) | (0.073) | (0.053) | (0.073) | (0.078) |
| GDP growth rate | -0.003 | -0.001 | -0.003 | 0.002 | 0.001 | 0.001 |
| | (0.003) | (0.002) | (0.003) | (0.001) | (0.001) | (0.001) |
| Openness | -0.003* | -0.004** | -0.002 | -0.000 | -0.001 | -0.002 |
| | (0.002) | (0.002) | (0.001) | (0.001) | (0.001) | (0.002) |
| Industry Share in GDP | 0.020** | 0.019** | 0.018** | 0.011 | 0.011 | 0.012 |
| | (0.008) | (0.008) | (0.008) | (0.007) | (0.008) | (0.008) |
| Labour Force Participation | 0.005 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 |
| | (0.006) | (0.005) | (0.006) | (0.007) | (0.008) | (0.009) |
| Democracy | 0.153** | 0.143** | 0.167** | 0.295*** | 0.355*** | 0.411*** |
| | (0.069) | (0.062) | (0.068) | (0.069) | (0.084) | (0.091) |
| Government Ideology | 0.316** | 0.288** | 0.343** | 0.263*** | 0.315*** | 0.345*** |
| | (0.139) | (0.128) | (0.137) | (0.093) | (0.096) | (0.103) |
| IMF SAF participation | 0.050 | -0.018 | -0.004 | 0.216 | 0.186 | 0.204 |
| | (0.247) | (0.253) | (0.244) | (0.227) | (0.215) | (0.215) |
| ILO 87 and 98 Treaties | -0.424*** | -0.376*** | -0.451*** | 0.223** | 0.315*** | 0.350** |
| | (0.118) | (0.110) | (0.120) | (0.103) | (0.118) | (0.138) |
| Trend | 0.045* | 0.177*** | 0.032 | -0.015 | 0.045** | 0.038 |
| | (0.024) | (0.033) | (0.028) | (0.015) | (0.022) | (0.024) |
| Constant | -84.490* | -365.456*** | -61.847 | 35.264 | -102.033** | -80.306 |
| | (48.700) | (69.346) | (58.450) | (31.213) | (48.394) | (50.984) |
| Observations | 2334 | 2334 | 2334 | 2334 | 2334 | 2334 |
| Hansen J-stat. (p-value) | .184 | .427 | .351 | .269 | .535 | .143 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 4: Non-OECD Countries Only**

| | (1) LR | (2) Practices | (3) Laws |
|---|---|---|---|
| Spatial Lag | 0.364*** | 0.348*** | 0.105 |
| | (0.108) | (0.073) | (0.117) |
| Lagged Dep. Var. | 0.761*** | 0.617*** | 0.823*** |
| | (0.043) | (0.061) | (0.037) |
| Per capita GDP (log) | -0.035 | 0.167* | -0.115 |
| | (0.115) | (0.087) | (0.078) |
| GDP (log) | -0.594*** | -0.483*** | -0.188*** |
| | (0.100) | (0.086) | (0.055) |
| GDP growth rate | -0.002 | -0.002 | 0.002* |
| | (0.003) | (0.003) | (0.001) |
| Openness | -0.005** | -0.004** | -0.000 |
| | (0.002) | (0.002) | (0.001) |
| Industry Share in GDP | 0.029*** | 0.019** | 0.010 |
| | (0.011) | (0.008) | (0.007) |
| Labour Force Participation | 0.003 | 0.005 | 0.001 |
| | (0.009) | (0.006) | (0.006) |
| Democracy | 0.428*** | 0.123* | 0.270*** |
| | (0.103) | (0.069) | (0.067) |
| Government Ideology | 0.555*** | 0.331** | 0.300*** |
| | (0.194) | (0.150) | (0.098) |
| IMF SAF participation | 0.345 | 0.075 | 0.253 |
| | (0.348) | (0.244) | (0.241) |
| ILO 87 and 98 Treaties | -0.037 | -0.462*** | 0.190* |
| | (0.145) | (0.122) | (0.103) |
| Trend | 0.086* | 0.050* | -0.012 |
| | (0.048) | (0.027) | (0.014) |
| Constant | -167.176* | -93.779* | 28.060 |
| | (97.703) | (54.125) | (30.919) |
| Observations | 2201 | 2201 | 2201 |
| Hansen J-stat. (p-value) | .559 | .290 | .401 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 5: Above and Below Median Labour Rights**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Below the Median Countries | | | Above the Median Countries | | |
| | LR | Practices | Laws | LR | Practices | Laws |
| Spatial Lag | 0.453*** | 0.471*** | 0.201 | 0.064 | 0.098* | -0.014 |
| | (0.138) | (0.105) | (0.150) | (0.053) | (0.057) | (0.039) |
| Lagged Dep. Var. | 0.652*** | 0.543*** | 0.700*** | 0.519*** | 0.368*** | 0.532*** |
| | (0.057) | (0.071) | (0.051) | (0.074) | (0.070) | (0.073) |
| Per capita GDP (log) | -0.390** | 0.127 | -0.431** | 0.038 | 0.068 | -0.013 |
| | (0.163) | (0.157) | (0.172) | (0.145) | (0.104) | (0.085) |
| GDP (log) | -0.419*** | -0.445*** | -0.025 | -0.408*** | -0.242*** | -0.212*** |
| | (0.112) | (0.102) | (0.093) | (0.115) | (0.079) | (0.067) |
| GDP growth rate | -0.015 | -0.023 | 0.012 | -0.000 | -0.001 | 0.001* |
| | (0.041) | (0.034) | (0.017) | (0.001) | (0.001) | (0.001) |
| Openness | -0.006*** | -0.004*** | 0.000 | -0.001 | 0.000 | -0.001 |
| | (0.002) | (0.001) | (0.002) | (0.003) | (0.002) | (0.001) |
| Ind. Share in GDP | 0.046*** | 0.028** | 0.018 | 0.008 | 0.003 | 0.004 |
| | (0.015) | (0.013) | (0.011) | (0.016) | (0.009) | (0.011) |
| Labour Force Participation | -0.020 | -0.015 | -0.005 | -0.013 | -0.003 | -0.009 |
| | (0.016) | (0.014) | (0.015) | (0.011) | (0.007) | (0.008) |
| Democracy | 0.634*** | 0.066 | 0.485*** | 0.239** | 0.126* | 0.151** |
| | (0.156) | (0.123) | (0.108) | (0.102) | (0.065) | (0.071) |
| Government Ideology | 0.738*** | 0.470** | 0.344** | 0.060 | -0.031 | 0.094 |
| | (0.270) | (0.224) | (0.142) | (0.185) | (0.135) | (0.120) |
| IMF SAF participation | 0.540 | 0.371 | 0.089 | 0.125 | -0.206 | 0.380* |
| | (0.545) | (0.370) | (0.355) | (0.308) | (0.265) | (0.219) |
| ILO 87 and 98 Treaties | -0.240 | -0.837*** | 0.388** | -0.087 | -0.235** | 0.065 |
| | (0.221) | (0.204) | (0.185) | (0.180) | (0.115) | (0.116) |
| Trend | 0.074 | 0.066* | -0.028 | -0.117*** | -0.092*** | -0.061*** |
| | (0.062) | (0.040) | (0.019) | (0.036) | (0.020) | (0.019) |
| Constant | -138.804 | -127.232 | 62.961 | 250.587*** | 198.557*** | 136.395*** |
| | (127.972) | (81.578) | (38.472) | (73.416) | (40.433) | (39.056) |
| Observations | 1187 | 1187 | 1187 | 1147 | 1147 | 1147 |
| Hansen J-stat. (p-value) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 6: Above and Below the Median with Cross-Group Lags**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Below the Median Countries | | | Above the Median Countries | | |
| | LR | Practices | Laws | LR | Practices | Laws |
| Spatial Lag Below Med. | 0.419*** | 0.370*** | 0.118 | 0.223*** | 0.223*** | -0.023 |
| | (0.141) | (0.133) | (0.159) | (0.086) | (0.073) | (0.066) |
| Spatial Lag Above Med. | 0.057 | 0.127 | -0.089 | 0.067 | 0.041 | -0.017 |
| | (0.063) | (0.081) | (0.086) | (0.055) | (0.057) | (0.040) |
| Lagged Dep. Var. | 0.700*** | 0.616*** | 0.732*** | 0.545*** | 0.400*** | 0.527*** |
| | (0.051) | (0.058) | (0.051) | (0.063) | (0.068) | (0.069) |
| Per capita GDP (log) | -0.392*** | 0.078 | -0.410** | 0.028 | 0.062 | -0.013 |
| | (0.152) | (0.136) | (0.161) | (0.138) | (0.100) | (0.084) |
| GDP (log) | -0.389*** | -0.397*** | -0.025 | -0.398*** | -0.230*** | -0.218*** |
| | (0.102) | (0.086) | (0.086) | (0.105) | (0.075) | (0.065) |
| GDP growth | -0.019 | -0.025 | 0.007 | -0.001 | -0.001 | 0.001* |
| | (0.040) | (0.035) | (0.017) | (0.001) | (0.001) | (0.001) |
| Openness | -0.006*** | -0.004*** | 0.000 | -0.001 | 0.000 | -0.001 |
| | (0.002) | (0.001) | (0.002) | (0.003) | (0.002) | (0.001) |
| Industry Share in GDP | 0.047*** | 0.029** | 0.019* | 0.011 | 0.004 | 0.005 |
| | (0.014) | (0.012) | (0.011) | (0.015) | (0.009) | (0.011) |
| Labour Force Participation | -0.018 | -0.013 | -0.004 | -0.013 | -0.003 | -0.009 |
| | (0.014) | (0.012) | (0.014) | (0.010) | (0.007) | (0.008) |
| Democracy | 0.616*** | 0.088 | 0.455*** | 0.241** | 0.123** | 0.156** |
| | (0.147) | (0.113) | (0.103) | (0.100) | (0.062) | (0.070) |
| Government Ideology | 0.741*** | 0.404* | 0.351** | 0.068 | -0.026 | 0.096 |
| | (0.259) | (0.211) | (0.138) | (0.185) | (0.131) | (0.120) |
| IMF SAF participation | 0.403 | 0.244 | 0.048 | 0.171 | -0.207 | 0.413* |
| | (0.550) | (0.377) | (0.355) | (0.307) | (0.268) | (0.217) |
| ILO 87 and 98 Treaties | -0.256 | -0.743*** | 0.343** | -0.106 | -0.224** | 0.067 |
| | (0.206) | (0.186) | (0.173) | (0.175) | (0.110) | (0.114) |
| Trend | 0.112 | 0.085** | -0.054 | -0.015 | -0.031 | -0.063*** |
| | (0.077) | (0.041) | (0.034) | (0.058) | (0.026) | (0.020) |
| Constant | -218.474 | -167.251** | 117.198* | 41.414 | 72.838 | 141.775*** |
| | (158.493) | (83.569) | (70.348) | (118.773) | (53.203) | (42.640) |
| Observations | 1187 | 1187 | 1187 | 1147 | 1147 | 1147 |
| Hansen J-stat. (p-value) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 7: Above and Below Median Average Income Countries**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Below the Median Countries | | | Above the Median Countries | | |
| | LR | Practices | Laws | LR | Practices | Laws |
| Spatial Lag | 0.075 | 0.227*** | -0.065 | 0.393*** | 0.431*** | 0.106 |
| | (0.096) | (0.087) | (0.070) | (0.111) | (0.085) | (0.181) |
| Lagged Dep. Var. | 0.751*** | 0.682*** | 0.751*** | 0.667*** | 0.491*** | 0.780*** |
| | (0.045) | (0.044) | (0.052) | (0.054) | (0.071) | (0.067) |
| Per capita GDP (log) | -0.423 | -0.466** | -0.007 | 0.358 | 0.813*** | -0.156 |
| | (0.298) | (0.221) | (0.201) | (0.234) | (0.274) | (0.159) |
| GDP (log) | -0.625*** | -0.411*** | -0.262*** | -0.690*** | -0.620*** | -0.180** |
| | (0.122) | (0.065) | (0.088) | (0.124) | (0.113) | (0.077) |
| GDP growth rate | 0.000 | -0.001 | 0.001 | -0.043 | -0.049 | 0.005 |
| | (0.001) | (0.001) | (0.001) | (0.045) | (0.035) | (0.012) |
| Openness | -0.007*** | -0.006*** | -0.000 | 0.001 | 0.002 | -0.000 |
| | (0.002) | (0.001) | (0.001) | (0.006) | (0.003) | (0.004) |
| Industry Share in GDP | 0.042*** | 0.017* | 0.024** | 0.034** | 0.044*** | 0.003 |
| | (0.014) | (0.010) | (0.011) | (0.015) | (0.011) | (0.011) |
| Labour Force Participation | 0.008 | -0.003 | 0.015 | -0.023** | -0.020* | -0.006 |
| | (0.018) | (0.010) | (0.015) | (0.012) | (0.012) | (0.008) |
| Democracy | 0.462*** | 0.211** | 0.260*** | 0.611*** | 0.161* | 0.353*** |
| | (0.131) | (0.093) | (0.096) | (0.145) | (0.097) | (0.102) |
| Government Ideology | 0.911*** | 0.450*** | 0.468** | 0.366 | 0.195 | 0.224** |
| | (0.278) | (0.169) | (0.184) | (0.225) | (0.178) | (0.112) |
| IMF SAF participation | 0.726* | 0.076 | 0.527** | -0.367 | -0.206 | -0.321 |
| | (0.380) | (0.322) | (0.251) | (0.537) | (0.354) | (0.363) |
| ILO 87 and 98 Treaties | 0.033 | -0.296** | 0.272 | 0.309 | -0.194 | 0.284* |
| | (0.227) | (0.149) | (0.178) | (0.237) | (0.166) | (0.171) |
| Trend | -0.033 | 0.042 | -0.021 | 0.051 | 0.030 | -0.027 |
| | (0.051) | (0.040) | (0.015) | (0.047) | (0.028) | (0.035) |
| Constant | 78.983 | -73.251 | 49.647 | -96.509 | -58.299 | 60.322 |
| | (103.128) | (80.225) | (30.970) | (96.120) | (56.770) | (74.207) |
| Observations | 1157 | 1157 | 1157 | 1177 | 1177 | 1177 |
| Hansen J-stat. (p-value) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 8: Above and Below Median Average Income Countries with Cross-Group Lags**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | **Low Income Countries** | | | **High Income Countries** | | |
| | LR | Practices | Laws | LR | Practices | Laws |
| Spatial Lag Below Med. | 0.086 | 0.220** | -0.083 | -0.088 | 0.013 | 0.020 |
| | (0.102) | (0.094) | (0.072) | (0.096) | (0.083) | (0.092) |
| Spatial Lag Above Med. | 0.241** | 0.074 | 0.148 | 0.378*** | 0.428*** | 0.081 |
| | (0.112) | (0.073) | (0.178) | (0.113) | (0.087) | (0.182) |
| Lagged Dep. Var. | 0.758*** | 0.666*** | 0.750*** | 0.687*** | 0.504*** | 0.788*** |
| | (0.043) | (0.048) | (0.056) | (0.052) | (0.060) | (0.060) |
| Per capita GDP (log) | -0.416 | -0.476** | -0.023 | 0.330 | 0.793*** | -0.152 |
| | (0.298) | (0.229) | (0.199) | (0.224) | (0.261) | (0.154) |
| GDP (log) | -0.619*** | -0.426*** | -0.267*** | -0.655*** | -0.610*** | -0.175** |
| | (0.119) | (0.066) | (0.093) | (0.115) | (0.103) | (0.071) |
| GDP growth | -0.000 | -0.001 | 0.001 | -0.047 | -0.048 | 0.003 |
| | (0.001) | (0.001) | (0.001) | (0.043) | (0.035) | (0.012) |
| Openness | -0.007*** | -0.006*** | -0.001 | 0.001 | 0.002 | -0.001 |
| | (0.002) | (0.001) | (0.001) | (0.006) | (0.003) | (0.004) |
| Industry Share in GDP | 0.042*** | 0.017 | 0.025** | 0.034** | 0.044*** | 0.004 |
| | (0.014) | (0.010) | (0.011) | (0.015) | (0.010) | (0.011) |
| Labour Force Participation | 0.007 | -0.003 | 0.014 | -0.022* | -0.019* | -0.005 |
| | (0.018) | (0.011) | (0.015) | (0.011) | (0.012) | (0.008) |
| Democracy | 0.456*** | 0.211** | 0.271*** | 0.589*** | 0.162* | 0.350*** |
| | (0.130) | (0.094) | (0.102) | (0.142) | (0.094) | (0.096) |
| Government Ideology | 0.912*** | 0.466*** | 0.487*** | 0.360* | 0.199 | 0.230** |
| | (0.271) | (0.169) | (0.184) | (0.214) | (0.174) | (0.109) |
| IMF SAF participation | 0.728* | 0.102 | 0.507** | -0.433 | -0.215 | -0.315 |
| | (0.378) | (0.321) | (0.246) | (0.538) | (0.360) | (0.366) |
| ILO 87 and 98 Treaties | 0.037 | -0.306** | 0.269 | 0.282 | -0.201 | 0.269 |
| | (0.224) | (0.152) | (0.173) | (0.230) | (0.164) | (0.166) |
| Trend | 0.084 | 0.055 | 0.008 | 0.013 | 0.039 | -0.030 |
| | (0.082) | (0.045) | (0.038) | (0.069) | (0.042) | (0.037) |
| Constant | -159.714 | -101.301 | -10.483 | -19.712 | -74.744 | 67.295 |
| | (167.388) | (91.337) | (78.851) | (141.093) | (86.142) | (77.854) |
| Observations | 1157 | 1157 | 1157 | 1177 | 1177 | 1177 |
| Hansen J-stat. (p-value) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Notes:** All specifications include country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

**Table 9: Regional Results**

| | (1) ASIA | (2) SUBSAHARA | (3) EUROPE | (4) AMERICAS | (5) MIDEAST |
|---|---|---|---|---|---|
| *Labour Rights* | | | | | |
| Spatial Lag | -0.270* | 0.006 | 0.031 | 0.247*** | -0.022 |
| | (0.160) | (0.094) | (0.074) | (0.069) | (0.173) |
| *Labour Practices* | | | | | |
| Spatial Lag | -0.220* | -0.010 | 0.070 | 0.200*** | 0.463*** |
| | (0.123) | (0.080) | (0.058) | (0.063) | (0.141) |
| *Labour Laws* | | | | | |
| Spatial Lag | -0.208** | 0.128 | 0.059 | 0.172 | -0.002 |
| | (0.094) | (0.152) | (0.050) | (0.187) | (0.132) |
| Observations | 374 | 776 | 253 | 493 | 306 |

**Notes:** All specifications include all of the additional controls including country-specific fixed effects. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

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**Appendix 1:** Countries under Study

| | | | | |
|---|---|---|---|---|
| Albania | Colombia | Haiti | Mexico | Slovenia |
| Algeria | Comoros | Honduras | Moldova | South Africa |
| Angola | Congo Dem. Rep. | Hungary | Mongolia | Sri Lanka |
| Antigua and Barbuda | Congo Republic | India | Morocco | St. Lucia |
| Argentina | Costa Rica | Indonesia | Mozambique | Sudan |
| Armenia | Cote d'Ivoire | Iran | Myanmar | Suriname |
| Azerbaijan | Croatia | Iraq | Namibia | Swaziland |
| Bahamas | Cuba | Israel | Nepal | Syrian Arab Republic |
| Bahrain | Cyprus | Jamaica | Nicaragua | Taiwan |
| Bangladesh | Czech Republic | Jordan | Niger | Tajikistan |
| Barbados | Djibouti | Kazakhstan | Nigeria | Tanzania |
| Belarus | Dominica | Kenya | Oman | Thailand |
| Belize | Dominican Republic | Korea Republic | Pakistan | Togo |
| Benin | Ecuador | Kuwait | Panama | Tonga |
| Bhutan | Egypt | Kyrgyz Republic | Papua New Guinea | Trinidad and Tobago |
| Bolivia | El Salvador | Lao PDR | Paraguay | Tunisia |
| Botswana | Equatorial Guinea | Latvia | Peru | Turkey |
| Brazil | Eritrea | Lebanon | Philippines | Turkmenistan |
| Brunei | Estonia | Lesotho | Poland | Uganda |
| Bulgaria | Ethiopia | Liberia | Qatar | Ukraine |
| Burkina Faso | Fiji | Libya | Romania | United Arab Emirates |
| Burundi | Gabon | Lithuania | Russian Federation | Uruguay |
| Cambodia | Gambia | Macedonia, FYR | Rwanda | Uzbekistan |
| Cameroon | Georgia | Madagascar | Saudi Arabia | Vanuatu |
| Cape Verde | Ghana | Malawi | Senegal | Venezuela |
| Central Af. Rep. | Guatemala | Malaysia | Seychelles | Vietnam |
| Chad | Guinea | Mali | Sierra Leone | Yemen Republic |
| Chile | Guinea-Bissau | Mauritania | Singapore | Zambia |
| China | Guyana | Mauritius | Slovak Republic | Zimbabwe |

**Appendix 2:** Descriptive Statistics

| Variables | Mean | Standard Deviation | Minimum | Maximum | Observations |
|---|---|---|---|---|---|
| Aggregated Labour Rights | 25.873 | 7.750 | 0.000 | 37.000 | 2458 |
| Labour Rights Practices | 22.231 | 4.445 | 0.000 | 27.500 | 2610 |
| Labour Rights Laws | 22.642 | 5.499 | 0.000 | 28.500 | 2610 |
| Per capita GDP (log) | 7.122 | 1.366 | 2.856 | 10.995 | 2610 |
| GDP (log) | 8.854 | 1.880 | 4.813 | 14.069 | 2461 |
| Growth Rate of GDP | 1.848 | 27.811 | -44.191 | 973.608 | 2610 |
| Openness | 62.86 | 53.012 | 4.96 | 986.64 | 2334 |
| Industry Share in GDP | 29.609 | 13.459 | 0.270 | 91.607 | 2468 |
| Labour Force Participation Rate | 66.644 | 11.766 | 6.755 | 93.200 | 2610 |
| Democracy (Freedom House) | -4.228 | 1.795 | -1.000 | -7.000 | 2505 |
| Government's Ideology | 0.105 | 0.694 | -1.000 | 1.000 | 2473 |
| IMF SAP participation | 0.115 | 0.319 | 0.000 | 1.000 | 2610 |
| ILO 87 and 98 Treaties Ratified | 1.287 | 0.851 | 0.000 | 2.000 | 2610 |
| Spatial lag: Labour Rights | 21.267 | 2.409 | 16.684 | 27.012 | 2461 |
| Spatial lag: Labour Rights Practices | 19.565 | 1.808 | 16.073 | 22.807 | 2461 |
| Spatial lag: Labour Rights Laws | 20.702 | 0.871 | 19.109 | 23.785 | 2461 |

**Appendix 3:** Data Sources

| Variables | Data description | Data Sources |
|---|---|---|
| Labour Rights index | Measures 37 aspects of Labour rights (both Laws and Practices) on a scale of 0 – 74.5 (see section 3) | Mosley and Uno (2007) |
| Labour Rights Practices and Laws | Measures 16 aspects of Labour rights Practices on a scale of 0 – 27.5 and 21 aspects of Labour rights Laws on a scale of 0 – 28.5 (see section 3) | Mosley and Uno (2007) |
| Per capita GDP and growth rate | Per capita GDP (logged) in US$ 2000 constant prices and rate of growth of per capita GDP. | Economic Research Service (ERS), Washington DC |
| Openness | (Exports + Imports)/GDP | UNCTAD |
| Industry share in GDP | Share of industry value-added in total GDP | UNCTAD |
| Labour Force Participation Rate | Total Labour Force share in Population | UNCTAD |
| Democracy index | Average of Civil and Political Liberties index coded on a scale of 0 to -7 where highest value denotes better liberties. | Freedom House |
| Government's Ideology | Incumbent government's ideology coded on a scale of -1 to +1 where -1 is right wing, 0 is centrists, and +1 is right wing in power. | DPI (Database of Political Institutions dataset developed by Keefer 2001). |
| IMF SAP | Dummy capturing whether a country was under IMF's Structural Adjustment Program or not | Dreher (2006) |
| ILO 87 and 98 conventions ratified | Dummy capturing whether a country ratified ILO conventions on labour rights, 87 and 98 or not | ILO database on conventions |