Business Regulations and Poverty

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Abstract

Using panel data for 189 economies from 2005 to 2013, this paper shows that business-friendly regulations are correlated with the poverty headcount at the country level. This association is significant using the World Bank's Doing Business indicators on getting credit and contract enforcement. The findings suggest that the conduit for poverty reduction is business creation, as a source of new jobs and a manifestation of thriving entrepreneurship.

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1. Introduction

A large literature on the determinants of poverty finds a strong association with regional and country-specific factors, like the vulnerability to flooding or tropical diseases, remoteness, quality of governance, and property rights (Dollar et al., 2016). A second strand of the literature finds within-country factors, such as the availability of infrastructure (roads, water, electricity) and services (health, education), proximity to markets, and social relationships, to matter as much (Kraay and McKenzie, 2014 for example). A third set of studies investigates household characteristics, such as household size, age structure, dependency ratio, gender of the head of household, employment status, hours worked, property owned, nutritional status and educational attainment, and correlates those to the poverty headcount (Banerjee and Duflo, 2011).

In this paper, we disentangle the link between business regulations and their enforcement and the poverty headcount, expanding the evidence on country-level determinants of poverty. In particularlar, we use business regulations on starting a business, acquiring licenses, getting credit and contract enforcement, as well as an overall regulatory ranking as indicators of property rights. The data are constructed from the World Bank's *Doing Business* project and cover 189 economies from 2005 to 2013.

We find that business-friendly regulations are correlated with lower poverty headcount, as is higher government expenditure, a country's income per capita, and the regional dummies for East Asia and Eastern Europe. We suggest that the conduit for poverty reduction is business creation, both as a source of new jobs and as a manifestation of thriving entrepreneurship.

The rest of the paper is organized as follows. Section 2 describes the data sources. Section 3 details the empirical strategy and presents the main results. Section 4 concludes.

2. The data

This section describes the sources of the dependent variables, and the sources and construction of independent variables.

The main dependent variable used in previous studies is the poverty headcount ratio at $1.90 a day (at 2011 purchasing power parity) as a percent of the population. As an alternative variable, the poverty headcount ratio at $3.10 a day is sometimes used too. We use both indicators, the latter for robustness purposes. The Democratic Republic of Congo is the country with largest share of population living below $1.90 a day: 85.56%, followed by Madagascar and Burundi with 77.88% and 77.65%, respectively. Looking at the alternative definition of the poverty headcount ratio of $3.10 a day, these percentages increase significantly. The Democratic Republic of Congo has nearly its entire population (94.52%) living on less than $3.10 a day, Burundi — 92.17% and Madagascar — 91.08%. The correlation between the two variables is high, at 93.73%.

During the global financial crisis we observe an increase in the poverty headcount in a number of low-income and lower-middle-income economies. For example, the average poverty headcount ratio at $1.90 in low-income countries increases 11 percentage points — from 48.6% in 2009 to 60% in 2013. Some middle-income countries, including Croatia, Georgia and Romania in Eastern Europe and Honduras and Panama in Central America, experienced a significant increase in the poverty headcount.

We use the World Bank's data on new business formation to investigate the channel through which business regulation may affect poverty. These annual data are collected from 143 company registrars on the number of newly registered firms. New business entry is defined as the number of newly registered corporations per 1,000 working-age people (those ages 15–64). The units of measurement are private, formal sector companies with limited liability. Data extend from 2005 to 2015.

As proxy for the regulatory attitude of governments, we use the World Bank's Doing Business data, first published in 2003. The methodology for data collection is described in Djankov et al. (2002) and updated in Djankov (2016). We use the Doing Business data in two ways. First, we employ the overall score, which combines 10 distinct groups of measures that constitute the Doing Business index. These relate to the legal protections and regulatory processes that an average private business needs to go through in order to operate (Table 1).

Second, we use measures in four areas – starting a business, acquiring licenses, getting credit and enforcing contracts – as specific measures of business regulation. All measures are positively correlated, with the correlation ranging between 0.1810 and 0.7430, with low correlation between contract enforcement and acquiring licenses and high correlation between getting credit and the total aggregate *Doing Business* measure. Property registration has the highest correlation with contract enforcement (0.4947) and lowest with acquiring licenses (0.2240). All measures are negatively correlated with the poverty headcount. GDP per capita is also negatively correlated with the poverty headcount, as expected.

Government expenditure is the general government expenditure as a share of GDP, constructed by the International Monetary Fund. Among the countries with highest expenditure levels are the Pacific Islands states of Kiribati and Marshall Islands, as they receive financial support from international institutions and donors. Belgium, Denmark, Finland, and France are among the biggest spenders globally, with an average expenditure of more than 50% of GDP in the period 2004–2015. They are also among the countries with highest health and education expenditure. Conversely, Bangladesh, the Central African Republic and Nigeria are the countries with least government expenditure. We further use government expenditure on education and government expenditure on health as more precise measures related to the poverty headcount.

The quality of health care is proxied by the mortality rate of adult females (per 1,000 female adults), and alternatively by infant mortality. Lesotho, Eswatini, and Zimbabwe are among the countries with the highest mortality rates of adult females, whereas the Republic of Korea, Japan, and Spain are among the countries with the lowest rates.

We next construct a proxy for the change in political power (PolChange). Fifty-four percent of countries had parliamentary elections in any one year, consistent with a 4-year election cycle in the democratic world. OECD high-income countries had an average of 0.250 elections a year, the highest in the world. However, Brunei, China, Eritrea, Fiji, Guinea, Qatar, West Bank and Gaza and the Republic of Yemen did not have a single parliamentary election during 2003–2016. Most of these economies have presidential or hereditary royal systems.

In testing the effects of political change, we use as our main explanatory variable not just the occurrence of elections, but when these elections lead to a change of control over parliament from one party or coalition of parties to another. During the sample period, 223 changes of power took place.

The data suggest that such change of power varies widely across countries by income group. More than 60 percent of political changes during the sample period took place in high-income and upper-middle-income countries, while only 12 percent of changes occurred in lower-income countries. Serbia had the highest number of political changes in the sample period (five), Bulgaria, Latvia and Slovenia had four changes of power.

In extended regressions, we use variables for population growth, the inflation rate, and public spending on education and health care to test the robustness of our analysis. These data come from the World Bank's World Development Indicators database.

Table 1
Variable definition.

Variable	Description
Poverty	Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population). *Source:* WDI, World Bank.
Business formation	To measure entrepreneurial activity, annual data was collected from 143 company registrars on the number of newly registered firms. New business entry is defined as the number of newly registered corporations per 1000 working-age people (those ages 15–64). As in the World Bank's annual Doing Business report, the units of measurement are private, formal sector companies with limited liability. *Source:* World Bank's Entrepreneurship Survey and database (econ.worldbank.org/research/entrepreneurship).
Doing Business index	Aggregate Doing Business distance to frontier (DTF) score. An economy's distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier. *Source*: Doing Business, www.doingbusiness.org
Starting a Business	Starting a Business topic distance to frontier (DTF) score. *Source*: Doing Business, www.doingbusiness.org
Acquiring Licenses	Dealing with Construction Permits topic distance to frontier (DTF) score. *Source*: Doing Business, www.doingbusiness.org
Getting Credit	Getting Credit topic distance to frontier (DTF) score. *Source*: Doing Business, www.doingbusiness.org
Enforcing Contracts	Enforcing Contracts topic distance to frontier (DTF) score. *Source*: Doing Business, www.doingbusiness.org
Income per capita	One year lag of natural log of GDP per capita (current USD). *Source:* WDI, World Bank
PolChange	Dummy equal to 1 if an alternation of political parties or coalitions took place 12 months prior to the start of the *Doing Business* reforms

	period for the Lower house of the country and 0 otherwise. *Source:* Inter-Parliamentary Union (IPU) and website searches
GovExp	General government expenditure (% of GDP). *Source*: International Monetary Fund, World Economic Outlook Database, October 2017.
Mortality	Mortality rate, adult, female (per 1000 female adults). *Source:* WDI, World Bank
PopGrowth	Population growth (annual %). *Source:* WDI, World Bank
Inflation	Inflation, GDP deflator (annual %) *Source:* WDI, World Bank
Regions	
East Asia and Pacific (EAP)	Dummy indicating a country in East Asia or Pacific region. *Source:* WDI, World Bank
Europe and Central Asia (ECA)	Dummy indicating a country in Europe or Central Asia region. *Source:* WDI, World Bank
OECD high income	Dummy indicating a country in OECD high income group. *Source:* WDI, World Bank
Latin America and Caribbean (LAC)	Dummy indicating a country in Latin America or Caribbean region. *Source:* WDI, World Bank
Middle East and North Africa (MENA)	Dummy indicating a country in Middle East or North Africa region. *Source:* WDI, World Bank
South Asia (SA)	Dummy indicating a country in South Asia region. *Source:* WDI, World Bank
Sub-Saharan Africa (SSA)	Dummy indicating a country in Sub-Saharan Africa region. *Source:* WDI, World Bank

3. Findings

We begin by controlling for cross-country differences in income levels using GDP per capita, a proxy for political change, and year and country fixed-effects. We find that richer countries have less incidence of poverty, and that countries that spend more on government services as a share of their GDP also display lower poverty headcount. Government expenditure on health and education is also negatively correlated with the poverty headcount. These results are consistent with the previous literature. When we include health and education expenditures separately, education expenditure is negatively correlated with the poverty headcount and this correlation is always statistically significant. Health expenditure appears with a negative sign but is only sometimes statistically significant (not shown).

The effect of inadequate health care, proxied by adult female mortality, on the poverty headcount is positive and statistically significant (Table 2). Population growth affects negatively the poverty headcount and this association is statistically significant, as in previous studies. The effect of political change is insignificant, while inflation is marginally significant (at the 10% level), with a negative sign.

Table 2
Correlates of the level of poverty. Dependent variable: *Poverty*

Variables	(1)	(2)	(3)	(4)	(5)
Income per capita	−4.732***	−4.363***	−4.440***	−4.452***	−4.431***
	(0.864)	(0.869)	(0.868)	(0.855)	(0.854)
GovExp	−0.159***	−0.171***	−0.170***	−0.155***	−0.169***
	(0.0499)	(0.0499)	(0.0500)	(0.0495)	(0.0498)
Mortality		0.0365***	0.0367***	0.0404***	0.0407***
		(0.0103)	(0.0103)	(0.0101)	(0.0101)
PolChange			−0.318	−0.254	−0.269
			(0.453)	(0.449)	(0.447)
Population growth				2.613***	2.656***
				(0.641)	(0.640)
Inflation					−0.0509*
					(0.0263)
2005.year	0.912	0.929	0.907	1.020	0.939
	(0.672)	(0.671)	(0.675)	(0.668)	(0.667)
2006.year	0.160	0.306	0.365	0.401	0.339
	(0.723)	(0.722)	(0.726)	(0.718)	(0.716)
2007.year	0.328	0.470	0.504	0.557	0.541
	(0.772)	(0.770)	(0.772)	(0.763)	(0.760)
2008.year	0.746	0.943	0.986	1.006	1.133
	(0.879)	(0.876)	(0.877)	(0.866)	(0.866)
2009.year	0.999	1.284	1.333	1.217	0.994
	(0.982)	(0.979)	(0.980)	(0.967)	(0.970)
2010.year	0.677	1.264	1.324	1.415	1.326
	(0.907)	(0.915)	(0.916)	(0.904)	(0.902)
2011.year	−0.00962	0.515	0.572	0.651	0.697
	(0.968)	(0.976)	(0.977)	(0.968)	(0.966)
2012.year	0.673	1.214	1.286	1.272	1.170
	(1.061)	(1.066)	(1.066)	(1.051)	(1.049)
2013.year	0.719	1.315	1.384	1.277	1.067
	(1.147)	(1.153)	(1.154)	(1.139)	(1.140)
2014.year	−0.751	−0.314	−0.247	−0.290	−0.465
	(1.211)	(1.217)	(1.217)	(1.201)	(1.200)
Constant	78.72***	65.02***	65.44***	57.39***	57.84***
	(5.522)	(6.817)	(6.807)	(7.008)	(6.999)
Observations	546	539	539	538	538
Number of cc_num	118	117	117	117	117

Standard errors in parentheses; regional dummies included but not reported.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Next, we rerun the regression using the overall measure of business regulation and the four alternative measures of property rights: the difficulty of starting a business, acquiring licenses, getting credit and contract enforcement (Table 3). The choice of indicators is dictated by the literature on property rights and their enforcement, which suggests that laws and regulations that change the underlying incentives for market participants – firms, workers and investors – are most difficult to achieve as they require legislative and sometimes judicial support.

Table 3
Poverty and business regulation. Dependent variable: *Poverty*.

Variables	(1)	(2)	(3)	(4)	(5)
Income per capita	−7.549***	−4.577***	−5.135***	−5.252***	−4.433***
	(1.069)	(0.886)	(0.992)	(0.911)	(0.873)
GovExp	−0.150**	−0.161***	−0.147**	−0.143***	−0.164***
	(0.064)	(0.052)	(0.059)	(0.053)	(0.051)
Mortality	0.039***	0.038***	0.056***	0.027**	0.039***
	(0.014)	(0.010)	(0.012)	(0.0108)	(0.009)
Population growth	0.793	2.686***	2.243***	2.138***	2.437***
	(0.703)	(0.651)	(0.691)	(0.660)	(0.652)
Inflation	−0.039	−0.062**	−0.058**	−0.042	−0.064**
	(0.027)	(0.027)	(0.029)	(0.027)	(0.027)
Doing Business index	−0.048				
	(0.070)				
Starting a Business		−0.010			
Acquiring		(0.024)			
Licenses			−0.021		
			(0.024)		
Getting Credit				−0.032*	
Enforcing				(0.017)	
Contracts					−0.192***
					(0.059)
2005.year		0.942			1.033
		(0.647)			(0.650)
2006.year		0.400		0.760	0.507
		(0.702)		(0.691)	(0.700)
2007.year		0.648	0.0512	1.196	0.731
		(0.756)	(0.674)	(0.750)	(0.748)
2008.year	1.254**	1.332	1.034	1.858**	1.357
	(0.624)	(0.882)	(0.786)	(0.871)	(0.854)
2009.year	1.963***	1.114	0.930	2.090**	1.088
	(0.743)	(0.996)	(0.897)	(1.007)	(0.963)
2010.year	1.598**	1.494	1.097	2.172**	1.489*
	(0.698)	(0.937)	(0.818)	(0.936)	(0.891)
2011.year	1.644**	0.899	0.811	1.772*	0.712
	(0.749)	(1.010)	(0.898)	(1.009)	(0.961)
2012.year	2.849***	1.438	1.676*	2.377**	1.272
	(0.848)	(1.095)	(0.994)	(1.099)	(1.047)
2013.year	2.915***	1.373	1.592	2.360**	1.111
	(0.963)	(1.188)	(1.089)	(1.189)	(1.140)
Constant	85.89***	60.08***	59.61***	69.48***	68.08***
	(9.278)	(7.120)	(8.173)	(7.417)	(7.303)
Observations	353	508	407	454	508
Number of cc_num	109	117	113	114	117

Standard errors in parentheses; regional dummies included but not reported.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

We find that the general measure of business-friendly regulations, as well as the measures of getting credit and enforcing contracts are negatively associated with the poverty headcount. However, these associations are statistically significant only in the case of getting credit and enforcing contracts. In terms of comparative statics, a 10% improvement in the enforcing contracts indicator results in a 2 percentage points' reduction in the poverty headcount, a sizable effect.

We next investigate the likely conduit for the association between lower poverty and the ease of doing business (Tables 4a and 4b). Djankov et al. (2002) offer suggestive evidence that the relationship goes through increased rates of new business formation in countries with improved regulation.

We test this hypothesis, using World Bank data on the number of newly created businesses. We first demonstrate that business regulation is highly correlated with new business formation, both using the overall Doing Business index, as well as the separate measures on starting a business and acquiring business licenses (panel A). Second, we show that new business formation is negatively related to poverty, though this association is statistically insignificant (panel B). Further work is needed to collect data on all formal businesses, not just limited liability corporations but also sole proprietorships. Such data may provide a more robust link between business regulation and poverty. For now, the conduit from business regulation to poverty through new business formation is only suggestive.

Table 4a

New business formation and business regulation. Dependent variable: *Business Formation.*

Variables	(1)	(2)	(3)	(4)	(5)
Income per capita	1.106***	0.999***	1.146***	1.210***	1.119***
	(0.303)	(0.229)	(0.255)	(0.248)	(0.231)
Inflation	0.00833	0.00781	0.00766	0.00921	0.00806
	(0.00728)	(0.00641)	(0.00712)	(0.00672)	(0.00644)
Doing Business index	0.0839***				
	(0.0234)				
Starting a Business		0.0237***			
		(0.00729)			
Acquiring Licenses			0.0329***		
			(0.00833)		
Getting Credit				0.00490	
				(0.00568)	
Enforcing Contracts					0.00522
					(0.0165)
2005.year		0.0977			0.122
		(0.179)			(0.180)
2006.year		0.266		0.264	0.298
		(0.183)		(0.187)	(0.183)
2007.year		0.378**	0.276	0.391**	0.439**
		(0.193)	(0.176)	(0.197)	(0.193)
2008.year	−0.534***	−0.103	−0.210	−0.0674	0.00903
	(0.163)	(0.213)	(0.195)	(0.219)	(0.212)
2009.year	−1.012***	−0.502**	−0.639***	−0.444*	−0.346
	(0.178)	(0.232)	(0.214)	(0.237)	(0.229)
2010.year	−0.912***	−0.365	−0.483**	−0.284	−0.189
	(0.180)	(0.226)	(0.207)	(0.230)	(0.222)
2011.year	−0.943***	−0.352	−0.463**	−0.258	−0.144
	(0.194)	(0.243)	(0.223)	(0.247)	(0.237)
2012.year	−1.075***	−0.437*	−0.576**	−0.346	−0.218
	(0.211)	(0.260)	(0.242)	(0.265)	(0.255)
2013.year	−1.212**	−0.580	−0.508	−0.478	−0.319
	(0.591)	(0.608)	(0.602)	(0.623)	(0.606)
Constant	−9.408***	−6.599***	−7.812***	−6.820***	−6.333***
	(2.029)	(1.610)	(1.816)	(1.706)	(1.709)
Observations	676	977	775	878	977
Number of cc_num	130	130	130	130	130

Standard errors in parentheses; regional dummies included but not reported.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4b. Poverty and new business formation. Dependent variable: *Poverty.*

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Business Formation	−0.0319	−0.0751	−0.0806	−0.0912	−0.0756	−0.0704
	(0.109)	(0.110)	(0.110)	(0.110)	(0.109)	(0.108)
Income per capita		−4.048***	−3.800***	−3.585***	−3.547***	−3.591***
		(0.875)	(0.896)	(0.902)	(0.892)	(0.884)
GovExp			−0.0561	−0.0719	−0.0451	−0.0829
			(0.0556)	(0.0561)	(0.0559)	(0.0573)
Mortality				0.0287**	0.0311***	0.0321***
				(0.0113)	(0.0112)	(0.0111)
Population growth					2.116***	2.111***
					(0.628)	(0.623)
Inflation						−0.0647***
						(0.0248)
2005.year	0.202	0.961	0.980	0.995	1.054*	0.965
	(0.601)	(0.631)	(0.635)	(0.637)	(0.627)	(0.624)
2006.year	−0.940	0.496	0.487	0.568	0.559	0.560
	(0.592)	(0.675)	(0.677)	(0.679)	(0.669)	(0.664)
2007.year	−1.668***	0.263	0.257	0.406	0.351	0.414
	(0.602)	(0.737)	(0.739)	(0.741)	(0.730)	(0.725)
2008.year	−2.312***	0.525	0.538	0.731	0.654	0.901
	(0.604)	(0.865)	(0.866)	(0.868)	(0.856)	(0.853)
2009.year	−2.874***	0.615	0.693	0.995	0.706	0.607
	(0.577)	(0.962)	(0.969)	(0.972)	(0.961)	(0.954)
2010.year	−2.416***	0.659	0.715	1.168	1.024	1.020
	(0.612)	(0.905)	(0.909)	(0.923)	(0.910)	(0.903)
2011.year	−3.248***	0.245	0.229	0.644	0.480	0.733
	(0.606)	(0.970)	(0.971)	(0.986)	(0.980)	(0.976)
2012.year	−2.871***	1.227	1.176	1.663	1.462	1.505
	(0.602)	(1.066)	(1.067)	(1.081)	(1.067)	(1.058)
2014.year	−4.814***	−0.328	−0.350	0.124	−0.296	−0.237
	(0.842)	(1.300)	(1.302)	(1.310)	(1.296)	(1.286)
Constant	45.92***	72.01***	71.80***	61.42***	54.70***	56.15***
	(2.767)	(5.758)	(5.830)	(7.240)	(7.400)	(7.352)
Observations	371	368	367	362	361	361
Number of cc_num	83	82	82	81	81	81

Standard errors in parentheses; regional dummies included but not reported.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4. Conclusions

Our results contribute to a burgeoning literature on the country-level determinants of poverty. We find empirical support for the association between the poverty headcount and business-friendly regulation. Using objective measures in several areas of business regulation, we are able to corroborate the findings of earlier studies that use aggregate indicators of property rights and institutional development. The likely conduit for this association is through the creation of new businesses that generate jobs and economic opportunities for the poor.

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