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Developing and Transition Economies**

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# On Judicial Reform and Corruption in Developing and Transition Economies

Alberto Chong and Angelo Cozzubo\*

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## Abstract

We use a difference-in-difference approach for the period 2005 to 2014 and show that judicial reform is statistically linked with a reduction in corruption indices for a large sample of countries even when including country trends. This finding is robust to placebo and falsification tests, and it complements well with recent research on the role of judicial reform on economic growth.

**Keywords:** Judicial Reform, Corruption, Developing Countries, Transition Economies

**JEL classification:** O10, H00, K40

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## Introduction

Not only does a well-functioning judicial system support the protection of human rights, facilitate the resolution of disputes, and help hold governments accountable, it also protects property rights, encourages investment, and promotes economic growth. As these are critical functions, vast foreign aid has been poured to help countries achieve reforms that include upgrading norms and procedures; strengthening organizational capability; training judges and court administrators; enhancing independence, transparency, and accountability; and increasing citizen access and participation.<sup>1</sup> In spite of its importance, research on the impacts of judiciary reforms on economic outcomes is rather scarce. An exception is Chemin (2012) who shows that in the particular case of India, court reform led to fewer breaches of contract, encouraged investment, and facilitated access to financing in small firms. More recently, Chemin (2019) put together new data on many countries around the world to show for the first time that judicial reform is causally linked: externally financed, comprehensive judicial reforms improve perceptions of judiciary efficiency and firm productivity.

In this paper, we contribute to the literature by showing that corruption, an equally important core variable of interest in developing countries, is also impacted by judicial reforms, likely causally. This finding is consistent with the literature that argues that corruption and economic growth may be substitutes and not complements, thus further appearing to discredit the idea that sometimes corruption is a necessary evil that helps ‘grease the wheels’ of the economy. Our paper is organized as follows. The next section describes the data and our difference-in-difference methodology. The third section shows our findings as well as a series of robustness tests. The final section concludes.

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<sup>1</sup> [web.worldbank.org/archive/website00912B/WEB/OTHER/0052E4CB.HTM](http://web.worldbank.org/archive/website00912B/WEB/OTHER/0052E4CB.HTM)

## Data and Methodology

Our main empirical strategy exploits spatial and time variation in the implementation of judicial reforms at the country level using a difference-in-difference approach in order to evaluate any causal effect on corruption. We compare corruption rates between countries where judicial reform has been implemented to those where they did not occur in our sample period, before and after the judiciary reform. We assign countries to treatment and control groups depending on the implementation and the timing of the reforms. Our reduced form is as follows:

$$Corruption_{it} = \beta Judicial\ Reform_{it} + \mathbf{X}'_{it}\boldsymbol{\gamma} + \mu_i + \rho_t + \varepsilon_{it} \quad (1)$$

where (i) *Corruption* denotes a corruption index of country *i* at time *t*, (ii) *Judicial Reform* is a dummy variable that indicates whether the country carried out a judicial reform, (iii) *X* denotes a vector of basic control variables,  $\mu_i$  and  $\rho_t$  represent country and year fixed effects, respectively, and  $\varepsilon_{it}$  is an error term. The standard errors of all regressions are clustered at the country level. Additionally, we include continent and country-specific time trends to assess the robustness of our results.

Our key variable of interest, judicial reform, is a dummy variable that takes the value of one if the country carried out a judicial reform between the years 2006 and 2014. In particular, it identifies all the “judicial reforms funded by foreign aid agencies as either comprehensive targeting all characteristics of quality, speed, access or limited reform by exploiting the data availability from the International Aid Transparency Initiative” (Chemin, 2019). Following this research, we consider as control countries those that have a Doing Business Survey (World Bank, 2019) for the period 2005 to 2014 but did not have judicial reform.<sup>2</sup> Our dependent

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<sup>2</sup> The countries included are: Afghanistan, Albania, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Bulgaria, Burundi, Cambodia, Chile, Colombia, Congo, Croatia, Czech Republic, Ecuador, El Salvador, Estonia, Ethiopia, Georgia, Ghana, Guatemala, Honduras, Hungary, Indonesia,

variable is the well-known index on corruption from the International Country Risk Guide (ICRG) that has been employed very extensively in the literature. It is an “assessment of the corruption within the political system. The most common form of corruption met directly by business is financial corruption in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans” (World Bank, 2019). We recoded the variable so it can be read more intuitively, a higher index depicts a higher corruption scenario. In addition, we employ a series of control variables, which were obtained from World Development Indicators (WDI) from the World Bank. These variables are GDP growth, ln GDP per capita, unemployment, annual inflation, share of female labor force, and primary school enrollment. Table 1 presents variable definitions and corresponding sources. Table 2 shows summary statistics.

## **Findings**

Our results are shown in Table 3. We find that the coefficient of our variable of interest, judicial reform, is negatively linked to the corruption assessment, as it is statistically significant at conventional levels. Column 1 shows the difference-in-difference results when including a full set of controls and fixed effects, but no trends. We estimate that carrying out a judicial reform implies a decrease in 0.11 points in the Corruption Index (0.14 standard deviations). The additional columns show that our basic result does not change when we include continent and country-specific time trends, which are included in order to account for differences in pre-trends. When adding continent-specific trends, we estimate that carrying out a judicial reform implies a

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Kazakhstan, Kenya, Kosovo, Kyrgyzstan, Lao, Latvia, Lithuania, Macedonia, Madagascar, Malawi, Mali, Mauritania, Mexico, Moldova, Mongolia, Montenegro, Namibia, Nepal, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Romania, Russia, Rwanda, Senegal, Serbia, Slovak Rep., Slovenia, Tajikistan, Tanzania, Timor-Leste, Turkey, Uganda, Ukraine, Uruguay, Uzbekistan, Vietnam, Yemen, and Zambia.

decrease in 0.12 points in the Corruption Index (0.14 standard deviations). When adding country-specific trends, this demanding specification that is also our preferred one, shows that carrying out a judicial reform implies a decrease in 0.06 points in the Corruption Index (0.08 standard deviations). This result is still statistically significant at conventional levels.

In Table 4, we test whether our findings may be spurious. We replace the main policy variable with 1,000 sets of placebo dates for the application of a judicial reform for the treated countries in our sample. Using a uniform distribution, we randomly generated 1,000 sets of fake dates from 2005 to one year before the actual effective date of the reform. To avoid contaminating the test with the truly treated data, we drop observations from the true treated period. Then, we estimated Equation (1) 1,000 times, where each time we define the treatment indicator according to the placebo dates. We find that these placebo dates do not capture any effect for the fake changes in judicial reforms. The estimated effects are small, negative (-0.002), and statistically insignificant at most conventional levels (standard error 0.09), and they were negative and statistically significant at the 1-, 5-, and 10-percent levels only 2, 10, and 24 times out of 1,000 replications, respectively. In addition, Table 5 shows falsification regressions where we estimate our preferred specification and change the dependent variable by an outcome not intuitively related to the effect of a judiciary reform. We do not find any statistically significant results at conventional levels.

## **Conclusions**

Using a difference-in-difference approach, we show that judicial reform is statistically linked with a reduction in corruption indices, a contribution that is unique, robust, and likely causal. In the context of recent research that shows that judicial reforms promote growth, we

provide evidence consistent with the fact that corruption may not help 'grease the wheels' in order to achieve higher rates of growth and may be actually detrimental to it.

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**Table 1**  
**Variable Definitions**

<b>Variable</b>	<b>Definition</b>
Judicial Reform	Dichotomous variable equals to one if the country carried out at least one judicial reform. Source: Chemin (2019)
Corruption Assessment	Assessment of corruption in the political system. Scale goes from -6 (indicating no corruption) to 0 (highest corruption assessment)
Growth GDP	GDP growth (annual %)
Ln GDP per capita	Ln of GDP per capita in initial year (constant 2010 US\$)
Unemployment total	Unemployment rate (% of total labor force)
Inflation	Inflation rate GDP deflator (annual %)
Labor force female	Female labor force (% of total labor force)
School Enrolment primary	School enrollment in primary education (% gross)

Unless noted the data come from World Bank (2019) and correspond to the period 2005 to 2014.

**Table 2**  
**Descriptive Statistics, 2005-2014**

	<b>N. Obs.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
GDP growth	517	4.81	4.60	-14.81	34.50
Ln GDP per capita	517	8.14	1.14	5.45	10.14
Unemployment total	518	7.70	4.74	0.40	24.00
Inflation GDP deflator	517	8.78	9.01	-18.93	80.75
Labor force female	518	42.93	7.43	9.15	50.62
School enrollment primary	484	104.17	11.08	73.77	149.31
ICRG: corruption assessment	518	-2.31	0.80	-5.50	-0.50
Judicial reform	518	0.12	0.32	0.00	1

**Table 3**  
**Judicial Reforms on Corruption Assessment, 2005-2014**

<b>Main Results</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
Judicial Reform = 1	-0.110*** (0.04)	-0.117*** (0.038)	-0.060* (0.030)
Controls	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes
Continent-specific trends	No	Yes	No
Country-specific trends	No	No	Yes
Observations	484	484	484
Adj. R-squared	0.8872	0.8896	0.9413

Notes: The controls are GDP growth, ln GDP per capita, unemployment, annual inflation, female labor force and primary school enrollment. Standard errors are clustered at the country level. The statistically significant coefficients are denoted as follows: \*p<0.10, \*\*p<0.05, \*\*\*p<0.01

**Table 4**  
**Placebo Dates for Judicial Reform**

Average placebo estimate	-0.002 (0.093)
Placebo coefficient < 0	486
Placebo coefficient < 0 and significant at 10 percent level	24
Placebo coefficient < 0 and significant at 5 percent level	10
Placebo coefficient < 0 and significant at 1 percent level	2
Number of observations	464

Notes: The dependent variable is corruption. The effect of judicial reforms was estimated for placebo (fake) dates, i.e., assigning random dates of the effectiveness of a judicial reform with 1000 trials. All regressions include country and year fixed effects, country-specific time trends, as well as these controls: GDP growth, ln GDP per capita, unemployment, annual inflation, female labor force and primary school enrollment. Standard errors are clustered at the country level. The statistically significant coefficients are denoted as follows: \*p<0.10, \*\*p<0.05, \*\*\*p<0.01

**Table 5**  
**Judicial Reforms on Falsification Variables, 2005-2014**

	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
	Access to electricity (% pop.)	Health expenditure (% GDP)	Employment in services (% total employed)	Oil rents (% GDP)
Judicial Reform = 1	-0.011 (0.012)	0.028 (0.031)	0.017 (0.013)	0.001 (0.006)
Observations	483	483	484	484
Adj. R-squared	0.9412	0.9412	0.9412	0.9408
	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>
	Mineral rents (% GDP)	External conflict	Military in Politics	Religious Tensions
Judicial Reform = 1	-0.012 (0.010)	-0.048 (0.041)	-0.025 (0.094)	-0.089 (0.105)
Observations	484	471	471	471
Adj. R-squared	0.9411	0.9415	0.9411	0.9412

Notes: All regressions include country and year fixed effects, country-specific time trends, as well as the following controls: GDP growth, ln GDP per capita, unemployment, annual inflation, female labor force and primary school enrollment. Standard errors are clustered at the country level. The statistically significant coefficients are denoted as follows: \*p<0.10, \*\*p<0.05, \*\*\*p<0.01