

The cost of registering property: does legal origin matter?

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Abstract There is a large literature that finds that common law countries perform better than civil law countries in various aspects of the institutional environment. This article extends these findings to another dimension of institutional quality—the cost of registering property. In a sample of 121 countries, we find that the cost of registering property is lower by 26 percent of the world average in common law compared with civil law countries, a result largely driven by differences in non-notary costs of registering property. We provide plausible explanations for these findings.

Keywords Legal origin · Institutions · Property registration

JEL Classification D23 · H1 · H82 · K00 · K4 · K11 · P11 · P14 · P51

1 Introduction

A large literature finds that common law countries perform better than civil law countries in various aspects of the institutional environment. Specifically, studies show differences across the two legal traditions in the quality of property rights protection and contract enforcement (Djankov et al. 2003), entry regulation (Djankov et al.

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2002), labor laws (Botero et al. 2004), and financial development (La Porta et al. 1997; Djankov et al. 2008). For a literature survey of these findings, see for example, La Porta et al. (2008).

This article extends this literature by providing evidence on how the cost of registering property to firms, where property is defined to include land and buildings, varies between civil and common law countries. If greater emphasis on private freedom vis-à-vis state control and greater judicial oversight that prevail in the common law compared with civil law countries results in better overall governance as suggested in the literature,¹ one can expect the cost of registering property (henceforth, registration cost) to be lower in common law compared with civil law countries. The empirical results strongly confirm this hypothesis.

Understanding the determinants of registration cost such as the legal origin of a country, is important for a variety of reasons. First, La Porta et al. (2008) note that the most striking aspect of the findings on legal origin is the *pervasive* effect legal origin has on economic outcomes. This raises the all important question whether there is more to legal origin than what existing studies (discussed above) have unearthed. Amin (2009) attempts to answer this question by showing that firms in common law countries view government as much more helpful to doing business than firms in civil law countries and this holds even after controlling for the known covariates of legal origin. In short, the study concludes that there is more to legal origin than what existing studies have found. This article contributes to this literature by showing that the pervasiveness of legal origins referred to by La Porta et al. (2008) extends to registration cost.

Second, lower registration cost may encourage greater formalization of businesses and more secure property rights (discussed below), and this in turn may have numerous beneficial effects on the overall growth and development of an economy. Broadly, studies have identified three reasons for why greater formalization (registration) of property and an efficient property rights regime is a pre-condition for growth: (i) it provides incentive necessary for property owners to undertake land-related investments, thus helping to maintain and increase the sustainability of resource use (Besley 1995; Galiani and Schargrodsky 2005; Kille and Lyne 1993; Hoff 1991); (ii) it decreases the cost of transacting land in the market, thus improving allocative efficiency in the land market (Feder et al. 1988; Pender and Kerr 1999); and (iii) formal land titles allow land to be used as collateral, increasing credit supply and therefore investment and growth (De Soto 2000; Feder et al. 1988; Field and Torero 2006).²

For these and potentially other similar reasons, studies have found overall economic performance to be strongly linked with the quality of property rights protection. For example, in a celebrated study of 98 countries over 1960–1985, Barro (1991) finds strong evidence that better protection of private property has a significant impact on the growth rate of GDP per capita of countries. In another influential study,

¹ See, for example, La Porta et al. (2008) and Treisman (2000).

² For example, recent studies by the World Bank (various years) show that 95 percent of commercial bank loans to businesses in Zambia, 80 percent in Indonesia and 75 percent in Uganda are secured by land. These studies are available at http://www.worldbank.org/privatesector/ic/ic_country_report.htm. Also see, for example, Ibbotson et al. (1985).

De Soto (2000) notes that weak property rights or poor title systems is the most important reason why some countries have remained poor and failed to benefit from the promise of capitalism. Knack and Keefer (1995); Besley (1995); Claessens and Laeven (2003), and Deininger (2003) provide useful summaries of the related literature.

Empirical evidence on how incremental changes in registration cost affect the level of property registration or the quality of property rights is limited. Most of the studies mentioned above compare titled versus untitled land holdings in trying to understand how property rights affect economic outcomes. In contrast, this study uses a more detailed and comprehensive measure of registration cost taken from the World Bank's Doing Business project. The cross-country comparable measure is expressed as a percentage of the property value and includes all official costs required by law in buying and selling a property, including fees, transfer taxes, stamp duties, and any payment to property registry, notaries, public agencies or lawyers.

Available evidence on the experience of some countries with reforms in the Doing Business measure of property registration suggests that registration cost may have large effects on the quality of property rights. For example, Egypt implemented a number of reforms in registering property in August 2006. These reforms lowered the property registration cost from 5.9 percent (of the property value) to a mere 1 percent. Tracking these reforms, Haidar (2007) reports that the number of deeds registered per month over the 6-month period post reform increased by about 11 percent of the same in the 6-month period prior to the reform. The corresponding increase in revenue from title registrations is estimated at about 39 percent. Similar benefits from lower property registration costs are also reported for Belarus where the number of transferred titles increased threefold since the country began computerizing its system in 2005; Bosnia and Herzegovina has seen 33 percent growth in transferred titles since all municipal cadastres started working on computerization a few years ago (World Bank 2009).

There is substantial variation in registration procedures and costs across countries, requiring an explanation. For example, according to the World Bank's Doing Business project, it takes entrepreneurs in Belgium seven procedures (interactions with government officials), 132 days, and 12.7 percent of a property value to transfer a property from one domestic company to another domestic company while entrepreneurs in Georgia can transfer property at almost no cost (0.14 percent of property value) within 5 days requiring only five procedures.

Summarizing, high registration costs may prevent businesses and households from registering their property. Consequently, protection of property rights, a key ingredient of a well-functioning market economy, can be seriously impaired and, thus, depress investment and business activity in general. Hence, it is crucial to understand what sorts of countries face higher registration costs and why so. This article attempts to take one step in this direction by profiling countries by their registration costs.

The remainder of the article is as follows. In Sect. 2 we describe the data and the main variables. We provide estimation results in Sect. 3, and the concluding section contains a summary of the main findings.

Table 1 Summary statistics for the main variables

	Mean	Standard deviation	Range (minimum, maximum)
<i>Property registration cost</i> (actual values)	8.1	5.7	0.1, 29.2
Notary cost	0.93	2.2	0, 12.5
Non-notary cost	7.6	5.6	0, 26.7
<i>English</i> (dummy)	0.39	0.49	0, 1
<i>GDP per capita</i> (logs)	8.3	1.3	5.5, 11.1
<i>Population</i> (logs)	15.8	1.9	11.2, 20.8
Ethnolinguistic fractionalization (<i>ELF</i>)	0.39	0.31	0, 0.89
<i>Catholic</i>	0.41	0.49	0, 1
<i>Protestant</i>	0.14	0.35	0, 1
<i>Muslim</i>	0.26	0.45	0, 1
All other religions	0.18	0.39	0, 1
Presidential system	0.71	0.46	0, 1
Human capital (logs)	4.6	0.23	3.6, 5
Corruption	1.2	0.44	0.47, 2.2
Business freedom index	37.4	12.7	1, 65.3
Cost of enforcing a contract (logs)	3.4	0.57	2.2, 5
Cost of starting a business (logs)	3.6	1.6	-1.6, 6.6

2 Data and main variables

The dependent variable, *Property Registration Cost*, is the cost of transferring a property from one domestic company to another and is expressed as a percentage of the property value. The data source for the variable is the World Bank's Doing Business project. The dependent variable ranges from 0.1 to 29.2, with mean value equal to 8.1 and standard deviation of 5.7. The sample consists of 119 countries that belong to the English common law or the French civil law tradition. Of these 119 countries, 49 are from Africa, 22 from Asia, 14 from Western Europe and North America, 26 from Latin America and the Caribbean region, and the remaining 8 countries are from the Asia Pacific region. In the regressions, we use the average value of the (property registration) cost over all years for which data are available (2004–2008). Table 1 provides summary statistics for all the main variables, and Table 2 shows correlations between the explanatory variables.

Registration processes vary substantially across countries. For example, while some countries such as Algeria make extensive use of notaries for verification of property documents, in other countries such as Australia, it is the standardized sale-purchase agreements and updated registries that play the verification role. Understanding which sub-components of the registration cost vary more (or less) across the legal traditions is beyond the scope of this article. However, we do provide some evidence in this direction by analyzing the two broad sub-components: notary versus non-notary costs.

Table 2 Correlations between the explanatory variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 English	1												
2 GDP per capita(log values)	0.064	1											
3 Population	-0.112	0.079	1										
4 ELF	0.116	-0.492	0.070	1									
5 Catholic	-0.314	0.220	-0.062	-0.291	1								
6 Protestant	0.416	-0.003	-0.052	0.219	-0.342	1							
7 Muslim	-0.157	-0.173	0.215	0.115	-0.497	-0.242	1						
8 All other religions	0.200	-0.082	-0.118	0.045	-0.399	-0.194	-0.283	1					
9 Presidential system	-0.349	-0.439	0.137	0.177	-0.030	-0.163	0.269	-0.125	1				
10 Human capital	0.044	0.409	-0.046	-0.368	0.389	0.026	-0.408	-0.051	-0.088	1			
11 Corruption	0.200	0.758	-0.062	-0.396	0.138	0.076	-0.234	0.023	-0.498	0.238	1		
12 Business freedom index	-0.358	-0.758	0.040	0.408	-0.054	-0.135	0.238	-0.091	0.496	-0.276	-0.852	1	
13 Cost of enforcing a contract	-0.049	-0.546	-0.032	0.352	-0.063	0.141	0.032	-0.083	0.205	-0.208	-0.488	0.502	1
14 Cost of starting a business	-0.289	-0.769	-0.088	0.409	-0.049	-0.158	0.201	-0.022	0.467	-0.260	-0.754	0.832	0.529

ELF Ethnolinguistic fractionalization

The main explanatory variable, *English*, is a dummy variable equal to 1 if a country's legal structure is based on the English common law (46 countries) and 0 otherwise (French civil law, 73 countries). Data source for the variable is [La Porta et al. \(1999\)](#).

It is natural to expect that the more developed countries are likely to have a better institutional environment, including lower registration costs. If the level of economic development also varies systematically across common and civil law countries, then the results for the legal origin and registration costs could suffer from the omitted variable bias problem. Another possibility is that there may be fixed costs in the provision of registration services. Hence, relatively large countries may have lower registration costs than the small countries. We control for these possible sources of omitted variable bias problem with the main results for the legal origin of countries by controlling for the (log of) GDP per capita in 2000, PPP adjusted and in constant 2000 USD (*GDP per capita*) and the size of the country as measured by the (log of) total population of the country in 2000 (*Population*). Both these variables are taken from the World Development Indicators, World Bank. We treat GDP per capita and population as the main controls. Moving beyond the base specification, we show that the main results survive a number of robustness checks. [La Porta et al. \(2008\)](#) note that omitted religious, cultural, and political factors constitute the most serious threat to the findings on legal origin. As a remedy, we use dummy indicators for the main religion in the country (Catholic, Muslim, Protestant, and others), and an index of ethnolinguistic fractionalization (*ELF*). The mean values of the religion dummies shown in [Table 1](#) equal the proportion of countries in the sample with the relevant religion as the main religion in the country. Data for the main religion and *ELF* are from [La Porta et al. \(1999\)](#). For political institutions, we use a dummy variable equal to 1 if the executive head is directly elected and 0 otherwise (*Presidential system*) taken from the Database for Political Institutions, World Bank. Consistent with the broader literature, the prediction is that presidential systems perform better than parliamentary systems (see, for example, [Persson 2002](#)).

For additional robustness, we control for the level of human capital measured by (log of) gross primary enrollment rate in 2000 (World Development Indicators, World Bank) and the level of corruption in 2000 (International Country Risk Guide). Lastly, we put the main results through a stringent test by controlling for the level of business regulation. The motivation here is to check if elements of legal origin that affect property registration costs are same or different from the ones that affect the broader business environment. Business regulation measures include the cost of starting a business and the cost of enforcing contracts taken from the World Bank's Doing Business project (log of the average value over all years for which data are available), and the Business Freedom index. The Business Freedom index is based on ten different indicators taken from the Doing Business project that capture various dimensions (other than registration cost) of the regulatory environment. Broadly, the dimensions covered include the difficulty in starting and closing a business and obtaining licenses and permits.³

³ The Business Freedom index varies on a 0–100 scale with higher values implying less regulation or more freedom to firms. In the regressions, we use the average value of the index over 2000–2008 for which data are available.

3 Estimation

The regression results are based on the ordinary least squares (OLS) estimation method, with Huber–White robust standard errors. The underlying estimated equation takes the simple linear form:

$$Y_i = \alpha + \beta \text{English}_i + \gamma_1 \text{GDP per capita}_i + \gamma_2 \text{Population}_i + \lambda X_i + \varepsilon_i$$

where Y_i is the outcome variable, X_i is a vector of the remaining controls, subscript i denotes the country and ε_i is the error term. As mentioned above, *English* is the variable of interest and the predicted sign of its coefficient is negative. *GDP per capita* and *Population* are the main controls.

Regression results for the previous equation with registration cost (notary plus non-notary) as the dependent variable are provided in columns 1–5 of Table 3. These results clearly show that the cost of registering property is lower in common law compared with civil law countries. The difference is statistically significant (at less than the 5 percent level) and economically large. For example, without any other controls, the cost is lower by 2.53 percentage points (column 1, Table 3) or 31 percent of the mean value of the dependent variable in the full sample. Controlling for the various variables discussed above, the estimated coefficient value of *English* increases in absolute value from -2.53 (column 1) to -3.71 (column 5), significant at less than the 1 percent level. About one-half of this increase is due to the difference in sample size in the two columns on account of missing observations. The remaining difference is largely due to the controls for the main religion. For example, restricting the sample size to those countries for which information is available on all the variables (97 countries), the estimated coefficient value of the common law dummy equals -2.96 (P value of 0.008; not shown) for the specification with no other controls and -3.71 with all the controls (column 5).

Results for the remaining variables are as expected. Higher GDP per capita, presidential as opposed to parliamentary system and lower ELF are associated with a significantly lower cost of registering property. There is also some evidence that larger countries (measured by total population) have lower registration cost, perhaps due to fixed costs in the provision of registration services.

Table 4 shows regression results for the two sub-components of the registration cost: notary cost (columns 1–4) and non-notary cost (columns 5–8). These results show that the non-notary cost, which includes property transfer taxes, registration fees, valuation fees, stamp duty, and other legal fees, is significantly higher in the civil law countries compared with the common law countries (column 5–8, Table 4). For notary cost, which includes issuing a copy of the deed to each party, notarizing the sale and purchase contract, and filing the original deed at the registry, there is no significant difference between the two legal traditions (columns 1–4, Table 4).⁴

⁴ We display adjusted R^2 values in Tables 3 and 4. We would like to mention a few points: (a) for the main results (overall cost of registering property in Table 3 and the non-notary cost in Table 4), adding more regressors tends to increase the adjusted R^2 values. The minor exception is when we add human capital and corruption controls in Table 1; (b) the adjusted R^2 for notary cost regressions (columns 1–4, Table 4)

Table 3 Regression results for the total property registration cost (OLS)

	(1)	(2)	(3)	(4)	(5)
Dependent variable: <i>Registration Cost</i>					
<i>English</i>	-2.53** [0.012]	-2.42** [0.013]	-4.28*** [0.001]	-4.27*** [0.001]	-3.71*** [0.007]
<i>GDP per capita</i> (log values)		-1.61*** [0.000]	-0.942** [0.046]	-0.792 [0.222]	-0.617 [0.415]
<i>Population</i> (log values)		-0.358 [0.132]	-0.456** [0.039]	-0.440** [0.046]	-0.640** [0.017]
<i>ELF</i>			5.29** [0.013]	5.12** [0.026]	5.13** [0.022]
<i>Catholic</i>			-1.88 [0.286]	-2.02 [0.256]	-3.56** [0.029]
<i>Protestant</i>			-0.754 [0.671]	-0.837 [0.633]	-3.15* [0.076]
<i>Muslim</i>			1.67 [0.399]	1.75 [0.422]	0.78 [0.713]
<i>Presidential syste</i>			-2.19* [0.067]	-2.41** [0.043]	-2.06* [0.097]
<i>Human capital</i> (log values)				1.05 [0.668]	1.76 [0.525]
<i>Corruption</i> (International Country Risk Guide)				-1.04 [0.559]	-0.009 [0.997]
<i>Business Freedom index</i> (Heritage foundation)					0.008 [0.925]
<i>Cost of enforcing a contract</i> (log values)					2.74** [0.023]
<i>Cost of starting a business</i> (log values)					-0.293 [0.669]
Constant	9.08*** [0.000]	28.1*** [0.000]	24.8*** [0.000]	19.9 [0.128]	9.56 [0.553]
Number of countries	119	119	104	101	97
R^2	0.047	0.19	0.34	0.342	0.404
Adjusted R^2	0.039	0.169	0.285	0.268	0.311
F statistic	6.57** [0.044]	14.5*** [0.000]	10.9*** [0.000]	7.86*** [0.000]	6.64*** [0.000]

P-values in brackets. All regressions use Huber–White robust standard errors. Significance level is denoted by *** (1% or less), ** (5% or less), and * (10% or less). Sample size varies due to missing observations. *ELF* Ethnolinguistic fractionalization. F statistic is for the overall fit of the regression

Footnote 4 continued

is mostly negative and very small. The negative values suggest that legal origin and other variables in the specifications are exceedingly poor predictors of the notary costs. We note that this confirms the overall results in the article that notary and non-notary costs have a different set of determinants and analyzing these costs separately may be necessary; (c) the sample size varies across different specifications in Tables 3 and 4 due to missing observations. We have checked that the change in sample size does not affect the way R^2 changes as more regressors are added. Specifically, for Table 3, we restricted the sample size to the 97 countries used in column 5 (Table 1). For this sample of 97 countries, adjusted R^2 for columns 1–5 equaled 0.051, 0.184, 0.296, 0.283, and 0.311, respectively. Similarly, for the non-notary cost results, restricting the sample size to the 93 countries in column 8 of Table 4, the adjusted $R^2 = 0.041$ (column 5, Table 4), 0.161 (column 6, Table 4), 0.297 (column 7, Table 4), and 0.325 (column 8, Table 4). Last, for notary cost results, restricting the sample size to the 97 countries used in column 4 of Table 4, the adjusted $R^2 = -0.005$ (column 1, Table 4), -0.017 (column 2, Table 4), -0.028 (column 3, Table 4), and 0.031 (column 4, Table 4).

Table 4 Notary versus non-notary cost of registering property (OLS)

	Notary cost				Non-notary cost			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>English</i>	-0.345 [0.387]	-0.371 [0.367]	-0.416 [0.404]	-0.26 [0.656]	-2.24** [0.026]	-2.04** [0.038]	-3.86*** [0.003]	-3.17** [0.019]
<i>GDP per capita</i> (log values)		0.158 [0.160]	0.357 [0.136]	0.447 [0.210]		-1.58*** [0.000]	-1.15** [0.020]	-0.82 [0.330]
<i>Population</i> (log values)		0.001 [0.988]	-0.037 [0.709]	-0.084 [0.451]		-0.223 [0.344]	-0.27 [0.235]	-0.372 [0.180]
<i>ELF</i>			1.58 [0.206]	1.36 [0.258]			4.01* [0.065]	4.16* [0.084]
<i>Catholic</i>			0.587 [0.181]	0.149 [0.726]			-2.15 [0.241]	-3.40** [0.044]
<i>Protestant</i>			0.094 [0.831]	0.238 [0.614]			-0.887 [0.626]	-3.39* [0.075]
<i>Muslim</i>			0.975 [0.206]	1.43 [0.120]			2.31 [0.251]	1.06 [0.611]
<i>Presidential system</i>			0.052 [0.932]	-0.529 [0.429]			-3.48*** [0.004]	-2.86** [0.024]
<i>Human capital</i> (log values)				2.90** [0.027]				-0.106 [0.967]
<i>Corruption</i> (International Country Risk Guide)				-0.189 [0.820]				1.01 [0.611]
<i>Business freedom index</i> (Heritage foundation)				0.056* [0.063]				-0.037 [0.673]
<i>Cost of enforcing a contract</i> (log values)				-0.005 [0.987]				2.94** [0.019]
<i>Cost of starting a business</i> (log values)				-0.109 [0.699]				0.083 [0.891]
Constant	1.06*** [0.000]	-0.262 [0.877]	-2.47 [0.306]	-16.8* [0.072]	8.43*** [0.000]	25.0*** [0.000]	24.2*** [0.000]	14.0 [0.426]
Number of countries	119	119	104	97	115	115	100	93

Table 4 continued

	Notary cost				Non-notary cost			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
R^2	0.006	0.015	0.068	0.162	0.039	0.178	0.340	0.420
Adjusted R^2	-0.002	-0.011	-0.010	0.031	0.030	0.155	0.282	0.325
F statistic	0.75	1.11	0.87	0.70	5.07**	11.6***	7.77***	6.23***
	[0.387]	[0.348]	[0.549]	[0.760]	[0.026]	[0.000]	[0.000]	[0.000]

P values in *brackets*. The dependent variable in columns 1–4 is the notary cost component of the total registration cost and expressed as a percentage of property value. Similarly, the dependent variable in columns 5–8 is the non-notary cost component of the total property registration cost and expressed as a percentage of the total property value. All regressions use Huber–White robust standard errors. Significance level is denoted by *** (1% or less), ** (5% or less), and * (10% or less). Sample size varies due to missing observations. *ELF* Ethnolinguistic fractionalization. F statistic is for the overall fit of the regression

One concern with the results above could be that the correlation between some of the explanatory variables is relatively high (stronger than 0.75). Most notably, GDP per capita and corruption show high correlation with one another and also with, for example, Business Freedom index and the cost of starting a business (Table 2). Such (high) correlation levels may be due to multicollinearity in the model specified and may explain why GDP per capita loses significance when corruption is added into the model. What this suggests that it is difficult to isolate the effect of, for example, GDP per capita on registration cost from that of corruption. However, as far as the main results above concerning legal origin are concerned, we confirm they do not change much when we exclude relatively well-correlated variables such as GDP per capita, corruption, and the Business Freedom index either jointly or individually. Quantitatively, in Appendix I and II, we provide regression results after dropping GDP per capita and corruption. These appendices clearly show that the results for legal origin are roughly unchanged when we drop GDP per capita and corruption. In short, multicollinearity problem does not affect the main results. For further robustness, we also dropped Business Freedom index (Heritage Foundation) from Appendix I and II, but this change did not have any noticeable effect on the magnitude or the significance level of the estimated coefficient of the legal origin dummy. Moreover, we also conducted the Variance Inflation Factor (VIF) or the Tolerance test. Typically, a VIF value above 10 or Tolerance value below 0.1 is considered to signal multicollinearity problem (see for example, Kutner et al. (2004)). Some authors suggest a more stringent cutoff level of five for the VIF (0.2 for Tolerance test). We use both these cut off levels for the results presented below.

For the full set of variables used in the article, the tests do not show any significant multicollinearity problem following the more relaxed cutoff level (Appendix III). That is, the average of the VIF values for the various variables equals 3.00 and the average Tolerance level equals 0.433. Dropping GDP per capita and corruption variables further lowers the VIF values (Appendix IV) and the same holds when we drop the Business Freedom index (Appendix IV). Following the more stringent cutoff level of five for VIF, Appendix III–V show a slight multicollinearity problem in the full spec-

ification (two variables show VIF of over five, although overall the VIF value (mean value) is still below five, Appendix III); however, this problem is much less important when we drop GDP per capita and corruption (Appendix IV) and it disappears completely when we drop the Business Freedom index too (Appendix V). We note again that all the results discussed in the article for the legal origin dummy continue to hold even if we exclude GDP per capita, corruption, and Business Freedom index from all the specifications discussed.

The results for the relationship between legal origin and notary versus non-notary costs discussed above suggest a fruitful area for future research. For example, it is possible that the notary versus non-notary distinction may reflect a more pervasive phenomenon with civil law countries having a tax structure more dependent of fees and assets as opposed to taxes on income flows. If this prediction is indeed true, it could be an important step toward understanding how and why legal traditions matter for economic outcomes. A richer data set than the one currently used in the article could help shed light on this issue.

Another plausible explanation of the stated distinction between notary and non-notary costs could be broadly along the lines of Beck et al. (2003). That is, Beck et al. suggests that differences in economic outcomes across legal traditions could either be due to differences in the underlying ideology of state control versus individual freedom (the political channel) or due to differences in the more narrow functioning of the judicial process (the adaptability channel). It is plausible that while notary costs more closely reflect the technical aspects of the legal or judicial structure, non-notary costs are more closely driven by the underlying ideology of greater emphasis on state control in civil law versus greater emphasis on individual freedom in the common law countries. If this is indeed true, then what the results above suggest is that the ideological or the political channel may be the more important one.

Closely related to the discussion in the previous paragraph, another plausible explanation for the results on notary versus non-notary costs could be that the ideological differences referred to above are typically slow to change, while the more technical differences that define notary costs are more easily amenable to change. For example, as the experience of some countries suggests, notary costs can be reduced by making notaries optional, standardizing registration deeds, and documents (as in Thailand), giving notary powers to registrars so that registration and notarization involves just one easy step (as in Portugal),⁵ and avoiding double verifications.⁶

We believe that the plausible explanations discussed above offer an interesting avenue for future research. Such research could help shed light on why and how registration costs vary across legal traditions and in the process, unfold the broader forces at work as far as the theory of legal origins is concerned.

⁵ When Portugal did this, notary costs are estimated to have decreased between 28 and 60 percent.

⁶ For example, in Senegal, entrepreneurs pay a notary fee of 4.5 percent of the property value to authenticate a sale deed. However, they pay an additional 15 percent when the registry reviews and authenticates it again. Such cost escalations due to double verifications are observed in over 40 countries covered by the Doing Business project.

4 Conclusion

The article extends the theory of legal origins to another dimension of institutional environment by showing that property registration cost is much lower in common law compared with civil law countries. We also found that much of this difference is due to differences in non-notary costs. Precisely which aspects of legal origin matter for the property registration cost and why so are fruitful areas for future work.

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Appendices

Appendix I Registration cost and legal origin (main results)

	(1)	(2)	(3)	(4)	(5)
Dependent variable: <i>Registration cost</i>					
English	-2.53** [0.012]	-2.65** [0.010]	-4.25*** [0.001]	-4.23*** [0.001]	-3.36*** [0.008]
Population (log values)		-0.279 [0.267]	-0.458** [0.040]	-0.459** [0.038]	-0.591** [0.016]
ELF			6.81*** [0.000]	6.78*** [0.001]	5.312** [0.017]
Catholic			-2.51 [0.128]	-2.55 [0.136]	-3.76** [0.012]
Protestant			-1.27 [0.443]	-1.27 [0.450]	-3.22** [0.042]
Muslim			1.45 [0.454]	1.45 [0.493]	0.467 [0.806]
Presidential system			-1.12 [0.253]	-1.15 [0.252]	-1.81* [0.095]
Human capital (log values)				-0.06 [0.982]	1.08 [0.698]
Business freedom index (Heritage foundation)					0.034 [0.691]
Cost of enforcing a contract (log values)					2.88*** [0.009]
Cost of starting a business (log values)					-0.135 [0.823]
Constant	9.08*** [0.000]	13.53*** [0.001]	16.03*** [0.000]	16.33 [0.231]	4.51 [0.756]

Appendix I continued

	(1)	(2)	(3)	(4)	(5)
Number of countries	119	119	104	102	98
R^2	0.047	0.056	0.315	0.314	0.402

P values in *brackets*. All regressions use Huber–White robust standard errors. Significance level is denoted by *** (1% or less), ** (5% or less), and * (10% or less). Sample size varies due to missing observations. *ELF* Ethnolinguistic fractionalization

Appendix II Notary versus non-notary registration costs (OLS)

	Notary cost				Non-notary cost			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
English	-0.345 [0.387]	-0.348 [0.401]	-0.428 [0.387]	-0.487 [0.330]	-2.24** [0.026]	-2.30** [0.027]	-3.79*** [0.003]	-2.83** [0.027]
Population (log values)		-0.006 [0.939]	-0.036 [0.712]	-0.116 [0.323]		-0.128 [0.611]	-0.27 [0.234]	-0.315 [0.236]
ELF			1.01 [0.309]	1.22 [0.280]			5.86*** [0.002]	4.32* [0.073]
Catholic			0.824 [0.122]	0.277 [0.552]			-2.87* [0.099]	-3.57** [0.020]
Protestant			0.288 [0.454]	0.252 [0.564]			-1.52 [0.370]	-3.37** [0.046]
Muslim			1.06 [0.182]	1.65* [0.086]			2.06 [0.292]	0.681 [0.710]
Presidential system			-0.354 [0.557]	-0.666 [0.338]			-2.16** [0.021]	-2.69** [0.011]
Human capital (log values)				3.39** [0.026]				-1.03 [0.712]
Business freedom index (Heritage foundation)				0.043 [0.207]				-0.025 [0.749]
Cost of enforcing a contract (log values)				-0.099 [0.728]				3.09*** [0.006]
Cost of start- ing a busi- ness (log values)				-0.222 [0.351]				0.259 [0.620]
Constant	1.06*** [0.000]	1.17 [0.404]	0.842 [0.587]	-13.66** [0.044]	8.43*** [0.000]	10.47** [0.012]	13.49*** [0.004]	10.13 [0.486]

Appendix II continued

	Notary cost				Non-notary cost			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of countries	119	119	104	98	115	115	100	94
R^2	0.006	0.006	0.046	0.142	0.039	0.041	0.3	0.413

P values in *brackets*. The dependent variable in columns 1–4 is the notary cost component of the total registration cost and expressed as a percentage of property value. Similarly, the dependent variable in columns 5–8 is the non-notary cost component of the total property registration cost and expressed as a percentage of the total property value. All regressions use Huber-White robust standard errors. Significance level is denoted by *** (1% or less), ** (5% or less), and * (10% or less). Sample size varies due to missing observations. *ELF* Ethnolinguistic fractionalization

Appendix III VIF and Tolerance levels for the full set of variables

	VIF	Tolerance
Business freedom index	6.86	0.146
Cost of starting a business	5.59	0.179
GDP per capita	4.59	0.218
Corruption	4.25	0.235
Catholic	2.86	0.350
Muslim	2.72	0.368
Protestant	2.24	0.446
English	1.89	0.530
Presidential system	1.85	0.540
Human capital	1.75	0.572
ELF	1.6	0.623
Cost of enforcing a contract	1.58	0.634
Population	1.26	0.792
Mean VIF, Tolerance	3.00	0.433

Appendix IV VIF and Tolerance levels with GDP per capita and corruption dropped

	VIF	Tolerance
Cost of starting a business	5.22	0.192
Business Freedom index	4.32	0.231
Catholic	2.78	0.359
Muslim	2.54	0.393
Protestant	2.26	0.442
English	1.66	0.601
ELF	1.6	0.625
Presidential system	1.59	0.629
Cost of enforcing a contract	1.52	0.657

Appendix IV continued

	VIF	Tolerance
Human capital	1.51	0.664
Population	1.21	0.826
Mean VIF, Tolerance	2.38	0.511

Appendix V VIF and Tolerance levels with GDP per capita, corruption, and Business freedom index dropped

	VIF	Tolerance
Catholic	2.61	0.384
Cost of starting a business	2.48	0.403
Muslim	2.41	0.415
Protestant	2.03	0.493
English	1.64	0.611
ELF	1.58	0.632
Presidential system	1.55	0.645
Human capital	1.47	0.678
Cost of enforcing a contract	1.46	0.684
Population	1.19	0.839
Mean VIF, Tolerance	1.84	0.579

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