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Recommended Citation

Anu Bradford, Yun-chien Chang, Adam S. Chilton & Nuno Garoupa, *Do Legal Origins Predict Legal Substance?*, The Journal of Law & Economics, Forthcoming; George Mason Law & Economics Research Paper No. 20-08; University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 895 (2020).

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Do Legal Origins Predict Legal Substance?*

Anu Bradford, Yun-chien Chang, Adam Chilton, & Nuno Garoupa**

June 10, 2020

Abstract. There is a large body of research in economics and law suggesting that the legal origins of a country—that is, whether its legal regime is based on English common law or French, German, or Nordic civil law—profoundly impacts a range of outcomes. However, the exact relationship between legal origins and legal substance has been disputed in the literature, and not fully explored with nuanced legal coding. We revisit this debate while leveraging novel cross-country datasets that provide detailed coding of two areas of laws: property and antitrust. We find that having shared legal origins strongly predicts whether countries have similar property regimes, but does little to predict whether countries have similar antitrust regimes. Our results suggest that legal origins may be an important predictor of legal substance in well-established legal regimes, but do little to explain substantive variation in more recent areas of law.

Keywords. Legal origins, legal families, colonial history, legal order, comparative law, property law, antitrust law, competition law.

^{*} We thank the anonymous referees, Adam Badawi, Dennis Carlton, Albert Chen, Chun-Fang Chiang, Xin Dai, Giuseppe Dari-Mattiacci, Christoph Engel, Hanjo Hamann, Haibo He, Tai-kuang Ho, Chia-shin Hsu, Weiqiang Hu, William Hubbard, Dan Klerman, Hui-Wen Koo, Monika Leszczyńska, Ming-Jen Lin, Shitong Qiao, Kyle Rozema, Qiming Ren, Benqian Sang, Bing Shui, Haochen Sun, Holger Spamann, Dennis Tang, Stefan Tontrup, Emanuel Towfigh, Yue Wang, Tao Xi, Guangdong Xu, Wenming Xu, Jun Xue, Ran You, Lei Zhao, Angela Zhang, Wei Zhong, and participants at the 2019 Conference on Empirical Legal Studies, the 5th International Conference on Empirical Legal Studies of Judicial Systems, Economic History Workshop at National Taiwan University Department of Economics, Law and Economics Workshop at Hong Kong University Faculty of Law, Faculty Workshop at School of Law and Economics, China University of Political Science, Cross-Straight Conference at Peking University Faculty of Law, Empirical Legal Studies Workshop at EBS Law School in Germany, and Faculty Workshop at School of Law, Ocean University of China for comments on earlier drafts of this article. We are also grateful for Patrick Huang, Ming-yen Tai, Patrick Wu, and Bartosz Woda who helped put the data together, and for the over 100 research assistants at Columbia Law School that helped us gather and code the antitrust data we employ in this paper. Chang thanks his 23 research assistants for coding assistance and Academia Sinica for funding this project (Career Development Award 106-H02). Bradford acknowledges the support of the National Science Foundation (see NSF-Law & Social Sciences grants 1228453 & 1228483, awarded in September 2012), a Columbia Global Policy Grant, and additional financial support from Columbia Law School, including the Millstein Center for Global Markets and Corporate Ownership.

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1. Introduction

Most countries' legal systems can be traced to a handful of models, such as English common law or French civil law.¹ An extensive body of research in economics and law suggests that the legal model a country follows—known as its "legal origins"—has profound long-run effects on a number of economic, political, and social outcomes. These outcomes range from growth in GDP per capita (Mahoney 2001), to use of military conscription (Mulligan and Shleifer 2005a; 2005b), to transmission rates of HIV (Anderson 2018), to climate change policies (Fredriksson and Wollscheid 2015), to criminal incarceration (D'Amico and Williamson 2015), and to judicial decisions (Zhang, Liu, and Garoupa 2018).

The start of the so-called "legal origins" literature is widely credited to four scholars—Rafael La Porta, Florencio López-de-Silanes, Andre Shleifer, and Robert Vishny—jointly known as "LLSV" (La Porta et al. 1997; 1998). LLSV studied cross-country differences in financial development and documented significant variance in the legal protections that different countries afford to investors. According to LLSV, much of this variance can be traced to countries' legal origins, with common law countries providing more extensive investor protections than civil law countries. This relationship led La Porta, López-de-Silanes, and Shleifer (2008: 326) to conclude that "legal rules and regulations differ systematically across countries . . . these differences in legal rules and regulations are accounted for to a significant extent by legal origins."

LLSV's research launched an influential literature examining the significance of legal origins (Mahoney 2001; Dam 2006; Roe 2006; La Porta, López-de-Silanes, and Shleifer 2008; Oto-Peralías and Romero-Ávila 2017). This research has shown that legal origins are correlated with aspects of countries' legal systems like property rights and

¹ On the controversies concerning legal families' taxonomy, see Pargendler (2012).

judicial independence, and that those differences are in turn correlated with greater economic growth (Anderson 2018: 1411). But this literature has also been highly contested in academic debates. For instance, it has been criticized for ignoring systematic differences between countries that predate their legal origins (Klerman et al. 2011), and for failing to document the mechanisms through which legal origins impact contemporary outcomes (Bazzi and Clemens 2013).²

This literature has also been critiqued for possibly overstating the extent to which countries that share legal origins actually have similar substantive laws. Most notably, in their prominent initial study, LLSV's data suggest that legal origins predict the legal protections provided to investors (La Porta et al. 1998), implying that countries with similar legal origins were likely to offer similar legal protections. However, subsequent research demonstrated that the link between countries' legal origins and their investor protections can be attributed to errors in LLSV's coding of countries' laws (Spamann 2009a). Once these errors were corrected, the correlation between countries' legal origins and their investor protections disappeared. This finding calls into question the link between legal origins and legal substance, undermining a key contribution of the legal origins literature. And because detailed cross-country coding of most areas of law does not exist,³ the relationship between legal origins and legal substance has not been adequately explored to date.

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² There are, of course, examples of research that takes steps to avoid these concerns. For instance, Oto-Peralías and Romero-Ávila (2014) traced the link between endowments and current legal outcomes within the English common legal family through the colonial legal-administrative apparatus. The measure of the extent of indirect rule in each colony was constructed as the ratio of colonially recognized customary court cases over the total number of court cases in 1955, with the latter comprising both customary court cases heard by native chiefs and magistrate court cases handled by British officials.

³ Corporate law is an exception. See the extensive literature in the field, e.g., Armour et al. (2009a), Armour et al. (2009b), Jackson and Roe (2009), Roe (2006), La Porta, López-de-Silanes, and Shleifer (2013), La Porta et al. (1998), Spamann (2009a).

Moreover, even if legal origins once predicted the substantive legal rules that countries adopted, it is not obvious that this influence persists today. For example, early in their history, common law countries may have primarily looked to other common law countries when drafting their laws. But today, those same countries may instead look to a country that is a leading regulator in a given area of law as their model, regardless of whether that country had the same legal origins. Moreover, countries may now model their legal rules on the ones adopted or recommended by international or regional organizes, such as the European Union, instead of emulating countries with shared legal origins or histories. If this is correct, legal origins may not explain variation in laws that countries have adopted more recently.

This article provides a more comprehensive assessment of the relationship between legal origins and legal substance than what exists to date. We are able to do this because of two new comparative datasets that provide detailed coding of substantive legal regimes around the world: one dataset documents countries' property laws and the other dataset documents countries' antitrust laws. To the best of our knowledge, with the exception of datasets that code national constitutions, these datasets are the largest cross-country efforts to code entire bodies of law. These datasets thus allow us to assess the relationship between legal origins and legal substance with more nuance than prior research. Moreover, these datasets offer the practical advantage of covering one older area of regulation (property) and one newer area of regulation (antitrust); and because, unlike LLSV and related research, both datasets were coded for projects unrelated to the study of legal origins, it is less likely that any errors in their coding correlate with countries' legal origins.

We also use a method that we believe is novel to studying the relationship between legal origins and legal substance. Prior research projects have aggregated relevant variables to create indexes of aspects of countries' legal systems,⁴ and then assessed whether legal origins are correlated with higher or lower scores on these indexes. The shortcoming with this aggregated variable approach, however, is that countries may have similar index scores despite having dissimilar underlying laws. In contrast, we borrow a method previously used to study legal diffusion (Elkins, Ginsburg, and Melton 2008; Law and Versteeg 2012; Bradford et al. 2019a) and use country pairs as our unit of observation. We calculate the correlation between each pair of countries' property regimes and the correlation between the same pair of countries' antitrust regimes. We then regress the correlations of property law and antitrust law against a dummy variable for whether a country pair has the same legal origin.

Across a range of regression specifications, our empirical analysis shows that having the same legal origins is strongly associated with more similar property laws, but it has no clear association with countries' antitrust law. This finding suggests that legal origins may have been a powerful determinant of a country's substantive laws in some areas, but the influence of legal origins may have waned in other areas. We offer suggestive evidence that this result is explained, at least in part, by alternative influences that have shaped a country's antitrust laws more than its shared legal origins or colonial history—a trend that is absent in property law.

2. BACKGROUND

2.1. The Legal Origins Literature

Scholars have long documented how countries' legal systems are largely based on common law or civil law models initially developed in Europe (David and Brierley 1985; Glendon, Gordon, and Osakwe 1994; Zweigert and Kötz 1998; Garoupa and

⁴ For example, La Porta et al. (1997; 1998) created an index of countries' legal protections provided to investors, or Botero et al. (2004) created an index of countries' legal protections afforded to workers.

Pargendler 2014). These legal models were then transmitted around the world through mechanisms like conquest, colonization, and commerce. As a result of this diffusion, although countries' laws are heterogenous in a myriad of ways, their legal systems can be grouped into a handful of categories based on their original model.⁵ These groups have alternatively been described as legal origins, legal traditions, and legal families.

In the 1990s, an influential line of research began to examine the link between countries' legal origins and their contemporary economic outcomes. This research began with two seminal articles from LLSV: La Porta et al. (1997) and La Porta et al. (1998). These papers documented a link between countries' legal origins and the substantive legal protections they provide to investors, and then further argued that stronger investor protections are associated with greater financial development. LLSV's finding that legal origins explain much of the variation in countries' economic performance led to an explosion of research. This research generally followed LLSV: demonstrate the link between legal origins and cross-country legal differences, and then show how those legal differences are associated with important outcomes.

In a review of this literature, La Porta, López-de-Silanes, and Shleifer (2008) argued that the research on legal origins could be broken into three categories.⁶ The first category of research directly follows LLSV by examining the relationship between legal origins and some aspect of investor protection, corporate law, or contract enforcement (e.g. La Porta et al. 1999; 2000; 2002; Dyck and Zingales 2004; Djankov, McLiesh, and Ramalho 2006; La Porta, López-de-Silanes, and Shleifer 2006; Djankov,

Garoupa, and Wells (2020) argue that countries can be divided into any number of groups.

⁵ The way to divide these groups is contested. For example, La Porta, López-de-Silanes, and Shleifer (2008) divides countries into four groups, Klerman et al. (2011) divide countries into six groups, and Chang,

⁶ This literature has continued to develop since La Porta, López-de-Silanes, and Shleifer reviewed it in 2008, yet these broad categories of research lines remain broadly consistent. For more recent surveys of the legal origins literature, see Spamann (2015: 135–137) and Oto-Peralías and Romero-Ávila (2017).

McLiesh, and Shleifer 2007; Djankov et al. 2008a; Djankov et al. 2008b; Spamann 2010). The second category of research documents the link between legal origins and government regulation of economic activity and markets (Djankov et al. 2002; Djankov et al. 2003b; Botero et al. 2004; Mulligan and Shleifer 2005b; 2005a). The third category of research investigates the relationship between legal origins and features of the judiciary (e.g. Djankov et al. 2003a; La Porta et al. 2004; Djankov et al. 2008b). Although there are differences in the methods and data used by these categories of research, they have all largely found that common law legal systems are associated with more secure property rights, greater levels of judicial independence, and superior financial development.

2.2. The Link Between Legal Origins and Legal Substance

In addition to being widely influential, this literature has also been widely criticized (Berkowitz, Pistor, and Richard 2003a; 2003b; Rajan and Zingales 2003; Licht, Goldschmidt, and Schwartz 2005; Roe 2006; Klerman and Mahoney 2007; Roe and Siegel 2009; Spamann 2009a; 2010; Bazzi and Clemens 2013). One line of criticism has argued that cross-country differences in economic outcomes are better explained by factors other than legal origins. For example, former British colonies were wealthier than former French colonies at the time of colonization, and thus it is unsurprising that they are wealthier today (Klerman et al. 2011). Another line of criticism notes that countries with the same colonial or legal histories are likely to be similar along a range of social, political, and legal dimensions, which makes it nearly impossible to reliably trace the relationship between legal origins and contemporary outcomes through a specific mechanism (Bazzi and Clemens 2013).

The line of criticism that is relevant to our project has questioned the link between legal origins and legal substance. Most notably, Spamann (2009a) corrected inaccuracies in the data used by La Porta et al. (1997; 1998) to measure investor protection. When using the corrected data, Spamann (2009a) no longer found that countries with common law legal origins had stronger legal protections. Relatedly, Licht, Goldschmidt, and Schwartz (2005) reexamined the link between legal origins and legal substance while accounting for cross-country cultural differences, and concluded that the variation in legal regimes between countries with different legal origins may be overstated.

Moreover, the existing literature has done little to explore whether the link between legal origins and legal substance has continued even while new patterns of legal diffusion have emerged.⁷ Although colonization may have previously been a primary method of legal diffusion, other forms of legal diffusion have subsequently developed (Linos 2011; 2013; Gadinis 2015). For instance, institutions like the European Union, OECD, and World Bank have urged countries, regardless of their legal origins, to adopt certain legal regimes based on "best practices" in a wide range of policy areas (Bradford 2020). In fact, in the 1990s, La Porta et al. (1998: 1119) recognized that these alternative patterns of diffusion may have greater influence over corporate law going forward. The current link between legal origins and legal substance may thus be more tenuous than earlier research suggests.

2.3. Our Approach

Our goal is to conduct a more nuanced study of the relationship between legal origins and legal substance than has previously been done. To do so, we examine the correlations between legal origins and the substance of countries' property laws and antitrust laws. We focus on these two areas because a detailed coding of countries' laws

⁷ But see Spamann (2009b), who observed that at least in some fields, legal diffusion has tracked legal origins.

in these domains has recently been completed. To our knowledge, along with projects that have coded national constitutions (Elkins, Ginsburg, and Melton 2009; Law and Versteeg 2012; 2013; Ginsburg and Versteeg 2014; Gutmann, Hayo, and Voigt 2014), these are the most detailed datasets available in comparative law.⁸

Focusing on these areas of law provides two practical advantages. First, property is one of the first areas of law that countries adopt, often shortly after their modern legal systems have been established. In contrast, although a handful of countries adopted antitrust regimes prior to World War II, most antitrust laws were adopted after 1990 (Bradford et al. 2019b). This variance allows us to test one area of law with old roots and another area of law with new roots. Second, these datasets were coded for projects unrelated to the study of legal origins. Thus, any coding errors are unlikely to be correlated with countries' legal origins because of any subjective bias, conscious or not, of the researchers.

In addition to using new data, our research design is also different than prior efforts to explore the link between legal origins and legal substance. Prior research has used the country as the unit of analysis and created indexes to represent countries' legal substance (e.g. Oto-Peralías and Romero-Ávila 2014). Although creating an index is a reasonable and standard way to measure legal systems, there are several drawbacks to using them to measure the similarity of legal regimes across countries. For one, it is possible that countries have the same scores on an index while having dissimilar legal regimes.⁹ For another, indexes are often created using just a handful of variables, and these variables may not therefore capture the intricacies of a country's legal regime.

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⁸ As Spamann (2009c: 798) points out, large-sample, quantitative comparative law research projects often rely on a narrow set of information for each country. Our study is an exception.

⁹ To illustrate this point, imagine an index comprised of four binary variables (A, B, C, and D) that are added together to create an index. If Country X has provisions A and B coded as 1, they may receive a score of 2 out of 4 on the index. But if Country Y has provisions C and D coded as 1, they may also receive a score

Instead of looking at individual countries while using a single index of countries' property laws or antitrust laws, our unit of observation is pairs of countries. By looking at pairs of countries, we can examine the correlation in their laws across a large number of distinct variables. This approach has the advantage of directly assessing how similar legal provisions are across countries that have shared legal origins. In other words, our research design measures whether countries with shared legal origins are more likely to have highly correlated property or antitrust regimes.

3. DATA

3.1. Legal Substance Data

Our property law data was introduced in Chang, Garoupa, and Wells (2020). This dataset contains more than 250 variables on the contents of property law in 156 jurisdictions based on laws in 2015. Most of the jurisdictions in the dataset are countries, but some of them are sub-national jurisdictions that have their own property law, such as Hong Kong, Macau, and Scotland. As property laws are not always enacted at the national level, in some cases the data uses certain sub-national jurisdictions to stand for the whole nation. The authors selected 108 key variables and transformed them into 170 dummy variables to construe property legal families. The dummy variables include, for instance, whether a country allows adverse possession of landownership and whether a country explicitly stipulates the *numerus clausus* principle. For our analysis, we use the same 170 variables.

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of 2 out of 4 on the index despite having made entirely different substantive legal choices.

¹⁰ For instance, New York property law is used as a proxy for U.S. property law (which is a reasonable choice, given that Chang, Garoupa, and Wells (2020) find that it strongly correlates with California property law). In addition, England and Wales property law is used as a proxy for U.K. property law, Ontario property law is used as a proxy for Canadian property law, and China's 2018 draft civil code, which is almost the same as the civil code eventually passed in May 2020, is used as a proxy for Chinese property law, disregarding Hong Kong's and Macau's different property laws.

Our antitrust law data is from the Comparative Competition Law Dataset introduced by Bradford et al. (2019b). This dataset consists of detailed coding of antitrust law provisions from 130 jurisdictions—125 countries and 5 regional organizations—from the beginning of modern antitrust law until 2010. Because many jurisdictions have multiple relevant laws, the dataset contains the coding of 700 individual laws in total. For each law, the data codes a number of substantive variables regarding merger review, the regulation of anti-competitive agreements, and the abuse of dominance. The dataset also includes variables that capture the institutional design of the antitrust regime, including whether the law recognizes a private right of action, the possibility of fines, or imprisonment as a remedy. Importantly, the dataset contains the coding of the "antitrust law regime" in force in any given year, which means that it layers together all the old and new laws in force in any given year to capture the entire set of antitrust laws in force each year. For our analysis, we use the 91 dummy variables in the dataset that measure the substance of countries' antitrust regimes.

Figure 1 maps the coverage of our property and antitrust data. In total, we have both property and antitrust data for 91 countries. As Figure 1 shows, the datasets include observations from all regions of the world, and the countries for which both datasets are available include the world's leading economies. Following the LLSV tradition, our analysis weights all countries equally, regardless of their relative wealth, population, or political importance.

3.2. Legal Origins Data

Our primary coding of countries' legal origins is based on data from LLSV (we also use three alternative measures of legal origins in Section 4.4).¹¹ The LLSV dataset

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We acquired the data from the personal website of Andrei Shleifer (the S in LLSV), https://scholar.harvard.edu/files/shleifer/files/data 2.zip. The zip file contains two spreadsheets. We used

breaks countries into four categories. It first codes countries as either having common law or civil law legal traditions. Then, countries with civil law traditions are further broken into one of three traditions: French, German, or Nordic. Even if countries incorporate influences from other legal traditions over time, the LLSV data still codes countries based on the initial legal origin.

Figure 2 presents countries' legal origins using the LLSV coding. As

Figure 2 shows, many countries are of French legal origin; countries with German legal origin cluster in central Europe and East Asia; and Africa is a tug-of-war among these two legal origins and English common law. Of the 91 countries in our sample, there are 13 countries with common law legal origins, 57 countries with French civil law legal origins, 17 with German civil law legal origins, and 4 with Nordic civil law legal origins.

3.3. Dataset Construction

Because our goal is to test whether countries with shared legal origins have similar substantive legal regimes, our unit of analysis is pairs of countries. Or, as they are referred to in the international relations literature, country "dyads." To ensure that differences in data availability do not drive our results, we restricted our sample to dyads for which we have data on countries' property laws, antitrust laws, and legal origins. This results in a sample of 4,095 dyads comprised of 91 unique countries (91*90/2 = 4,095). Part 1 of the online appendix lists the countries in our dataset.

For each dyad, we created a measure of the similarity of their property laws and antitrust laws by calculating the Pearson's phi, which is a correlation coefficient for

the "legor07" variable in "Legal_origins_JEL2008.dta." Regarding the "legor07" variable, English Common law is 1; French civil law is 2; German civil law is 4; Nordic law is 5.

binary variables, for all of the variables in each dataset. We used this measure of similarity because its scale from -1 (indicating perfectly opposite coding) to +1 (indicating perfectly identical coding) provides an intuitive interpretation, and because it is a method that has already been used to study the similarity of legal regimes (Elkins, Ginsburg, and Melton 2008; Law and Versteeg 2012; Bradford et al. 2019a). For instance, for the Albania–Vietnam dyad, we calculated the correlation between Albania's coding for the 170 property variables and Vietnam's coding for those variables. They had the same coding for 121 of 170 variables, which resulted in a correlation of 0.45. We similarly calculated the correlation of each dyad's antitrust laws based on 91 variables in our dataset. Albania and Vietnam had the same coding for 71 of 91 variables, which resulted in a correlation of 0.57.

For each dyad, we also created a variable to indicate whether the two countries had a "shared legal origin." To do so, we coded countries as having a shared legal origin if both countries in the dyad were coded as belonging to the same legal origins as categorized by LLSV. For instance, we coded Australia—Canada as having shared legal origins because LLSV categorized both as having English Common Law origin, and we coded Algeria—Ivory Coast as having a shared legal origin because LLSV categorized both as having French Civil Law origin. In total, 44.4 percent of the dyads (1,816 out of 4,095) have a shared legal origin.

Table 1 reports the summary statistics for our dyad-level dataset. In addition to the variables mentioned above, Table 1 also reports summary statistics for six control variables we use in some regression specifications. Four of these control variables are

12 Section 4.5 uses an alternative measure of similarity based on percentage of variables for which the countries in a dyad have the same coding.

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measured at the dyad level: ¹³ Distance, ¹⁴ Contiguity, ¹⁵ Common National Language, ¹⁶ and Common Ethnic Language. ¹⁷ The other two control variables are measured at the country level: Population and Nominal GDP (we use the natural log of these variables because they are both right screwed and it is likely that the ratio of these variables is relevant to the relationships we are testing). ¹⁸

4. RESULTS

4.1. Graphical Evidence

Figure 3 graphs the correlations of dyads' substantive laws broken out by whether they have shared legal origins. Panel A graphs the distribution of dyads' correlations for property law and Panel B graphs the distribution of dyads' correlations for antitrust law. The x-axis is the correlation coefficient between two dyads' substantive law variables and the y-axis is the percent of dyads that have a given correlation. The distribution for dyads that have shared legal origins are shown separately from the dyads that do not share the same legal origin.

Three results from Figure 3 are worth highlighting. First, almost all dyads have positive correlations for both areas of law. Just 0.8 percent of dyads (31 out of 4,095) have property laws that are negatively correlated. These include several dyads with no obvious connections, like Pakistan–Portugal and Madagascar–Taiwan. Moreover, just 0.07 percent of dyads (3 out of 4,095) have antitrust laws that are negatively correlated. These three dyads are Qatar–Tajikistan, Bolivia–South Africa, and Tajikistan–Kuwait.

¹³ These variables are from the "dist_cepii.dta" dataset mentioned above.

¹⁴ This variable codes the population-weighted distance (in kilometers) between the two countries.

¹⁵ This variable codes if the two countries have contiguous borders.

¹⁶ This variable codes if both countries have the same official primary language.

¹⁷ This variable codes if the same language is spoken by at least 9% of the population in both countries.

¹⁸ These variables are from "gravdata.dta" downloaded from the Gravity section on CEPII website, http://www.cepii.fr/CEPII/en/bdd_modele/download.asp?id=8.

Second, the correlations are lower on average for property law than for antitrust law. For property law, dyads have a mean correlation of 0.30 and a median correlation of 0.29. For antitrust law, dyads have a mean correlation of 0.43 and a median correlation of 0.43. This difference is notable given the distribution of correlations for both types of law. To illustrate, only 18 percent of dyads have a correlation above 0.43 for property law (which is the median for antitrust law). The higher correlations for antitrust are likely because most countries with antitrust laws only adopted them in the last few decades, and when they did adopt them, they followed models from the European Union and the United States (Bradford et al. 2019a).

Third, having a shared legal origin is associated with higher correlations for property law, but it is not associated with higher correlations for antitrust law. More specifically, for property law, dyads without a shared legal origin have a mean correlation of 0.27 and dyads with a shared legal origin have a mean correlation of 0.34. For antitrust law, however, dyads without a shared legal origin have a mean correlation of 0.43 and dyads with a shared legal origin also have a mean correlation of 0.43.

4.2. Empirical Specification

To more formally test the relationship between shared legal origins and similar substance of laws, we estimate Equation 1:

$$a_{jt} = \alpha + \mathrm{SLO}_{jt} \; \beta_0 + \zeta '_{jt} \beta_1 + \chi '_{j} \beta_2 + \chi '_{t} \; \beta_3 + \phi_j + \eta_t + \epsilon_{jt} \eqno(1)$$

for dyad_{jt}. The dependent variable a_{jt} is one of two measures of the similarity between legal regimes: the correlation coefficient between a dyad's property laws or the correlation coefficient between a dyad's antitrust laws. The key independent variable SLO_{jt} codes whether both countries in a given dyad have a shared legal origin. For example, SLO_{jt} is coded as 1 if both countries in a dyad have English Common Law legal origins, but coded as 0 if one country's legal origin is English Common Law while

the legal origin of the other country in the dyad is French Civil Law. In addition, ζ' represents control variables measured for dyad $_{jt}$, χ' represents control variables that are measured separately for country j and for country t in dyad $_{jt}$, ϕ_{j} represents fixed effects for country j and η_{t} represents fixed effects for country t, and ε_{jt} is the error term. Because the errors for a given country are likely to be correlated for all the dyads that the country is part of, we use multi-way clustering to cluster our standard errors for both country j and country t.

It is important to note that it would be inappropriate to control for most variables that may influence the correlations between dyads' property or antitrust laws. This is because legal origins have been linked to a range of outcomes that occur after countries acquire a given legal origin (Bazzi and Clemens 2013), and many natural control variables are thus likely to have been influenced by a country's legal origin. Therefore, controlling for factors like economic growth, political regimes, or membership in international institutions would be, in the words of Angrist and Pischke (2008), "bad controls"—or, in the language of political science, would introduce "post-treatment bias." We thus only use a minimal set of control variables in our regressions.

4.3. Primary Results

Tables 2 and 3 report the results estimating Equation 1 for property law and antitrust law, respectively. Column 1 simply includes the shared legal origin variable, Column 2 adds fixed effects for country j and country t in each dyad,²⁰ and Column 3

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¹⁹ Because we only have one observation per dyad, we are unable to include fixed effects for combinations of states. Instead, the country fixed effects we include pick up any unobserved heterogeneity for all the dyads of which a given country is a member. That said, one concern with this approach is that a given country can be country j in some dyads and country t in some dyads. The result is that the fixed effect for a given country may be different for dyads that the country is indexed as country j than dyads where the country is indexed as country t. In Part 2 of the online appendix, we address this concern by developing a leave-out measure of all of a countries' other correlations (regardless whether the country was indexed as country j or country t in a given dyad) that we control for as an alternative to fixed effects.

²⁰ F-test of the joint significance of the fixed effects allow us to reject the null hypothesis that the

adds controls for the distance and contiguous borders between countries. Column 3 is our preferred specification because it does not include any variables likely to have been influenced by countries' shared legal origins (that is, it does not include any "bad controls"). For illustrative purposes, although these additional variables may be influenced by having a shared legal origin, in Column 4 we add controls for whether dyads have common national and ethnic languages, and in Column 5 we add controls for each country in a given dyad's population and nominal GDP.

The results in Table 2 shows that having a shared legal origin is consistently associated with dyads having property laws that are more highly correlated. Not only are the estimates for all five specifications highly statistically significant (p < 0.001), the size of the effect is substantively large. Our preferred specification, Column 3, suggests that having a shared legal origin is associated with having a 0.09 higher correlation for property laws. To put this effect in perspective, this standard deviation for Property Law Correlation is 0.14, which means that having a shared legal origin has a roughly 0.6 standard deviation effect. Or, in other words, an increase of 0.09 would move a median dyad to being roughly a 75th percentile dyad in Property Law Correlation.

The results in Table 3 show that having a shared legal origin is associated with at most slightly higher correlations for antitrust laws. Although the estimates are statistically significant for several of the specifications, the size of the coefficient for our key independent variable is consistently small. In our preferred specification, Column 3, the coefficient for shared legal origin is 0.01. However, the standard deviation for Antitrust Law Correlation is 0.13, suggesting that having shared legal

coefficients for the fixed effects are zero (in other words, including the fixed effects increases the explanatory power of our regressions).

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origins is associated with roughly a 0.1 standard deviation higher correlation. Using standard rules of thumb (Cohen 1988), this effect is negligible.

4.4. Alternative Measures of Legal Origin

Our primary results code countries' legal origins using data from LLSV (2008). There are, however, several alternative ways to measure legal origins. We specifically test the robustness of our results when using three of these alternative approaches.

First, we use an alternative measure of legal origins produced by Klerman et al. (2011) ("KMSW"). The KMSW data added the categories of "mixed" and "Islamic" to the four legal traditions used by LLSV. For instance, the KMSW coding recategorizes Israel from common law to mixed and Qatar from French Civil Law to Islamic. Additionally, the KMSW data corrected a number of mistakes in the LLSV coding.

Second, we use a measure of colonial origins that was also produced by KMSW.²¹ Most countries have legal origins based on their colonial relationships, but for some countries legal origins and colonial origins are not the same. For instance, some countries with French legal origins were colonized by countries like Belgium, Italy, and the Netherlands, and some countries that were British colonies drew legal traditions from multiple countries (e.g. South Africa). KMSW coded countries as having one of six colonial origins: former English colonies; former French colonies; former colonies of other French civil law countries; colonies that were part of the Austro-Hungarian Empire; other former colonies; and countries never colonized.²²

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²¹ We acquired the data from *Journal of Legal Analysis*, which published Klerman et al. (2011). The data is available at: https://academic.oup.com/jla/article/3/2/379/899816#supplementary-data. The zip file includes "Klerman_etal_LO_v_CO.dta." We use the "LO" variable, which is KMSW's coding of legal origins, and the "CO" variable, which is their coding of colonial power.

When country-level data is transformed into dyads, simply treating two countries both of which are "Not Colonized" as having the same colonial history creates bias. Thus, a dummy variable Both Not Colonized (coded as 1 if neither country in a pair have been colonized) is included in these regressions.

Third, we also coded whether countries have shared legal orders. KMSW do not always code countries' exact colonizer. Rather, some colonial powers are grouped as Other French Civil Law or Other. Wimmer and Min (2006) document colonial powers in all territories since 1816,²³ and thus provide more exact information on colonial histories. Using this data, we coded countries as having shared legal orders if they either had a colonial relationship—e.g., the United Kingdom and India—or if both countries were both colonies of the same country—for e.g., India and Australia.

Figure 4 plots the coefficients of interest when using these alternative approaches to coding legal origins (for comparison, Figure 4 also plots the coefficients of interest from Tables 2 and 3).²⁴ Separate lines plot the five regression specifications initially introduced in Tables 2 and 3. For each group of five lines, the top line is the coefficient from column 1, the bottom five lines is the coefficient from column 5, and our preferred specification from column 3 is shown in black.

The results in Figure 4 show that these alternative ways of measuring shared legal origins produce results that are similar to our primary ones. The coefficients for property law are almost all positive, statistically significant, and substantively large. In contrast, the coefficients for antitrust law are mostly close to zero and frequently statistically insignificant. In addition to illustrating that our primary results are not sensitive to the measure of shared legal origins we use, Figure 4 also makes it clear that it is difficult to know which measure of shared legal origins—for instance, legal origins or colonial histories—has a stronger association with countries' substantive property

The data are available for downloading at Andreas Wimmer's website: http://www.columbia.edu/~aw2951/, under "FROM EMPIRE TO NATION-STATE (REPLICATION DATA) Territorial Data, 1816-2001." The "imppower" variable identifies the imperial power at a territory. An easier to use dataset can be downloaded from: https://github.com/owid/owid-datasets/blob/master/datasets/Colonial%20Regimes%20%20Minner%20and%20Wim%20(2006)/Colonial%20Regimes%20-%20Minner%20and%20Wim%20(2006).csv.

²⁴ Part 3 of the online appendix reports the full results of these regressions.

law or antitrust laws. This is because the confidence intervals are largely overlapping for the alternative specifications. As a result, we cannot say with confidence whether countries with shared legal origins, shared colonial histories, or shared legal orders are more likely to have similar substantive legal regimes in property and antitrust law.

4.5 Robustness

Our primary results are robust to a range of alternative modeling choices and specifications. Because these results are consistent with our main findings, this discussion is brief and the results are only reported in the online appendix.²⁵ First, other research has calculated the similarity of legal regimes based on the percent of variables that are coded the same instead of the correlations across variables (Elkins, Ginsburg, and Melton 2009). Our results are robust to using this alternative approach. Second, our primary results aggregate all types of shared legal origins together even though there may be heterogenous effects based on the type of legal origin. But our results are robust when we include separate dummy variables for different types of shared legal origins. In the online appendix, we also separately report the average correlations for all ten possible combinations of legal origins. When disaggregating the data in this way, the patterns are consistent with our overall results. Third, EU member states, regardless of their legal origins, have adopted similar antitrust regimes, which may be negatively influence the overall relationship between shared legal origins and antitrust laws. But our results remain consistent even when we exclude either the 28 EU members or all European countries. Fourth, for consistency with our property data, we used all 91 substantive variables in our antitrust data when measuring the similarity of countries' antitrust regimes, but our results are robust to only using the

²⁵ Part 4 of the online appendix reports these results.

variables that have been identified by prior research as the most substantively important (Bradford et al. 2019a).

5. DISCUSSION

Our results suggest that common legal origins predict the similarity in countries' property laws, but they do little to predict similarity in antitrust laws. For example, the United Kingdom and New Zealand, which share legal origins, have a 0.17 correlation in their antitrust laws, while United Kingdom and France, which do not share legal origins, have a 0.27 correlation in their antitrust law. Similarly, the correlation in antitrust law between Ireland and US (0.53) is lower than that between Ireland and Estonia (0.68), even though the former share legal origins while the latter do not.

While the European examples may be attributed to the direct influence of the EU, there is a similar phenomenon in Asia. Common-law countries like India, Malaysia, Pakistan, and Singapore have antitrust laws are not highly correlated with the United Kingdom (0.31, 0.37, 0.21, and 0.28, respectively). Instead, their antitrust laws are more closely aligned with countries in the civil law legal families. For instance, these four countries' antitrust law correlations with Taiwan, a member of the German Civil Law family, are all higher than their correlations with the United Kingdom (0.48, 0.39, 0.43, and 0.35, respectively). Across these examples, the property laws in those common-law countries remain similar to their common-law peers.

There are also a few examples where legal origins would predict certain countries' antitrust laws to follow French or German legal tradition but where these countries have followed a different path. For example, antitrust laws of Bolivia (0.20 with France; 0.41 with the US), Japan (0.37 with Germany; 0.69 with the US), Peru (0.39 with France; 0.51 with the US), and Panama (0.49 with France; 0.62 with the US)

correlate more closely with countries associated with the common law tradition despite their French and German legal origins.

Of course, there are examples where shared legal origins correlate with both property and antitrust laws: France and Belgium have a 0.71 correlation for property law and a 0.62 correlation for antitrust law, and South Korea and Taiwan have a 0.72 correlation for property law and a 0.65 correlation for antitrust law. There are also examples of low correlations across both property law and antitrust law when the dyads do not share a legal origin: Australia and China have a 0.20 correlation for property law and a 0.18 correlation for antitrust law, and Israel and Indonesia have a 0.16 correlation for property law and a 0.19 correlation for antitrust law.

But, in general, countries with shared legal origins are not more likely to have similar antitrust regimes than countries without shared legal origins. This is likely for several reasons. For one, countries' antitrust laws have been shaped through regulators' and policy makers' engagement in various international organizations and transgovernmental networks. A specialized network of antitrust regulators—the International Competition Network (ICN)—has been particularly influential, but more general bodies—like the Organization for Economic Cooperation and Development (OECD) and the United Nations Conference on Trade and Development (UNCTAD)—have fostered global antitrust convergence through the promotion of international best practices (Tritell and Kraus 2018).

Another important factor is that antitrust laws are largely a more recent phenomenon, with most countries adopting them after 1990 (Bradford and Chilton 2019). By that time, these countries had many models to emulate. The EU in particular offered an attractive template to emulate given the specific and detailed nature of EU antitrust laws, as well as their availability in many languages (Bradford et al. 2019b).

The EU's active push to export its antitrust laws through trade agreements, and extend regulatory cooperation and technical assistance for new antitrust regimes likely further explains why the EU's influence prevails over that exerted by legal traditions. Many multinational companies also conform their global conduct to EU antitrust law as the "most stringent law," entrenching EU antitrust law as the global de facto norm (Bradford 2020). This de facto convergence often also paves the way for de jure convergence as countries codify EU-style antitrust laws domestically with the support of their export-oriented corporations that already bear the costs of EU compliance and prefer uniform rules (Vogel 1997; Bradford 2020).

EU law also diffuses through its member states. For instance, because Spain and Germany had harmonized their laws with EU antitrust law, when Colombia was copying Spanish antitrust law or Taiwan was copying German antitrust law (correlations of 0.58 and 0.57, respectively), they were effectively copying EU law. This mediating influence of EU members thus explains why Colombia and Taiwan have antitrust laws that are similar (the correlation is 0.52) despite their different legal origins.

The same patterns likely exist in other areas where legal diffusion has been influenced by EU law or other leading regulatory authorities like the OECD (see, e.g., Linos 2013). For example, EU law has become the "gold standard" globally in data privacy. Today, over 100 countries have adopted privacy laws, most of them resembling the EU law on data protection (Greenleaf 2014; Schwartz and Peifer 2017). These countries represent different legal traditions, and align many common law jurisdictions with the European civil law jurisdictions—often for the same reasons why they emulate EU antitrust laws. The same pattern may hold for other areas where the EU has been a regulatory leader, including: food safety, chemical regulations, animal welfare, anti-discrimination law, and environmental policy (Bradford 2020).

6. CONCLUSION

Our results show that shared legal origins are associated with countries having similar property laws, but they are not associated with countries having similar antitrust laws. This finding adds to the existing, contested debate on the relationship between legal origins and legal substance by empirically showing that this relationship can vary from one area of law to another. The results also highlight how other forms of influence, including that exercised by supranational legal institutions such as the European Union, can override the influence exerted by legal traditions. Given the growing lawmaking by supranational institutions, ²⁶ it is also possible that the significance of the legal origins will further wane in the coming decades.

Our results also point to at least two major avenues for future research. First, continued research is needed to explore the generalizability of our results. For instance, although we have no reason to believe that property is unique among areas of historical legal regulation or that antitrust is unique among areas that have only recently been regulated, it is possible that our findings are specific to these areas. Additionally, we exclusively test the similarity of countries' law on the books, and we are unable to look at the way those laws are applied and enforced. Although this concern is one that plagues the entire legal origins literature, future research should find ways to explore the relationship between legal origins and laws in action. Moreover, we focus on average effects for a cross-section of countries, but it is possible that there are heterogenous effects across time or subsets of countries.

²⁶ For instance, in addition to the EU, there are at least five other regional organizations that have some degree of supranational competition policy: Andean Community (CAN), East African Community (EAC), Economic Community of West African States (ECOWAS), European Free Trade Area (EFTA), and West African Economic and Monetary Union (WAEMU).

Second, future research should do more to document the mechanisms that produced the patterns we found. For instance, our results may simply be driven by property law being an old, well-established area of law, while antitrust is a relatively new area of law in most jurisdictions. Alternatively, the key explanatory variable may be that supranational law-making has done little to influence property law, while the EU and ICN have been critical in shaping antitrust laws around the world. Property law is also less complex and technical than antitrust law, lending the development of antitrust law perhaps more readily to alternative sources of influence. Relatedly, Chang and Smith (2019) suggest that, because it is easier to change laws when there are fewer ripple effects on other laws, countries' isolated legal doctrines may be more likely to converge with global norms than countries' legal doctrines that interconnected to many other doctrines. It is possible that property laws may be less likely to evolve because they are more deeply connected to many other aspects of a country' legal system. Moreover, functional theories of legal convergence suggest countries' laws are more likely to converge in cases where one rule is clearly more efficient, but less likely to converge in cases where multiple laws are similarly efficient (Levmore 1987; Dari-Mattiacci and Guerriero 2019). This points to the need for more research into whether evolution in legal regimes is related to the effects of legal differences (e.g. Acemoglu and Johnson 2005; Guerriero 2016). Finally, it is possible that laws that are more likely to govern cross-border conduct (such as antitrust) are more likely to be subject to foreign influences compared to laws that primarily govern legal relationships within countries (such as property).

That said, despite the need for future research, we believe that this article provides the most detailed investigation yet conducted into the relationship between legal origins and legal substance. And, by doing so, has provided important new

evidence about one of the most prominent debates on the influence of legal history on contemporary economic, political, and social outcomes.

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FIGURES AND TABLES

Figure 1: Data Availability of Property and Antitrust Law by Country

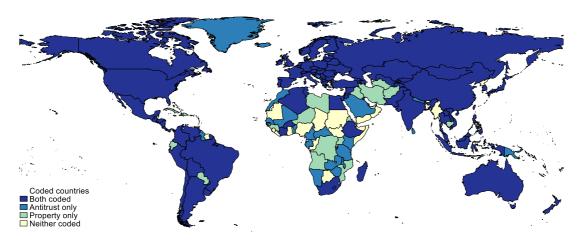


Figure 2: Legal Origins by Country (LLSV Coding)

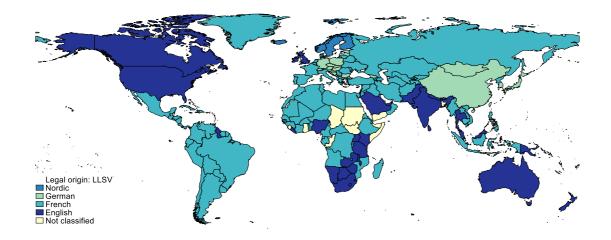
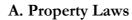


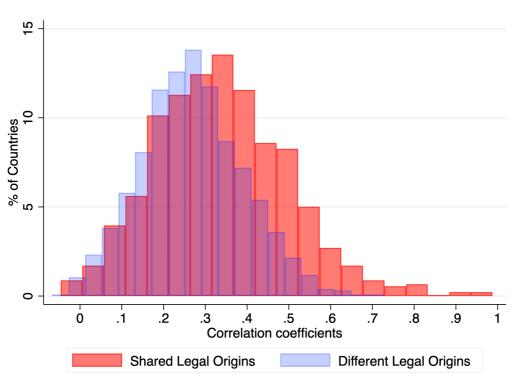
Table 1: Summary Statistics

	Dyads	Mean	SD	Min	Max
Property Law Correlation	4,095	0.30	0.14	-0.07	0.99
Antitrust Law Correlation	4,095	0.43	0.13	-0.04	0.85
Shared Legal Origin (LLSV)	4,095	0.44	0.50	0.00	1.00
Shared Legal Origin (KMSW)	4,095	0.37	0.48	0.00	1.00
Shared Colonial Origins (KMSW)	4,095	0.27	0.44	0.00	1.00
Shared Legal Order	4,095	0.11	0.31	0.00	1.00
Distance	4,095	8.56	0.92	4.74	9.88
Contiguous	4,095	0.03	0.17	0.00	1.00
Common National Language	4,095	0.08	0.27	0.00	1.00
Common Ethnic Language	4,095	0.09	0.29	0.00	1.00
Population (ln) – Country1	4,095	2.72	1.52	-0.89	7.20
Population (ln) – Country2	4,095	2.71	1.55	-0.89	7.20
NGDP (ln) – Country1	4,095	11.73	1.90	7.62	16.52
NGDP (ln) – Country2	4,095	11.82	1.90	7.62	16.52

 $\it Notes:$ Distance is the natural log is the distance (in kilometers) weighted by population. Population (ln) is the natural log of populations millions.

Figure 3: Correlations of Legal Substance by Shared Legal Origins





B. Antitrust Laws

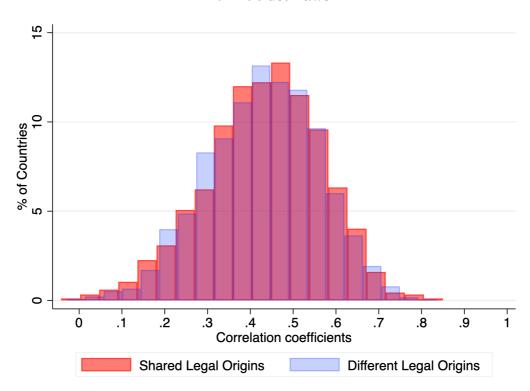


Table 2: Primary Results – Property Law Correlations

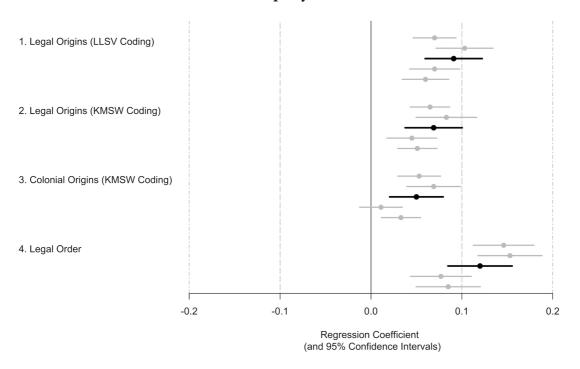
	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.070***	0.103***	0.091***	0.070***	0.060***
	(0.012)	(0.016)	(0.016)	(0.014)	(0.013)
Distance (ln)			-0.042***	-0.020***	-0.032***
			(0.008)	(0.006)	(0.006)
Contiguous			0.064***	0.057***	0.057***
			(0.021)	(0.019)	(0.019)
Common National Languag	ge .			0.173***	0.133***
				(0.037)	(0.029)
Common Ethnic Language				0.001	-0.016
				(0.026)	(0.020)
Population (ln) – Country1					-0.003
					(0.005)
Population (ln) – Country2					-0.002
					(0.006)
nGDP (ln) – Country1					0.003
					(0.004)
nGDP (ln) – Country2					0.005
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.058	0.318	0.372	0.441	0.182

Notes: All Models report OLS results. Dependent variable: correlation coefficients of property law. Robust standard errors, two-way clustered on both the first country in the dyad and the second country in the dyad, in parentheses. Constant omitted. *** p<0.01, ** p<0.05, * p<0.1.

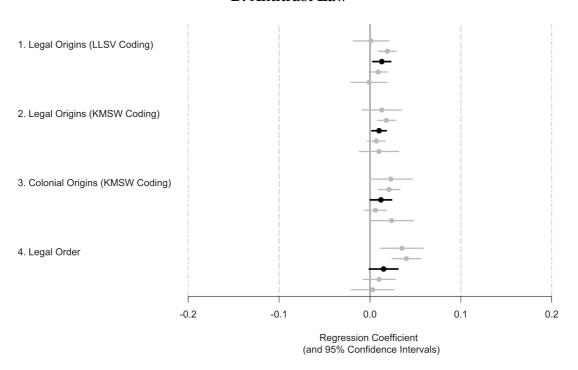
Table 3: Primary Results – Antitrust Law Correlations

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.001	0.019***	0.013***	0.009*	-0.001
	(0.010)	(0.005)	(0.005)	(0.005)	(0.010)
Distance (ln)			-0.031***	-0.028***	-0.045***
			(0.004)	(0.004)	(0.007)
Contiguous			-0.004	-0.004	0.005
			(0.011)	(0.011)	(0.018)
Common National Language				0.042***	0.035
				(0.014)	(0.022)
Common Ethnic Language				-0.018	-0.052**
				(0.012)	(0.021)
Population (ln) – Country1					-0.001
					(0.007)
Population (ln) – Country2					-0.000
					(0.005)
nGDP (ln) – Country1					0.001
					(0.006)
nGDP (ln) – Country2					0.000
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.000	0.611	0.633	0.635	0.099

Figure 4: Coefficient Plots
A. Property Laws



B. Antitrust Law



Notes: The coefficients for "Legal Origins (LLSV Coding)" are reported in Tables 2 and 3; the coefficients for "Legal Origins (LMSW Coding)" are reported in Tables A.4 and A.5; the coefficients for "Colonial Origins (KMSW Coding)" are reported in Tables A.6 and A.7; and the coefficients for "Legal Order" are reported in Tables A.8 and A.9.

Do Legal Origins Predict Legal Substance?

Online Appendix

This supplemental appendix provides four pieces of additional information. Part 1 provides a list of countries included in our sample and their legal origins. Part 2 reports results when using an alternative approach to country-fixed effects to control for country-level variation in correlations across dyads. Part 3 reports results while using three alternative measures of legal origins discussed in Section 4.4 of the paper and reported in Figure 4. Part 4 reports the results of four robustness test discussed in Section 4.5 of the paper: (A) uses an alternative dependent variable (the percent of provisions for which countries have the same coding); (B) breaks-out legal origins by category (e.g. the coefficients for English common law and French civil law are reported separately); (C) excludes dyads that include EU members; (D) calculates the correlations for antitrust law using 36 "core" antitrust variables instead of the full 91 variables from the dataset.

1. LIST OF COUNTRIES

Table A.1: 91 Countries in Our Dataset and Legal Origin (LLSV Coding)

Country	Origin	Country	Origin	Country	Origin
Albania	French	Honduras	French	Panama	French
Algeria	French	Hungary	German	Peru	French
Argentina	French	India	English	Philippines	French
Armenia	French	Indonesia	French	Poland	German
Australia	English	Ireland	English	Portugal	French
Austria	German	Israel	English	Qatar	French
Azerbaijan	French	Italy	French	Romania	French
Belarus	French	Ivory Coast	French	Russia	French
Belgium	French	Japan	German	Serbia	French
Bolivia	French	Jordan	French	Singapore	English
Brazil	French	Kazakhstan	French	Slovakia	German
Bulgaria	German	Kuwait	French	Slovenia	German
Burkina Faso	French	Kyrgyzstan	French	South Africa	English
Burundi	French	Laos	French	South Korea	German
Canada	English	Latvia	German	Spain	French
Chile	French	Lithuania	French	Sweden	Nordic
China	German	Luxembourg	French	Switzerland	German
Colombia	French	Macedonia	French	Syria	French
Costa Rica	French	Madagascar	French	Taiwan	German
Croatia	German	Malaysia	English	Tajikistan	French
Czech Republic	German	Malta	French	Thailand	English
Denmark	Nordic	Mauritius	French	Tunisia	French
Egypt	French	Mexico	French	Turkey	French
El Salvador	French	Moldova	French	Ukraine	French
Estonia	German	Mongolia	German	United Kingdom	English
Ethiopia	French	Netherlands	French	United States	English
Finland	Nordic	New Zealand	English	Uruguay	French
France	French	Nicaragua	French	Uzbekistan	French
Germany	German	Norway	Nordic	Venezuela	French
Greece	French	Pakistan	English	Vietnam	French
Guatemala	French				

2. "LEAVE OUT" ROBUSTNESS CHECK

Our primary regression specifications include country fixed effects for each of the two countries in a given dyad. That said, one concern with this approach is that a given country can be country j in some dyads and country t in some dyads. The result is that the fixed effect for a given country may be different for dyads that the country is indexed as country j than dyads where the country is indexed as country t.

To address this concern, as an alternative to fixed effects, for each dyad we calculated the "leave-out" mean correlation of property laws for the countries in the dyads, and did the same for antitrust laws. For example, for the dyad "Albania-Vietnam", we calculated the average property law correlation for all other dyads that include Albania (regardless of whether Albania is country j or country t in the dyad), and the average property law correlation for all other dyads that include Vietnam (regardless of whether Vietnam is country j or country t in the dyad). Importantly, we excluded the value from the "Albania-Vietnam" dyad when calculating the averages for Albania and Vietnam.

We then included these measures as two variables in our regression. Tables A.2 and A.3 report these results. The results are consistent with our primary results.

Table A.2: Leave Out Results – Property Law Correlations

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.070***	0.060***	0.057***	0.040***	0.043***
	(0.012)	(0.011)	(0.011)	(0.010)	(0.011)
Distance (ln)			-0.024***	-0.020***	-0.020***
			(0.005)	(0.004)	(0.005)
Contiguous			0.097***	0.070***	0.068***
			(0.017)	(0.018)	(0.018)
Common National Languag	e			0.162***	0.163***
				(0.034)	(0.033)
Common Ethnic Language				0.002	-0.000
				(0.022)	(0.022)
Population (ln) – Country1					-0.002
					(0.002)
Population (ln) – Country2					0.001
					(0.002)
nGDP (ln) – Country1					0.002
					(0.002)
nGDP (ln) – Country2					0.002
					(0.002)
Leave Out – Country 1		0.870***	0.820***	0.912***	0.907***
		(0.080)	(0.077)	(0.069)	(0.069)
Leave Out – Country 2		0.949***	0.897***	1.021***	1.021***
		(0.081)	(0.081)	(0.068)	(0.068)
Country Fixed Effects	No	No	No	No	No
Observations	4,095	4,095	4,095	4,095	4, 095
R-squared	0.058	0.239	0.288	0.372	0.374

Table A.4: Leave Out Results – Antitrust Law Correlations

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.001	0.010***	0.009***	0.005*	0.004
	(0.010)	(0.003)	(0.003)	(0.003)	(0.003)
Distance (ln)			-0.017***	-0.016***	-0.017***
			(0.003)	(0.003)	(0.003)
Contiguous			0.018*	0.012	0.010
			(0.009)	(0.009)	(0.009)
Common National Language				0.047***	0.047***
				(0.014)	(0.014)
Common Ethnic Language				-0.010	-0.010
				(0.011)	(0.011)
Population (ln) – Country1					0.002
					(0.001)
Population (ln) – Country2					0.002
					(0.001)
nGDP (ln) – Country1					-0.001
					(0.001)
nGDP (ln) – Country2					-0.000
					(0.001)
Leave Out – Country 1		1.036***	0.996***	1.008***	1.009***
		(0.030)	(0.034)	(0.032)	(0.033)
Leave Out – Country 2		0.981***	0.942***	0.953***	0.954***
		(0.033)	(0.035)	(0.035)	(0.035)
Country Fixed Effects	No	No	No	No	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.583	0.598	0.603	0.604	0.583

3. ALTERNATIVE MEASURES OF LEGAL ORIGIN

Table A.4: Legal Origin (KMSW Coding) - Property

	0 0				
	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.065***	0.083***	0.069***	0.045***	0.051***
KMSW Coding	(0.011)	(0.017)	(0.016)	(0.014)	(0.011)
Distance (ln)			-0.043***	-0.021***	-0.031***
			(0.008)	(0.007)	(0.006)
Contiguous			0.067***	0.060***	0.057***
			(0.020)	(0.019)	(0.019)
Common National Language				0.184***	0.138***
				(0.038)	(0.030)
Common Ethnic Language				-0.006	-0.016
				(0.027)	(0.021)
Population (ln) – Country1					-0.003
					(0.006)
Population (ln) – Country2					-0.002
					(0.007)
nGDP (ln) – Country1					0.002
					(0.004)
nGDP (ln) – Country2					0.004
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.047	0.294	0.350	0.424	0.171

Table A.5: Legal Origin (KMSW Coding) - Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.013	0.018***	0.010**	0.007	0.010
KMSW Coding	(0.011)	(0.005)	(0.004)	(0.005)	(0.011)
Distance (ln)			-0.031***	-0.028***	-0.044***
			(0.004)	(0.004)	(0.007)
Contiguous			-0.004	-0.004	0.003
			(0.011)	(0.011)	(0.018)
Common National					
Language				0.043***	0.031
				(0.014)	(0.021)
Common Ethnic Language				-0.019	-0.051**
				(0.012)	(0.021)
Population (ln) – Country1					-0.002
					(0.007)
Population (ln) – Country2					-0.001
					(0.006)
nGDP (ln) – Country1					0.002
					(0.006)
nGDP (ln) – Country2					0.001
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.002	0.610	0.632	0.635	0.101

Table A.6: Colonial Origin (KMSW Coding) – Property

	(1)	(2)	(3)	(4)	(5)
Shared Colonial History	0.053***	0.069***	0.050***	0.011	0.033***
KMSW Coding	(0.012)	(0.015)	(0.015)	(0.012)	(0.011)
Both Not Colonized	-0.041**	-0.092***	-0.077***	-0.021	-0.046*
	(0.019)	(0.022)	(0.023)	(0.021)	(0.024)
Distance (ln)			-0.044***	-0.021***	-0.033***
			(0.008)	(0.007)	(0.006)
Contiguous			0.069***	0.063***	0.059***
			(0.020)	(0.019)	(0.019)
Common National Language				0.193***	0.150***
				(0.039)	(0.031)
Common Ethnic Language				-0.003	-0.025
				(0.029)	(0.022)
Population (ln) – Country1					-0.000
					(0.006)
Population (ln) – Country2					0.001
					(0.007)
nGDP (ln) – Country1					0.001
					(0.004)
nGDP (ln) – Country2					0.002
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.024	0.271	0.331	0.412	0.154

Table A.7: Colonial Origin (KMSW Coding) – Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Colonial History	0.023*	0.021***	0.012**	0.006	0.024**
KMSW Coding	(0.012)	(0.006)	(0.006)	(0.006)	(0.012)
Both Not Colonized	-0.013	-0.019	-0.012	-0.004	-0.045*
	(0.023)	(0.012)	(0.011)	(0.012)	(0.024)
Distance (ln)			-0.031***	-0.028***	-0.045***
			(0.004)	(0.004)	(0.007)
Contiguous			-0.005	-0.004	-0.001
			(0.011)	(0.011)	(0.017)
Common National Language				0.043***	0.030
				(0.014)	(0.021)
Common Ethnic Language				-0.019	-0.055***
				(0.011)	(0.020)
Population (ln) – Country1					-0.002
					(0.007)
Population (ln) – Country2					-0.001
					(0.005)
nGDP (ln) – Country1					0.003
					(0.006)
nGDP (ln) – Country2					0.002
					(0.005)
0	N T	3 7	3 7	3 7	N T
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.005	0.611	0.632	0.635	0.106

Table A.8: Shared Legal Order - Property

	(1)	(2)	(3)	(4)	(5)
Shared Legal Order	0.146***	0.153***	0.120***	0.077***	0.085***
Colonial History or Colony	(0.017)	(0.018)	(0.018)	(0.017)	(0.018)
Distance (ln)			-0.028***	-0.014**	-0.026***
			(0.007)	(0.006)	(0.006)
Contiguous			0.052***	0.053***	0.049***
			(0.019)	(0.018)	(0.018)
Common National Language				0.180***	0.139***
				(0.039)	(0.030)
Common Ethnic Language				-0.019	-0.040**
				(0.026)	(0.019)
Population (ln) – Country1					-0.001
					(0.006)
Population (ln) – Country2					0.000
					(0.007)
nGDP (ln) – Country1					0.000
					(0.004)
nGDP (ln) – Country2					0.002
					(0.005)
0 7 174					
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.101	0.348	0.371	0.430	0.172

Table A.9: Shared Legal Order – Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Legal Order	0.035***	0.040***	0.015*	0.010	0.003
Colonial History or Colony	(0.012)	(0.008)	(0.008)	(0.009)	(0.012)
Distance (ln)			-0.029***	-0.027***	-0.044***
			(0.004)	(0.005)	(0.007)
Contiguous			-0.006	-0.005	0.004
			(0.011)	(0.011)	(0.018)
Common National Language				0.043***	0.034
				(0.014)	(0.022)
Common Ethnic Language				-0.021*	-0.053**
				(0.012)	(0.021)
Population (ln) – Country1					-0.001
					(0.007)
Population (ln) – Country2					-0.000
					(0.005)
nGDP (ln) – Country1					0.001
					(0.006)
nGDP (ln) – Country2					0.000
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.007	0.616	0.633	0.635	0.100

4. ROBUSTNESS TESTS

This section reports the results of the robustness checks from Section 4.5.

A. Alternative Dependent Variables

Our primary results measure similarity of legal regimes by calculating the correlations of the coding of the variables, but there are ways other than correlations to measure the similarity of the legal regimes. For instance, Elkins, Ginsburg, and Melton (2009) measure the similarity of countries' constitutions using the percent of variables for which two constitutions had the same coding. Following this approach, we calculated the percent of the variables for which dyads had the same coding. For instance, the Albania–Vietnam dyad had the same coding for 71 of 120 property law variables, which means they have agreement on 59.2% of the provisions. Figure A.1 graphs the relationship between the percentage of agreement and correlation measures. Tables A.10 and A.11 report regression results using percentage of agreement as the dependent variable. These percentage of agreement measures of similarity are highly correlated with our primary measures (the correlation between the two measures is 0.96 for property and 0.93 for antitrust), and our results are thus also substantially the same when using percentage of agreement as our dependent variable.

Figure A.1: Correlations Between Dependent Variables

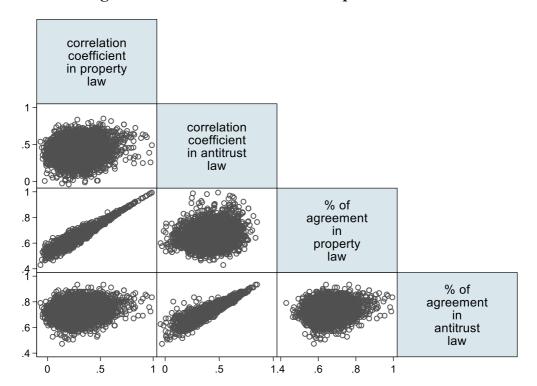


Table A.10: Alternative Measures – Percentage of Agreement – Property

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.031***	0.050***	0.043***	0.034***	0.023***
	(0.006)	(0.008)	(0.008)	(0.007)	(0.006)
Distance (ln)			-0.022***	-0.012***	-0.013***
			(0.004)	(0.004)	(0.003)
Contiguous			0.034***	0.031***	0.036***
			(0.010)	(0.010)	(0.009)
Common National Language				0.082***	0.068***
				(0.018)	(0.015)
Common Ethnic Language				-0.002	-0.005
				(0.013)	(0.010)
Population (ln) – Country1					0.001
					(0.002)
Population (ln) – Country2					0.001
					(0.002)
nGDP (ln) – Country1					-0.001
					(0.002)
nGDP (ln) – Country2					0.000
					(0.002)
0 5 15%	> T	3 7	T 7	X 7	> T
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.050	0.242	0.305	0.369	0.169

Table A.11: Alternative Measures – Percentage of Agreement – Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.005	0.009***	0.006***	0.005**	0.003
	(0.005)	(0.002)	(0.002)	(0.002)	(0.005)
Distance (ln)			-0.013***	-0.012***	-0.020***
			(0.002)	(0.002)	(0.003)
Contiguous			0.000	0.001	0.002
			(0.005)	(0.005)	(0.008)
Common National Language				0.020***	0.019**
				(0.006)	(0.008)
Common Ethnic Language				-0.010*	-0.026***
				(0.005)	(0.008)
Population (ln) – Country1					-0.002
					(0.003)
Population (ln) – Country2					-0.001
					(0.003)
nGDP (ln) – Country1					0.000
					(0.002)
nGDP (ln) – Country2					-0.000
					(0.002)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.002	0.566	0.586	0.588	0.109

B. Categories of Legal Origins

Our primary results aggregate all types of shared legal origins together, but there may be heterogenous effects based on the type of legal origin. We explored this possibility in two ways. We first re-estimated our results while breaking out shared legal origins into the four categories from LLSV: English Common Law, French Civil Law, German Civil Law, and Nordic Civil Law. For this analysis, for example, for the Germany–Switzerland dyad, the German Civil Law variable equals 1 and the other three variables—English Common Law, French Civil Law, and Nordic Civil Law—equal 0. Tables A.12 and A.13 reports these results.

For property law, the coefficients are positive for all four types of legal origins in all specifications, but the result is not statistically significant in our preferred specification for German Civil Law. For antitrust law, the estimates are negative or null for English Common Law and French Civil Law, but positive and statistically significant for German Civil Law and Nordic Civil Law. This perhaps reflects the fact that European antitrust law has become the global model (Bradford et al. 2019a), and countries with ties to the German legal system are all likely to have adopted the EU model.

Table A.12: Results by Category of Legal Origin – Property

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.165***	0.213***	0.196***	0.097**	0.089**
English Common Law	(0.037)	(0.045)	(0.045)	(0.046)	(0.039)
Shared Legal Origin	0.057***	0.093***	0.090***	0.082***	0.051***
French Civil Law	(0.012)	(0.019)	(0.018)	(0.019)	(0.014)
Shared Legal Origin	0.156***	0.049**	0.024	0.026	0.122***
German Civil Law	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)
Shared Legal Origin	0.209***	0.242***	0.149***	0.147***	0.094**
Nordic Civil Law	(0.008)	(0.020)	(0.024)	(0.034)	(0.039)
Distance (ln)			-0.042***	-0.021***	-0.031***
			(0.008)	(0.007)	(0.006)
Contiguous			0.063***	0.056***	0.054***
			(0.020)	(0.019)	(0.020)
Common National Language				0.166***	0.131***
				(0.038)	(0.030)
Common Ethnic Language				0.002	-0.015
				(0.026)	(0.019)
Population (ln) – Country1					-0.002
					(0.005)
Population (ln) – Country2					-0.001
					(0.006)
nGDP (ln) – Country1					0.001
					(0.004)
nGDP (ln) – Country2					0.004
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.082	0.330	0.384	0.444	0.190

Table A.13: Results by Category of Legal Origin – Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	-0.042**	0.020	0.011	-0.006	-0.023
English Common Law	(0.020)	(0.017)	(0.016)	(0.016)	(0.021)
Shared Legal Origin	-0.006	0.009	0.007	0.005	-0.007
French Civil Law	(0.013)	(0.009)	(0.008)	(0.008)	(0.013)
Shared Legal Origin	0.097***	0.035***	0.022*	0.022**	0.058***
German Civil Law	(0.014)	(0.012)	(0.011)	(0.011)	(0.012)
Shared Legal Origin	0.139***	0.109***	0.068***	0.064***	0.040
Nordic Civil Law	(0.019)	(0.013)	(0.013)	(0.014)	(0.025)
Distance (ln)			-0.030***	-0.027***	-0.043***
			(0.004)	(0.004)	(0.008)
Contiguous			-0.006	-0.006	0.001
			(0.011)	(0.011)	(0.018)
Common National Language				0.044***	0.041*
				(0.015)	(0.022)
Common Ethnic Language				-0.017	-0.049**
				(0.012)	(0.021)
Population (ln) – Country1					0.000
					(0.007)
Population (ln) – Country2					0.001
					(0.005)
nGDP (ln) – Country1					0.000
					(0.006)
nGDP (ln) – Country2					-0.001
					(0.005)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.022	0.612	0.633	0.636	0.107

Next, it is also possible that countries with certain legal traditions may have more similar substantive laws, even if those legal traditions are not the same. We thus calculated the average correlations for all 10 possible combinations of legal origins using the LLSV data. Figure A.2 reports these results.

For property law, the correlations were higher for the four combinations of shared legal origins (e.g. "English Common Law – English Common Law" or "French Civil Law") than for any of the other six possible combinations that do not involve having shared legal origins (e.g. "English Common Law – French Civil Law" or "French Civil Law – Nordic Civil Law").²⁷ In addition, the correlations were higher for the three combinations of related legal origins (e.g. "French Civil Law – German Civil Law") than for three combinations of unrelated legal origins (e.g. "English Common Law – French Civil Law").²⁸

For antitrust law, dyads that share German Civil law and Nordic Civil Law legal origins had the highest average correlations,²⁹ but the other eight combinations of dyads had similar results. In other words, dyads that shared English Common Law legal origins had roughly the same correlations of their antitrust law as dyads where one country had English Common Law legal origins and the other country had, for instance, French Civil Law legal origins.³⁰

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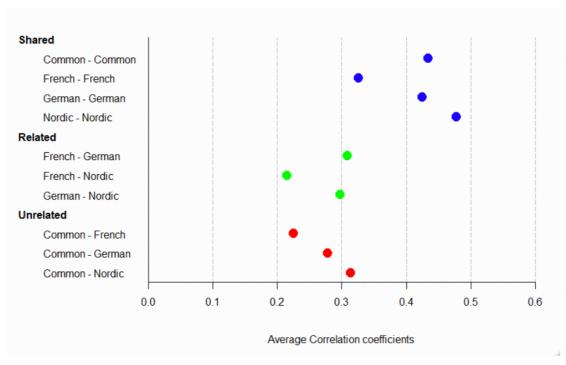
²⁷ P-value under Wilcoxon rank-sum test on whether the two groups are from populations with the same distribution is <0.001.

²⁸ *P*-value under Wilcoxon rank-sum test on whether the two groups are from populations with the same distribution is <0.001. The related group has, on average, higher correlation coefficient than the unrelated group, as this result is driven by the difference between the "French Civil Law – German Civil Law" combination (coefficient=0.31) and the "English Common Law – French Civil Law" combination (coefficient=0.23).

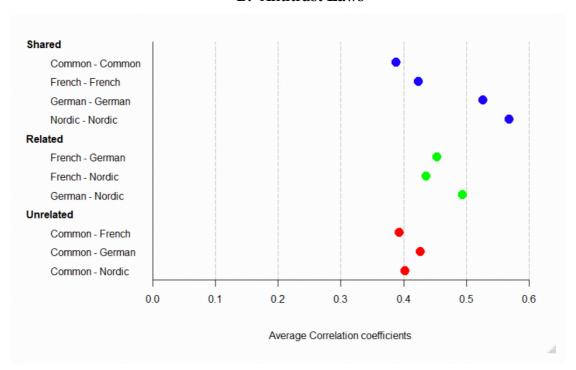
²⁹ *P*-value under Wilcoxon rank-sum test on whether the two groups ("German Civil Law – German Civil Law" and "Nordic Civil Law – Nordic Civil Law" versus other eight combinations) are from populations with the same distribution is <0.001.

³⁰ P-value under Wilcoxon rank-sum test on whether the two groups ("English Common Law – English Common Law" versus the three unrelated combinations that include English Common Law) are from populations with the same distribution is 0.386.

Figure A.2: Average Correlation Coefficients for All Legal Origin Combinations
A. Property Laws



B. Antitrust Laws



Notes: Figure A.2 plots the average correlation coefficients for each of the 10 possible combinations of legal origins for pairs of countries. For example, "Common – Common" means that both countries in a dyad have English Common Law Legal Origins, and "French – German" means that one country in the dyad has French Civil Law legal origins and one country has German Civil Law legal origins.

C. Excluding Dyads That Include EU Members

It is possible that our results are driven in part by the fact that countries in Europe adopt antitrust laws that are more consistent with the EU than with their legal origins. If true, this would damper the relationship between shared legal origins and antitrust laws. (Although EU membership is unlikely to be driving our property results, we estimate these results for both property and antitrust to ensure any differences in our results are not attributable to different samples.) To test this possibility, we reestimated our primary specifications while excluding dyads that include any of the 28 EU members. Even when reducing the sample in this way, the results are similar: the coefficients for property law remain larger and achieve statistical significance. Tables A.14 and A.15 reports these results. In addition to excluding 28 EU members, we also ran similar regressions that re-estimated our primary specifications while excluding dyads that include any of the following 36 European countries: Albania, Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, the Ukraine, and the United Kingdom. The results are qualitatively the same.

Table A.14: Excluding Dyads with EU Members – Property

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.073***	0.118***	0.098***	0.066***	0.063***
	(0.015)	(0.021)	(0.023)	(0.022)	(0.018)
Distance (ln)			-0.060***	-0.029***	-0.041***
			(0.010)	(0.009)	(0.008)
Contiguous			0.077**	0.092***	0.079***
			(0.031)	(0.026)	(0.026)
Common National Language				0.151***	0.130***
				(0.039)	(0.029)
Common Ethnic Language				0.007	-0.019
				(0.030)	(0.024)
Population (ln) – Country1					-0.003
					(0.006)
Population (ln) – Country2					-0.005
					(0.007)
nGDP (ln) – Country1					0.005
					(0.005)
nGDP (ln) – Country2					0.010*
					(0.006)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	2,016	2,016	2,016	2,016	2,016
R-squared	0.058	0.292	0.396	0.456	0.222

Table A.15: Excluding Dyads with EU Members – Antitrust

	c 11.13. Excluding Dyads with De Members				Milliust	
	(1)	(2)	(3)	(4)	(5)	
Shared Legal Origin	0.015	0.020***	0.014**	0.005	0.017	
	(0.015)	(0.007)	(0.007)	(0.007)	(0.016)	
Distance (ln)			-0.022***	-0.015**	-0.034***	
			(0.005)	(0.006)	(0.009)	
Contiguous			0.001	0.006	0.009	
			(0.015)	(0.014)	(0.022)	
Common National Language				0.052***	0.043*	
				(0.015)	(0.023)	
Common Ethnic Language				-0.011	-0.053***	
				(0.012)	(0.019)	
Population (ln) – Country1					0.000	
					(0.009)	
Population (ln) – Country2					0.001	
					(0.007)	
nGDP (ln) – Country1					0.006	
					(0.007)	
nGDP (ln) – Country2					0.004	
					(0.006)	
Country Fixed Effects	No	Yes	Yes	Yes	No	
Observations	2,016	2,016	2,016	2,016	2,016	
R-squared	0.003	0.611	0.624	0.630	0.051	

D. Calculating Correlations Using 36 "Core" Antitrust Variables

For consistency with our property data, we used all 91 substantive variables in our antitrust data when measuring the similarity of countries antitrust regimes. However, prior scholarship using this data has identified 36 of the antitrust variables as being the most substantively important. We thus re-estimated our results using these 36 "core" variables to measure antitrust laws. Table A.16 reports these regression results. These results are substantively similar to our primary results.

Table A.16: Calculating Correlation Using 36 Core Variables – Antitrust

	(1)	(2)	(3)	(4)	(5)
Shared Legal Origin	0.012	0.035***	0.023**	0.018**	0.015
	(0.011)	(0.009)	(0.009)	(0.009)	(0.010)
Distance (ln)			-0.054***	-0.049***	-0.068***
			(0.007)	(0.008)	(0.008)
Contiguous			-0.012	-0.014	-0.006
			(0.020)	(0.020)	(0.024)
Common National Language				0.046**	0.028
				(0.022)	(0.025)
Common Ethnic Language				-0.005	-0.047*
				(0.021)	(0.025)
Population (ln) – Country1					-0.004
					(0.007)
Population (ln) – Country2					-0.004
					(0.005)
nGDP (ln) – Country1					0.006
					(0.005)
nGDP (ln) – Country2					0.005
					(0.004)
Country Fixed Effects	No	Yes	Yes	Yes	No
Observations	4,095	4,095	4,095	4,095	4,095
R-squared	0.001	0.362	0.398	0.400	0.126