

*Online Appendix to:*

**Property rights institutions, foreign  
investment, and the valuation of  
multinational firms**

Leming Lin    Atanas Mihov    Leandro Sanz    Detelina Stoyanova

# Data

In this section, we elaborate on the data we utilize in this paper and their sources. We utilize four major data sources: data on MNC subsidiary locations, which we collect from firms' Exhibit 21 (reported as part of annual 10-K forms); property rights measures based on the World Bank's Worldwide Governance Indicators (WGI); firm-level financial data; and FDI expropriation data from Hajzler and Rosborough (2016). The WGI data are publicly available from the World Bank (<http://info.worldbank.org/governance/wgi/#home>). Interested readers with appropriate subscriptions can source and reconstruct our financial variables using data from Compustat, which is most commonly distributed by Wharton Research Data Services (<https://wrds-web.wharton.upenn.edu/wrds/>). We provide more information on the subsidiary location data from Exhibit 21 and the FDI expropriation data next.

**Exhibit 21 Data:** The Exhibit 21 data gathering process can be summarized as follows:

- Access the the U.S. Securities and Exchange Commission EDGAR (Electronic Data Gathering, Analysis, and Retrieval) system.<sup>1</sup>
- Locate archived 10-K filings through EDGAR indexes to public filings.
- Search every 10-K filing for Exhibit 21.
- Search every Exhibit 21 for a list of country names.
- Check, organize and process the data.

A Java program accesses U.S. companies' 10-K filings through the EDGAR system, locates and searches Exhibits 21 for the names of a list of countries, and keeps track of the number of times a country's name appears in a given Exhibit 21. The country name list we use is

---

<sup>1</sup>Instructions on accessing EDGAR data can be found here: <https://www.sec.gov/edgar/searchedgar/accessing-edgar-data.htm>.

as follows: Afghanistan, Albania, Algeria, American Samoa, Andorra, Angola, Anguilla, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Cayman Islands, Central African Republic, Chad, Chile, China, Christmas Island, Cocos (Keeling) Islands, Colombia, Comoros, Cook Islands, Costa Rica, Croatia, Cuba, Curacao, Cyprus, Czech Republic, Democratic Republic of Congo, Denmark, Djibouti, Dominica, Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Falkland Islands, Faroe Islands, Fiji, Finland, France, French Guiana, French Polynesia, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Greenland, Grenada, Guam, Guatemala, Guernsey, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Isle of Man, Israel, Italy, Ivory Coast, Jamaica, Japan, Jersey, Jordan, Kazakhstan, Kenya, Kiribati, Kosovo, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macau, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia, Moldova, Monaco, Mongolia, Montenegro, Montserrat, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Netherlands, New Caledonia, New Zealand, Nicaragua, Niger, Nigeria, Niue, Norfolk Island, North Korea, Northern Mariana Islands, Norway, Oman, Pakistan, Palau, Palestine, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Pitcairn Islands, Poland, Portugal, Puerto Rico, Qatar, Republic of the Congo, Romania, Russia, Rwanda, Saint Barthelemy, Saint Helena, Tristan da Cunha, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Sint Maarten, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, South Korea, South Sudan, Spain, Sri Lanka, Sudan, Suriname,

Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tokelau, Tonga, Transnistria, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Turks and Caicos Islands, Tuvalu, Uganda, Ukraine, United Arab Emirates, United Arab Emirates, United Kingdom, United States Virgin Islands, Uruguay, Uzbekistan, Vanuatu, Vatican City, Venezuela, Vietnam, Wallis and Futuna, Western Sahara, Yemen, Zambia, Zimbabwe. Code expressions are used to remove spaces, adjust capitalization, and adjust search terms (i.e. country names) to make them as unique as possible. The results of the search are then matched to full country names and ISO country codes, and are then further processed as described in Section 3.1 of the manuscript.

**FDI Expropriations Data:** We are indebted to Christopher Hajzler at the Bank of Canada for sharing FDI expropriations data with us, which we have used to investigate the relationship between explicit acts of expropriation and MNC valuations. The original version of the Hajzler and Rosborough (2016) data, which was compiled in Hajzler (2012), are publicly available at the author’s website (<https://sites.google.com/site/christopherhajzler/research>). Below, we describe the steps to arrive from the starting data to the final set of FDI expropriation events used in our analysis:

- **Starting point.**

Period: [1990, 2014]; Number of expropriation events: 160; Number of expropriated companies: 198; Number of countries with expropriations: 48.

- **Filter: exclude observations outside the 68 countries in our sample.<sup>2</sup>**

Period: [1990, 2014]; Number of expropriation events: 110; Number of expropriated

---

<sup>2</sup>The 68 countries are: Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Ecuador, Egypt, El Salvador, Finland, France, Germany, Ghana, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Russian Federation, Singapore, Slovakia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, Uruguay, Venezuela and Zimbabwe.

companies: 145; Number of countries with expropriations: 23.

- **Filter: exclude observations outside [1995, 2012] period.**

Period: [1990, 2014]; Number of expropriation events: 99; Number of expropriated companies: 131; Number of countries with expropriations: 21.

- **Ending point.**

Section 4.3 of our paper further discusses the expropriations data, and provides an in-depth discussion about the timing and industry patterns of the expropriation events.

## **Robustness checks: sub-sample analysis**

In this section, we check the robustness of our location results in different sub-samples of our data. We start by using a sub-sample excluding the top 3 (Canada, Great Britain, and Germany) and top 5 (Canada, Great Britain, Germany, France, and the Netherlands) countries in terms of U.S. MNCs' presence. Table OA-1, Panel A presents results. Our results remain robust to such exclusions.

[Insert Table OA-1 about here]

We then investigate whether our results are driven by particular country outliers in terms of country income level. Based on a 2012 income group classification from the World Bank, the majority of the countries in our sample, 51.5%, are high-income countries. The second and third largest groups are countries of upper middle (26.5%) and lower middle (17.6%) incomes. Only 3 of the countries in our sample, Kenya, Uganda and Zimbabwe, are in the low-income group.

In Table OA-1, Panel B, Columns (1) and (2), we proceed by excluding the three countries in the low-income group. In Table OA-1, Panel B, Columns (3) and (4), we next check

whether our results hold for non-OECD countries.<sup>3</sup> In Table OA-1, Panel B, Columns (5)–(8), we check whether results hold excluding the most developed countries in our sample (above the 50th or 75th percentile of GDP per capita). Across all different data cuts, our results remain robust.

## Imbalance of observations (presence vs. non-presence)

In our collapsed estimation sample, we have a total of 467,092 firm-country observations, of which 52,396 (or 11.2%) indicate subsidiary presence. To provide some insight on the potential effect of the low proportion of observations indicating presence in our estimations, we conduct two exercises. First, we create a sub-sample from our original sample (with the 467,092 firm-country observations) that includes the 52,396 observations indicating subsidiary presence and also includes 52,396 randomly selected zero value observations. Thus, we create an estimation sample that has a total of 104,792 firm-country observations with 50% zero values and 50% one values. Then we re-estimate Eq. (1). Table OA-2, Columns (1) and (2) present the results.

[Insert Table OA-2 about here]

As a second exercise, we also re-estimate Eq. (1) using only the top 15 countries in our sample in terms of subsidiary presence (marked in Figure 2 of the manuscript). Limiting our sample to the top 15 countries restricts our estimation sample to 103,035 firm-year-country observations, 29.3% of which indicate subsidiary presence. Table OA-2, Columns (3) and (4) present the results.<sup>4</sup> Overall, our results are robust to using sub-samples with a more

---

<sup>3</sup>The authors note that the countries that are geographically contiguous to the United States (i.e. Canada and Mexico) are both OECD members and have above median incomes. Consequently, the coefficient of *Contiguous* cannot be estimated in sub-samples of non-OECD countries and countries with below median income due to the lack of variation in *Contiguous*.

<sup>4</sup>When we restrict the sample to the top 15 countries in terms of subsidiary presence, two of our control variables, *Language* and *Legal Origin*, become perfectly collinear. Thus, we drop *Legal Origin* from the

balanced proportion of zero-nonzero values in our regression analysis. Coefficient magnitudes of *Prpty Rights* suggest that the results based on the full sample (with 467,092 observations) are more conservative (i.e. smaller in magnitude).

## Unrestricted vs. controls-restricted samples

Our final sample in the subsidiary location analysis includes observations from 68 countries and excludes countries with missing values for country-level control variables. Relaxing the data availability constraints (non-missing values for control variables) results in a substantially larger sample. Specifically, our sample becomes a panel of 8,614,247 firm-year-subsidary country observations during the period [1996-2012] of 6,965 U.S. multinational companies covering 207 countries (which we then collapse into a single firm-subsidary country cross-section).<sup>5</sup>

To provide insight into the effect of excluding countries with missing data (values for control variables), we estimate regression specifications similar to Eq. (1), but with no control variables. Regressions in Columns (1) and (2) of Table OA-3 do not restrict the sample. On the other hand, regressions in Columns (3) and (4) are based on our estimation sample in the manuscript (requiring country observations with non-missing values for previously used control variables).

[Insert Table OA-3 about here]

Overall, regression coefficients have similar economic magnitudes and are statistically significant at the 1% level.

---

estimations reported in Table OA-2, Columns (3) and (4).

<sup>5</sup>We note that while the number of countries nearly triples, the 68 countries that comprise our estimation sample capture the majority of firm-year-subsidary country observations which indicate MNC presence (82%).

## Property rights dimensions

Our measure of property rights encompasses three different dimensions: rule of law, control of corruption, and voice and accountability. In this section, we examine the relation of the individual property rights components to MNCs' subsidiary locations. Table OA-4 presents results.

[Insert Tables OA-4 about here]

Table OA-4 shows that all three individual property rights components are related to the locations of MNC subsidiaries. The coefficients of *Rule of Law*, *Control of Corruption* and *Voice and Accountability* are positive and significant at the 1% level, consistent with the interpretation that MNCs operate subsidiaries in countries with better property rights (across all three property rights dimensions).

## Controlling for income per capita

Prior literature suggests that the strength of property rights has a significant effect on GDP per capita (e.g., Mauro (1995), Acemoglu et al. (2001)). To mitigate confounding effects (especially for our instrumental variable regressions) of country income level on the association between subsidiary locations and property rights institutions, we did not control for control for country economic development in our main set of specifications. To assuage omitted variable concerns, this section shows the robustness of our main location results to explicitly controlling for country income. Table OA-5 presents the results.

[Insert Table OA-5 about here]

In Columns (1) and (2), we include log GDP per capita as an additional regressor. In Columns (3) and (4), we include income group fixed effects, where we use World Bank's



2012 country income group classification (low-income, lower-middle-income, upper-middle-income and high-income countries). In Columns (5) and (6) we include both log GDP per capita and income group fixed effects. All specifications show that *Property Rights* retains its positive sign and remains statistically significant at the 1% level. Overall, when controlling for country income level, one can notice that the coefficient *Property Rights* increases in magnitude substantially, more than doubling in some of the specifications. Overall and individually, we conclude that our results are robust to explicitly controlling for country income levels.

## Valuation regression country weighting schemes

In Sections 4.2 and 4.3, we provided evidence that deterioration in property rights in the host countries, where MNCs operate subsidiaries, decreases the value of MNCs. Because our data has multiple instances per firm-year (one observation for every country a firm operates in), and Exhibit 21 does not explicitly provide information on the size of firms' subsidiaries, in our regressions, we weighted each country exposure within a firm-year proportionately to the number of times the country's name is recorded in a given company's annual Exhibit 21, then weighting firm-years equally. In this approach, we used the number of a country's name records as a proxy for the number of subsidiaries a multinational firm has in a given country to capture the intensity of firms' exposures.

In this section, we test the robustness of our regression results using alternative weighting schemes. Specifically, we use the following two alternative schemes: 1) we weight each country exposure within a firm-year equally, firm-years having equal weight among each other; 2) we weight each country exposure within a firm-year proportionately to the GDP of the country in a given year, then weighting firm-years equally. Following the main regression methodology in Sections 4.2 and 4.3, we estimate weighted least squares specifications using

the above weighting approaches to proxy for country exposure. Table OA-6 present the results, which confirm the robustness of our findings to the two alternative weighting schemes.

[Insert Tables OA-6 about here]

## References

- Acemoglu, D., Johnson, S., and Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5):1369–1401.
- Hajzler, C. (2012). Expropriation of foreign direct investments: sectoral patterns from 1993 to 2006. *Review of World Economics*, 148(1):119–149.
- Hajzler, C. and Rosborough, J. (2016). Government corruption and foreign direct investment under the threat of expropriation. *Working Paper, Bank of Canada*.
- Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, 110(3):681–712.

### Table OA-1: **Robustness checks**

This table reports coefficients from regressions of firms' subsidiary locations on the quality of country property rights institutions and control variables. The sample is a panel of 2,882,744 firm-year-subsiary country observations during the period [1996-2012] of 6,869 U.S. multinational companies. We collapse the data into a single firm-subsiary country cross-section. *Presence* is a binary variable equal to 1 if a multinational firm reported a subsidiary in a given country during any year over the [1996-2012] period, and 0 otherwise.  $Ln(NSub)$  is a proxy measure of the number of subsidiaries a firm has in a given country. It is calculated as a natural log transformation of the maximum number of times a country's name is mentioned in Exhibit 21 of a company's 10-K reports (description of material foreign operations) in any year over the period [1996-2012]. *Prpty Rights* measures the quality of property rights institutions in a country, and is calculated as the first principal component of three governance dimensions (rule of law, control of corruption, and voice and accountability). All right hand side variables are measured as of 1996. In Panel A, the estimation sample excludes the top three and the top five countries in terms of U.S. MNCs' presence. In Panel B, Columns (1) and (2), we exclude observations related to three countries classified as low-income by the World Bank as of 2012: Kenya, Uganda and Zimbabwe. In Columns (3) and (4), the estimation sample includes only non-OECD countries. In Columns (5) and (6), the estimation sample includes countries with below median GDP per capita. In Columns (7) and (8), the estimation sample includes countries with below 75th percentile GDP per capita. All specifications include firm fixed effects and cluster standard errors at the firm level. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

<b>Panel A: Excluding Top 3/5 Countries</b>				
	(1)	(2)	(3)	(4)
	Presence Excl Top 3	Ln(NSub) Excl Top 3	Presence Excl Top 5	Ln(NSub) Excl Top 5
Property Rights	0.009*** (0.000)	0.012*** (0.000)	0.007*** (0.000)	0.008*** (0.000)
Ln(GDP)	0.033*** (0.000)	0.041*** (0.000)	0.030*** (0.000)	0.036*** (0.000)
GDPGr	0.015 (0.101)	0.085*** (0.000)	0.015* (0.090)	0.085*** (0.000)
Ln(Trade)	0.007*** (0.000)	0.009*** (0.000)	0.007*** (0.000)	0.010*** (0.000)
Contiguous	0.143*** (0.000)	0.229*** (0.000)	0.159*** (0.000)	0.253*** (0.000)
Ln(Distance)	-0.002* (0.091)	-0.009*** (0.000)	0.011*** (0.000)	0.010*** (0.000)
Tax Haven	0.062*** (0.000)	0.071*** (0.000)	0.069*** (0.000)	0.083*** (0.000)
Colony	0.035*** (0.000)	0.052*** (0.000)	-0.005** (0.047)	-0.006** (0.027)
Language	0.023*** (0.000)	0.028*** (0.000)	0.035*** (0.000)	0.047*** (0.000)
Legal Origin	0.004** (0.011)	0.012*** (0.000)	-0.013*** (0.000)	-0.014*** (0.000)
Observations	446485	446485	432747	432747
Adjusted $R^2$	0.314	0.352	0.310	0.347

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel B: Non-OECD and Low Income Countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Presence Excl LI	Ln(NSub) Excl LI	Presence Non-OECD	Ln(NSub) Non-OECD	Presence < 50th GDP < 50th GDP	Ln(NSub) < 50th GDP < 50th GDP	Presence < 75th GDP < 75th GDP	Ln(NSub) < 75th GDP < 75th GDP
Property Rights	0.012*** (0.000)	0.015*** (0.000)	0.023*** (0.000)	0.026*** (0.000)	0.017*** (0.000)	0.019*** (0.000)	0.011*** (0.000)	0.014*** (0.000)
Ln(GDP)	0.038*** (0.000)	0.049*** (0.000)	0.031*** (0.000)	0.038*** (0.000)	0.038*** (0.000)	0.046*** (0.000)	0.031*** (0.000)	0.037*** (0.000)
GDPGr	-0.024** (0.011)	0.040*** (0.001)	0.121*** (0.000)	0.210*** (0.000)	0.176*** (0.000)	0.273*** (0.000)	0.041*** (0.000)	0.085*** (0.000)
Ln(Trade)	0.009*** (0.000)	0.010*** (0.000)	0.007*** (0.000)	0.009*** (0.000)	-0.000 (0.899)	0.001 (0.110)	0.006*** (0.000)	0.009*** (0.000)
Contiguous	0.123*** (0.000)	0.188*** (0.000)					0.159*** (0.000)	0.251*** (0.000)
Ln(Distance)	-0.034*** (0.000)	-0.055*** (0.000)	0.000 (0.996)	-0.001 (0.438)	-0.013*** (0.000)	-0.015*** (0.000)	0.003*** (0.027)	0.004*** (0.021)
Tax Haven	0.050*** (0.000)	0.055*** (0.000)	0.060*** (0.000)	0.067*** (0.000)	0.040*** (0.000)	0.046*** (0.000)	0.082*** (0.000)	0.088*** (0.000)
Colony	0.077*** (0.000)	0.121*** (0.000)	-0.082*** (0.000)	-0.096*** (0.000)	-0.027*** (0.000)	-0.037*** (0.000)	-0.009*** (0.000)	-0.015*** (0.000)
Language	0.013*** (0.000)	0.013*** (0.000)	0.059*** (0.000)	0.069*** (0.000)	0.025*** (0.000)	0.033*** (0.000)	0.038*** (0.000)	0.049*** (0.000)
Legal Origin	0.037*** (0.000)	0.064*** (0.000)	-0.041*** (0.000)	-0.048*** (0.000)	-0.012*** (0.000)	-0.017*** (0.000)	-0.015*** (0.000)	-0.017*** (0.000)
Observations	446485	446485	254153	254153	233546	233546	350319	350319
Adjusted R <sup>2</sup>	0.339	0.379	0.279	0.307	0.269	0.296	0.300	0.331

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table OA-2: Zero values of dependent variable**

This table reports coefficients from regressions of firms' subsidiary locations on the quality of country property rights institutions and control variables. The sample is a panel of firm-year-subsidiary country observations during the period [1996-2012] of 6,869 U.S. multinational companies, which is then collapsed into a single firm-subsidiary country cross-section. In Columns (1) and (2), we randomly exclude "zero" observations (observations for which the dependent variable assumes a value 0) so that, in the final sample, the number of "zero" observations is equal to the number of "non-zero" observations. In Columns (3) and (4), we keep only observations from the top 15 countries in terms of subsidiary presence: Canada, United Kingdom, Germany, France, Netherlands, Mexico, Australia, Japan, China, Singapore, Hong Kong, Italy, Brazil, Spain and Switzerland. *Presence* is a binary variable equal to 1 if a multinational firm reported a subsidiary in a given country during any year over the [1996-2012] period, and 0 otherwise.  $\ln(NSub)$  is a proxy measure of the number of subsidiaries a firm has in a given country. It is calculated as a natural log transformation of the maximum number of times a country's name is mentioned in Exhibit 21 of a company's 10-K reports (description of material foreign operations) in any year over the period [1996-2012]. *Prpty Rights* measures the quality of property rights institutions in a country, and is calculated as the first principal component of three governance dimensions (rule of law, control of corruption, and voice and accountability). All right hand side variables are measured as of 1996. Specifications include firm fixed effects and cluster standard errors at the firm level. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

	(1) Presence Random 0s	(2) Ln(NSub) Random 0s	(3) Presence Top 15 Ctries	(4) Ln(NSub) Top 15 Ctries
Property Rights	0.022*** (0.000)	0.029*** (0.000)	0.015*** (0.000)	0.028*** (0.000)
Ln(GDP)	0.077*** (0.000)	0.102*** (0.000)	0.010*** (0.006)	0.028*** (0.000)
GDPGr	0.230*** (0.000)	0.640*** (0.000)	1.053*** (0.000)	1.994*** (0.000)
Ln(Trade)	0.026*** (0.000)	0.036*** (0.000)	0.038*** (0.000)	0.037*** (0.000)
Contiguous	0.124*** (0.000)	0.213*** (0.000)	-0.128*** (0.000)	-0.112*** (0.000)
Ln(Distance)	-0.023*** (0.000)	-0.061*** (0.000)	-0.094*** (0.000)	-0.125*** (0.000)
Tax Haven	0.123*** (0.000)	0.123*** (0.000)	-0.062*** (0.000)	-0.103*** (0.000)
Colony	0.064*** (0.000)	0.156*** (0.000)	0.024*** (0.000)	0.039*** (0.000)
Language	0.067*** (0.000)	0.090*** (0.000)	0.098*** (0.000)	0.153*** (0.000)
Legal Origin	0.004 (0.430)	0.052*** (0.000)		
Observations	104792	104792	103035	103035
Adjusted $R^2$	0.533	0.556	0.437	0.546

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



Table OA-3: **Unrestricted vis-à-vis controls-restricted sample results**

This table reports coefficients from regressions of firms' subsidiary locations on the quality of country property rights institutions and control variables. The sample is a panel of 8,614,247 firm-year-subsidary country observations during the period [1996-2012] of 6,965 U.S. multinational companies with operations in 207 countries, which is then collapsed into a single firm-subsidary country cross-section. *Presence* is a binary variable equal to 1 if a multinational firm reports a subsidiary in a given country during any year over the [1996-2012] period, and 0 otherwise. *Ln(NSub)* is a proxy measure of the number of subsidiaries a firm has in a given country. It is calculated as a natural log transformation of the maximum number of times a country's name is mentioned in Exhibit 21 of a company's 10-K reports (description of material foreign operations) in any year over the period [1996-2012]. *Prpty Rights* measures the quality of property rights institutions in a country, and is calculated as the first principal component of three governance dimensions (rule of law, control of corruption, and voice and accountability). All right hand side variables are measured as of 1996. Specifications include firm fixed effects and cluster standard errors at the firm level. Regressions in Columns (1) and (2) do not restrict the sample beyond data availability (i.e. do not restrict the sample to countries which host at least one U.S. MNC subsidiary over the [1996-2012] period). Regressions in Columns (3) and (4) require country observations with non-missing values for the following variables: *Anti-Self Dealing*, *Anti-Director*, *Ln(GDP)*, *GDPGr*, *Ln(GDPPC)*, *Ln(Trade)*, *Contiguous*, *Ln(Distance)*, *Tax Haven*, *Colony*, *Language*, and *Legal Origin*. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

	(1) Presence	(2) Ln(NSub)	(3) Presence	(4) Ln(NSub)
Property Rights	0.026*** (0.000)	0.032*** (0.000)	0.028*** (0.000)	0.033*** (0.000)
Observations	1441755	1441755	467092	467092
Adjusted $R^2$	0.130	0.140	0.233	0.261

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table OA-4: Subsidiary locations: decomposition of property rights institutions**

This table reports coefficients from regressions of firms' subsidiary locations on the quality of country property rights institutions and control variables. The sample is a panel of firm-year-subsidiary country observations during the period [1996-2012] of 6,869 U.S. multinational companies. We collapse the data into a single firm-subsidiary country cross-section. *Presence* is a binary variable equal to 1 if a multinational firm reported a subsidiary in a given country during any year over the [1996-2012] period, and 0 otherwise.  $Ln(NSub)$  is a proxy measure of the number of subsidiaries a firm has in a given country. It is calculated as a natural log transformation of the maximum number of times a country's name is mentioned in Exhibit 21 of a company's 10-K reports (description of material foreign operations) in any year over the period [1996-2012]. *Rule of Law* is a country-level index that captures rule of law. *Control of Corruption* is a country-level index that captures control of corruption. *Voice and Accountability* is a country-level index that captures voice and accountability. All right hand side variables are measured as of 1996. Specifications include firm fixed effects and cluster standard errors at the firm level. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
	Presence	Ln(NSub)	Presence	Ln(NSub)	Presence	Ln(NSub)
Rule of Law	0.017*** (0.000)	0.022*** (0.000)				
Control of Corruption			0.017*** (0.000)	0.023*** (0.000)		
Voice and Accountability					0.016*** (0.000)	0.020*** (0.000)
Ln(GDP)	0.041*** (0.000)	0.053*** (0.000)	0.041*** (0.000)	0.053*** (0.000)	0.041*** (0.000)	0.053*** (0.000)
GDPGr	-0.010 (0.297)	0.055*** (0.000)	-0.022** (0.019)	0.038*** (0.001)	0.060*** (0.000)	0.142*** (0.000)
Ln(Trade)	0.004*** (0.000)	0.005*** (0.000)	0.003*** (0.000)	0.004*** (0.000)	0.006*** (0.000)	0.007*** (0.000)
Contiguous	0.132*** (0.000)	0.198*** (0.000)	0.136*** (0.000)	0.205*** (0.000)	0.124*** (0.000)	0.188*** (0.000)
Ln(Distance)	-0.036*** (0.000)	-0.058*** (0.000)	-0.033*** (0.000)	-0.053*** (0.000)	-0.034*** (0.000)	-0.056*** (0.000)
Tax Haven	0.053*** (0.000)	0.058*** (0.000)	0.049*** (0.000)	0.052*** (0.000)	0.056*** (0.000)	0.063*** (0.000)
Colony	0.076*** (0.000)	0.120*** (0.000)	0.081*** (0.000)	0.127*** (0.000)	0.077*** (0.000)	0.121*** (0.000)
Language	0.022*** (0.000)	0.024*** (0.000)	0.013*** (0.000)	0.013*** (0.000)	0.018*** (0.000)	0.020*** (0.000)
Legal Origin	0.039*** (0.000)	0.065*** (0.000)	0.043*** (0.000)	0.070*** (0.000)	0.043*** (0.000)	0.070*** (0.000)
Observations	467092	467092	467092	467092	467092	467092
Adjusted $R^2$	0.334	0.371	0.335	0.372	0.333	0.371

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table OA-5: Subsidiary locations: controlling for income per capita**

This table reports coefficients from regressions of firms' subsidiary locations on the quality of country property rights institutions and control variables. The sample is a panel of 2,882,744 firm-year-subsidary country observations during the period [1996-2012] of 6,869 U.S. multinational companies, which is then collapsed into a single firm-subsidary country cross-section. *Presence* is a binary variable equal to 1 if a multinational firm reported a subsidiary in a given country during any year over the [1996-2012] period, and 0 otherwise. *Ln(NSub)* is a proxy measure of the number of subsidiaries a firm has in a given country. It is calculated as a natural log transformation of the maximum number of times a country's name is mentioned in Exhibit 21 of a company's 10-K reports (description of material foreign operations) in any year over the period [1996-2012]. *Prpty Rights* measures the quality of property rights institutions in a country, and is calculated as the first principal component of three governance dimensions (rule of law, control of corruption, and voice and accountability). *Ln(GDPPC)* is the log transformation of a country's annual GDP per capita. All right hand side variables are measured as of 1996. All specification include firm fixed effects. Specifications (3), (4), (5) and (6) also include country income group fixed effects, where we use World Bank's 2012 country income group classification (low-income, lower-middle-income, upper-middle-income and high-income countries). We cluster standard errors at the firm level. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
	Presence	Ln(NSub)	Presence	Ln(NSub)	Presence	Ln(NSub)
Property Rights	0.017*** (0.000)	0.022*** (0.000)	0.010*** (0.000)	0.014*** (0.000)	0.021*** (0.000)	0.028*** (0.000)
Ln(GDPPC)	-0.009*** (0.000)	-0.013*** (0.000)			-0.026*** (0.000)	-0.033*** (0.000)
Ln(GDP)	0.042*** (0.000)	0.054*** (0.000)	0.037*** (0.000)	0.048*** (0.000)	0.037*** (0.000)	0.048*** (0.000)
GDPGr	-0.006 (0.515)	0.058*** (0.000)	-0.016* (0.079)	0.048*** (0.000)	-0.070*** (0.000)	-0.021* (0.059)
Ln(Trade)	0.005*** (0.000)	0.006*** (0.000)	0.009*** (0.000)	0.010*** (0.000)	0.012 (0.000)	0.014*** (0.000)
Contiguous	0.129*** (0.000)	0.194*** (0.000)	0.123*** (0.000)	0.188*** (0.000)	0.115*** (0.000)	0.178*** (0.000)
Ln(Distance)	-0.037*** (0.000)	-0.059*** (0.000)	-0.033*** (0.000)	-0.054*** (0.000)	-0.040*** (0.000)	-0.063*** (0.000)
Tax Haven	0.059*** (0.000)	0.066*** (0.000)	0.046*** (0.000)	0.050*** (0.000)	0.059*** (0.000)	0.066*** (0.000)
Colony	0.075*** (0.000)	0.118*** (0.000)	0.080*** (0.000)	0.125*** (0.000)	0.077*** (0.000)	0.121*** (0.000)
Language	0.017*** (0.000)	0.018*** (0.000)	0.017*** (0.000)	0.020*** (0.000)	0.017*** (0.000)	0.020*** (0.000)
Legal Origin	0.037*** (0.000)	0.062*** (0.000)	0.038*** (0.000)	0.063*** (0.000)	0.028*** (0.000)	0.051*** (0.000)
Income Group FE	No	No	Yes	Yes	Yes	Yes
Observations	467092	467092	467092	467092	467092	467092
Adjusted R <sup>2</sup>	0.33	0.37	0.33	0.37	0.34	0.37

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table OA-6: Valuation regression country weighting schemes**

This table reports coefficients from weighted least square regressions of a firm's Tobin's Q on the quality of country property rights institutions and control variables. The sample includes a panel of 273,128 firm-year-subsubsidiary country observations with requisite data during the period [1996-2012] of 5,045 U.S. multinational companies, which report foreign operations in their 10-K reports. *Tobin's Q* is defined as the ratio between market value of assets and book value of assets, and is calculated as the ratio  $(AT-BE+ME)/AT$ , where AT denotes a firm's total assets, BE is book value of equity and ME is market value of equity. *Prpty Rights* measures the quality of property rights institutions in a country, and is calculated as the first principal component of three governance dimensions (rule of law, control of corruption, and voice and accountability). *ExprEvt SameCtry* is defined as an indicator variable taking the value of 1 if a foreign direct investment expropriation act occurred over the calendar year prior to a multinational firm's fiscal year end date in a country where the firm reports material subsidiaries, and 0 otherwise. We use two schemes to weight observations: 1) we weight each country exposure within a firm-year equally, firm-years having equal weight among each other; 2) we weight each country exposure within a firm-year proportionately to the GDP of a country in a given year, then weighting firm-years equally. The weighting schemes are denoted *WS1* and *WS2*, respectively. In all specifications, we include year and firm fixed effects, and cluster the standard errors at the firm level. The definitions of all variables are reported in Appendix A of the paper. P-values are presented in parentheses.

	(1) Tobin's Q WS1	(2) Tobin's Q WS2	(3) Tobin's Q WS1	(4) Tobin's Q WS2
Property Rights	0.014*** (0.000)	0.012*** (0.005)		
ExprEvt SameCtry			-0.069*** (0.004)	-0.098*** (0.000)
Ln(GDP)	0.006 (0.401)	0.020 (0.148)	0.012 (0.103)	0.022 (0.128)
GDPGr	0.767*** (0.000)	0.564*** (0.009)	0.566*** (0.000)	0.330* (0.060)
Ln(Trade)	0.004 (0.555)	0.009 (0.478)	0.000 (0.961)	0.008 (0.500)
Contiguous	-0.000 (0.987)	0.035 (0.397)	-0.026 (0.315)	0.012 (0.752)
Ln(Distance)	0.004 (0.712)	0.021 (0.159)	-0.013 (0.174)	0.008 (0.560)
Tax Haven	-0.004 (0.824)	0.002 (0.965)	0.009 (0.639)	0.010 (0.829)
Colony	0.021 (0.102)	0.023* (0.073)	0.016 (0.227)	0.021* (0.097)
Language	-0.025 (0.116)	-0.081** (0.016)	-0.007 (0.667)	-0.068** (0.043)
Legal Origin	-0.003 (0.824)	0.071** (0.027)	-0.007 (0.677)	0.069** (0.036)
FX Mean	-0.008 (0.393)	-0.008 (0.366)	-0.009 (0.359)	-0.009 (0.335)
FX Range	0.017*** (0.007)	0.017*** (0.005)	0.017*** (0.009)	0.017*** (0.007)
Foreign Sales	-0.551*** (0.000)	-0.537*** (0.000)	-0.556*** (0.000)	-0.541*** (0.000)
Ln(Size)	-0.527*** (0.000)	-0.514*** (0.000)	-0.529*** (0.000)	-0.517*** (0.000)
Leverage	-0.812*** (0.000)	-0.816*** (0.000)	-0.807*** (0.000)	-0.811*** (0.000)
Age	-0.000* (0.081)	-0.000* (0.087)	-0.000* (0.075)	-0.000* (0.082)
ROA	3.274*** (0.000)	3.253*** (0.000)	3.264*** (0.000)	3.245*** (0.000)
RDI	2.473*** (0.000)	2.606*** (0.000)	2.459*** (0.000)	2.592*** (0.000)
Dividends	-0.050 (0.201)	-0.043 (0.250)	-0.050 (0.202)	-0.043 (0.246)
ProdCon	0.262*** (0.000)	0.262*** (0.000)	0.259*** (0.001)	0.258*** (0.000)
Observations	273128	273128	269483	269483
Adjusted $R^2$	0.659	0.659	0.658	0.658

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$