Comparing the Spread of Capitalism and Democracy[*]

Peter T. Leeson[†]   Russell S. Sobel[‡]   Andrea M. Dean[§]

Abstract

We apply Leeson and Dean's (2009) method for studying democratic dominoes to capitalist spillovers to compare the rates at which capitalism and democracy spread between countries. We find that capitalism and democracy spread at approximately the same modest rate.

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1 Introduction

Dwight Eisenhower made the "domino theory" famous. According to that theory, changes in one country's political and economic institutions spread to neighboring countries, affecting these countries' political and economic institutions similarly, which spreads to their neighbors, and so on.

In a recent paper, Peter Leeson and Andrea Dean (2009) use spatial econometrics to examine the political side of this proposition: the democratic domino theory. They find that while democratic dominoes fall as this theory contends, they fall significantly "lighter" than the theory's importance and influence suggest.

Our paper uses their approach to examine the domino theory's economic side. We apply Leeson and Dean's method for studying democratic dominoes to capitalist spillovers to compare the rates at which capitalism and democracy spread between countries.

Sobel and Leeson (2007) estimate capitalism's spread rate using spatial econometric methods but do so using different specifications than those Leeson and Dean use and consider different years. This prevents a comparison of capitalism's and democracy's spread rates using their results. Our analysis, which follows Leeson and Dean's as closely as possible, permits a comparison of those spread rates. We find that capitalism and democracy spread at approximately the same modest rate.

2 Factors Affecting the Spread of Capitalism and Democracy

Several factors influence what kind of institutions—economic ones, or political ones—may spread more strongly between countries. First, to the extent that the success (or failure) of certain kinds of institutions in one country are more easily observed by neighboring countries,

it's reasonable to expect changes in those kinds of institutions to spread more strongly. For example, if the effects of changes in a country's fiscal policy are more pronounced than the effects of changes in its rules governing political-party competition, and so are more easily observed, changes in that country's economic institutions are more likely to spread to its neighbors than changes in its political institutions and vice versa.

Second, to the extent that certain kinds of institutions are easier to reform, it's reasonable to expect changes in those kinds of institutions to spread more strongly. For example, if improving legal protections of citizens' property rights is easier to accomplish politically than strengthening judicial checks on executive authority—for instance, because the stakeholders who would oppose the former reforms tend to be less entrenched than those who would oppose the latter—changes in countries' economic institutions are more likely to spread to their neighbors than changes in their political institutions and vice versa.

Third, to the extent that certain kinds of institutions are more easily "transportable" between countries, it's reasonable to expect changes in those kinds of institutions to spread more strongly. For example, if some trade policy's ability to produce beneficial effects is generic, i.e., tends not to depend heavily on particular geographic, cultural, or other country-specific factors, but more frequent elections' ability to produce beneficial effects is context specific, i.e., tends to depend heavily on such factors, changes in countries' economic institutions are more likely to spread to their neighbors than changes in their political institutions and vice versa.

Another possibility is that there are no significant, systematic differences between economic and political institutions on any of the dimensions described above. In this case we would expect economic and political institutions' spread rates to be similar. Alternatively, a

country's ability to reform its political institutions in a particular manner may depend on its ability to reform its economic institutions in a particular manner as well or vice versa. For example, improving political-party competition, which would enhance a country's degree of political freedom, may necessitate improving the strength of its citizens' property rights, which would enhance its degree of economic freedom. If this tends to be the case, we would expect to find changes in economic and political freedom spreading at a similar rate between countries.

A priori, each of the scenarios described above is plausible. Our goal below is to shed light on which of those scenarios might dominate empirically by comparing the spread rates of capitalism and democracy.

3 Data and Empirical Strategy

To investigate capitalism's spread rate we follow Leeson and Dean (2009) who use spatial econometrics to estimate a spatial autoregressive (SAR) and spatial error (SEM) model. The SAR model considers how explained changes in capitalism spill over onto geographic neighbors:

$$\Delta\mathbf{E}_t = \alpha + \rho\mathbf{W}\Delta\mathbf{E}_t + \mathbf{E}_{t\text{-}5}\beta + \mathbf{X}\omega + \mathbf{\nu}_t$$

where $\Delta\mathbf{E}_t$ is an N×1 vector that measures countries' changes in economic freedom between year $t - 5$ and year t. $\mathbf{E}_{t\text{-}5}$ is an N×1 vector that measures countries' lagged levels of economic freedom—i.e., the level of economic freedom that prevailed in each country in the first year of the five-year period over which countries' changes in economic freedom are calculated. $\mathbf{X}$ is an N×K matrix of exogenous variables that include comprehensive year-specific fixed effects and comprehensive country-specific fixed effects to control for as many factors as possible besides capitalist spillover that might affect countries' changes in economic freedom. $\mathbf{W}$ is an N×N

spatial weight matrix based on first-degree contiguity (bordering geographic neighbors). ρ is the spatial autoregressive coefficient. It measures the spread of changes in economic freedom between geographic neighbors. If capitalism spreads, ρ should be positive and significant. $\mathbf{v}_t$ is an N×1 vector of IID random errors.

The SEM model considers how unexplained changes in capitalism spill over onto geographic neighbors:

$$\Delta\mathbf{E}_t = \alpha + \mathbf{E}_{t\text{-}5}\beta + \mathbf{X}\omega + \varepsilon_t; \ \lambda\mathbf{W}\Delta\varepsilon_t + \boldsymbol{\eta}_t$$

where our parameter of interest is λ, the spatial autocorrelation coefficient, which measures capitalism's spread rate using the SEM model.

These models are identical to the ones Leeson and Dean (2009) use to examine democracy's spread rate with one minor exception created by differences in our datasets. While their models consider changes in democracy over four-year periods, the nature of our economic freedom data requires us to consider changes in capitalism over five-year periods.

We deal with islands, which don't have geographic neighbors and thus pose a difficulty for estimating the spread of capitalism between such neighbors, in the same way that Leeson and Dean do. First, we control for island status with an island dummy. To ensure islands aren't unduly influencing our results, we also re-estimate all of our regression excluding them.

Our data on economic freedom are from the Fraser Institute publication *Economic Freedom in the World 1975-2005*. Fraser measures countries' economic freedom every five years by assigning points to them on the basis of five, equally weighted categories related to government's size and activeness in the economy. Together these categories create a composite measure of economic freedom that ranges from zero (completely unfree) to ten (completely

free). For descriptions of these categories and details on the index's composition, we refer the reader to Fraser's report.

Our panel covers the years 1985-2005. Leeson and Dean's panel covers the years 1991-2001. Because we estimate capitalism's spread rate over similar years to those that they consider, we can compare the strength of capitalist and democratic spillovers at the end of the 20th and beginning of the 21st centuries. The countries in our sample are available in an online appendix.

4   Results and Discussion

Table 1 presents the results of econometrically isolating and estimating capitalism's spread rate. Economic freedom's spatial coefficient is significant across all specifications using both spatial models. Capitalism spreads between neighboring countries.

Most important, in all but one specification, difference of means tests find that the estimated difference between capitalism's and democracy's spread rate is statistically insignificant. Capitalism and democracy spread at approximately the same modest rate—on the order of 15 percent.

5   Sensitivity Analysis and Conclusion

We perform the same robustness tests for our investigation of capitalist spillovers that Leeson and Dean (2009) perform for their investigation of democratic dominoes. The most important of these, reported in Table 2, control for countries' income levels and income growth rates using Maddison's GDP data. Like Leeson and Dean, we find that adding these controls does

little to our main finding. Capitalism still spreads between neighboring countries, but modestly so.

Most important, difference of means tests conducted for the results in this table confirm again that the estimated difference between capitalism's and democracy's spread rate is statistically insignificant. Controlling for average income and average income growth, both capitalism and democracy spread at a rate on the order of 10 percent.

Our other sensitivity checks also follow those that Leeson and Dean (2009) use. We rerun our regressions excluding islands, looking at countries' levels of economic freedom instead of their changes in economic freedom, and weighting countries in the spatial weight matrix, **W**, by population size. Our results are similar. The spatial estimates in the level regressions jump around a great deal more, as they do for Leeson and Dean. But when we add two-way fixed effects they're similar to the other results. Capitalism and democracy spread at approximately the same modest rate.

References

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Table 1. The Spread of Capitalism, 1985-2005

	SAR				SEM			
	1	2	3	4	1	2	3	4
Leeson and Dean's (2009) democracy spatial coefficients	0.135*** (3.602)	0.097*** (7.864)	0.014 (0.288)	0.028*** (4.329)	0.132*** (3.559)	0.169*** (4.636)	-0.018 (0.255)	0.036*** (5.051)
Rho	0.131** (2.360)	0.119** (2.197)	0.086* (1.568)	0.076* (1.526)				
Lambda					0.132** (2.485)	0.156*** (2.962)	0.118** (2.211)	0.143*** (2.702)
Lagged freedom level		-0.120*** (5.931)		-0.510*** (11.026)		-0.133*** (6.305)		-0.519*** (11.224)
Constant	0.001*** (6.277)	0.001*** (7.350)	-0.001** (2.468)	0.001*** (6.492)	0.001*** (6.806)	0.001*** (7.951)	-0.001** (2.386)	0.001*** (6.536)
Log-likelihood	-200.832	-186.611	155.041	-101.536	-200.866	-181.995	-154.314	-99.365
R-squared	0.024	0.100	0.214	0.392	0.024	0.111	0.219	0.402
Observations	415	415	415	415	415	415	415	415
Difference of means test (p-values)	0.952	0.692	0.326	0.339	1.000	0.839	0.124	0.045

Notes: Dependent variable: change in freedom (t-statistics in parentheses). Spatial weight matrix: first-order contiguity. ***=1%, **=5%, *=10%. Variable included but not reported: island dummy in columns 1 and 2. Columns 3 and 4 include year and country fixed effects.

Table 2. Controlling for GDP p/c and GDP p/c Growth Rate, 1985-2005

	SAR				SEM			
	1	2	3	4	1	2	3	4
Leeson and Dean's (2009) democracy spatial coefficients	0.126*** (3.153)	0.110*** (8.035)	0.125*** (3.092)	0.098*** (7.917)	0.126*** (3.155)	0.108*** (8.112)	0.125*** (3.089)	0.098*** (8.003)
Rho	0.086* (1.586)	0.076* (1.893)	0.079* (1.793)	0.076* (1.812)				
Lambda					0.132** (2.485)	0.098* (1.825)	0.117** (2.191)	0.093* (1.729)
GDP p/c		-0.001** (2.181)		-0.001** (2.037)		-0.001** (1.996)		-0.001* (1.910)
GDP p/c growth rate			0.691*** (3.265)	0.669*** (3.172)			0.693*** (3.267)	0.680*** (3.215)
Constant	-0.001** (2.486)	-0.001** (2.004)	-0.001** (2.492)	-0.001** (2.040)	0.001*** (6.806)	-0.001* (1.947)	-0.001** (2.351)	-0.001* (1.942)
Log-likelihood	155.041	-152.706	-149.794	-147.731	-200.866	-152.412	-149.044	-147.314
R-squared	0.214	0.222	0.233	0.241	0.024	0.225	0.238	0.243
Observations	415	415	415	415	415	415	415	415
Difference of means test (p-values)	0.553	0.423	0.442	0.615	0.928	0.857	0.905	0.928

Notes: Dependent variable: change in freedom (t-statistics in parentheses). Spatial weight matrix: first-order Contiguity. ***=1%, **=5%, *=10%. Columns 1-4 include year and country fixed effects.