

# Contagious Capitalism\*

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## Abstract

Is capitalism contagious? Since WWI, global foreign policy has treated economic freedom/repression like a virus that spreads between countries. Most recently, the “domino theory” of freedom has played prominently in U.S. foreign policy toward Asia, Latin America, and the Caribbean during the Cold War, and the Middle East during the War on Terror. This paper investigates the spread of economic freedom between nations. Our analysis considers two potential channels of this spread: geography and trade. We estimate two models of spatial dependence using panel data that cover more than 100 countries between 1985 and 2000. We find that capitalism is in fact contagious. Countries consistently “catch” about 20 percent of their average geographic neighbors’ and trading partners’ levels and changes in economic freedom. We also explore American foreign military intervention’s ability to spread economic freedom abroad. We find that although intervention may increase freedom in U.S.-occupied countries, this freedom is not contagious. Using our estimates of freedom’s spread when it is contagious, we simulate the impact of successful Iraqi occupation on Middle Eastern freedom. Even under the most favorable assumptions, we find that U.S. occupation would minimally improve freedom in this region.

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# 1 Introduction

*The New Republic* recently called America's intervention in Iraq "the most important foreign policy decision in a generation" (Ackerman 2006). According to George W. Bush, its goal is "to spread freedom throughout the Middle East."<sup>1</sup> Bush and his supporters argue that "A new regime in Iraq would serve as a dramatic and inspiring example of freedom for other nations in the region . . . A liberated Iraq can show the power of freedom to transform that vital region, by bringing hope and progress into the lives of millions."<sup>2</sup>

This foreign policy view might be called the contagion model of economic freedom and repression. According to the contagion model, freedom/repression is like a virus that spreads between countries. Introducing freedom to a repressed country ignites the spread of freedom throughout the region, improving lives. The result is a freer, more prosperous region and world. On the other hand, an isolated pocket of repression is unlikely to remain isolated for long. Like freedom, repression in one country infects others, spreading tyranny and poverty to the region it infests.

One need not look to leaders or events as recent as George W. Bush or the War on Terror, however, to find the contagion model of economic freedom guiding foreign policy. The contagion model has a long and important history directing global geopolitics. During the Cold War, for instance, both American and Soviet leaders envisaged international affairs as a kind of domino game where tipping one country toward capitalism or socialism would lead to the adoption of a similar economic organization by its neighbors. In fact, U.S. Cold War strategists called this contagion model the "domino theory."

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<sup>1</sup>Quoted in *White House Press Release*, April 13, 2004.

<sup>2</sup>Quoted in *White House Press Release*, February 26, 2003.

In a 1954 press conference, then-U.S. President Dwight Eisenhower described what he called “the falling domino principle” behind American foreign policy as follows: “You have a row of dominoes set up, you knock over the first one, and what will happen to the last one is the certainty that it will go over very quickly. So you could have a beginning of a disintegration that would have the most profound influences.”<sup>3</sup>

In addition to laying out his foreign policy guide, Eisenhower’s “falling domino principle” explained America’s 1950 intervention in South Korea, initiated by his predecessor, Harry Truman. Truman believed that if South Korea became communist, all of Indochina would as well. In Truman’s words, it was therefore critical for the U.S. to “fight against the spread of communism.”<sup>4</sup> For this reason, South Korea was called “the first domino.”

America’s containment policy under Truman and Eisenhower aimed precisely at preventing the domino effect from spreading communism outside the regions it already dominated. From the 1950s to early 1980s, U.S. fear of socialist contagion and Soviet fear of capitalist contagion led both countries to compete vigorously to extend their respective spheres of influence in key “undecided” countries throughout the world.

In 1961, John F. Kennedy warned Americans of the imminent threat that communism in Cuba posed of infecting the entire “hemisphere.” As a result of communist contagion, he argued, “our security may be lost piece by piece, country by country, without the bring of a single missile or the crossing of a single border.”<sup>5</sup> Soon after, Lyndon Johnson applied this logic to Southeast Asia, and in 1964 used the spectre of communist contagion to justify intervention in Vietnam.

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<sup>3</sup>Presidential News Conference, April 7, 1954.

<sup>4</sup>Address at the Mechanics Hall in Boston, October 27, 1948.

<sup>5</sup>Address before the American Society of Newspaper Editors, April 20, 1961.

Richard Nixon also relied heavily upon the contagion model to guide foreign policy. In Nixon's version of this idea, geography was not the only channel through which economic freedom or repression spread. He maintained that trade was also an important carrier of the communist virus. In a 1953 speech, Nixon argued: "If Indochina falls, Thailand is put in an almost impossible position. The same is true of Malaya with its rubber and tin. The same is true of Indonesia. If this whole part of South East Asia goes under Communist domination or Communist influence, Japan, who trades and must trade with this area in order to exist must inevitably be oriented towards the Communist regime."<sup>6</sup>

Twenty years later, Nixon used the inverse of this logic to open trade relations with China. He reasoned that trade between China and the U.S. would spread capitalist ideas to the communist country, and hopefully allow China to experience some benefits of economic freedom, encouraging its leaders to reform in this direction. Nixon's reasoning echoed the words of Lyndon Johnson's Vice President, Hubert Humphrey, who eight years before declared "Freedom . . . the most contagious virus known to man."<sup>7</sup>

In the 1980s Ronald Reagan combined Eisenhower's and Nixon's spin on the economic freedom domino theory to justify American intervention in Latin America and increase economic freedom in the U.S. In adopting this strategy Reagan saw himself as initiating a two-pronged approach against economic repression and in support of economic freedom. On the one hand, Reagan argued that if communism gained a foothold in a significant country in Latin America, the rest of its region was soon to follow. In his words, the "Soviet-bloc challenge to capture Nicaragua" threatened to "spread communism throughout Central

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<sup>6</sup>Quoted in Cole (1956: 171).

<sup>7</sup>Speech, New York City, October 29, 1964.

America.”<sup>8</sup> Thus, American intervention in Nicaragua could thwart the falling dominoes of communism throughout the region. On the other hand, Reagan aimed to mould America into an example of tremendous economic freedom, a “shining city upon the hill,” which he believed would inspire observing nations to increase their own economic freedom, spreading capitalism to the unfree world.

It’s easy to find older examples of the contagion model of economic freedom guiding foreign policy as well. As Ninkovich (1994) points out, Woodrow Wilson, for example, who on the eve of WWI famously declared America’s mission as “making the world safe for democracy,” clearly had the contagion idea in mind. Wilson argued that America’s entrance into WWI “prevented a catastrophe that might have overwhelmed the world.”<sup>9</sup> Like his much later successor Richard Nixon, Wilson’s contagion model saw both geography and trade as channels of spreading freedom or repression. In 1907, Wilson argued: “Since trade ignores the national boundaries and the manufacturer insists on having the world as a market, the flag of his nation must follow him” where he trades.<sup>10</sup>

Franklin Delano Roosevelt also adhered to the contagion model of freedom. Roosevelt famously feared the spread of fascism not only through Hitler’s military conquest, but also through fascist contagion to neighboring countries Hitler did not invade. As he put it, “The danger is . . . not only from a military enemy, but from an enemy of . . . all liberty.”<sup>11</sup> Stanley K. Hornbeck, Chief Advisor for Far Eastern Affairs in the State Department under Roosevelt, likened the global politico-economic landscape to a gigantic fabric. “Disturb this

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<sup>8</sup>Radio Address to the Nation on United States Assistance for the Nicaraguan Democratic Resistance, March 8, 1986.

<sup>9</sup>Quoted in Ninkovich (1994).

<sup>10</sup>Quoted in Parenti (1995: 40).

<sup>11</sup>Presidential radio broadcast from the White House, Fireside Chat, September 11, 1941.

fabric at any point,” he argued, “and you produce disturbances throughout its entirety.”<sup>12</sup>

Although the U.S. may be the most aggressive pursuer of the freedom contagion model in foreign affairs, it is not the only country whose actions have been grounded in this idea. As noted above, the Soviet Union followed this model. Britain, France, and most other major European powers seem to have been guided by a belief in the contagion idea in many cases too. WWI, WWII, and the Cold War provide the most notable examples, but there are others as well.

More recently, countries such as Germany and France have expressed reluctance to support spreading economic freedom through military means. However, they remain staunch advocates of the importance of improving freedom in repressed nations like Iraq through peaceful methods, such as foreign aid and pressure from the international community. Increased freedom in Iraq achieved through these methods, many argue, will spill over onto surrounding nations, improving freedom throughout the Middle East. Thus, although in some cases the proposed means have changed, the contagion idea of economic freedom has not.

Despite the contagious capitalism model’s long history in global foreign affairs, no one has investigated whether economic freedom or repression in fact spreads between countries as the contagion model hypothesizes. Is capitalism contagious? If so, to what extent; and how does it spread?

This paper is the first to empirically examine these questions. We explore the spread of economic freedom between countries using spatial econometric methods. We estimate both spatial autoregressive (SAR) and spatial error (SEM) models using panel data that

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<sup>12</sup>Quoted in Ninkovich (1994).

cover more than 100 countries between 1985 and 2000. Our analysis considers two potential channels through which freedom might spread: geography and trade.

Our results suggest that capitalism is in fact contagious. Countries consistently “catch” about 20 percent of their average geographic neighbors’ and trading partners’ levels of economic freedom. Additionally, they catch about 20 percent of their average geographic neighbors’ and trading partners’ changes in economic freedom. These findings are highly robust and remain even after accounting for traditional determinants of economic freedom, such as colonial origin, legal origin, ethnolinguistic fractionalization, and continental membership.

We also explore American foreign military intervention’s ability to spread economic freedom abroad. We consider several cases of U.S. occupation with the aim of improving economic freedom. We find that although intervention may increase freedom in U.S.-occupied countries, this freedom is not contagious. Using our estimates of freedom’s spread when it is contagious, we simulate the impact of successful Iraqi occupation on Middle Eastern freedom. Even under the most favorable assumptions, we find that U.S. occupation would minimally improve freedom in this region. Taken together, our results provide strong support for the contagion hypothesis that has historically guided, and continues to influence, global foreign policy. However, they cast serious doubt on the ability of military occupation to spread freedom in economically repressed parts of the world.

## **2 Theories of Contagious Capitalism**

Economic freedom refers to the extent of capitalism in a country. Economically free countries are market oriented. Their policies and institutions safeguard private property rights and

supply public goods that facilitate production and exchange. Otherwise, however, government does not interfere with markets. Economically unfree, or repressed, countries reflect the other side of the spectrum. Government is an active player, rather than referee, of economic activity. The state highly regulates production and exchange, and central planning instead of markets directs the bulk of economic decisions.

Since the collapse of the Soviet Union, academic economists and policymakers have approached a growing consensus that economic freedom promotes prosperity. A substantial body of research documents the benefits of economic freedom against the model of central planning. For instance, Easton and Walker (1997), Hanke and Walters (1997), and Nelson and Singh (1998) show that greater economic freedom leads to higher income. Hall and Jones (1999) demonstrate that economic policies of greater freedom increase labor productivity. Coyne and Leeson (2004b), Kreft and Sobel (2005), and Ovaska and Sobel (2005) point to the positive relationship between economic freedom and entrepreneurship. Similarly, Barro (1996), Scully (1988), Dawson (1998), Rodrik (1999), and Gwartney, Lawson and Holcombe (1999) identify a strong connection between higher economic freedom and higher growth.

Related work shows that the benefits of economic freedom are not only economic. Goldsmith (1997), for example, documents the positive impact of economic freedom on human rights, suggested by Milton Friedman (1980) and Friedrich Hayek (1960). Esposito and Zaleski (1999) demonstrate that more economic freedom leads to longer life expectancies. Norton (1998a) finds a positive relationship between economic freedom and countries' overall indicators of human development. Scully (2002) provides evidence that growing economic freedom reduces income inequality. Norton (1998b) and Carlsson and Lundström (2001) show that higher economic freedom is associated with higher environmental quality. Graeff



and Mehlkop (2003) find that higher economic freedom results in lower corruption; and Tures (2003) shows that more economic freedom leads to less domestic violence.

An equally voluminous literature examines the relationship between major subcomponents of economic freedom and socioeconomic outcomes. Acemoglu, Johnson and Robinson (2001, 2002), Rodrik, Subramanian and Trebbi (2002), and Knack (1996), for example, consider the connection between security of private property rights and income. Djankov et al (2002) and La Porta et al (1999) explore the relationship between government regulation and government quality. Acemoglu and Johnson (2005), and Johnson, McMillan and Woodruff (2002) look at how the strength of private contract enforcement affects growth, investment, and financial development. La Porta, Lopez-de-Silanes and Shleifer (2002) consider how government ownership of banks affects these variables as well. Djankov et al (2003) test the relationship between state ownership of mass media and an array of development outcomes including life expectancy, infant mortality, access to sanitation, corruption, and financial development.<sup>13</sup>

This research universally confirms the positive relationship between prosperity and economic freedom generally: more freedom is associated with wealthier, healthier, and more peaceful citizens. Although they did not have access to these results, in light of the substantial benefits of economic freedom, it's easy to see why world leaders from Winston Churchill to Ronald Reagan were eager to promote the spread of economic freedom and prevent organizations of economic repression, such as communism, from proliferating.

No one has provided an explicit model of how economic freedom might in fact spread between countries. However, the rhetoric and actions of world leaders interested in increasing

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<sup>13</sup>See also, Coyne and Leeson (2004a) and Leeson and Coyne (2006).

freedom abroad suggests two channels through which this could occur: geography and trade. Historically, the idea of geographic contagion has wider support in the actions of national governments. As noted above, U.S. and Soviet activities during the Cold War certainly favored spreading capitalism or socialism through geographic neighbors. More recently, the War on Terror supported by America and its Western-European allies is grounded in this theory of contagion as well. However, as discussed above, Ronald Reagan, Richard Nixon, and Woodrow Wilson each suggested that trade was also an important carrier of the freedom/repression virus.

## **2.1 Geographic Channels**

There are three chief ways economic freedom might spread geographically: Tiebout competition, the spread of ideas and technology, and regional economic zones. Competition between governments can create strong incentives for geographic neighbors to increase domestic economic freedom, leading capitalism to spread throughout regions. If a country liberalizes its economy substantially, for instance by lowering taxes and regulation, it is likely to attract additional foreign business and direct investment through agents seeking the most profitable locations to undertake economic activity.

The firms and citizens that find this move the least costly are those in neighboring nations that share a border with the liberalizing economy. Their movement or potential movement puts pressure on neighboring countries to undertake similar market-oriented reforms to avoid losing their tax base. If these nations' neighbors in turn liberalize to avoid losing their tax base to their liberalizing neighbors, and so on, the resulting competition can lead to a

contagion effect that creates greater economic freedom throughout a region of neighboring countries.

The diffusion of pro-freedom ideas and technologies between neighboring countries could also cause economic freedom to spread geographically. Examples of freedom-enhancing ideas and technologies might be institutional or organizational arrangements that make the market more effective, or technologies that make it possible to streamline government activities. Neighboring countries can observe the activities of the countries around them and import successful ideas and technologies at a lower cost than if they had to look further abroad to find them. If one country stumbles upon freedom-enhancing ideas or technologies, its geographic neighbors become more likely to adopt them as well. Once these countries' have adopted freedom-enhancing ideas or technologies, their neighbors become more likely to adopt them, and so on. This process may cause a cascade of more capitalism whereby economic freedom in one country spreads to countries around it.

Finally, economic communities or zones may also spread economic freedom between geographic neighbors. Economic communities such as NAFTA or the EU often harmonize the economic policies and institutional arrangements of their members and require significant economic freedom as a condition of membership. In some cases, admission to these communities confers benefits on members in the form of cross-country subsidization, protection alliances, etc. These benefits raise the value of joining economic zones, creating an incentive for non-member nations to increase their economic freedom. Since economic communities are often geographically based, their presence may in this way produce spreading freedom throughout a region of neighboring countries.

## 2.2 Trade Channels

The second major channel of spreading economic freedom is foreign trade. The idea that international trade facilitates the spread of freedom is at least 150 years old. Classical liberal thinkers, such as the Frenchman, Frederic Bastiat, and the Englishman, Richard Cobden, argued in the mid-19th century that free trade stimulates the growth of economic freedom abroad by disseminating new ideas from free countries to those that are less free. These ideas could be like the ones considered above that spread geographically. They could also be new methods of production, new attitudes toward openness, and new ways of thinking about life—namely life oriented toward market exchange versus isolationist subsistence. In the 20th century, development economist P.T. Bauer (2000) advanced this argument, and noted the freedom-enhancing properties of imports in particular for Africa.

Classical liberal thinkers also emphasized the prosperity and peace that foreign trade creates. By promoting greater wealth, imports to the developing world, for example, give a taste of capitalism’s fruit to countries with less economic freedom. After experiencing some of these benefits, such nations may be more inclined to liberalize economically in their domestic sphere, increasing their economic freedom. When these nations exchange with their trading partners, they may pass some of their now higher economic freedom along as well, causing freedom to spread through trade. Though he was not a classical liberal, Richard Nixon used this argument to open U.S.-China trade in 1972. A decade before, critics also used this argument to contest John Kennedy’s declaration of a trade embargo with communist Cuba.

Modern classical liberals credit 19th-century political economist Frederic Bastiat with the phrase “When goods don’t cross borders, soldiers do.” The idea here is that there are two

ways for a nation to increase its wealth beyond the resources it has at home: foreign trade or foreign conquest. When countries come to rely upon one another for essential goods and services obtained through trade, the cost of going to war with one another rises. Nations that are less ready to use their governments to go to war may also be less ready to use their governments for domestic central planning. This leads to greater economic freedom in countries actively engaged in trade. Ronald Reagan, for example, was fond of pointing to this alleged benefit of liberalizing U.S. trade with foreign countries.

### **3 Data and Empirical Methodology**

In light of these theories of contagious capitalism we want to examine both the geography and trade as potential channels of spreading freedom. Our basic empirical strategy is therefore twofold. First, we search for spatial dependence in economic freedom across geographic neighbors over time. Second, we do the same across trading partners over time. For both analyses we construct a panel of economic freedom in 102 countries between 1985 and 2000. Appendix A lists all of the countries in our sample.

Our data on economic freedom come from the Fraser Institute's publication *Economic Freedom in the World 1975-2000*, which measures countries' economic freedom every five years. Economic freedom is an index that measures the extent of capitalism on a scale from zero to ten. Zero means that a country is completely economically unfree. Ten means it is completely free.

Five subcomponents compose this index:

1. *Size of government*, which considers the share of government's expenditures, level of

taxes, and the degree of state ownership in an economy;

2. *Legal structure and security of property rights*, which measures the quality and effectiveness of a country's legal system, such as how independent its judiciary is, the impartiality of courts, military interference with the legal system, and how well government protects private property rights;

3. *Access to sound money*, which measures the extent of inflation, and freedom to own foreign currency domestically and abroad;

4. *Freedom to trade internationally*, which measures the extent of tariff and non-tariff trade barriers, international capital market controls, exchange rate regulation or other regulation on the ability to trade internationally; and

5. *Credit, labor, and business regulation*, which covers government control of credit markets, minimum wages, price controls, time to start up a new business, the number licenses, permits and other bureaucratic approvals involved with starting and operating a business, and restrictions on hiring and firing workers.

### **3.1 Geographic Neighbors**

The first part of our analysis examines the spread of economic freedom between geographic neighbors. Spatial methods are the most natural and effective way to reliably estimate the rate of economic freedom's contagion. Unlike Ordinary Least Squares (OLS), which produces biased estimates in the face of spatial correlation, spatial methods are designed specifically to identify and measure spatial dependence. We use two spatial models for this purpose, a spatial autoregressive model (SAR) and a spatial error model (SEM). Each searches for

spatial dependence in a different way.

The Lagrangian multiplier (LM) test (Anselin 1988) determines whether spatial dependence is present and thus OLS would produce biased estimates, requiring spatial methods. It also identifies which spatial model is superior for each specification. The LM test does the former by producing significant or insignificant test statistics, and the latter by comparing the significance and then size of the LM test statistic for the SAR and SEM models in each specification. Given the same level of statistical significance, the spatial model with the larger LM test statistic is superior.

For readers unfamiliar with spatial methods, it is useful to think of the SAR model as analogous to an autoregressive (AR) time series model, but with lags over geographic distances rather than time. So, for a country  $i$ , one spatial lag refers to all of  $i$ 's contiguous geographic neighbors, two spatial lags refers to contiguous geographic neighbors of  $i$ 's neighbors ( $i$ 's neighbors that are two countries away), and so on.

The SAR model specifies each country's dependent variable, in our case economic freedom, as a function of the weighted value of economic freedom in its neighbors. It models how explained economic freedom spills over onto geographic neighbors. The SAR model allows potential freedom spillovers to flow multidirectionally rather than unidirectionally, as it would in an AR time series model. This is important since we are interested in how economic freedom may flow into and out of multiple countries, influencing economic freedom in each nation.

The SEM model is analogous to the moving average (MA) time series model for contiguous geographic neighbors that includes a spatially correlated error structure. The SEM model specifies each country's error term, in our case for economic freedom, as a function of the

weighted value of the economic freedom error term of its geographic neighbors. It models how unexplained economic freedom spills over onto geographic neighbors. Like the SAR model, the SEM model allows for multidirectional flows of influence rather than unidirectional flows as it would in an MA time series model.

Economic freedom may spread through levels of economic freedom, changes in economic freedom, or both. If capitalism is contagious in levels, we should be able to predict a country's level of freedom based on the levels of freedom in its neighboring countries. On the other hand, if capitalism is contagious in changes and a country experiences an increase (or decrease) in economic freedom from one period to the next, we should find that its neighbors' economic freedom increased (or decreased) as well.

To get at this, we estimate separate freedom-level and freedom-change models (both SAR and SEM varieties) to search for spatial dependence between geographic neighbors in both forms of potential spread. Our freedom-level SAR model takes the form:

$$\mathbf{F}_t = \alpha + \rho \mathbf{W} \mathbf{F}_t + \mathbf{F}_{t-1} \beta + \mathbf{X}_t \omega + \boldsymbol{\nu}_t \quad (1)$$

where  $\mathbf{F}_t$  is an  $N \times 1$  vector that measures countries' levels of economic freedom in time  $t$ ,  $\mathbf{F}_{t-1}$  is an  $N \times 1$  vector that measures countries' lagged levels of economic freedom,  $\mathbf{X}_t$  is an  $N \times K$  matrix of exogenous variables, and  $\boldsymbol{\nu}_t$  is an  $N \times 1$  vector of IID random errors.

We include countries' lagged levels of economic freedom in order to control for as many factors as possible besides capitalist contagion that might affect the level or change in economic freedom in geographic neighbors. This variable accounts for the fact that geographic neighbors often share a similar colonial origin, legal origin, form of government, degree of



ethnolinguistic fractionalization, and other such factors that tend to persist over time. It controls for any features of countries that contribute to their levels of freedom, which were present five years ago. In the freedom-level model, this variable's coefficient,  $\beta$ , therefore measures the extent of institutional persistence in countries from one period to the next.

$\mathbf{W}$  is an  $N \times N$  spatial weight matrix based on first-degree contiguity (bordering geographic neighbors). For example, since the United States has two contiguous geographic neighbors, Canada and Mexico, each of these countries receives a weight of  $1/2$  in the spatial weight matrix,  $\mathbf{W}$ , as America's geographic neighbors.  $\rho$ , our parameter of interest in the SAR model, is the spatial autoregressive coefficient. It measures the spread of levels of economic freedom between geographic neighbors. If capitalism is contagious in levels, this coefficient should be positive and significant.

The freedom-change SAR model is nearly identical to equation (1). The only difference is that here we replace  $\mathbf{F}_t$  with  $\Delta\mathbf{F}_t$ , which measures countries' changes in economic freedom between time  $t$  and  $t - 1$ . If capitalism is contagious in changes,  $\rho$  should be positive and significant in the change regressions.

In this and the freedom-change SEM model below, including countries' lagged levels of economic freedom not only controls for any features contributing to their levels of freedom that were present five years ago, but also allows to us determine whether there is 'freedom convergence' across countries. If countries with higher levels of freedom in the previous period grow slower in terms of freedom the following period,  $\beta$  will be negative, suggesting freedom convergence. If countries with higher levels of freedom in the previous period grow faster in terms of freedom the following period,  $\beta$  will be positive, suggesting 'freedom divergence.'

Our freedom-level SEM model takes the form:

$$\mathbf{F}_t = \alpha + \mathbf{F}_{t-1}\beta + \mathbf{X}_t\omega + \varepsilon_t; \varepsilon_t = \lambda\mathbf{W}\varepsilon_t + \boldsymbol{\eta}_t \quad (2)$$

where our parameter of interest is  $\lambda$ , the spatial autocorrelation coefficient, which measures the spread of levels of economic freedom using the SEM model.

The freedom-change SEM model is identical to equation (2), except that in this case we replace  $\mathbf{F}_t$  with  $\Delta\mathbf{F}_t$ , which measures countries' changes in economic freedom between periods. Like for the SAR model, if capitalism is contagious in either levels or changes, the spatial coefficient,  $\lambda$ , should be positive and significant in the freedom-level and freedom-change specifications respectively.

As discussed above, in all of our spatial models that consider the spread of freedom geographically, we use first-order contiguity to determine the weight received by each country in the spatial weight matrix,  $\mathbf{W}$ . However, some countries' neighbors, for instance those with more inhabitants, may be more influential than others on their economic freedom. For instance, a more populous country, such as the United States, might have more impact on Mexico's freedom than one of Mexico's other contiguous neighbors, such as Belize, which is considerably smaller than the U.S.

To address this possibility, we also try weighting contiguous neighbors in the spatial weight matrix according to population size. We do this for all specifications and samples, for both spatial models, in both their freedom-level and freedom-change forms. As it turns out, this does not matter for the geographic spread of freedom. We find nearly identical estimates as when we use simple first-order contiguity for the spatial weight matrix and so

do not report the results with population weighting separately.

Looking at the spread of freedom between contiguous geographic neighbors has multiple advantages over examining freedom's spread through other channels. First, the language in which world leaders have usually expressed the contagion model suggests that economic freedom's spread is a geographic phenomenon that affects neighboring countries which compose a region. Investigating the spread of freedom geographically allows us to directly test this version of the contagion hypothesis.

Second, using geographic neighbors eliminates the potential for endogeneity bias. Geography is exogenous. Countries cannot choose their geographic location and are thus unable to affect who they have as geographic neighbors. This removes reverse causality as a concern for our spatial estimates that explore the spread of freedom geographically.

The biggest disadvantage of investigating the spread of freedom geographically is the question of how to deal with islands, which have no contiguous geographic neighbors. Because of this, in the full sample, the geographic spatial weight matrix contains values of zero when predicting the level or changes in freedom of islands. We address this issue in two ways. First, we run our regressions on the entire sample treating islands as countries without neighbors, and include a dummy variable that controls for island status. Second, as a robustness check, we estimate both spatial models excluding islands from the sample to ensure that treating islands this way does not affect our estimates.<sup>14</sup>

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<sup>14</sup>Because of some missing observations, our sample includes a small number of “data islands”—countries that have contiguous geographic neighbors for which data are not available. Our empirical analysis treats these the same as actual islands.

## 3.2 Trading Partners

Our empirical strategy for exploring the spread of economic freedom through trade is the same as for geography, only here our spatial weight matrix is based on import shares for each country instead of first-order contiguity. For example, if China imports 1/2 of its imports from Russia, 1/5 from the United States, and 3/10 from Singapore, in the spatial weight matrix,  $W$ , we assign these countries the corresponding weights (1/2, 1/5, and 3/10) as China’s “trade neighbors.” The spatial coefficients,  $\rho$  and  $\lambda$  for the SAR and SEM models respectively, tell us whether economic freedom spreads to countries through imports from their trading partners.

To construct our new spatial weight matrix for import shares we use data from the *Statistics Canada Trade Analyzer*, which draws its trade figures from the World Bank. Our panel covers the same counties and years as the sample we use to estimate the spread of freedom between geographic neighbors. Like for geography, for trade we also consider the potential spread of freedom in both levels and changes.

Similar to geography, examining whether economic freedom is contagious via trade has both benefits and drawbacks. The most important benefit of investigating trade as potential channel of capitalist contagion is that it allows us to directly test the most commonly-given, plausible alternative avenue to geography of spreading economic freedom. Second, here we do not have to worry about dealing with the issue of islands. Although islands do not have contiguous geographic neighbors, all countries—*islands or not*—have “trade neighbors.”

The biggest drawback of considering trade as a channel of spreading freedom is the potential for endogeneity. Although countries cannot choose their location in the world and

thus cannot choose their geographic neighbors, they obviously can and do choose who they import from. Thus, what may look like economic freedom spreading between trade partners could in fact be countries simply choosing to trade with nations that have similar levels of economic freedom.

We deal with this issue in two ways. First, we are able to reduce the impact of reverse causality in our trade regressions to some extent by controlling for lagged economic freedom. If countries are importing from certain nations primarily because they share many of the same institutional structures, including the lagged freedom term will partially account for this.

Second, we can also partially circumvent the potential for endogeneity by looking at changes in freedom in addition to levels. While it might be reasonable to think that countries with similar institutional features, and thus similar levels of economic freedom, choose to import from one another more, there is no reason to think that countries choose to import more from others whose economic freedom is changing in the same way that their own is. Furthermore, if we find that economic freedom spreads at a similar or lower rate through imports compared to geography, which we know does not suffer from endogeneity, we can be more confident that reverse causality is not biasing our estimates that consider trade.

## **4 Does Freedom Spread? The Evidence at a Glance**

A preliminary look at the data lends support to the contagious capitalism model. In Figure 1 we create four maps that display economic freedom in the world between 1985 and 2000. We color-code countries according to freedom quartiles for each year. Economically more free

countries receive darker shading and economically less free countries receive lighter shading. The white countries are those for which we do not have economic freedom scores in certain years, but tend to be the least economically free nations. Prior to the collapse of the Soviet Union, for example, the countries that now make up Eastern and Central Europe did not have economic freedom scores, but were among the least economically free places in the world.

Two features stand out in Figure 1. First, there is substantial geographic correlation in economic freedom. Consider, for example, economic freedom in the world in 2000. All of North America is highly economically free. The west coast of South America is relatively free, while the rest of the continent and Central America is relatively unfree. Western Europe is highly free, while Eastern and Central Europe are highly unfree. Africa is a bit more mixed, but even here economic freedom displays strong geographic dependence. The southernmost part of Africa is moderately free, while central Sub-Saharan Africa is for the most part highly unfree.

The second feature that stands out in Figure 1 is that changes in economic freedom over time also display significant geographic dependence. Consider, for example, the pattern in the western part of South America over time. Figure 1 clearly shows capitalism growing together in the countries in this region as one moves from the map for 1985 to the map for 2000, and creeping into neighboring border portions of central South America as well. A similar pattern exists among the southern-most nations in Africa. Bordering countries in this part of Africa tend to increase or decrease in economic freedom together over time.

In the graphics, at least, there is some support for the idea that economic freedom is contagious. Regions, rather than isolated countries, are typically free, moderately free, or

unfree. Notably, the darkest areas in Figure 1, the freest countries, are also the largest trading partners with one another and similarly for the least free countries. Furthermore, the most notable changes in economic freedom over time appear to occur in bordering countries, which move together as the contagion model would suggest.

## 5 Spatial Results: Geographic Neighbors

### 5.1 Levels of Freedom

While the visual evidence is intriguing, to determine if capitalism is contagious we need to isolate the spread of economic freedom between nations econometrically. We begin this task with our simplest spatial model, which looks for spatial dependence in levels of economic freedom between geographic neighbors controlling only for island status. Table 1 contains our results. The left panel of this table presents our results using the SAR model, and the right panel presents our results using the SEM model. In both panels, the first column contains this stripped-down specification.

The spatial coefficients in both models are highly significant, suggesting the strong presence of spatial dependence in levels of economic freedom between geographic neighbors. The results of the LM tests for this specification, and all others we use in our freedom-level regressions below, confirm this and indicate that spatial methods are appropriate to obtain unbiased estimates of freedom's spread through geography. Unadjusted, a country,  $i$ , whose geographic neighbors are on average one unit freer than the geographic neighbors of some other country,  $j$ , is 0.5 units freer than  $j$ . It does not matter whether we use the SAR

or SEM model—both deliver nearly identical estimates. If one cut a hole in a map that contained no countries’ names but instead only their levels of economic freedom, he could predict the missing country’s level of freedom by taking 50 percent of the average level of economic freedom in its geographic neighbors and adding it to the constant in row three.

Different continents may each have their own equilibrium level of economic freedom. Additionally, there may be some factors specific to each continent independent of whether capitalism spreads that accounts for this spatial dependence. To control for this, in the second column of each panel we include continent dummies. Doing so reduces the size of our estimates, however they remain nearly identical across the SAR and SEM models, and highly significant. After taking continental membership into account, a country,  $i$ , whose geographic neighbors are on average one unit freer than the geographic neighbors of some other country,  $j$ , is 0.35 units freer than  $j$ .

In the third column of both panels we control for countries’ lagged levels of economic freedom. The results confirm that institutions persist. The coefficient on lagged freedom is 0.805 and highly significant. This makes sense since lagged freedom controls primarily for institutional features of nations that are in many cases determined by whether or not they share common colonial histories, such as whether they use common law or civil law, their form of government, and so on. Countries inherit about 80 percent of their previous economic freedom from period to period.<sup>15</sup>

When we control for lagged freedom, countries “catch” about 20 percent of the average level of economic freedom in their geographic neighbors. For both models the spatial coeffi-

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<sup>15</sup>In our model, each period is five years. So, the annual rate of institutional persistence is:  $0.805^{1/5} = 0.975$ .



cient remains significant at the one percent level, though here the estimates diverge slightly. In the SAR model, capitalism spreads at a rate of 0.19 between neighboring nations, and in the SEM model it spreads at a rate of 0.26. Still, both models deliver very similar estimates.

Finally, in the last column of each panel we include controls for continent membership and lagged economic freedom. The results are essentially unchanged from the specification that controls only for lagged freedom. In both models, about 20 percent of average economic freedom in countries' neighbors spreads to them.

The results in Table 1 indicate substantial spatial dependence in economic freedom between neighboring nations. Capitalism does in fact appear to be contagious. However, this contagion is not as strong as the historical foreign policy emphasis of many countries suggests.

To see this, consider a simple example, such as the United States, which has only two first-order contiguous geographic neighbors—Canada and Mexico. In 2000, economic freedom in the U.S. was 8.5, in Canada was 8.1, and in Mexico was 6.1. Average economic freedom in North America was therefore 7.57. Using the estimates from the SAR model in the third column of Table 1, we can predict what economic freedom would be in these countries and North America as a whole if instead the U.S. were a communist state similar to China, which has a level of economic freedom of 5.4.

The equation for calculating the difference between Canada and Mexico's current levels of freedom and their levels of freedom under this scenario is simply:  $\partial F_i = \rho w_{i,j} \cdot \partial F_j$ . For Canada, this means economic freedom would drop by:  $(0.194 \times 1) \times (8.5 - 5.4) = 0.6014$ , making its new freedom score:  $8.1 - 0.6014 = 7.4986$ . For Mexico this operation is slightly more difficult because unlike Canada, which has only the U.S. as a neighbor, Mexico has

three neighbors: the U.S., Guatemala, and Belize. In 2000, Guatemala and Belize had freedom scores of 6.4 and 6.2 respectively. The presence of these additional neighbors softens Mexico's freedom fall, relative to Canada's, of neighboring the U.S. when its freedom score is equal to China's, since having more neighbors dilutes the freedom/repression contagion effect coming from any one neighbor. It's easy to see this when we calculate Mexico's freedom drop:  $(0.194 \times (1/3)) \times (8.5 - 5.4) = 0.2005$ , making Mexico's new freedom score:  $6.1 - 0.2005 = 5.8995$ . If the U.S. were only as free as China, average North American freedom would therefore be:  $(5.4 + 7.4986 + 5.8995)/3 \approx 6.3$ , a drop of 1.3.

Given the rather dramatic difference in U.S. economic freedom between 2000 America and a communist America, this effect is not especially big. Even in the latter case, economic freedom in North America does not go below the world average. So, while there is strong support that the domino effect exists, its impact on overall regional freedom is relatively modest.

In Table 2, we rerun all of our regressions on a subsample that excludes islands. The results are nearly identical for all specifications in both models. Our treatment of islands in the full sample does not affect our estimates. The spatial coefficients are always significant at the one percent level, and have the same size as when we estimate the panel with islands. About 20 percent of the average level of economic freedom in a country's neighbors spread to the country. Similarly, like before, when we include lagged freedom, its coefficient is about 0.8. This suggests that about 80 percent of countries' previous levels of economic freedom persists to the next period. In other words, institutions change very slowly.

## 5.2 Examining the Residuals

As a check on the sensibility of our model we look at the residuals produced by our SAR and SEM estimates that include lagged economic freedom. Four of the five largest residuals are for the same countries in the same years in both models. Our estimates are clearly consistent. These country-years include: Nicaragua in 1995, Peru in 1995, Kuwait in 1985, and El Salvador in 1995. Economic freedom in these countries for these years is the furthest above where our model predicts it should be given their past levels of economic freedom and economic freedom in their neighbors at these times.

Significant historical events that created positive freedom “shocks” explain why our model underestimates their levels of freedom. The largest residuals are in precisely those countries and years where, owing to these unusual historical events, we would expect them to be. This is significant since it suggests that our model does a good job of explaining countries’ economic freedom based on economic freedom among their neighbors.

Consider, for instance, Nicaragua in 1995. In 1990, Violetta Barrios de Chamorro unexpectedly defeated Daniel Ortega, the leader of Nicaragua’s long-standing communist Sandinista government. Between 1990 and 1995, when economic freedom was measured in Nicaragua, there was therefore an abnormally large jump in Nicaragua’s economic freedom resulting from the demise of Nicaraguan communism.

Similar historical events explain why Peru in 1995 also has one of the largest residuals. In 1990, Peru elected economist Alberto Fujimori president and then reelected him again 1995. Fujimori dedicated the Peruvian government to eradicating the Shining Path, the deadly communist terrorist group that had menaced and murdered Peruvians since the 1980s. In

1992, Fujimori's government captured the Shining Path's leader, Abimael Guzman, reducing the Shining Path from a major Peruvian threat to small and uninfluential crew of Marxist agitators.

In 1995, pro-freedom shocks also hit Uganda, another country in the top five residuals from our estimates. In 1995, under Yoweri Museveni, Uganda introduced its first constitution that established democratic constraints on government. The same year, Uganda reelected Museveni who undertook substantial market-oriented reforms, including large-scale privatization of state-owned enterprises and drastically reducing the size of Uganda's government workforce.

We also look at the smallest five residuals from our estimates. They are again the same for both the SAR and SEM models. These include: Peru in 1985, Myanmar in 1990, Sierra Leone in 1985, Nicaragua in 1985, and Kuwait in 1990. Economic freedom in these countries for these years is the furthest below where our model predicts it should be given their past levels of economic freedom and economic freedom in their neighbors at these times. Like our largest residuals, our smallest residuals also correspond to the cases we would expect to have abnormally low levels of economic freedom. Here, these are cases in which historical events in these countries created large anti-freedom shocks.

For example, in 1985, Alan Garcia was elected ruler of Peru. As is well-known, Garcia pursued an explicitly anti-liberal economic agenda upon taking office, including unexpectedly nationalizing all Peruvian banks, hyperinflation, and introducing measures to prevent the inflow of foreign capital to Peru. Garcia, who actively denounced the "evils of capitalism," artificially depressed economic freedom in Peru. The work of Hernando de Soto (1989) and others documents this history.

The situation was similar in 1990 Myanmar and 1985 Nicaragua. In 1990, Myanmar was at the height of its economic repression under the rule of a military junta led by communist General Ne. Similarly, in 1985 Nicaragua had reached the zenith of its economic repression under Ortega just before his removal from power discussed above. The sensibility of these residuals and the largest ones considered above strengthens our confidence that our spatial models do a good job of estimating the spread of freedom geographically.

### **5.3 Changes in Freedom**

In addition to thinking about how levels of economic freedom spread between neighboring countries, it is also reasonable to consider how changes in countries' economic freedom might spread between neighbors. For example, an endogenous reform in one country that makes it more free may have positive spillover effects on surrounding countries that cause them to introduce reforms, making these countries more free as well.

The improvements in economic freedom in China over the past decade, for instance, may have set forces in motion forces per the domino theory that encouraged greater freedom in surrounding countries in Eastern Asia. In fact, some have argued that the increase in economic freedom in China and South Korea over the last ten years is partly responsible for the economic boom enjoyed by the East Asian Tigers.

To get at these issues, in Table 3 we perform the same spatial analysis as above, this time looking at the spread of capitalism geographically through changes in economic freedom. Our results are remarkably similar to those in Tables 1 and 2. In general, countries "catch" about 20 percent of the average change in economic freedom in their geographic neighbors.

Column 1 presents the results of the specification that controls only for islands. The spatial autoregressive and autocorrelation coefficients are both 0.21 and highly significant. So are the LM test statistics for both models in this specification and all others we use in our freedom-change regressions that examine geography, again confirming the presence of spatial dependence and appropriateness of our spatial models. When we include continent dummies in the second column, the spatial coefficients remain 0.21 in both models. Controlling for countries' lagged levels of economic freedom in column 3 does not affect the spatial autoregressive coefficient, which stays the same at 0.21, but causes the spatial autocorrelation coefficient to rise slightly to about 0.26. Interestingly, the coefficient on lagged economic freedom is negative here. Countries with higher levels of freedom in the previous period grow slower in terms of freedom the following period, and vice versa. This suggests that there is 'freedom convergence' across countries.

When we control for islands, continents, and lagged freedom in column 4, the spatial coefficients are again nearly the same. In the SAR model, 22 percent of the average change in a country's geographic neighbors' economic freedom spreads to it, and in the SEM model 25 percent of this change spreads from its geographic neighbors to the country.

The highly significant 0.2 spatial coefficient that consistently reemerges in our estimates provides strong evidence that capitalism is contagious, but also confirms that this contagion is not especially strong. A country's geographic neighbors would need to produce an average increase (decrease) in economic freedom of five (on scale from zero to ten) in order to induce a one point rise (drop) in economic freedom in the county in question. To put a dramatic change in freedom like this in perspective, consider the fact that no country in the world—including those transitioning from socialism—has experienced a change in freedom this large

since we began measuring economic freedom in 1970. The largest change has been in Uganda, where economic freedom has risen 3.9 points since 1975.

Of course, this does not mean that rising (or falling) economic freedom in one country has no impact on changes in freedom in neighboring countries in the region. If endogenous pro-market reforms in a country with only one contiguous neighbor (which had the reforming nation as its only neighbor) caused its economic freedom to increase by one point—a fairly common change in freedom—economic freedom in its neighbor would rise by 0.2. This is a modest, but still measurable and significant effect.

Like for our freedom-level model, here we also check that including islands in the sample does not exert undue influence on the results. Thus, we rerun all of our freedom-change specifications excluding islands from the sample. Table 4 presents these results, which are completely unchanged. Changes in economic freedom consistently spread between geographic neighbors at a rate of about 20 percent regardless of the specification, sample, or spatial model we use. The fact that this finding is the same one we find for the spread of levels of economic freedom strengthens our confidence in both results.

## **6 Spatial Results: Trading Partners**

### **6.1 Levels of Freedom**

This section considers the spread of economic freedom through foreign trade, using import shares to construct our spatial weight matrix,  $\mathbf{W}$ . Table 5 presents the results of our spatial models that examine whether countries can catch capitalism through trade. As before, the

left panel contains our SAR results and the right panel has our SEM results. Overall, the coefficients of interest for trade are somewhat larger than for geography, but are equally consistent across spatial models.

Column 1 in each panel presents our spatial specification without any controls. The results are nearly identical to those in Tables 1 and 2 that looked at freedom's geographic spread. Unadjusted, a country,  $i$ , whose import partners are on average one unit freer than the import partners of some other country,  $j$ , is 0.52 units freer than  $j$ . Like for geography, the spatial coefficients and LM tests confirm the presence of highly significant spatial dependence in this, and all of our other freedom-level trade specifications considered below. Column 2 includes continent dummies, which here produces a somewhat larger effect than for geography. In the SAR model the spatial coefficient is about 0.47 and in the SEM model it is about 0.53.

When we control for lagged economic freedom in the third column the spatial coefficient drops substantially, as it did above—here to about 0.3 in both models. About 30 percent of the average level of economic freedom in nations exporting to a country spreads to the importing country. The coefficient on lagged freedom retains its size from our previous regressions that looked at freedom's spread through geography. 80 percent of countries' previous levels of economic freedom persists over time, consistent with the fact that institutions tend to change slowly. Like in the case of geography in Tables 1 and 2, adding controls for continent membership to lagged freedom in column 4 leaves these results essentially unchanged.

At face value, it appears that levels of economic freedom spreads about ten percentage points more strongly through trade than through geography. However, we should interpret this larger coefficient with caution, since the larger effect for trade may reflect endogeneity



that we could not remove in the freedom-level regressions. More definitively, what we can take away from these results is their striking similarity to those for geographic neighbors. The spatial coefficients in both models for geography and trade are always highly significant and between 0.2 and 0.3. This closeness strengthens our confidence that we have correctly identified the extent of capitalism's contagion.

Although islands pose no special problem in the trade regressions, since we reestimated our panel that analyzed freedom's spread through geography on a subsample excluding islands to check for consistency across our estimates, we do so here as well to ensure the robustness of our trade results for this subsample. Table 6 presents these estimates, which like for geography are nearly identical to those we find using the full sample. In the complete specification in column 4 that excludes islands from the sample, depending on the spatial model we use, the spatial coefficients are between 0.2 and 0.3. Our results are robust. Between 20 and 30 percent of the average level of economic freedom in the nations a country imports from spills over onto the importing country.

## **6.2 Changes in Freedom**

Next we consider if changes in economic freedom spread through trade. Table 7 presents our results using the full sample of countries. What stands out here is the consistency of the spatial estimates. In all specifications for both models, changes in economic freedom spread between trading partners by about 0.20 to 0.30—or 20 to 30 percent. The spatial coefficients and LM tests again confirm the presence of highly significant spatial dependence in all of our freedom-change trade specifications.

Notably, the spatial coefficient in the fully-specified SEM model remains about 0.3, its size in the freedom-level regressions for trade. Since endogeneity is less likely to affect our freedom-change regressions for trade than our freedom-level regressions for trade, this makes us less suspicious that reverse causality is responsible for the slightly stronger spread of freedom through trade compared to geography mentioned above.

In Table 8 we rerun our change regressions for trade excluding islands from the sample. The results are nearly identical. The spatial coefficients are highly significant in all specifications for both models and have the same size as before: 0.205 in the fully-specified SAR model and 0.295 in the fully-specified SEM model. Taken together, the trade results are strongly robust and deliver highly consistent estimates that mirror those for geography. About 20 percent of countries' average geographic neighbors' and trading partners' levels and changes in economic freedom spread to them. Capitalism is in fact contagious, though this contagion is not as strong as U.S. or Soviet foreign policy concerns during the Cold War, for instance, seemed to suggest.

## **7 Spreading Economic Freedom Through Intervention**

### **7.1 U.S. Military Occupation**

A natural question that arises in light of these results is whether freedom spreads differently when its source is foreign military intervention. Can, for example, U.S. occupation abroad in strategic, less free countries spark similar freedom spillovers to other countries in the region? This question is especially interesting to consider given the controversial foreign

policy guiding America in the Middle East.

On the one hand, U.S. foreign policy past and present displays tremendous faith in the ability of military occupation to improve economic freedom abroad. According to proponents of this policy, military intervention is needed to exogenously provide economic freedom to countries that refuse to provide it internally. The failure to internally reform could be because of a tyrannical government that refuses to do so, such as was argued in the case of U.S. occupation of Panama, Haiti, and Iraq, or because of civil conflict, as was argued in the case of U.S. occupation of Somalia in the early 1990s. In such cases, advocates argue, exogenous institutional imposition through military occupation is the only way to improve freedom in the unfree country, enabling freedom to spread throughout the region.

On the other hand, recent research that examines the transportability of institutions across countries, as well as the experiences international development agencies such as the IMF and World Bank over the past 15 years, suggests that institutions have difficulty ‘sticking’ where outsiders try to exogenously impose them abroad. When institutions that promote greater economic freedom emerge endogenously, for instance per the channels discussed in Section 2, they tend to take hold in the nation they emerge in and, as our results above suggest, spread greater freedom to geographic neighbors and trading partners. On the other hand, where these institutions are exogenously imposed in foreign countries, their rate of successful take-hold tends to be much weaker.

Researchers have offered a number of explanations for this pattern. Easterly (2002, 2006), for example, argues that weak or perverse incentives of foreign aid recipients in the developing world prevents them from genuinely committing to institutions of greater economic freedom. North (1990, 2005) suggests that institutions of improved freedom cannot be exogenously

imposed abroad with success in most instances because of institutional path dependence rooted in both economic factors and culturally-embedded mental attitudes that must undergo change before new institutions can take hold.

Hayek's (1994) arguments related to local knowledge have also been used to explain the general failure to exogenously impose institutions of greater freedom in unfree countries. According to this view, foreign institutional designers and implementers simply don't have the required knowledge of local circumstances to effectively transplant new institutions in distant, largely unknown societies. Similarly, Coyne (2006), and Boettke, Coyne and Leeson (2006) argue that institutional stickiness depends upon proposed new institutions' relationship to previously-existing, informal institutional arrangements. Where a new proposed institution is inconsistent with these arrangements, it will not take hold. Existing informal institutional arrangements severely constrain the degree to which new, exogenously-imposed institutions can deviate from the institutions already in place in the host country. Substantial institutional reforms that would improve economic freedom must therefore emerge endogenously rather than exogenously.

For these reasons, exogenously-imposed institutions of greater economic freedom may take hold only weakly or not at all in the foreign countries they are transported to. If this is the case, any attendant increase in economic freedom resulting from exogenous institutional imposition may spread only very weakly, or not at all, to neighbors. Thus, military occupations by countries such as the United States that attempt to increase economic freedom in repressed countries like Iraq may be unable create contagious freedom like the endogenously-generated sort, which spreads between countries.

On the other hand, there are a few notable examples of exogenous institutional imposition

that clearly were successful. The most obvious of these are Germany and Japan, which the U.S. occupied for some years immediately following WWII. In both countries, institutions of greater economic freedom were successfully transplanted, evidenced by their persistence to this day. The strength of pro-freedom take-hold in Germany and Japan suggests that freedom-creating occupation can be successful and at least in principle generate increases in freedom strong enough to potentially spread to other countries.

To examine these issues we consider instances of U.S. military intervention abroad with the stated goal of achieving greater economic freedom in the occupied country, and hopefully the greater region it exists in. Lawson and Thacker (2003) identify three cases of U.S. military occupation related to this goal since 1985 when our panel begins. Data limitations allow us to consider two of them: Panama, which the U.S. occupied in 1989 and exited in 1995, and Haiti, which America occupied in 1994 and left in 1996.

U.S. occupation clearly has the geography contagion channel in mind rather than the trade channel. So, to investigate the effectiveness of military intervention in spreading freedom, we use our spatial model for geographic neighbors. Specifically, we estimate:

$$\begin{aligned} \mathbf{F}_t = & \alpha + \rho \mathbf{W}\mathbf{F}_t + \mathbf{F}_{t-1}\beta_1 + \mathbf{X}_t\omega + \textit{Panama}\beta_2 \\ & + \textit{Haiti}\beta_3 + \sigma \textit{Panama}\mathbf{W}_P\mathbf{F}_{t,P} + \theta \textit{Haiti}\mathbf{W}_H\mathbf{F}_{t,H} + \boldsymbol{\nu}_t \end{aligned} \quad (3)$$

where *Panama* and *Haiti* are binary variables for Panama and Haiti that measure whether U.S. occupation successfully increased economic freedom in Panama and Haiti. These variables are equal to one if a country is Panama or Haiti respectively in a year following the end of U.S. military occupation in that country, and zero otherwise.  $\textit{Panama}\mathbf{W}_P\mathbf{F}_{t,P}$

and  $Haiti\mathbf{W}_H\mathbf{F}_{t,H}$  are interaction terms that measure the spread of economic freedom post-U.S. intervention in Panama and Haiti’s geographic neighbors.

$\mathbf{W}_P$  and  $\mathbf{W}_H$  are spatial weight matrices for Panama and Haiti respectively.  $\mathbf{W}_P$  contains only Panama’s geographic neighbors, and  $\mathbf{W}_H$  contains only Haiti’s geographic neighbors.  $\mathbf{F}_P$  and  $\mathbf{F}_H$  are matrices that contain economic freedom in Panama and Haiti’s geographic neighbors respectively for years following the end of U.S. military occupation in Panama and Haiti.  $\mathbf{W}$  is the world spatial weight matrix covering all other countries in our sample and  $\mathbf{F}$  is the economic freedom matrix for these countries.  $\rho$  is the world spatial coefficient, which measures the spread of freedom between all countries except Panama, Haiti, and their neighbors.  $\sigma$  and  $\theta$  are Panama and Haiti’s respective “intervention spatial coefficients,” which measure the spread of freedom following U.S. occupation in Panama and Haiti to their geographic neighbors.

We use the SAR model to estimate the effectiveness of spreading economic freedom through U.S. military occupation. The SEM model is inappropriate here for several reasons. First, it presents obstacles for constructing the spatial weight matrices for our interaction terms. Second, it has not produced substantially different estimates from the SAR model in our previous regressions. Finally, the SEM model does not allow for unambiguous interpretation in this case.

In contrast, the significant benefit of using the SAR model here comes from the straightforwardness of interpretation. If U.S. military intervention successfully increased economic freedom in Panama or Haiti, the dummy variables *Panama* and *Haiti* should be positive and significant. Panama, Haiti, and their geographic neighbors are excluded from the world spatial weight matrix. Instead the spread of freedom from Panama and Haiti to their neighbors

is captured through the interaction terms, which include separate spatial weight matrices for both countries that include only their geographic neighbors. We can therefore interpret the coefficients on these interaction terms as the total contagion effect of U.S. military occupation in Panama and Haiti. If U.S. military intervention affects the spread of economic freedom in Panama and Haiti's respective regions in the way that economic freedom spreads when it is the result of endogenously-created economic freedom, the intervention spatial coefficients should be positive and significant.

Another nice feature of the SAR model here is that we can directly compare the size of the intervention spatial coefficients,  $\sigma$  and  $\theta$ , which tells us the rate of freedom's spread when it is the result of U.S. military occupation, with the size of the global spatial coefficient,  $\rho$ , which tells us the rate of freedom's spread when it is results from endogenous forces. If U.S. military intervention leads economic freedom to spread more strongly than its endogenous rate,  $\sigma$  and  $\theta$  should be larger than  $\rho$ , and vice versa. Alternatively, freedom may spread at the same rate whether its source is exogenous or endogenous, in which case we should expect roughly equal coefficient sizes between  $\sigma$  and  $\theta$ , and  $\rho$ .

Table 9 presents our results. The coefficient on the Panama and Haiti dummies are both positive and significant, suggesting that economic freedom in Panama and Haiti did in fact increase following U.S. military occupation. In Figure 2 we display this graphically. Here we include Panama and Haiti's economic freedom scores for all available years. These are five-year intervals until 2000 and then annually for the next three years. The dashed vertical lines mark the period of U.S. occupation in each country.

As the Figure displays, the U.S. government spent significantly more time attempting to increase freedom in Panama than it did in Haiti. It is easy to see in both graphs that

economic freedom is higher after U.S. occupation than before it. In the case of Panama, the increase in economic freedom is quite dramatic, though it appears that freedom was on the rise in Panama well before U.S. intervention. In Haiti, the rise in economic freedom is not nearly as strong, but the increase's timing corresponds closely to the timing of U.S. intervention. The movement of economic freedom before, during, and after U.S. intervention in Haiti makes a much more compelling case that American occupation is responsible for improved economic freedom than in Panama.

However, returning to Table 9, things are not so optimistic for freedom's spread through U.S. occupation. Although the intervention spatial coefficients are positive, they are insignificant and considerably smaller than the global spatial coefficient. This finding is broadly consistent with the 'institutional stickiness' reasoning discussed above. While U.S. occupation of Panama and Haiti increased each country's economic freedom, its weakness resulting from its exogenous source created only a very weak (positive but insignificant) contagion effect. Notably, the global spatial coefficient ( $\rho$ ) is nearly identical to our previous results: highly significant and close to 0.2.

This suggests that economic freedom in Panama and Haiti created exogenously by U.S. occupation is not contagious like our previous analysis indicates endogenously-created economic freedom is. If these results can be generalized, they imply that American occupation does not create the freedom domino effect in repressed regions hoped for by U.S. leaders. On the other hand, if the goal of American leaders is simply to increase economic freedom in isolated nations, these results provide limited support that at least in some cases U.S. intervention is effective.



## 7.2 Iraqi Freedom and the Middle East

Although our findings above suggest that freedom is not contagious when it is the result of U.S. military occupation, it is interesting to explore what impact the U.S. occupation of Iraq would have on freedom in the Middle East if it were able to improve Iraqi freedom and generate freedom that is contagious. Using the spatial coefficient estimates from our geography and trade regressions, we simulate the effects of a successful U.S. occupation of Iraq on Middle Eastern economic freedom.

Our simulations allow economic freedom to spread its rate when it is the result of endogenous freedom-enhancing reforms identified in our freedom change-regressions for both geography and trade in Tables 3 and 4, and 7 and 8 respectively. This rate was  $\approx 0.20$  in the case of geographic spread and  $\approx 0.30$  in the case of freedom's spread through trade. This establishes an upper and lower bound for the strength at which an increase in freedom in one country spreads to its neighbors based on our previous results.

We perform two simulations that replicate the impact of an increase in Iraqi freedom on freedom in the Middle East. Both simulations replicate the dynamics of our freedom-change spatial model of geographic spread. Recall that these dynamics are similar to the ripples that spread throughout a pond when a stone is dropped in it. The 'stone' in this case is U.S. occupation that generates freedom-enhancing ripples, the pond is the Middle East, and the stone's entry point is Iraq. The spread dynamics in the spatial model are different, however, in that unlike a stone dropped into a pond, which creates unidirectional ripples, in the spatial model, 'freedom ripples' move bidirectionally.

In the first 'round' of spread, a fraction of the increased freedom in Iraq resulting from

successful U.S. occupation (determined by  $\rho$ ) spreads to Iraq's first-order (contiguous) neighbors. In the second round, a fraction of these countries' increase in freedom spreads to their neighbors, which include Iraq and others. Thus, countries receive 'freedom feedback' as the increase in freedom makes its way across the region. In the third round, a fraction of these nations' increase in freedom spreads to their neighbors, and so on throughout the Middle East. The size of the freedom boost each nation receives from its neighbors' increased freedom diminishes in strength in each round of the spread, until after enough rounds the compounding rate of decay causes the freedom ripples to die out. When this point is reached, countries no longer experience increases in their freedom from the initial catalyst of increased Iraqi freedom. In our simulations this takes ten rounds.

Our simulations include all countries in the 'traditional Middle East': Egypt, Saudi Arabia, Yemen, Oman, United Arab Emirates, Qatar, Jordan, Israel, Lebanon, Syria, Iran, Turkey, Kuwait, and Iraq.<sup>16</sup> The first simulation lets occupation-created increases in freedom spread at the same rate as endogenously-created increases in freedom through geography,  $\approx 0.20$ . For this simulation we assume that U.S. occupation of Iraq initially causes Iraqi economic freedom to increase 3.5 points. To put an improvement of this size in perspective, consider the fact that it is 13 percent larger than the increase communist China would require to become as economically free as the United States.

Our second simulation lets occupation-created increases in freedom spread at the same rate as endogenously-created increases in freedom through trade,  $\approx 0.30$ . In this simulation we assume that U.S. occupation of Iraq initially causes Iraqi freedom to increase four points.

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<sup>16</sup>Two islands are also typically included in the 'traditional Middle East': Cyprus and Bahrain. We exclude these from our simulation, however, since they have no contiguous geographic neighbors, they could be included, though they would receive values of zero in Table 10, and have no impact on our results.

To put a freedom increase of this magnitude in perspective, consider the fact that such a change in economic freedom would be about 2.5 percent bigger than the largest recorded increase in economic freedom in the world over any period of time—a record currently held by Uganda, which as noted previously has increased in freedom 3.9 points over the past 30 years. Thus, our simulations consider the absolute best conceivable outcome of U.S. occupation in Iraq. In reality, a one point increase in Iraqi freedom following American occupation would be enough for most observers to count the mission, at least in terms of freedom, wildly successful.

Table 10 presents the resulting changes in economic freedom in each country in the Middle East and the average regional change for both simulations. The results are not promising for those who hope to increase freedom in the Middle East through increasing freedom in Iraq. In both simulations, even assuming highly unrealistic improvements in Iraqi freedom as a consequence of American occupation, the impact on each country and the average Middle Eastern nation is very small.

In column 1, where we use the 0.20 spatial coefficient and assume an occupation-caused increase in Iraqi freedom of 3.5 units, the greatest freedom beneficiary (after Iraq) is Iran, whose freedom increases only 0.38 units. As one would expect, the biggest beneficiaries of Iraq's improved freedom are Iraq's first-order neighbors, with the benefit weakening as countries become separated from Iraq by an increasing number of countries. As one would also expect, countries with fewer geographic neighbors also receive a larger benefit from Iraq's increase in freedom since they have fewer neighbors to dilute the impact of Iraq's improvement on their own change in freedom.

Note that Iraq's overall freedom increase is 3.55—larger than the occupation-caused ini-

tial jump in Iraqi freedom of 3.5. This is because of the pro-freedom feedback discussed above that spreads back to Iraq through bidirectional freedom flows when Iraq's initial increase in freedom spreads to its neighbors. In the last two lines of column 1 we present the overall, average regional increase in freedom resulting from successful U.S. occupation of Iraq. Including Iraq's improvement in freedom, the average increase in Middle Eastern freedom is only 0.37 points. Excluding Iraq, it is only 0.12 points. To put the smallness of this average change in perspective, it is less than a third of the freedom difference between the United States and Canada.

Column 2 presents the results of our simulation that uses the 0.30 spatial coefficient and assumes an occupation-caused increase in Iraqi freedom of four units. Iran is again the largest beneficiary in the Middle East of Iraq's improvement. Its freedom increases about 0.70 units, a more respectable, but still rather small improvement. More importantly, however, the average freedom increase in a Middle Eastern country remains extremely small. Including Iraq, the average freedom increase in the Middle East is 0.51 units. Excluding Iraq, it is only 0.24 units. To put the smallness of this change in perspective, it is about 2/3 of the freedom difference between the United States and Canada.

These results suggest that *even if* U.S. occupation in Iraq created contagious freedom that spread with the same strength as endogenously-created improvements in freedom, which our findings in Table 9 suggest it does not, *and* U.S. occupation created unprecedented improvements in economic freedom in Iraq, occupation would still have only a small impact on economic freedom in the Middle East. Freeing Iraq does not appear to be an effective strategy for freeing the region.

## 8 Concluding Remarks

The history of global foreign policy is strongly grounded in the idea that economic freedom or repression spreads between countries. The contagious capitalism model has explicitly or implicitly guided foreign policy for some of the most important global events in the 20th and 21st centuries. WWI, WWII, the Cold War, and most recently the War on Terror have all, to one extent or another, been influenced by the belief that modes of politico-economic organization are infectious like viruses. Though world leaders rarely explicitly identify the mechanisms by which economic freedom or repression is supposed to be contagious, their actions and rhetoric suggest two chief channels through which this allegedly happens: geography and trade.

This paper investigated both of these potential channels of spreading economic freedom. We searched for spatial dependence in economic freedom between geographic neighbors and trade partners using a panel of more than 100 countries between 1985 and 2000. Our results confirm that capitalism is contagious through both geography and trade. Furthermore, we found that capitalism is contagious in levels and changes.

Significantly, economic freedom spreads at about the same rate through both geography and trade, in both levels and changes. Countries “catch” about 20 percent of their average geographic neighbors’ and trading partners’ levels and changes in economic freedom. This result is remarkably robust and remains after controlling for persistent institutional and other features of countries, such as colonial origin, legal origin, ethnolinguistic fractionalization, and continent membership. It is also true regardless of the spatial dependence model used to estimate freedom’s spread, with and without islands in our sample.

Although these results provide strong evidence that freedom spreads, they also suggest freedom does not spread as strongly as the domino theory behind U.S. and Soviet foreign relations during the Cold War suggested. Substantially affecting economic freedom in a region requires relatively large differences in freedom in key countries. The idea that capturing the friendship or alliance of a few major nations would substantially alter the state of economic freedom in the rest of the region does not appear to be correct.

Additionally, we explored whether U.S. military intervention also creates contagious capitalism. Unlike endogenously-created economic freedom, our results suggest that exogenously-created economic freedom through American occupation does not spread to neighboring countries. While our investigation of U.S. intervention in Haiti and Panama found some evidence that American occupation increased economic freedom in Haiti and Panama, our results that look at the contagion of this higher freedom suggest that it did not spill over onto other countries in their regions. Although these results draw on a small number of cases, they are at least suggestive that U.S. occupation aimed at spreading freedom abroad can positively impact occupied nations, but cannot create a pro-freedom domino effect among their neighbors.

While it is important to be cautious in drawing policy implications from our analysis, the results point to several conclusions. First, by liberalizing their trade with foreign nations, economically free countries can exert at least a modest positive impact on economic freedom in less free nations. Although the effect of any one country doing this is relatively small, free trade agreements that allow a number of highly free nations to coordinate trade liberalization with less free countries could have a sizeable influence on spreading economic freedom to economically repressed regions of the world.

Second, in light of what seems to be the non-contagious nature of economic freedom that has its source in U.S. military occupations, and the contagious nature of endogenously-created economic freedom, U.S. foreign policy that aims to spread economic freedom to repressed regions may be better served by working toward trade liberalization than using military force for this purpose. This is especially so given the substantially higher cost of military occupations, both in terms of financial resources and human lives, compared to trade liberalization (Coyne 2006).

Third, it appears that even if U.S. military occupation could create contagious freedom that spread with the same strength as freedom created endogenously, its effect on regional freedom would be modest at best. According to our results for geography and trade, even a successful U.S. intervention in Iraq, for instance, that both increased economic freedom in Iraq and did so in a way that led to the spread of this greater freedom to Iraq's neighbors, would only have a small impact on freedom in the Middle East.

In order for intervention to have a substantial impact on regional freedom, like with trade liberalization, it would require that a number of countries, rather than one, be involved. In the case of military occupation this would mean occupying multiple countries in the Middle East at once. This would be practically and politically difficult for a number of reasons. However, more important than this, as noted above, such a policy does not seem sensible given that a less costly and more effective alternative, namely coordinated trade liberalization, exists.

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# A Appendix

## Sample Countries

Country	Geog.	Trade	Isld.*	Country	Geog.	Trade	Isld.*	Country	Geog.	Trade	Isld.*
Algeria	X	X		Hong Kong	X	X		S. Africa	X	X	
Argentina	X	X		Hungary	X	X		S. Korea	X	X	
Australia	X	X	X	Iceland	X	X	X	Spain	X	X	
Austria	X	X		India	X	X		Sri Lanka	X	X	X
Bahamas	X	X	X	Indonesia	X	X		Sweden	X	X	
Bahrain	X	X	X	Iran	X	X		Switzerland	X	X	
Bangladesh	X	X		Ireland	X	X		Syria	X		
Barbados	X	X	X	Israel	X	X		Taiwan	X	X	X
Belgium	X			Italy	X	X		Tanzania	X	X	
Belize	X	X		Jamaica	X	X	X	Thailand	X	X	
Benin	X	X		Japan	X	X		Togo	X	X	
Bolivia	X	X		Jordan	X	X		Trin. & Tob.	X	X	X
Botswana	X			Kenya	X	X		Tunisia	X	X	
Brazil	X	X		Kuwait	X	X	X	Turkey	X	X	
Burundi	X	X		Luxembourg	X			Uganda	X	X	
Cameroon	X	X		Madagascar	X	X	X	U. Arab Em.	X	X	X
Canada	X	X		Malawi	X	X		UK	X	X	
Chile	X	X		Malaysia	X	X		USA	X	X	
China	X	X		Mali	X	X		Uruguay	X	X	
Colombia	X	X		Malta	X	X	X	Venezuela	X	X	
Congo, Dem. R.	X	X		Mauritius	X	X	X	Zambia	X	X	
Congo, Rep. of	X	X		Mexico	X	X		Zimbabwe	X	X	
Costa Rica	X	X		Morocco	X	X					
Cote d'Ivoire	X	X		Myanmar	X	X					
Cyprus	X	X	x	Nepal	X	X					
Denmark	X	X		Netherlands	X	X					
Dominican Rep.	X	X		New Zealand	X	X	X				
Ecuador	X	X		Nicaragua	X	X					
Egypt	X	X		Niger	X	X					
El Salvador	X	X		Nigeria	X	X					
Fiji	X	X	x	Norway	X	X					
Finland	X	X		Pakistan	x	x					
France	X	X		Panama	x	x					
Gabon	X	X		Paraguay	x	x					
Germany	X	X		Peru	x	x					
Ghana	X	X		Phillipines	x	x	x				
Greece	X	X		Portugal	x	x					
Guatemala	X	X		Senegal	x	x					
Haiti	X	X		Sierra Leone	x	x	x				
Honduras	X	X		Singapore	x	x	x	*Includes 'data islands'			

Figure 1. Spatial Dependence and Economic Freedom

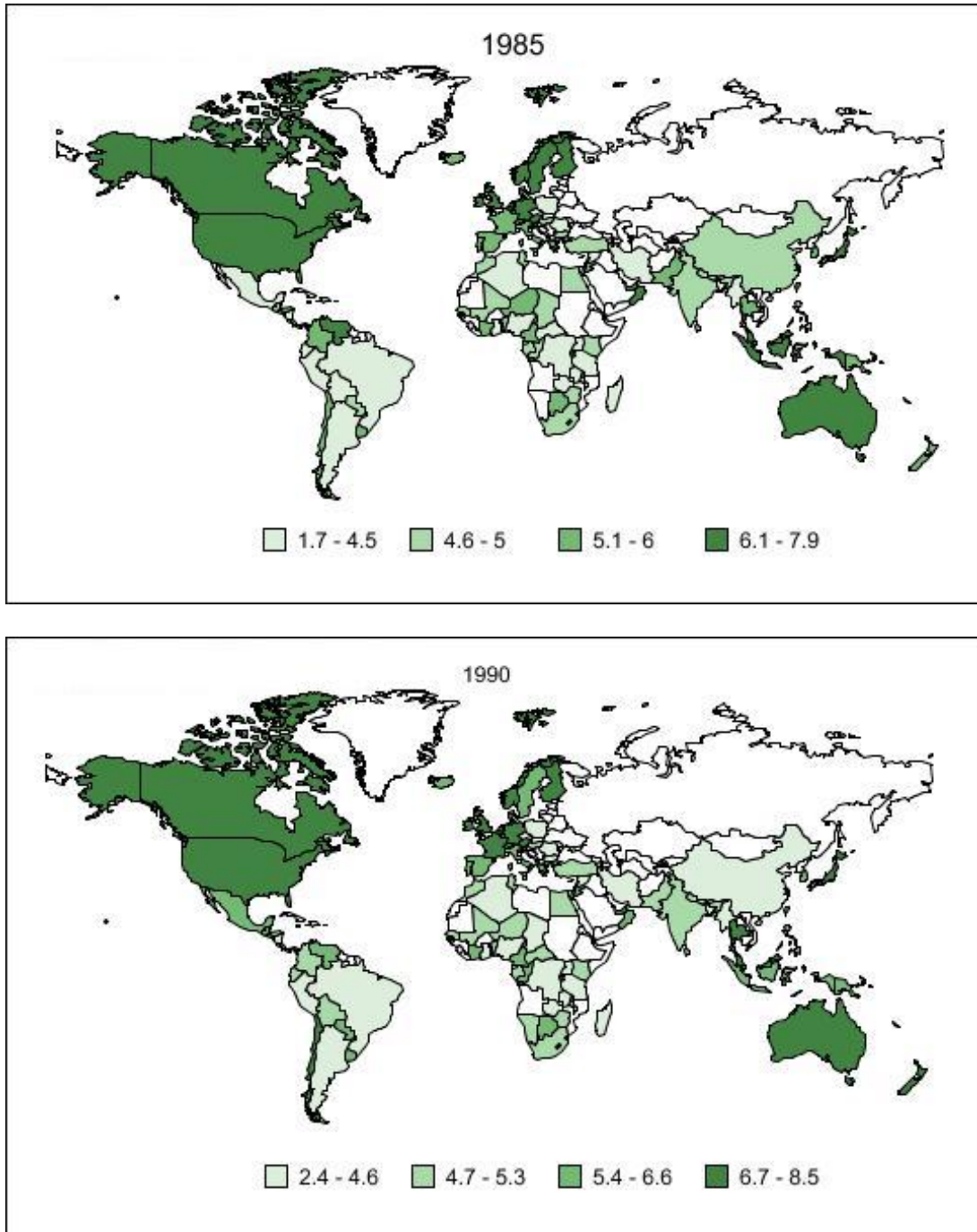


Figure 1 (cont.) Spatial Dependence and Economic Freedom



Figure 2. The Effects of Intervention: Economic Freedom in Panama and Haiti

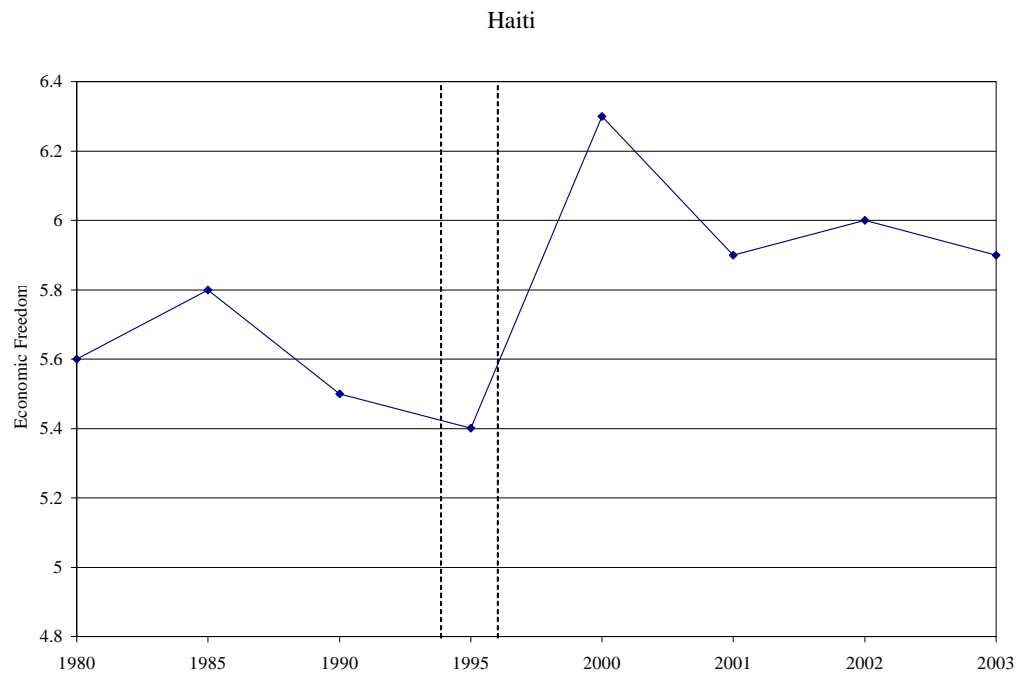
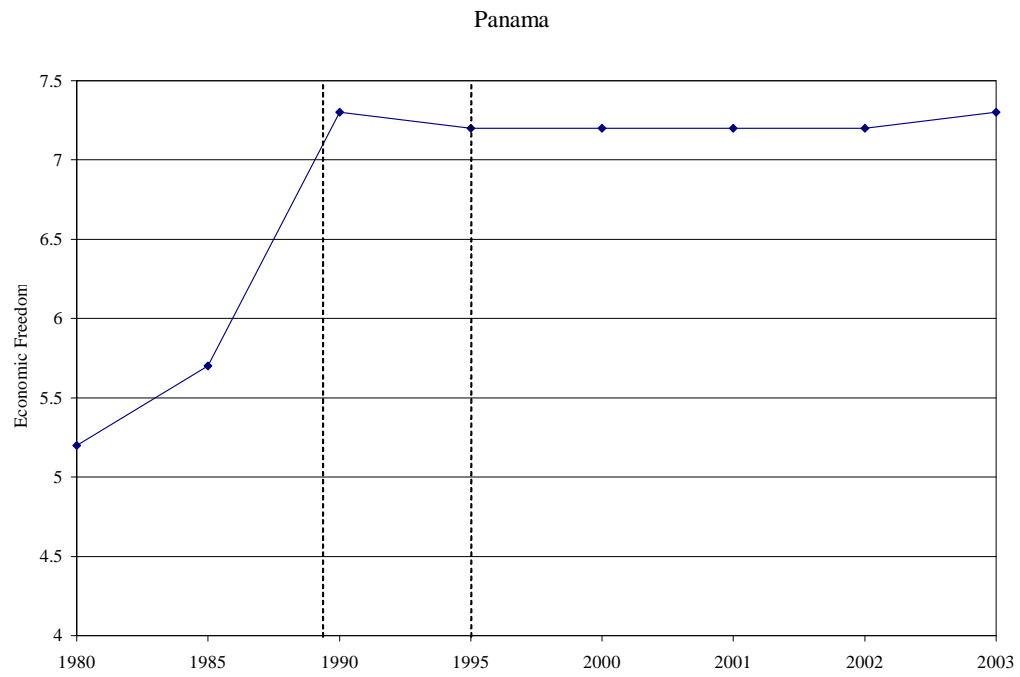


Table 1. Geographic Contagion: Level of Economic Freedom—All Observations

<i>Independent Variable</i>	SAR				SEM			
	1	2	3	4	1	2	3	4
Rho	0.496*** (11.301)	0.347*** (7.011)	0.194*** (6.197)	0.183*** (5.177)				
Lambda					0.499*** (12.093)	0.355*** (7.410)	0.263*** (5.143)	0.252*** (4.896)
Lagged Freedom Level			0.805*** (29.755)	0.800*** (27.757)				
Constant	2.915*** (11.181)	4.650*** (10.500)	0.286* (1.758)	0.350 (1.111)	5.787*** (48.688)	6.702*** (16.853)	1.097*** (7.504)	1.468*** (5.234)
Africa		-1.468*** (4.624)		-0.026 (0.131)		-1.722*** (4.089)		-0.336 (1.469)
Europe		-0.238 (0.766)		0.069 (0.375)		-0.087 (0.203)		0.032 (0.141)
South America		-0.982*** (3.070)		0.092 (0.469)		-1.009*** (2.410)		-0.151 (0.667)
Middle East		-1.045***		0.031 (0.147)		-0.972** (2.159)		-0.214 (0.883)
Asia		(3.029)		-0.019 (0.097)		-0.586 (1.326)		-0.217 (0.925)
Oceania		(2.023)		0.160 (0.610)		-0.229 (0.435)		-0.066 (0.229)
Caribbean		-1.045*** (3.178)		-0.003 (0.015)		-1.255*** (2.606)		-0.207 (0.789)
Island	3.397*** (11.994)	2.502*** (7.747)	1.219*** (6.110)	1.163*** (5.279)	0.525*** (3.196)	0.450*** (2.584)	0.089 (1.122)	0.123 (1.273)
Log-Likelihood	-485.627	-450.958	-227.183	-225.732	-485.439	-453.736	-232.740	-227.208
LM Test Statistic	144.256***	53.023***	37.483***	28.152***	144.369***	44.092***	29.044***	28.023***
Observations	408	408	408	408	408	408	408	408

Table 2. Geographic Contagion: Level of Economic Freedom—Excluding Islands

<i>Independent Variable</i>	SAR				SEM			
	1	2	3	4	1	2	3	4
Rho	0.515*** (11.939)	0.360*** (7.198)	0.195*** (5.990)	0.194*** (5.400)				
Lambda					0.516*** (12.692)	0.348*** (7.197)	0.266*** (5.201)	0.261*** (5.088)
Lagged Freedom Level			0.796*** (25.967)	0.794*** (24.385)				
Constant	2.808*** (10.954)	4.174*** (10.763)	0.330*** (2.021)	0.317 (1.136)	5.791*** (48.675)	6.341*** (20.120)	1.080*** (6.689)	1.395*** (5.449)
Africa		-0.980*** (3.923)		0.008 (0.050)		-1.283*** (3.697)		-0.242 (1.284)
Europe		0.226 (0.910)		0.058 (0.398)		0.446 (1.244)		0.125 (0.660)
South America		-0.576** (2.276)		0.096 (0.629)		-0.672* (1.931)		-0.079 (0.419)
Middle East		-1.060*** (3.383)		0.040 (0.210)		-1.116*** (2.707)		-0.158 (0.696)
Asia		-0.493 (1.589)		-0.077 (0.471)		-0.564 (1.409)		-0.222 (1.055)
Oceania								
Caribbean								
Island								
Log-Likelihood	-376.777	-348.918	-172.908	-171.650	-376.503	-352.096	-178.876	-174.116
LM Test Statistic	129.841***	54.189***	36.547***	30.079***	129.942***	46.465***	28.213***	29.974***
Observations	320	320	320	320	320	320	320	320



Table 3. Geographic Contagion: Change in Economic Freedom—All Observations

<i>Independent Variable</i>	<i>SAR</i>				<i>SEM</i>			
	1	2	3	4	1	2	3	4
Rho	0.210*** (3.740)	0.209*** (3.724)	0.214*** (3.894)	0.218*** (3.998)				
Lambda					0.213*** (4.031)	0.210*** (4.010)	0.268*** (5.256)	0.251*** (4.873)
Lagged Freedom Level			-0.108*** (4.559)	-0.157*** (5.671)			-0.142*** (5.513)	-0.177*** (6.258)
Constant	0.266*** (6.685)	0.225 (1.255)	0.844*** (6.209)	1.293*** (5.042)	0.334*** (7.578)	0.300 (1.409)	1.101*** (7.518)	1.468*** (5.235)
Africa		0.020 (0.106)		-0.333* (1.737)		0.010 (0.044)		-0.336 (1.470)
Europe		0.079 (0.412)		0.006 (0.032)		0.084 (0.366)		0.032 (0.140)
South America		0.083 (0.428)		-0.184 (0.957)		0.089 (0.389)		-0.152 (0.668)
Middle East		0.035 (1.167)		-0.231 (1.113)		0.011 (0.046)		0.215 (0.884)
Asia		-0.070 (0.351)		-0.244 (1.258)		-0.089 (0.363)		-0.217 (0.927)
Oceania		0.030 (0.113)		-0.095 (0.368)		0.018 (0.061)		-0.066 (0.229)
Caribbean		0.068 (0.301)		0.213 (0.950)		0.063 (0.240)		-0.207 (0.790)
Island	0.080 (1.034)	0.104 (1.129)	0.145* (1.091)	0.191** (2.115)	0.010 (0.121)	0.042 (0.430)	0.089 (1.124)	0.123 (1.274)
Log-Likelihood	-246.759	-245.448	-236.401	-229.901	-246.741	-245.525	-232.723	-227.200
LM Test Statistic	20.007***	18.896***	21.782***	22.161***	20.006***	18.644***	29.004***	28.023***
Observations	408	408	408	408	408	408	408	408

Table 4. Geographic Contagion: Change in Economic Freedom—Excluding Islands

<i>Independent Variable</i>	SAR				SEM			
	1	2	3	4	1	2	3	4
Rho	0.210*** (3.733)	0.206*** (3.658)	0.227*** (4.133)	0.217*** (3.961)	0.218*** (4.152)	0.209*** (3.963)	0.270*** (5.290)	0.262*** (5.111)
Lambda							-0.139*** (4.831)	-0.178*** (5.573)
Lagged Freedom Level			-0.098*** (3.803)	-0.148*** (4.786)	0.334*** (7.640)	0.308* (1.862)	1.084*** (6.703)	1.396*** (5.450)
Constant	0.264*** (6.760)	0.237* (1.731)	0.786*** (5.356)	1.155*** (4.916)				
Africa		0.012 (0.080)		-0.224 (1.471)		0.008 (0.047)		-0.242 (1.283)
Europe		0.056 (0.364)		0.097 (0.653)		0.064 (0.341)		0.125 (0.660)
South America		0.071 (0.460)		-0.091 (0.591)		0.080 (0.431)		-0.079 (0.419)
Middle East		0.107 (0.556)		-0.138 (0.716)		0.090 (0.403)		-0.158 (0.696)
Asia		-0.105 (0.615)		-0.199 (1.207)		-0.130 (0.626)		-0.222 (1.054)
Oceania								
Caribbean								
Island								
Log-Likelihood	-189.503	-188.166	-182.285	-177.048	-189.490	-188.330	-178.844	-174.120
LM Test Statistic	20.526***	19.082***	22.193***	22.143***	20.525***	18.636***	28.213***	27.972***
Observations	320	320	320	320	320	320	320	320

Table 5. Trade Contagion: Level of Economic Freedom—All Observations

<i>Independent Variable</i>	<i>SAR</i>				<i>SEM</i>			
	1	2	3	4	1	2	3	4
Rho	0.527*** (6.964)	0.473*** (6.068)	0.312*** (6.006)	0.322*** (5.995)	0.523*** (9.001)	0.527*** (9.135)	0.280*** (3.679)	0.346*** (4.814)
Lambda							0.880*** (3.678)	0.819*** (27.966)
Lagged Freedom Level			0.854*** (34.280)	0.811*** (28.422)	4.601*** (35.338)	6.470*** (16.122)	0.949*** (7.055)	1.443*** (5.071)
Constant	2.167*** (6.154)	3.633*** (6.424)	-1.028*** (3.069)	-0.795* (1.892)				
Africa		-1.922*** (6.026)		-0.210 (1.101)		-2.018*** (5.461)		-0.336 (1.546)
Europe		-0.209 (0.643)		0.134 (0.724)		-0.161 (0.414)		0.098 (0.454)
South America		-1.322*** (4.027)		-0.030 (0.155)		-1.447*** (4.413)		-0.160 (0.796)
Middle East		-1.009*** (2.845)		-0.037 (0.179)		-1.092*** (2.793)		-0.114 (0.504)
Asia		-0.801*** (2.411)		-0.122 (0.642)		-1.068*** (2.852)		-0.233 (1.081)
Oceania		-0.156 (0.365)		0.050 (0.204)		-0.224 (0.470)		0.017 (0.063)
Caribbean		-1.329*** (3.589)		-0.165 (0.774)		-1.354*** (3.978)		-0.147 (0.692)
Island								
Log-Likelihood	-510.229	-445.646	-226.103	-219.245	-510.285	-441.116	-237.511	-228.878
LM Test Statistic	58.365***	48.397***	36.143***	39.386***	58.365***	66.017***	10.542***	15.542***
Observations	392	392	392	392	392	392	392	392

Table 6. Trade Contagion: Level of Economic Freedom—Excluding Islands

<i>Independent Variable</i>	<i>SAR</i>				<i>SEM</i>			
	1	2	3	4	1	2	3	4
Rho	0.423*** (4.784)	0.324*** (3.517)	0.205*** (3.402)	0.205*** (3.232)	0.419*** (6.163)	0.359*** (4.956)	0.234*** (2.913)	0.295** (3.846)
Lambda							0.880*** (30.316)	0.813*** (24.453)
Lagged Freedom Level			0.862*** (29.499)	0.813*** (24.426)	4.849*** (39.789)	6.195*** (18.826)	0.931*** (6.074)	1.395*** (5.290)
Constant	2.790*** (6.439)	4.074*** (6.745)	-0.345 (0.882)	-0.083 (0.170)				
Africa		-1.390*** (5.240)		-0.156 (0.927)		-1.396*** (4.347)		-0.291 (1.538)
Europe		0.450 (1.624)		0.225 (1.382)		0.551*** (1.602)		0.186 (0.950)
South America		-0.769*** (2.789)		0.033 (0.194)		-0.864*** (2.915)		-0.098 (0.552)
Middle East		-0.489 (1.493)		0.127 (0.649)		0.482 (1.307)		0.020 (0.092)
Asia		-0.484 (1.631)		-0.082 (0.462)		-0.614** (1.785)		-0.209 (1.049)
Oceania								
Caribbean								
Island								
Log-Likelihood	-424.129	-371.696	-206.118	-199.783	-424.199	-369.500	-209.653	-201.233
LM Test Statistic	31.226***	20.294***	13.056***	13.058***	31.226***	32.227***	5.569***	9.689***
Observations	320	320	320	320	320	320	320	320

Table 7. Trade Contagion: Change in Economic Freedom—All Observations

<i>Independent Variable</i>	<i>SAR</i>				<i>SEM</i>			
	1	2	3	4	1	2	3	4
Rho	0.210** (1.992)	0.199* (1.889)	0.200* (1.905)	0.197* (1.927)				
Lambda					0.215*** (2.692)	0.213*** (2.663)	0.281*** (3.695)	0.349*** (4.888)
Lagged Freedom Level			-0.104*** (4.224)	-0.152*** (5.278)			-0.120*** (4.759)	-0.180*** (6.171)
Constant	0.270*** (5.572)	0.224 (1.195)	0.845*** (5.963)	1.266*** (4.726)	0.342*** (8.281)	0.274 (1.328)	0.949*** (7.056)	1.443*** (5.070)
Africa		0.013 (0.068)		-0.324 (1.633)		0.035 (0.166)		-0.336 (1.545)
Europe		0.109 (0.548)		0.034 (0.180)		0.145 (0.669)		0.099 (0.458)
South America		0.112 (0.559)		-0.146 (0.733)		0.123 (0.603)		-0.160 (0.796)
Middle East		0.082 (0.377)		-0.111 (0.522)		0.097 (0.424)		-0.114 (0.504)
Asia		-0.059 (0.291)		-0.196 (0.993)		-0.061 (0.282)		-0.233 (1.082)
Oceania		0.063 (0.240)		0.022 (0.088)		0.068 (0.248)		0.016 (0.061)
Caribbean		0.098 (0.433)		-0.121 (0.544)		0.109 (0.488)		-0.147 (0.693)
Island								
Log-Likelihood	-248.271	-246.451	-239.496	-232.865	-248.260	-246.213	-237.491	-228.836
LM Test Statistic	6.047**	5.886**	5.200**	4.996**	6.047**	6.405**	10.542***	15.542***
Observations	392	392	392	392	392	392	392	392

Table 8. Trade Contagion: Change in Economic Freedom—Excluding Islands

<i>Independent Variable</i>	<i>SAR</i>				<i>SEM</i>			
	1	2	3	4	1	2	3	4
Rho	0.194** (1.798)	0.186* (1.719)	0.173* (1.699)	0.181* (1.744)				
Lambda					0.196*** (2.378)	0.197*** (2.392)	0.234*** (2.912)	0.294*** (3.830)
Lagged Freedom Level			-0.109*** (3.850)	-0.167*** (5.041)			-0.120*** (4.121)	-0.187*** (5.612)
Constant	0.267*** (5.146)	0.241 (1.572)	0.864*** (5.408)	1.280*** (5.076)	0.331*** (7.079)	0.305* (1.758)	0.931*** (6.047)	1.395*** (5.290)
Africa		-0.021 (0.128)		-0.293* (1.751)		-0.023 (0.128)		-0.291 (1.538)
Europe		0.080 (0.470)		0.114 (0.693)		0.101 (0.522)		0.186 (0.950)
South America		0.092 (0.543)		-0.088 (0.523)		0.087 (0.485)		-0.097 (0.552)
Middle East		0.146 (0.721)		0.003 (0.016)		0.143 (0.661)		0.020 (0.092)
Asia		-0.100 (0.547)		-0.199 (1.120)		-0.113 (0.563)		-0.209 (1.049)
Oceania								
Caribbean								
Island								
Log-Likelihood	-217.842	-215.947	-210.591	-203.661	-217.848	-215.839	-209.649	-201.213
LM Test Statistic	3.985**	3.906*	3.271*	3.603*	3.985**	4.100**	5.569**	9.689***
Observations	320	320	320	320	320	320	320	320

Table 9. U.S. Occupation and Capitalist Contagion

<i>Dependent Variable: Level of Economic Freedom (t-statistics in parentheses)</i>	
<i>Spatial Weight Matrix: First-Order Contiguity (***=1%, **=5%, *=10%)</i>	
<i>Sample: All Observations</i>	
<i>Independent Variable</i>	<i>SAR</i>
Global Spatial Coefficient (Rho)	0.177*** (5.086)
Panama Spatial Intervention Coefficient (Sigma)	0.107 (1.185)
Haiti Spatial Intervention Coefficient (Theta)	0.030 (0.561)
Lagged Level of Freedom	0.797*** (28.347)
Panama	1.380*** (3.436)**
Haiti	1.093 (2.355)
Constant	0.419** (2.049)
Africa	-0.053 (-0.697)
Europe	0.057 (0.641)
Island	1.134*** (5.283)
Log-Likelihood	-225.435
R-Squared	0.787
Observations	408

Table 10. Simulated Change in Freedom in the Middle East of Successful U.S. Occupation of Iraq

Country	1 $\Delta F_{Iraq} = +3.5; \rho = 0.20$	2 $\Delta F_{Iraq} = +4; \rho = 0.30$
Iraq	3.5499	4.1378
Iran	0.3823	0.6978
Kuwait	0.3669	0.6549
Turkey	0.2729	0.5143
Jordan	0.1925	0.3546
Syria	0.1621	0.3070
Saudi Arabia	0.1191	0.2282
Qatar	0.0238	0.0684
Israel	0.0188	0.0549
Lebanon	0.0181	0.0543
U. Arab Emirates	0.0129	0.0388
Yemen	0.0129	0.0388
Oman	0.0097	0.0306
Egypt	0.0038	0.0165
Avg. Middle East w/ Iraq	0.3675	0.5141
Avg. Middle East w/o Iraq	0.1227	0.2353