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Colonial rule and economic freedom

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Abstract
This paper studies the legacy of European colonial rule for economic freedom in former colonies. I find that current levels of economic freedom in former colonies are directly related to the level of economic freedom of their colonizers. This association can be seen as early as the time of independence. I also find that additional European settlement from colonizers with high (low) economic freedom contributes to (detracts from) the overall economic freedom of their colonies. These results are robust to selection on unobservables and to controls for geography, climate, natural resource endowments, colonizer identity, settlement patterns, and precolonial characteristics. The difference in modern-day economic freedom associated with being colonized by the freest colonizer instead of the least free implies a predicted increase in modern-day per capita income of up to US$10,000.

Keywords Colonial rule · Economic freedom · Institutions · Persistence

JEL Classification N40 · O10 · P14 · P50

1 Introduction

Economic freedom—defined as the extent to which economic activity is directed by voluntary market transactions rather than government interference—is a strong determinant of economic growth and several other measures of development (De Haan et al. 2006; Hall and Lawson 2014; Lawson et al. 2024). As a result, a large literature has emerged to explore why some countries have more economic freedom than others (Lawson et al. 2020). Although present-day institutions evolve through long, path-dependent processes (North 1991; Spolaore and Wacziarg 2013), relatively few studies have thoroughly examined the historical roots of economic freedom.

In this paper, I study the contemporary legacy of European colonial rule for economic freedom in former colonies. Former European colonies inherited numerous institutions established during colonization, notably their legal systems, tax collection structures, and land-tenure systems (e.g., Banerjee and Iyer 2005; Levine et al. 2021; La Porta et al. 1998;

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Bjørnskov and Rode 2020; Garfias and Sellars 2024). Moreover, the characteristics of colonial rule — for example, direct vs. indirect rule, the identity of the colonizer — presumably affected which institutions were implemented, which in turn shaped current levels of income (e.g., Grier 1999; Acemoglu et al. 2001).

Using data on 107 former European colonies, I study the colonial determinants of modern-day economic freedom, based on the average *Economic Freedom of the World* (EFW) Index score (Gwartney et al. 2021) for the 2000–2019 period. First, I investigate whether colonizers transmit their levels of economic freedom to their colonies. Using a historical index of economic freedom (Prados De La Escosura 2016) covering the colonial period, I show that countries colonized by European nations with greater economic freedom at the time of colonization have greater economic freedom today. Each standard deviation increase in a colonizer's economic freedom score corresponds to as much as a 0.8 standard deviation increase in its colony's score. These results are robust to selection on unobservables and controls for geography, climate, natural resource endowments, colonizer identity, precolonial characteristics, and prior mechanisms of institutional transmission highlighted in the development literature (Acemoglu et al. 2001, 2002; Nunn and Puga 2012; Easterly and Levine 2016).

I also analyze the role of the timing and persistence of institutional transmission. First, I show that the level of economic freedom of the colonizer at the very beginning of the colonization period or at independence is insufficient to explain modern-day economic freedom. Instead, specifications using the average economic freedom for the entire colonial tenure have much greater explanatory power, suggesting that modern-day institutions are built over long periods. Additionally, by studying the evolution of economic freedom in a panel of former colonies from 1950 to 2019, I show that this relationship seems to be strong and does not fade over time. The evidence favors the persistence of historical levels of economic freedom inherited from colonizers.

Further, I show that European settlement seems to be an important (but not the only) transmission mechanism that mediates the transmission of economic freedom. The findings suggest two important implications, which directly relate to the literature on the colonial origins of development. First, they suggest that additional settlers (under direct rule) create "inclusive' institutions (as in Acemoglu et al. 2001, 2002; Easterly and Levine 2016) *in proportion to* the inclusiveness of institutions in their countries of origin. That is, additional European settlement from colonizers with high (low) economic freedom increases (reduces) the overall economic freedom of their colonies. However, it also highlights that settlement is not the only relevant mechanism: The transmission of economic freedom from colonizers to their colonies occurs even under strictly indirect rule (with zero settlement).

This paper primarily contributes to the literature on the determinants of economic freedom (Lawson et al. 2020). While this literature identifies several key determinants of economic freedom, it mostly overlooks long-run factors, especially those related to colonial rule. However, my results suggest long-run determinants—notably, the level of economic freedom of the colonizer—are quite persistent even after several decades following independence and can account for a large share of the variation in modern-day economic freedom.

I also extend the literature on colonial origins of comparative development in two key directions. First, I argue that the set of institutions imported during colonial times depended not only on settlement conditions (Acemoglu et al. 2001, 2002) and factor endowments (Engerman and Sokoloff 1997) but also on the quality of institutions of the colonizer. Several studies also highlight the superiority of common law over civil law (La Porta et al. 1997, 1998, 2008), and of British rule over French and Spanish rule (Grier 1999). I add to these studies by leveraging variation in colonizer institutions over time as part of my identification strategy. As a result, even after accounting for legal system and colonizer identity, colonies with longer exposure to colonizers with higher economic freedom are freer today.

Moreover, my results imply that by focusing too narrowly on legal systems (La Porta et al. 1997, 1998, 2008) and "the institutions of property rights" (Acemoglu et al. 2001, 2002), this literature provides an incomplete account of institutional transmission during colonial history. Instead, I emphasize a broader set of institutions — those of economic freedom — which include sound money, quality regulation, and international freedom of trade. In fact, the strongest result from the subindexes of economic freedom shows is that former colonies of freer European colonizers are significantly more open to international trade, which is not accounted for by their legal systems, the identity of their colonizer, nor by geographical variables.

These results also yield important implications because of their economic significance, especially given the robust association between economic freedom and economic growth (Lawson et al. 2024). The difference in modern-day economic freedom associated with being colonized by the freest colonizer (the Netherlands) instead of the least free (Portugal) implies a predicted increase in modern-day per capita income of up to $10,000.[1]

This article proceeds as follows. Section 2 reviews the literature on the determinants of economic freedom and links it to the literature on the colonial origins of modern-day institutions. Section 3 introduces the data. Section 4 presents the econometric results and the following section discusses their robustness. The last section concludes.

2 Literature review

Despite a large literature investigating the determinants of economic freedom (Lawson et al. 2020), only a few studies examine historical or geographical factors as sources of it. In contrast, there is a large literature on the historical origins of development that analyzes the impact of geography and the transmission of institutions and human capital throughout the colonial period while overlooking the role of economic freedom specifically. There are large potential gains to be made by connecting these two literatures, which can be divided into three, often interconnected, main branches.

2.1 Geography

First, many scholars have argued for the importance of geography for development. To a large extent, geography shapes agricultural productivity, transportation costs, and access to trade routes, rivers, and seas (e.g., Ashraf and Galor 2011; Nunn and Puga 2012).[2]

A prominent theory relating development to geography is that of Diamond (1999), who emphasize domesticable species and the East–West orientation of continents as crucial determinants of development.[3] Similarly, Sachs (2001, 2003) argues that tropical

[1] Considering the mean effect found in the meta-analysis by Lawson et al. (2024). See the discussion at the end of Sect. 4.1.

[2] Also see the discussions in Acemoglu et al. (2001, 2002).

[3] Diamond's theory identifies three biogeographic factors: (1) the availability of crops for agriculture, (2) domesticable large animals useful for food, transport, and farming, and (3) a continental landmass oriented

environments face slow development due to lower agricultural productivity and higher mortality rates than temperate areas.[4] I highlight these previous studies primarily because the literature on the determinants of economic freedom has drawn on these theories to explain variations in institutions.

In the spirit of Sachs, Nikolaev and Salahodjaev (2017) shows that higher pathogen prevalence is associated with lower economic freedom. They argue this is because collectivist values arise in areas with a high prevalence of infectious diseases — the parasite-stress theory. Gohmann (2018) develops a variant hypothesis of Diamond (1999)'s theory, in which societies adopting agriculture earlier began institutional development sooner, providing more opportunities for institutional evolution. This, in turn, fostered institutions better suited to greater economic freedom. While he finds that the two biogeographical factors relate to specific components of the EFW index (see Sect. 3.1), no significant link emerges with the overall economic freedom index. Murphy (2021) finds that larger countries (in area) tend to have less economic freedom.[5] Following a similar intuition, Fors (2014) argues that islands exhibit greater social cohesion and presents evidence that their economic institutions are better. I show that economic freedom of colonies is consistently determined by the level of economic freedom of colonizers, even after controlling for several geographical factors.[6]

2.2 Legal origins and the identity of the colonizer

Another branch of this literature focuses on the qualities of specific institutions. Hall and Jones (1999) posit that institutions with greater "Western influence" generate greater output per capita in modern times. However, Western influence is a rather broad concept. Indeed, Europeans implemented various types of institutions. The Spaniards implemented the *encomienda* system, granting governing powers over land and people to the ruling *encomendero* (Lockhart and Schwartz 1983); the French exported a centralized rational bureaucracy, sending emissaries and public officials to act as representatives of the French government and providers of public services (Fieldhouse 1982); the British established large settlements in the "Neo-Europes," and while they primarily relied on indirect rule elsewhere — with India serving as a mixed case with both direct and indirect rule — they had the English law, along with the English language, served as a "unique foundation" that united the empire (Churchill 1956, 10). In turn, these institutions shaped modern-day outcomes. For instance, Grier (1999) finds that former British colonies have larger incomes

Footnote 3 (Continued)

mostly along the East–West relative to North–South axis, which facilitated migration and technology transfers across regions with similar climates. For empirical evidence supporting the first two factors, see Olsson and Hibbs Jr (2005) and Bleaney and Dimico (2011); for the technology-transfer component, see Bologna Pavlik and Young (2019).

[4] Sachs also underscores Diamond's (1999) technology-transmission argument, noting that technologies suited to temperate climates often fail in tropical environments.

[5] This builds on Alesina (2003), who argue that countries with large *populations* are more heterogeneous and less cohesive, complicating the creation of institutions that serve the common interest or provide public goods. Murphy (2021) instead focuses on *geographical* size, arguing that population size may result from geographical characteristics.

[6] Incidentally, I find strong support for Fors's (2014) argument; in nearly all specifications in which a dummy for islands is included, it correlates strongly with greater economic freedom.

today relative to former French and Spanish colonies.[7] I contribute to this literature by showing that the modern-day economic institutions of former colonies are directly related to the institutions that their colonizers enjoyed at home.

More closely related to this argument is the work of La Porta et al. (1997, 1998, 1999, 2008), who highlight the role of legal systems in creating widely different incentives for economic development. Crucially, legal systems are one of the most important institutions to be transmitted from colonizers to their colonies. Their findings show that English common law systems provide greater protection of investors and their property than do systems of French civil law origins. Since both outcomes are fundamental parts of economic freedom, scholars in this literature have considered the role of legal origins as an important determinant. Nattinger and Hall (2012) show that US states that were first settled by civil law countries have less economic freedom today.[8] In a similar vein, Callais (2021) attributes poor economic outcomes in Louisiana to its French legal origins. I add to this literature by showing that colonizers transmit a much broader set of institutions, highlighting that the transmission of legal systems alone cannot explain variation in contemporary economic freedom.

2.3 European settlement

The largest strand of this literature focuses on European settlement as the key source of variation in colonial development. Although the studies vary in highlighting institutions or human capital as the primary relevant endowment brought by Europeans, they agree that the costs and benefits of different settlement strategies are conditioned by geographical and historical factors (Easterly and Levine 2016). The first of these studies, Engerman and Sokoloff (1997), conditions Western influence on initial factor endowments. For instance, where slave-labor agriculture was feasible, inequality was high because institutions were designed for resource extraction by small colonial elites.

Likewise, Acemoglu et al. (2001) contend that the institutions established during colonization were shaped less by colonizer identity and more by the costs and benefits of European settlement. In areas with harsh disease environments (Acemoglu et al. 2001)[9] or in densely populated regions where land for settlement was costly (Acemoglu et al. 2002), colonizers had little incentive to settle. Instead, they found it more profitable to establish “extractive” institutions that relied on forced labor and enslavement to produce goods for international markets. Conversely, in areas suitable for settlement, Europeans came in large numbers. They brought a set of “inclusive” institutions, similar to those found at home,[10]

[7] She also finds that countries colonized for longer have greater income today. This hypothesis was revisited by Feyrer and Sacerdote (2009) for a sample of islands, finding similar evidence.

[8] Alabama, Arizona, Arkansas, California, Florida, Louisiana, Mississippi, Missouri, New Mexico, and Texas were first colonized by either France, Mexico, or Spain and thus originally adopted a civil law legal system.

[9] Bennett et al. (2017) diverge from Acemoglu et al. (2001) by contending that colonizer identity and settlement conditions should be treated as complements rather than substitutes. They also posit that geography exerts both direct and indirect effects on postcolonial development paths.

[10] Several papers also complement this mechanism of institutional transmission associated with migration flows (e.g. Putterman and Weil 2010; Spolaore and Wacziarg 2013; Giuliano and Nunn 2018). Closer to this paper, Bologna Pavlik and Young (2021) find that countries whose populations have greater historical experience with representative assemblies have stronger property rights, rule of law, and constraints on the executive—all of which are important elements of economic freedom.

which promoted property rights and physical capital investments, fostering long-term development (Acemoglu et al. 2001, 2002).

A potential limitation of these contributions is their implicit view of inclusive institutions as monotonically increasing in additional settlement (under direct rule), without accounting for the quality of institutions at home. Thus, at least implicitly, the view assumes that additional settlement from countries with relatively non-inclusive institutions will contribute to the same extent as that from inclusive countries—regardless of the colonizer, more-European institutions are always an improvement. A key contribution of this paper is to account for the inclusiveness of the home institutions of settlers, showing that additional settlement from colonizers with high (low) economic freedom increases (reduces) overall economic freedom of their colonies.

In turn, Easterly and Levine (2016) support the notion that former colonies with greater prevalence of European settlers have higher income today but emphasize the transmission of human capital as the key mechanism, following Glaeser et al. (2004). Their findings indicate that early settlement during the colonial period is more influential than the modern-day prevalence of European descendants. They argue that this aligns with the slow development of educational systems and the gradual transmission of human capital, and they downplay the direct role of Europeans per se (Easterly and Levine 2016). My results are broadly in line with their idea but highlight that settlement is not the only relevant mechanism: Institutional transmission occurs even under strictly indirect rule (with zero settlement).

3 Data

3.1 Economic freedom of the world index

My estimates of economic freedom are derived from two sources. Modern-day economic freedom in former colonies comes from the Economic Freedom of the World (EFW) Index (Gwartney et al. 2021). Conceptually, the index measures the degree to which economic activity is guided by voluntary transactions in the market, free from government constraints. It consists of five equally weighted areas: Size of Government, Legal System and Property Rights, Sound Money, Freedom to Trade Internationally, and Regulation.[11] Accordingly, it covers a much broader set of institutions than those considered in previous work, such as Acemoglu et al. (2001, 2002), which focuses on the “institutions of property rights” and constraints on the executive. These measures are captured by Area 2 of the EFW index. In turn, the related work of La Porta et al. (1997, 1998, 1999) focuses on legal origins, which again is captured by Area 2 and is likely correlated with Area 5 (Regulation). Table C5. A shows the historical relationship between economic freedom and other institutional measures rule of law, of constraints on the executive, electoral democracy, and liberal democracy. However, at least three remaining areas of the EFW index remain largely unexplored by the existing literature.

The data ranges from 0 (least free) to 10 (most free) and are available in five-year intervals from 1970 to 1995 and annually since 2000. Murphy and Lawson (2018) extend the

[11] Gwartney et al. (2021) explain that to achieve a high EFW score, a country must ensure secure protection of private property, a fair legal system with equal treatment for all, consistent enforcement of contracts, and a stable monetary system. Additionally, it should maintain low taxes, avoid barriers to domestic and international trade, and prioritize markets over government intervention for allocating goods and resources.

data back until 1950, but with a smaller number of variables in each area. I use the EFW index to construct four outcome variables for the colonies. The main variable of interest is average economic freedom for the 2000–2019 period (*Avg. EFW*). There is considerable variability in the index, ranging from 3.92 (Sudan) to 8.38 (Singapore); the mean is 6.13 and represents a country like Swaziland or Zambia.

Finally, I construct a panel of economic freedom using data from 1950 to 2019 to track its evolution following independence and test the persistence of this relationship between colonies and their colonizers. A summary for this version of the data appears in Table A3. For additional results, I analyze the subindexes for the five areas separately and the standard deviation across the subindexes. The standard deviation is used below to test whether countries with multiple colonizers have less cohesive EFW scores, as different colonizers may have implemented functionally disconnected institutions over time. This follows the spirit of Bolen and Sobel (2020), who find that countries with a smaller standard deviation (that is, more cohesiveness) have larger growth rates. Summary statistics for all variables are available in Table A1. Table A2 provides summaries disaggregated by colonizer and continent.

3.2 Historical index of economic liberty

The *Historical Index of Economic Liberty* (HIEL) (Prados De La Escosura 2016) provides historical data on economic freedom for European colonizers. It offers economic freedom scores for OECD countries from 1850 to the present. Although it excludes the Size of Government area, its four areas align with the structure of the rest of the EFW index. Seven of the 15 variables in the four subindexes are sourced from the V-Dem project (Coppedge et al. 2019), while the rest are proxied using national accounts from works of economic history.[12]

For each colony, I calculate its colonizer's economic freedom as the average HIEL score during the period of colonization for which data are available. For example, for a British colony colonized from 1800 to 1900, the colonizer's economic freedom is calculated as the United Kingdom's average HIEL score from 1850 (the first year of available data) to 1900.[13]

According to this method, the Netherlands had the highest HIEL score (7.96) during its time as a colonizer, followed closely by Britain (7.81). The remaining colonizers are Belgium (7.47), Germany (7.42), France (7.06), Spain (6.52), Italy (6.36), and Portugal (6.34). Additionally, I calculate the HIEL score of the colonizer at the start of colonization (for post-1850 colonies) and at the time of the colony's independence. Crucially, two colonies of the same colonizer will have different scores if they were colonized in different years, allowing for variation in the colonizer's economic freedom over time.

[12] Variables from V-Dem primarily cover Legal System and Property Rights, as well as Regulation. Data for Sound Money and International Openness come from historical national accounts. For example, tariff data are inferred from the ratio of total tariff revenue to total trade value.

[13] To address potential biases from the omitted pre-1850 period, I also run a specification limited to countries colonized after 1850. The results remain largely unchanged. Countries that gained independence before 1850 are excluded from both samples, as no information about the economic freedom of their colonizer can be obtained.

3.3 Historical and geographical data

Historical data for this paper comes from multiple sources, with the main one being the Colonial Dates Dataset (Becker 2019). This dataset identifies former European colonies and is used to construct variables such as the duration of colonial rule. It includes 128 former colonies of Belgium, Britain, France, Germany, Italy, the Netherlands, Portugal, and Spain.[14] However, 21 colonies are excluded because of the unavailability of EFW data.[15] On average, these countries remained under colonial rule for 170 years.

For the 23 cases with multiple colonizers, I follow the same classification as La Porta et al. (1999), which is also used by Acemoglu et al. (2001, 2002). The exceptions are the Philippines and Suriname, which are both incorrectly coded by those scholars as Portuguese colonies. I code them as Spanish and Dutch colonies, respectively. Seychelles, which does not appear in their sample, is coded here as a former British colony. Table A2 provides the main classification used for each country, and Fig. 1 maps the colonies according to their main colonizers and their levels of economic freedom.[16]

I also use data on geographical and precolonial characteristics to control for potential selection biases in the colonization process. The geographical characteristics are five indicators of temperature, four of humidity, six of climate/soil, and five of natural resources (gold, iron, silver, zinc, and oil reserves), all sourced from Parker (1997). Additionally, I include two dummy variables to indicate whether a country is landlocked or an island, to account for better access to maritime trade routes.[17]

Finally, I include controls for mechanisms of institutional transmission highlighted in the development literature. Specifically, these controls are settler mortality (Acemoglu et al. 2001), the prevalence of European settlers (Easterly and Levine 2016), the share of modern-day populations with European-language ancestry (Giuliano and Nunn 2018), precolonial population density (Acemoglu et al. 2002), terrain ruggedness (Nunn and Puga 2012),[18] and dummy variables for British, French, and socialist legal origins (La Porta et al. 1999). I detail the importance of these variables as they appear in the next section.

4 Results

4.1 Economic freedom of colonizer

The main results, reported in Table 1, concern the relationship between the economic freedom of the colonizer and that of the former colony. The dependent variable is the former

[14] Importantly, as explained in Becker (2019, p. 4) "contemporary nation states are also regarded to have a colonial legacy if they absorbed a geopolitical unit that previously had a colonial dependency," following the standard used in the Correlates of War project (Sarkees and Wayman 2010). For example, this would be the case for Thailand.

[15] Most of these are small islands in the Pacific or Indian Oceans, but the set also includes Cuba, Dominica, Eritrea, and Equatorial Guinea.

[16] In 7 of the 23 cases, the main colonizer is also the longest ruling. Table A2 compares the classification of colonizer identity using the longest-ruler criterion and the one used for the base sample.

[17] All of these are available in Acemoglu et al. (2002).

[18] As explained in Nunn and Puga (2012, p.20), rugged terrain is “tough to farm, costly to traverse, and often inhospitable to live in,” and, on a global scale, it hinders trade and development. However, it has the opposite effect in Africa, where terrain ruggedness offered protection from the slave trade.

colony's average EFW score for the 2000–2019 period, while the main explanatory variable is the colonizer's average HIEL score during its rule. Since HIEL data are available only from 1850 onward, the sample excludes countries that gained independence before then (Tables 2, 3). In all cases, standard errors are clustered at the colonizer level.[19]

Column 1 presents a naive regression (with no controls), while subsequent columns address potential concerns. The results indicate that each additional point in the colonizer's average economic freedom score during the colonial era corresponds to a 0.7-point increase in the former colony's present-day economic freedom. Figure A1 also plots this relationship. Column 2 includes basic controls for geography, including continent dummies, absolute latitude, and two dummies for landlocked and island colonies. The results are somewhat less precisely estimated and of around 30% smaller magnitude, but are still significant at the 5% level.

In addition to geography, the third column controls for several environmental and historical factors emphasized in the development literature (e.g., Acemoglu et al. 2001, 2002; Sachs 2001, 2003; Nunn and Puga 2012; Engerman and Sokoloff 1997) — climate/soil, humidity, temperature, natural resources, terrain ruggedness, and disease environment — that may influence land productivity, precolonial development, and, importantly, settlement patterns. For the sets of controls related to climate/soil, humidity, temperature, and natural resources, I report only the *p*-value for their joint significance. I also include colonizer fixed effects to restrict comparisons to colonies of the same colonizer and account for time-invariant unobserved colonizer characteristics. The results show that the relationship between the colonizer's economic freedom and that of the colony is actually stronger when accounting for these factors and is not solely explained by unobservable colonizer-specific characteristics.

A natural question is whether these findings simply reflect differences in legal origins rather than economic freedom more broadly. For instance, La Porta et al. (1997; 1998; 1999) demonstrate that common law systems provide stronger protection of private property, which is captured by the EFW index. Previous research has also shown that British legal origins, particularly in contrast to French ones, are a key determinant of modern economic freedom, even among US states (e.g., Nattinger and Hall 2012). Since colonies typically inherit the legal origins of their colonizers, legal origins promoting greater economic freedom at the colonizer level would likely foster greater economic freedom in their colonies as well. To test this, I include dummies for French and British legal origins based on La Porta et al. (1999).[20] Notably, after accounting for legal origins, the relationship between the colonizer's and colony's economic freedom becomes approximately 40% stronger in magnitude. In Sect. 5.5, I also show that these results are robust for accounting for other measures of institutional quality that are orthogonal to economic freedom.

To illustrate this relationship, consider the paired cases of Benin and Burkina Faso, then Mali and Senegal, all four being neighbors in West Africa. They were all colonized by France and adopted the French legal system following their independence in 1960. Acemoglu et al. (2002) code them as having identical precolonial levels of development (though data for Mali is unavailable). To a great extent, they also share similar climates and disease

[19] Table C3 also reports results using Conley (1999) standard errors, which yield unchanged results.

[20] My sample does not include countries of German legal origin, and Scandinavian legal origins are not present among former colonies. The baseline is socialist legal origin.

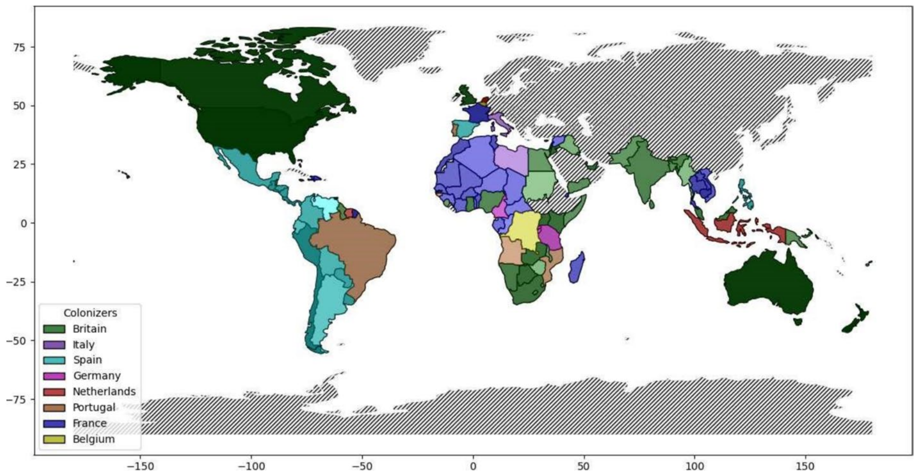

Fig. 1 Colonization map and economic freedom. Darker colors represent higher economic freedom scores

environments, with tropical forest in the south and arid lands in the north, lying on the southern edge of the Sahara Desert.[21]

The key difference is that Benin and Senegal, colonized earlier and under a relatively free France, have higher EFW scores than their respective pairs, Burkina Faso and Mali, which were colonized later. As the average economic freedom of France fell from 7.22, to 7.0, the economic freedom of her colonies fell from the high of 6.038 in Benin to 5.858 in Burkina Faso. The case of Mali (then French Sudan) and Senegal is particularly impressive because they even coexisted as a single country under the Mali Federation around independence. Yet Senegal's economic freedom exceeds Mali's by a similar proportion to the difference in France's economic freedom during their respective colonization periods.

To put the economic significance of these results in perspective, consider that if, instead of being colonized by Portugal, Brazil had been colonized by the Netherlands—an implied increase of 1.59 points in the average economic freedom of the colonizer—we would expect Brazil's modern-day average economic freedom to be 1.14 points (1.19 standard deviations) higher. This would place Brazil in the top 50 most free countries, instead of almost than 60 positions below, ranking at around 109 in 2019. More importantly, if we consider the average effect of economic freedom on income reported in the meta-analysis in Lawson et al. (2024), this increase in economic freedom implies that Brazil's per capita income would be around US$8,300 to US$10,400 higher, which would be sufficient to *double* its current per capita income (around US$8,900).[22]

[21] Granted, Mali has a much larger share of desert land, and perhaps Niger serves as a better counterfactual. The same story can be told: Niger was also a French colony until 1960, with similar settler mortality rates to those of Benin and Burkina Faso. But being the latest to be colonized, in 1910, it endured its 50 years of colonial rule under the least free era (6.7) of France of the inter- and postwar periods. As a result, its EFW score, at 5.11, is the lowest in French West Africa.

[22] Lawson et al. (2024) report that a 1-standard deviation increase in EFW score (around 0.96 points) is related to a 0.4- to 0.5- standard deviation increase in income (around $7,000–$8,750).

Table 1 Economic freedom of colonizer and average economic freedom (2000–2019): main results

Dependent variable	Avg. EFW (2000–2019)			
	(1)	(2)	(3)	(4)
HIEL Colonizer	0.716***	0.521**	1.199***	1.648***
	(0.153)	(0.206)	(0.176)	(0.206)
America dummy		0.0338	− 0.595	0.242
		(0.125)	(1.052)	(1.667)
Africa dummy		− 0.327	− 0.532	1.022
		(0.273)	(1.083)	(2.297)
Asia dummy		− 0.137	− 1.021	0.0103
		(0.110)	(1.243)	(2.070)
Abs. Latitude		1.082*	− 5.296***	− 2.267
		(0.489)	(0.709)	(1.227)
Landlocked		0.339	0.782**	1.134**
		(0.292)	(0.217)	(0.334)
Island		0.959***	1.562***	1.565***
		(0.219)	(0.255)	(0.197)
Ruggedness			− 0.001	0.000
			(0.001)	(0.002)
Log Settler Mortality			− 0.164	− 0.388***
			(0.164)	(0.059)
Pop. Density in 1500			− 0.058	0.001
			(0.211)	(0.295)
French Legal Origin				0.371
				(0.974)
British Legal Origin				1.628**
				(0.486)
p-val. humidity			[0.118]	[0.000]
p-val. temperature			[0.006]	[0.012]
p-val. climate/soil			[0.518]	[0.169]
p-val. nat. resources			[0.064]	[0.187]
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53
*R*2	0.154	0.435	0.793	0.837

Standard errors clustered at the colonizer level in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Dependent variable is the average *Economic Freedom of the World* (EFW) Index score in the 2000–2019 period. The scores range from 0 to 10. HIEL Colonizer is the average HIEL score (starting in 1850) of the colonizer(s) during the period of colonization. Columns 3 and 4 include four indicators of humidity, five indicators of temperature, and six indicators of climate/soil, as well as controls for the presence of gold, iron, silver, zinc, and oil reserves. Dummies for German and Scandinavian not included for lack of observations

4.2 Timing of transmission

This section investigates the timing of transmission of economic freedom from the colonizers to their colonies. One conjecture is that the colonizer's economic freedom at the

Table 2 Economic freedom of colonizer and average economic freedom (2000–2019): alternative measures and timing of transmission

Dependent variable:	Avg. EFW (2000–2019)				
Specification:	Early hypothesis		Late hypothesis	Bauer hypothesis	
	(1)	(2)	(3)	(4)	(5)
First HIEL	0.280	− 0.174			
	(0.241)	(0.466)			
HIEL at Independ			0.218		0.122
			(0.181)		(0.214)
Postwar				− 0.451**	− 1.228**
				(0.148)	(0.381)
Postwar × HIEL Indep					0.117* (0.057)
Year Colonization	− 0.028**	− 0.037**			
	(0.010)	(0.010)			
Year Independence			− 0.007**		
			(0.002)		
America dummy	–	–	− 0.054	− 0.064	− 0.130
	(–)	(–)	(0.206)	(0.181)	(0.219)
Africa dummy	–	− 0.150	− 0.360	− 0.376	− 0.431
	(–)	(0.504)	(0.326)	(0.270)	(0.345)
Asia dummy	− 0.298	–	0.052	− 0.030	0.080
	(0.327)	(–)	(0.301)	(0.201)	(0.349)
Abs. Latitude	0.059	− 0.119	0.163	0.095	0.423
	(2.281)	(3.983)	(0.559)	(0.685)	(0.450)
Landlocked	0.645	1.314***	0.341	0.342	0.329
	(0.457)	(0.277)	(0.433)	(0.426)	(0.430)
Island	0.379	1.529***	0.974***	0.990***	0.950***
	(0.338)	(0.128)	(0.217)	(0.204)	(0.219)
Ruggedness	0.001	− 0.001***	0.000	− 0.000	− 0.000
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)
Pop. Density in 1500	− 0.054	− 0.003	− 0.156***	− 0.171**	− 0.158***
	(0.073)	(0.122)	(0.036)	(0.047)	(0.037)
Colonizer FE	No	Yes	Yes	Yes	Yes
N	40	34	66	66	66
*R*2	0.283	0.517	0.581	0.576	0.580

Standard errors clustered at the colonizer level in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. *First HIEL* is the first available Historic Index of Economic Liberty (HIEL) score for the colonizer of countries colonized after 1850. Column 2 considers only countries for which the first colonizer is the main colonizer, according to La Porta et al. (1999)—see Table A2 for details. *Postwar* is a dummy for countries that obtained independence after 1945. All columns use the same set of controls, beginning with the America dummy row. Cells with —or (–) are omitted for lack of observations of collinearity

start of colonization is the most influential, for it establishes path dependence for the entire colonial period—what I call the *early hypothesis*[23] In contrast, the *late hypothesis* maintains that economic freedom near independence is most influential, as it reflects the colonizer's most recent institutions and policies. A related view is Peter Bauer's argument that African countries suffered significantly from the price controls and central planning imposed by colonizers in the postwar period (Bauer 2004) —the *Bauer hypothesis*.

Table 4 consider these three hypotheses. For the early hypothesis (columns 1–2), I regress the average EFW score of the colonies on the first available HIEL, which is only available for countries colonized in or after 1850. Beyond the baseline controls, I include the colonization year to account for trends in the colonizer's economic freedom. In column 2, I restrict the sample to countries in which the first colonizer was the main colonizer, enabling the inclusion of colonizer fixed effects.[24] In both cases, *HIEL at Independence* is nonsignificant, suggesting that economic freedom of the colonizer at the beginning of colonization is unrelated to modern-day economic freedom.

Next, column 3 tests the late hypothesis. Here, I control for the country's independence year, in addition to the baseline controls, and include colonizer fixed effects. The results remain nonsignificant. These findings suggest that economic freedom at a single point in time does not predict future economic freedom.

Indeed, colonial institutions often changed drastically. Consider Brazil. From 1548 onward, Portugal explicitly prohibited communications from one captaincy to another (Ziravello 1999); a 1733 law prohibited the opening of roads connecting them (Gomes 2014, p. 115); going back at least to 1649 the General Company of Commerce held a monopoly over Brazilian trade (Coaracy 1965, 150–1); most inland cities hardly had any currency with which to trade (Simonsen 2005, 285; Calógeras 1938, 49); and in 1785, Queen Maria I prohibited the establishment of industries and manufactures in the colony. After 1808, however, Prince Dom João VI lifted Queen Maria's prohibition, opened the Brazilian ports of trade to all "friendly nations," and established property rights for both Portuguese settlers and foreigners.[25] As this case illustrates, measures of economic freedom at a single point in time can introduce substantial measurement error.[26] The more parsimonious specification using the colonizer's *average* economic freedom in the main results appears to better capture the underlying mechanism.

I also conduct two tests of the Bauer hypothesis (Bauer 2004). Column 4 regresses average economic freedom on dummy for post-1945 independence, along with the baseline controls. It shows that countries that gained independence after WWII tend to have less present-day economic freedom. Column 5 presents a specification more directly related to this paper. Specifically, it includes an interaction of the postwar dummy with the colonizer's economic freedom at independence. Even though all postwar-independence countries have lower economic freedom on average (column 4), the interaction term suggests that colonies with freer postwar colonizers have more economic freedom on the margin, though

[23] This is similar to the view of Easterly and Levine (2016): Early European settlement is more relevant than current shares of population with European ancestry.

[24] Otherwise, the inclusion of colonizer fixed effects could potentially introduce measurement error when their first colonizer was not their main one.

[25] See, for example, Wilcken (2005, 222), Bethell (2009; 2018, 58), das Neves Alves (2005).

[26] For other examples of important institutional changes in which timing is quite relevant, see Banerjee and Iyer (2005) for India, and Garfias and Sellars (2024) for Mexico.

Table 3 Economic freedom of colonizer and average economic freedom (2000–2019), mechanism: European settlement

Dependent variable	*Avg. Economic freedom (2000–2019)*					
Interaction:	*Additive*			*Multiplicative*		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: *Prevalence of European Settlers* (Easterly and Levine, 2016)						
Avg. HIEL	0.431**	20.337*	− 0.061	0.349*	0.263	− 0.383
	(0.159)	(0.145)	(0.826)	(0.169)	(0.185)	(0.705)
Euro Settlers	0.021***	0.012***	0.008	− 0.294*	− 0.337	− 0.462
	(0.002)	(0.003)	(0.004)	(0.120)	(0.486)	(0.607)
Avg. HIEL × Euro Settlers				0.039**	0.044	0.059
				(0.015)	(0.061)	(0.077)
Controls	No	Baseline	Baseline	No	Baseline	Baseline
N	40	37	37	40	37	37
R^2	0.432	0.670	0.688	0.456	0.678	0.698
Panel B: *Ancestral Origins of Current Populations* (Giuliano and Nunn 2018)						
Avg. HIEL	0.718***	0.446**	1.442**	0.698***	0.448**	1.344***
	(0.134)	(0.146)	(0.440)	(0.125)	(0.153)	(0.217)
Euro Origins	0.002	− 0.000	− 0.016	− 0.206***	0.0596	− 1.344**
	(0.001)	(0.003)	(0.008)	(0.056)	(0.181)	(0.466)
Avg. HIEL × Euro Settlers				0.026**	− 0.008	0.167**
				(0.007)	(0.022)	(0.059)
Controls	No	Baseline	Full	No	Baseline	Full
N	86	66	53	86	66	53
R^2	0.170	0.525	0.880	0.180	0.525	0.893
Panel C: *Adjusted Ancestral Origins of Current Populations* (Giuliano and Nunn 2018)						
Avg. HIEL	0.648***	0.443**	1.299**	0.615***	0.427**	1.067***
	(0.124)	(0.141)	(0.432)	(0.114)	(0.141)	(0.227)

Table 3 (continued)

Dependent variable	Avg. Economic freedom (2000–2019)					
Interaction:	*Additive*			*Multiplicative*		
	(1)	(2)	(3)	(4)	(5)	(6)
Adj. Euro Origins	0.005**	− 0.000	− 0.016	− 0.277***	− 0.214	− 1.433**
	(0.002)	(0.004)	(0.009)	(0.031)	(0.226)	(0.470)
Avg. HIEL × Adj. Euro Origins				0.035***	0.027	0.178**
				(0.004)	(0.029)	(0.060)
Controls	No	Baseline	Full	No	Baseline	Full
N	86	53	53	86	66	53
R^2	0.186	0.589	0.876	0.214	0.527	0.890
Colonizer FE	No	No	Yes	No	No	Yes

Standard errors clustered at the colonizer level in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The scores range from 0 to 10. Baseline controls include continent dummies, indicators for landlocked and island colonies, terrain ruggedness, and precolonial population density in 1500. Full controls further include settler mortality, legal origins, and indicators for climate/soil, temperature/humidity, and for the presence of natural resources. See the main text for a description of the adjustments made in Panel C this should be interpreted cautiously because of potential selection on unobservables (see Section C.2 of the Electronic Supplementary Material).[27]

4.3 Mechanisms: direct and indirect rule

Here I examine direct and indirect rule as potential transmission mechanisms. Direct rule has been linked to inclusive political and economic institutions: It typically led to a larger share of European settlers, who brought their institutions and human capital (Easterly and Levine 2016). In contrast, indirect rule is linked to extractive institutions.

This theory suggests two alternative hypotheses. Both Acemoglu et al. (2001, 2002) and Easterly and Levine (2016) imply an additive model: The higher rates of European migration associated with direct rule simply add to the bundle of inclusive institutions. I propose that a multiplicative model better captures this transmission. That is, the impact of additional settlers on inclusive institutions depends on the inclusiveness of institutions in their countries of origin. Additional settlers from freer European nations contribute more to economic freedom in their destination colonies than those from less free European nations.[28]

I use two proxy measures for direct and indirect rule from previous studies. Easterly and Levine (2016) estimate the prevalence of European settlers during the colonial period (*Euro Settlers*) — a relatively direct measure, but one available for relatively few countries. Giuliano and Nunn (2018) use ethnographic sources to trace ancestral characteristics across all modern countries. Specifically, I use their measure of the share of the population speaking a European-origin language (*Euro Origins*). I also use a slightly adjusted version of the data from Giuliano and Nunn (2018) to account for large discrepancies relative to Easterly and Levine (2016).[29]

Table 4 reports the results. Panel A uses Easterly and Levine's (2016); Panels B and C use Giuliano and Nunn's (2018) measure, without and with adjustments, respectively. For each proxy for direct and indirect rule,[30] I test both the additive (columns 1–3) and the multiplicative (columns 4–6) hypotheses. I find limited evidence for the additive model. The coefficients indicating larger shares of Europeans (in terms of either settlers or ancestry) are only significant in the first column with no controls, and in column 2 of Panel A. The coefficient on *Avg. HIEL*, on the other hand, is robust to controls for European settlers and ancestry in eight out of nine specifications.

The data aligns more closely with the multiplicative hypothesis and suggests two key implications. First, since *Avg. HIEL* is significant in seven out of nine specifications,

[27] Alternatively, one can interpret that the relationship between the economic freedom of colonizer *at independence* and the modern-day economic freedom of colonies is only significant for the postwar period – see Brambor et al. (2006).

[28] Indeed, a broader literature indicates that the institutions brought by immigrants are those that they have experience with (e.g. Putterman and Weil 2010; Spolaore and Wacziarg 2013; Bologna Pavlik and Young 2021).

[29] For three countries, though Easterly and Levine (2016) report high European settlement rates and English as the main language, Giuliano and Nunn (2018) record zero *ancestral* populations speaking a European language. In the adjusted version, I assign Belize's value to Barbados and the Bahamas, and Australia's to New Zealand. As discussed by both Easterly and Levine (2016) and Giuliano and Nunn (2018), this likely results from differences in the measurement period.

[30] Because of the limited observations for Easterly and Levine (2016)'s measure in Panel A, I include only a baseline set of controls: continent dummies, absolute latitude, island and landlocked dummies, ruggedness, and precolonial population density (measured in 1500). Columns 3 and 6 include colonizer fixed effects. In Panels B and C, the regressions incorporate a full set of controls (as in Table 3, column 4).

Table 4 Economic freedom of colonizer and average economic freedom (2000–2019), persistence panel

Dependent variable	*Economic freedom of colony$_t$*					
	(1)	(2)	(3)	(4)	(5)	(6)
Years since Independence	– 0.012	– 0.048	– 0.051***	0.032	– 0.046	– 0.105**
	(0.019)	(0.027)	(0.011)	(0.046)	(0.044)	(0.029)
HIEL at Independence	– 0.031	0.117	1.245**			
	(0.321)	(0.316)	(0.399)			
HIEL at Indep. × Years since Indep	0.003 (0.003)	0.006 (0.003)	0.003* (0.001)			
Avg. HIEL				0.840**	0.691*	1.827**
				(0.288)	(0.299)	(0.459)
Avg. HIEL × Years since Indep				– 0.003 (0.006)	0.005 (0.005)	0.009* (0.003)
Time Trend	0.003	0.019***	0.041***	0.007	0.027***	0.047***
	(0.004)	(0.003)	(0.006)	(0.005)	(0.004)	(0.004)
Abs. Latitude		0.872*	– 2.138		1.463**	– 1.582
		(0.351)	(1.179)		(0.380)	(1.109)
Landlock		– 0.025	0.579**		0.182	0.769*
		(0.177)	(0.151)		(0.227)	(0.325)
Island		0.706**	1.332***		0.756**	1.359***
		(0.211)	(0.249)		(0.269)	(0.124)
Ruggedness		0.000	– 0.001		0.001	0.002
		(0.001)	(0.001)		(0.001)	(0.001)
Log Settler Mortality		– 0.114*	– 0.208**		– 0.092*	– 0.287***
		(0.051)	(0.054)		(0.038)	(0.015)
Pop. Density in 1500		– 0.109	0.066		– 0.230**	– 0.072
		(0.060)	(0.052)		(0.059)	(0.150)
British Legal Origins			0.132			1.093**
			(0.288)			(0.320)
French Legal Origins			– 0.827*			0.605

Table 4 (continued)

Dependent variable	*Economic freedom of colony$_t$*					
	(1)	(2)	(3)	(4)	(5)	(6)
			(0.380)			(0.664)
Controls for Soil/Climate (p-value)			[0.000]			[0.000]
Controls for Temperature (p-value)			[0.000]			[0.000]
Controls for Humidity (p-value)			[0.001]			[0.006]
Controls for Nat. Resources (p-value)			[0.018]			[0.002]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	No	Yes	Yes	No	Yes	Yes
Colonizer FE	No	No	Yes	No	No	Yes
N	2,002	1,361	1,361	2,002	1,361	1,361
$R2$	0.284	0.609	0.769	0.359	0.636	0.756

Standard errors clustered at the colonizer level in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The scores range from 0 to 1 countries colonized by freer nations tend to be freer today even after strictly indirect rule (*Euro Settlers/Origins* = 0). This also indicates that European migration is not the sole channel of institutional transmission. Second, consistent with the multiplicative model, a larger share of European settlers or ancestry from colonizers with high economic freedom amplifies the transmission of economic freedom –*Avg. HIEL* × *Euro* is positive and significant in five out of nine cases.[31]

These results should be interpreted with caution. First, the data do not allow precise identification of settlers by country of origin. Thus, these interpretations rely instead on the assumption that former colonies had a larger share of settlers from their respective colonizers than from other countries. While plausible, this might not hold universally. Second, as Easterly and Levine (2016) highlights, the timing of settlement—particularly early settlement—is crucial, but obtaining consistent estimates for all countries in the same period is unfeasible.[32] Finally, the interaction term in column 6 of Panel 5B is quite sensitive to selection on unobservables (see section C.2 of the Electronic Supplementary Material).

4.4 Persistence

The main results support the idea that colonizers transmit their level of economic freedom to their colonies, which remains observable in former colonies' economic freedom in the twenty-first century. A large literature emphasizes the long-run persistence of colonial institutions, making it important to assess the durability of these effects specifically in the case of economic freedom. To address this question, I construct a panel of colonies' economic freedom from 1950 to 2019. The estimated equation is:

$$\begin{aligned} Colony\ EFW_{ict} =& \alpha + \beta HIEL_i + \mu\ Years\ From\ Independence_{it} \\ & + \delta\left(HIEL_i \times Years\ From\ Independence_{it}\right) \\ & \lambda\ Time\ Trend_{it} + \varphi X_i + \tau_t + \rho_c. \end{aligned}$$

where $ColonyEFW_{ict}$ is the EFW score in year t of colony i, colonized by country c. *HIEL* represents the colonizer's economic freedom score, measured either at independence (*HIEL at Indep.*) or as the average during the colonization period (*Avg. HIEL*). $Years\ from\ Independence_{it}$ denotes the time elapsed since independence.[33] The first coefficient of interest, β, captures the relationship between the colonizer's economic freedom and that of the colony at independence (when *Years from Independence* = 0). *TimeTrend* accounts for the global increase in average EFW scores, which rose from approximately 4.95 in 1950 to 6.89 in 2019. All specifications include year fixed effects (τ_t) to control for cross-colony, year-specific shocks to EFW scores.

The second coefficient of interest, δ, associated with the interaction terms in each specification, captures how the relationship between the economic freedom of colonizers and colonies evolves over time. A negative coefficient would argue against persistence, as it would mean colonies lose the economic freedom initially inherited from their colonizers. A nonsignificant coefficient would indicate that this relationship remains stable, while a

[31] This is also suggested by the often-negative constitutive coefficients on European settlers or ancestry (*Euro Settler, Euro Origins*) but should be considered with caution because it is an extrapolation without support from the data, as no European country had zero economic freedom.

[32] See also the discussion of timing of measurement in Giuliano and Nunn (2018).

[33] Thus, μ has no empirically meaningful interpretation, as it captures the effect of time since independence when $HIEL = 0$.

positive coefficient would imply that the relationship strengthens as time since independence increases. I present the results in Table 5.

Columns 1–3 use *HIEL at Independence* as the measure of the colonizer's economic freedom, while columns 4–6 use *Avg. HIEL* as measures of the colonizer's economic freedom. As noted earlier, the constitutive terms—*HIEL at Independence* and *Avg. HIEL*—both capture the relationship between the colonizer's economic freedom at the time of independence (*Years from Independence* = 0).

When using a measure of the colonizer's economic freedom at independence (columns 1–3), I find limited evidence of a direct relationship with the colonies' economic freedom at independence. This result is only significant conditional on controls, as in column 3, in which case colonies inherit 1.245 points of economic freedom for every additional point of their colonizer's score at independence. The interaction term (*HIEL Indep* × *Years since Indep.*) indicates that this relationship strengthens over time, with colonies expected to inherit an additional 0.033 points per decade after independence.

Columns 3–6 present a similar pattern: At independence, colonies inherit between 0.691 and 1.827 points for each point of their colonizer's average economic freedom. Again, the relationship strengthens when controls and colonizer fixed effects are included. In this case, colonies are expected to inherit an additional 0.009 points per decade after.

independence, but only conditional on observables (column 6).

While the evidence modestly suggests that the colony-colonizer economic freedom relationship strengthens over time, it more clearly indicates that it does not fade. No coefficient is significantly negative, which would argue against persistence.[34]

4.5 Additional Results

4.5.1 Sample Splits

To examine potential heterogeneity, I conduct four sample splits. Because of the smaller sample size, I include only a baseline set of controls. The results are reported in Table B1.[35] First, since average HIEL scores are based on data from 1850 onward, column 1 excludes countries colonized before that year to ensure the averages fully capture the entire colonization period. The results remain largely unchanged.

Columns 2 and 3 examine whether the findings are driven by specific regions. Interestingly, excluding Africa (column 3) reverses the sign. As Fig. A2 shows, the raw correlation between colonies' and colonizers' economic freedom is positive across all continents except Asia, where it is slightly negative but statistically indistinguishable from zero. Without Africa's large number of observations, Asia dominates the sample, and the relationship turns negative when conditioning on observables. However, a sensitivity analysis as in Section C.2 of the Electronic Supplementary Material shows that this negative result would easily be driven to zero by unobservables.[36] More generally, Section C.1 discusses how the

[34] Table C3.C in Electronic Supplementary Materials also shows that these coefficients may be driven to zero under selection by unobservables, but they are at least modestly robust to sign changes.

[35] All columns include the same set of controls: continent dummies, absolute latitude, island and landlocked dummies, and controls for ruggedness and pre-colonial population density (measured in 1500). Cells with – or (–) are omitted due to a lack of observations or collinearity.

[36] Results available upon request.

regression weights in the main results are not consistently driven by a specific continent or colonizer.

4.5.2 Categories of the EFW Index

While I find evidence of a general relationship between a colonizer's economic freedom and that of its colony, it is unclear whether this holds across all areas of the EFW index. Another concern is the overlap between economic freedom and other institutional quality measures used in the literature (e.g., Acemoglu et al. 2001, 2002), making it important to isolate the components of economic freedom not explained by these measures.

In Table B2, I address these issues by regressing the average score (2000–2019) of each of the five areas of the colonies' EFW score on their colonizer's HIEL score, following the specifications of the main results. Column 1 shows a positive and significant correlation, indicating that colonies ruled by freer colonizers score higher across all areas of the EFW index, though only a few remain robust to additional controls. In particular, freer colonizers are associated with better regulation (Panel E) and stronger property rights and rule of law (Panel B), but these results lose significance when controlling for legal origins. This is expected, as these areas are largely shaped by a country's legal system.

The most striking and robust finding is that freer colonizers are strongly associated with higher scores in Area 4 (Freedom to Trade Internationally, Panel D). This relationship remains significant even after including all controls, including legal origins. For each additional point of the colonizer's economic freedom, colonies gain up to 2.8 points in this subindex, indicating greater openness to trade. This also underscores that international trade is a distinct component of economic freedom, orthogonal to other institutional quality measures, and was thus overlooked in previous studies of institutional transmission during colonial rule. Below, in Sect. 5.5, I provide additional robustness checks showing that there is a distinctive component of economic freedom that is not simply explained by institutional quality.

4.5.3 Multiple Colonizers and Institutional Cohesion

I also test whether colonization by multiple nations (simultaneously or sequentially) affects institutional cohesion, defined as the standard deviation across the five EFW subindexes. Bolen and Sobel (2020) show that variation among EFW areas strongly predicts economic growth. Since different colonizers may have prioritized different institutions over time, countries with multiple colonial rulers could develop dysfunctional or incoherent institutional environments. Table B3 regresses the 2000–2019 average of within-year standard deviations across the five EFW areas on an indicator for countries with multiple colonizers. I find no evidence that multiple colonizers reduce institutional cohesion.

5 Robustness Checks

This section briefly reports additional robustness checks that further support the main findings. A detailed discussion of each test is provided in Section C of the Electronic Supplementary Material.

5.1 Regression Weights

Following Aronow and Samii (2016), Tables C1.A and C1.B report the effective regression weights by continent and colonizer, respectively. While some variation exists across specifications, no continent or colonizer is consistently over- or underrepresented in the main results (Table 1). This ensures that the findings are not driven by any specific continent or colonizer—see Section C.1 for details.

5.2 Sensitivity Analysis

I conduct several sensitivity tests to assess whether the results might be driven by omitted variable bias. First, I report the test proposed by Oster (2019), in which δ indicates how large selection on unobservables must be, relative to selection on observables, to explain away the results (that is, to make $\beta = 0$). However, Diegert et al. (2022) show that Oster's δ may incorrectly account for correlation between unobservables and observed control variables. Additionally, Masten and Poirier (2024) demonstrate that the selection on observables required to set $\beta = 0$ can be substantially greater than that needed to flip its sign. Since this paper argues that a colonizer's economic freedom positively affects its colonies, I apply their test for $\beta > 0$.

These tests are detailed in Sect. C.2, and results are reported in Tables C1.A and C2.B. Given the benchmarks suggested by Oster (2019) and Diegert et al. (2022), the specifications with full controls appear robust to selection on unobservables. However, as mentioned earlier, other coefficients of interest in Tables 4–6 are much less so and should be interpreted with caution (see Section C.2 for details).

5.3 Spatial Correlation

As Conley and Kelly (2025) argue, spatial correlation is a major source of inflated *t*-statistics in studies of persistence. In this context, neighboring countries are more likely to have been colonized by the same power within a short time frame, introducing spatial correlation in the observations. Tables C3.A-C3.C show that nearly all results remain robust to Conley (1999) spatial standard errors and often become more significant. The exception is the *Postwar* dummy in Table 4.[37]

5.4 Population-Weighted Regression

Table C4 reestimates the main results from Table 1, weighting colonies by their population at independence. This approach, while subjective, assigns greater relevance to more populous colonies, offering an alternative perspective. In this case, columns 1 and 4 remain highly significant, whereas columns 2 and 3 do not. This suggests that at least some of the results are partially driven by colonies with smaller populations, which lose its importance in the regression with the inclusion of population weights.

[37] As discussed in Conley and Kelly (2025), this likely reflects a case in which latitude and longitude alone can strongly predict whether a country gained independence before or after the war.

5.5 Controlling for Institutional Quality

As a final robustness check, Section C5 reestimates the main results from Table 1 with the components of economic freedom that are independent of other measures of institutions. Specifically, I regress the average economic freedom of the colonizer on four measures of institutional quality—rule of law, judicial constraints on the executive, and indexes of electoral and liberal democracy—and then use the residuals of each of these regressions as the main explanatory variables. The results are largely robust to controlling for historical institutional quality, providing further evidence that there is a distinctive component of economic freedom that is orthogonal to these measures—see Table C5.B.

6 Conclusion

Institutions consistent with greater economic freedom are important predictors of economic growth and development. Accordingly, the question of determinants of economic freedom has been receiving the attention of several scholars (Lawson et al. 2020). Institutions usually develop across long periods of time (Spolaore and Wacziarg 2013), and are often constrained by historical accidents in a path-dependent process (North 1991; Page 2006), but the long-run determinants of economic freedom have been mostly overlooked. This paper bridges this gap by studying the relationship between modern-day economic freedom and characteristics of colonial rule among former European colonies, while also adding to the literature on colonial origins of modern institutions.

The findings suggest two main takeaways. First, colonies ruled by European nations with greater historical economic freedom are freer today. This relationship is sizable, persistent, and robust to selection on unobservables and controls for geography, climate, natural resource endowments, colonizer identity, precolonial characteristics, and mechanisms of institutional transmission highlighted in the development literature.

Second, these results suggest a more nuanced version of the theory of settlement patterns as the main driver of inclusive institutions (Acemoglu et al. 2001, 2002; Easterly and Levine 2016). Rather than a dichotomy between direct and indirect rule, I show that the "inclusiveness" of institutions brought by additional settlers is proportional to the "inclusiveness" of institutions in their countries of origin. That is, it suggests that additional European settlement from colonizers with high (low) economic freedom increases (reduces) the overall economic freedom of their colonies. It also emphasizes that former colonies inherited a much broader set of institutions from their colonizers than simply legal origins (La Porta et al. 1997, 1998, 1999) or "the institutions of property rights" (Acemoglu et al. 2001, 2002).

While a large literature has argued for causality with similar arguments about institutional transmission in colonial settings (Acemoglu et al. 2001, 2002; Easterly and Levine 2016; La Porta et al. 1999), especially highlighting their persistent effects until today, the potential causality of the findings presented here should be interpreted with caution. On the one hand, given their robustness to numerous geographical and historical controls highlighted in previous literature, and also to selection on unobservables, a causal argument may be made on the basis of unconfoundedness. On the other hand, there is only so much that can be inferred from historical data, which are often permeated by measurement errors.

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