Response to Editor and Reviewers for PUCH-D-24-00316 ("Colonial Rule and Economic Freedom")

January 31, 2025

1 Summary

I thank the editor and the reviewers for their comments, concerns, and suggestions. In this document I detail my responses and the revisions that have been made to the paper. I hope they are satisfactory and believe that the paper is now much improved thanks to your valuable feedback.

All quoted sections of the revised text that appear below are indented. (Since the revised text is "copied-and-pasted" into this document, please note that footnotes may be numbered differently here than in the paper.)

The order in which I address the comments is simply the order in which they appear in the editor's correspondence. I have included labeled subsections to better organize my response. Responses to the Editor begin on the next page. Responses to Reviewer 1 begin here; and those to Reviewer 2 begin here.

As a general note, I emphasize that the paper underwent extensive revisions. Importantly, I have decided to remove the results on the length of colonial rule, primarily because it was highlighted as a puzzle in the literature (Grier et al., 1997; Feyrer and Sacerdote, 2009), and I too cannot provide a sufficiently convincing explanation. This also better accommodates the several new results suggested by the editor and the referees without compromising the level of detail or substantially increasing the total length of the paper.

The Tables, Figures, and Appendices are also reproduced in their entirety at the end of this response. For your convenience, they are linked below and whenever they are mentioned in the main text.

- Appendix A: Data Description
- Appendix B: Additional Results
- Appendix C: Robustness Checks

All editor and referee comments are reproduced in **bold** below.

2 Editor

I enjoyed reading your paper and sent it to two expert referees. Both of them make the argument that very substantial revisions are needed before the paper could be reconsidered for publication. I particularly wish to emphasize Referee #1's first, second, and third major comments. The paper needs to be better conceptualized. The suggestion to have a few "case studies" or developed examples is a good one.

While the question of your paper is worth answering, the main criticisms I have against your paper are its structure and whether or not your results simply restate what we already know from the literature on legal origins.

2.1 Literature Review

Concerning the structure of the paper, your literature review, for instance, lacks a common thread and is a bit of a drag. It reads like a laundry list of things written on the topic. I would recommend that you taxonomize the existing literature instead. One suggestion is to make the distinction between papers pointing to geographical determinants, those pointing to the incentives of the colonizers in establishing extractive vs. inclusive institutions (Acemoglu's reversal of fortunes and colonial origins papers), and those authors pointing to the human capital of colonizers (Glaeser et al. 2004's Do Institutions Cause Growth? ; see also William Easterly & Ross Levine's The European origins of economic development). It is fine to engage those papers in the development literature even though they do not directly study the effect of colonialism on economic freedom. This taxonomy would likely make it easier to discuss your results about the length of colonial rule. Right now, it is not clear why those results are included. You invoke Olson's stationary bandit to explain them, but there are alternative explanations you do not exclude or discuss (for instance, the human capital of colonizers channel). If you find a better way to reorganize section 2, feel free to adopt it.

Response: I greatly appreciate these suggestions. I have decided to follow your suggestion of a taxonomy of the literature into three branches, with slight modifications to the groups. Given your subsequent comments on the importance of legal origins and whether these results are explained by the identity of the colonizer, I have decided to include these two together as their own. That subsection discusses how different colonizers implemented different institutions and their effects on development

The following subsection groups the costs and benefits of different settlement strategies and includes the human capital literature. This is because both Acemoglu et al. (2001, 2002) and Easterly and Levine (2016) argue in favor of the prevalence of European settlement, differing in that the former highlights institutions, while the latter focuses on human capital as the relevant endowment brought by Europeans.

Finally, instead of a separate review of the economic freedom literature, I have grouped the individual papers into those same branches, according to which factors they see as the most relevant determinant. This has made the literature review much more concise and organized, and I hope that it has improved its overall readability. It now reads as follows:

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 today's economic freedom. 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. Thus, 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 who 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).[1]

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.[2] Similarly, Sachs (2001, 2003) argue that tropical environments face hindered development due to

[1] Also see the discussion in Acemoglu et al. (2001) and Acemoglu et al. (2002).

[2] 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

lower agricultural productivity and higher mortality rates than temperate areas. This is attributed to differences in soil quality, water access, and the prevalence of diseases and pests. Sachs also underscores Diamond (1999)'s technology transmission argument, noting that technologies suited to temperate climates often fail in tropical environments.

A few studies on economic freedom determinants draw on these theories to explain variations in institutions. Building on Sachs's focus on disease prevalence, Nikolaev and Salahodjaev (2017) test the parasite-stress theory, which argues that infectious diseases influence personality traits and cultural values. The theory suggests that higher pathogen prevalence fosters collectivist values, which undermine economic freedom through institutional development, and is supported by their empirical evidence.

Gohmann (2018) develops a variant hypothesis of Diamond (1999)'s aforementioned theory, in which these two factors are associated with contemporary levels of economic freedom. Gohmann argues that 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 (see Section 3.1), no significant link emerges with the overall economic freedom index.

In addition to the previous papers, Murphy (2021) considers the absolute size of a country, and finds that larger countries (in area) tend to have less economic freedom.[3] Following a similar intuition, Fors (2014) argues that islands exhibit greater social cohesion and presents evidence supporting their better economic institutions.

2.2 Identity of Colonizer and Legal Origins

Another branch of this literature focuses on the qualities of specific institutions. Hall and Jones (1999) posits that institutions with greater "Western influence" generate higher levels of output per capita in modern times. However, "Western influence" is a rather broad concept. Indeed, European implemented various types of institutions, with varying outcomes. For instance, Grier (1999) finds that former British colonies have larger incomes today relative to former French and Spanish colonies.[4]

oriented mostly in East-West relative to North-South axes, 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 Pavlik and Young (2019).

[3]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 focus on *geographical* size, arguing that population size may result from geographical characteristics.

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

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 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 of both direct and indirect rule – they had the English law as a "unique foundation" that united the Empire, along with the English language (Churchill, 1956, p. 10).

In this vein, La Porta et al. (1997, 1998, 1999, 2008) highlight the role of legal systems in creating widely different incentives for economic development. Their findings show that English common law systems provide greater protection of investors and their property than do systems of French civil law origins. Crucially, legal systems are one of the most important institutions to be transmitted from colonizers to their colonies.

With respect to economic freedom specifically, Nattinger and Hall (2012) show that U.S. states that were first settled by civil law countries have less economic freedom today.[5] In a similar vein, Callais (2021) attributes poor economic outcomes in Louisiana to its French legal origins.

2.3 European Settlement

The larger strand of this literature focuses on European settlement as the key source of variation in colonial development. Although they 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 will be conditioned by geographical and historical factors (Easterly and Levine, 2016). First in this literature, Engerman and Sokoloff (1997) condition 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),[6] 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 to international markets.

[5] 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.

[6] 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 post-colonial development paths.

Conversely, in areas suitable for settlement, Europeans came at large. As part of their baggage, they brought a set of "inclusive" institutions, similar to those found at home,[7] 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 implied by direct rule, without accounting for the quality of institutions at home. Thus, at least implicitly, it assumes that additional settlement from countries with relatively noninclusive institutions will contribute to the same extent as those from inclusive countries – regardless of the colonizer, more "European" institutions are always an improvement.

In turn, Easterly and Levine (2016) support the notion that former colonies with greater prevalence of European settlers have greater levels of 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, while downplaying the direct role of Europeans per se (Easterly and Levine, 2016)

The present study bridges these the economic development and economic freedom literatures by examining the link between colonial rule and contemporary economic freedom. While there is substantial evidence that colonies inherit institutions from their colonial period, it remains unclear whether this extends to the broader set of institutions underlying economic freedom. As the results detail below, even after controlling for initial geographical characteristics, colonizer identity, legal origins, and settlement patterns, the colonizer's economic freedom significantly influences the economic freedom of their colonies.

2.2 HIEL at Independence

Peter Bauer (for instance, in his *From Subsistence to Exchange*) made the case that one reason why the independence of colonies after WWII failed so miserably is that the Europeans after WWII exported socialism, national planning, price controls, etc., to colonies. If possible, I would like you to test that hypothesis. Thus, as mentioned by Referee #1, I would like you to produce results using the HIEL *at the beginning of colonization.* But unlike the referee, I would also like you to test the Bauer hypothesis using the colonizer's economic freedom level at the time of, or just before, independence.

[7]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, Pavlik and Young (2021) find that countries whose populations have greater historical experience with representative assemblies have stronger property rights, rule of law, and greater constraints of the executive – all of which are important elements of economic freedom.

My intuition is that the economic freedom of the colonizer at the time of independence matters the most. Another advantage of doing it this way, as referred to by Referee #1, is that you could maybe include colonizer country fixed effects and exploit time variation in each colonizer's level of economic freedom. That said, it may be that you do not have enough data and variation to identify a result along those lines. Still, it is worth trying.

Response: Thank you for this great suggestion. I have included a section that investigates different hypotheses regarding the "timing" of institutional transmission. The details are provided in the section reproduced below, with the results table at its end. I have also included colonizer fixed effects in the "full" specifications of each table (not just the one about "timing"). The results are robust to, and even stronger with, the inclusion of fixed effects (e.g., Columns 3 and 4 of Table 3, as reported in my reply to your next comment).

4. Results

[...]

4.2 Timing and Mechanisms of Transmission

4.2.1 Timing

This section investigates the timing and mechanisms of transmission of economic freedom from the colonizers to their colonies. First, consider the role of timing in transmission. One explanation is that a colonizer's economic freedom at the start of colonization is most influential, for it establishes a path dependence for the entire colonial period – what I call the "early hypothesis."[8] Conversely, the "late hypothesis" suggests 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 post-war period (Bauer, 2004) – the "Bauer hypothesis" – which I also test.

Table 5 consider these three hypotheses. For the "early hypothesis" (columns 1-2), I regress the average EFW score of the colonies on the very first available HIEL, which is only available for countries colonized at 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 where the first colonizer was also the *main* colonizer, enabling the inclusion of colonizer fixed effects.[9] In both cases, *HIEL at Independence* is

[8] This is similar to the view of Easterly and Levine (2016) in which early European settlement is more relevant than current shares of population with European ancestry.

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

insignificant, 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. As in previous columns, the results remain insignificant. These findings suggest that economic freedom at a single point in time does not predict future economic freedom. By contrast, 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 tests Bauer's hypothesis by regressing average economic freedom on a post-1945 independence dummy, along with baseline controls. Indeed, countries that gained independence postwar tend to have lower present-day economic freedom. Column 5 presents a specification more directly related to this paper. Specifically, I interact the postwar dummy with the colonizer's economic freedom at independence. Taken together, even though all postwar countries have lower economic freedom on average (column 4), the interaction term suggests that colonies with freer postwar colonizers have higher economic freedom on the margin, though this should be interpreted cautiously due to potential selection on unobservables (see Section C.2, in Appendix C).[10]

[10] Alternatively, we 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).

Table 4: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019): Alternative Measures

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 First HIEL	-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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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 post-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, beggining with the America dummy row. Cells with - or (–) have been omitted for lack of observations of collinearity.

2.3 Difference from Development Literature

Another concern I have about your paper is that it is unclear whether your results tell us what we already know from the development literature: legal origin matters. Do your results show the effect of economic freedom, or do they capture the effect of legal origin? What happens when you control for French vs. English legal origin? Does your result disappear? Does the legal origins result disappears? Do both results disappear or remain significant?

Response: This is a very reasonable concern, and I have made several edits to highlight this paper's contribution relative to that literature. First, the introduction includes the following discussions:

1 Introduction

[...]

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, it suggests that additional settlers implied by 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) 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 (implied by 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 their 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. While several studies highlight the superiority of common law (La Porta et al., 1997, 1998, 2008), and British rule over its French and Spanish counterparts (Grier, 1999), my identification

strategy also allows leveraging variation in colonizer institutions over time. As a result, even after accounting for legal systems 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,Äîthose of economic freedom,Äîwhich include sound money, regulation, and international trade freedom. In fact, the strongest result from the sub-indexes of economic freedom shows that former colonies of freer European colonizers are significantly more open to international trade, which is not accounted by their legal systems, the identity of their colonizer, nor by geographical variables.

In the empirical portion of the paper, I have included controls for legal origins in the "full" specifications (e.g. Column 4 of Table 3, reported below). The results are robust to these controls, and in fact have magnitudes about 40% larger after accounting for legal origins. In reporting these results, I also bring this discussion explicitly:

4 Results

[...]

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).[11] Notably, after accounting for legal origins, the relationship between the colonizer's and colony's economic freedom becomes approximately 40% stronger in magnitude.

[11] 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.

Table 3: 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			-0.000917	0.000340
			(0.00154)	(0.00231)
Log Settler Mortality			-0.164	-0.388***
			(0.164)	(0.0592)
Pop. Density in 1500			-0.0582	0.000869
			(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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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.

2.4 Econometrics

2.4.1 Clustering at Colonizer

There are a few problems with econometrics. First, it seems to me that you should cluster your standard errors at the colonizer level.

Response: I thank the editor for this excellent suggestion (also made by Reviewer #2). I have included standard errors clustered at the colonizer level as the default in all regressions, and the results are, in general, more significant. While I provide full details in Section C.3 of Appendix C, I should mention that these results are also robust to Conley (1999) standard errors.

2.4.2 All controls together

Second, as both referees pointed out, all controls should be included and not simply separately. You can include different types of controls (geographic, social, etc.) in different columns, but you need a reason for this. Right now, your tables 3 to 6 look like a case of p-hacking.

Response: I appreciate these concerns. To be clear about specification choices made in the previous version of the paper, the controls and sample splits were included following the structure of Acemoglu et al. (2002) (see esp. Table V, p. 1250). However, I have now restructured all main tables to report the inclusion of controls together (sequentially) instead of separately as before. The last column of each table reflects a "fully specified" model with all the variables that have been highlighted by the editor and the referees, including continent dummies, absolute latitude, dummies for islands and landlocked countries, terrain ruggedness (Nunn and Puga, 2012), log settler mortality (Acemoglu et al., 2001), pre-colonial population density (Acemoglu et al., 2002), indicators for soil, temperature, and presence of natural resources, as well as dummies for British and French legal origins (La Porta et al., 1999). The controls for settlement that you suggested (e.g., Easterly and Levine, 2016) have a dedicated section – please see my reply to your next point.

For formatting limitations, I have moved the sample splits (previously columns 2, 3, 4, and 6 of Table 3) to a separate table in Appendix B (see Table B1) and included a "baseline" set of controls (continent dummies, absolute latitude, island and landlocked dummies, terrain ruggedness, and pre-colonial population density) in all these sample split regressions. I also included these "baseline" controls in all secondary sets of results or whenever the number of observations was extremely low. All results tables are provided at the end of this response document, starting here.

2.4.3 Additional controls

There are also many covariates that should be considered based on the development literature. For instance: a) the prevalence of European settlers (using, for instance, the data in William Easterly Ross Levine's The European origins of economic development), b) Ruggedness, since it may have been a factor for both state building and the slave trade (see Nunn and Puga, Ruggedness: The Blessing of Bad Geography in Africa), c) Urbanization rate in 1500 (see Acemoglu and Robinson's Reversal of fortune). This last variable is in Appendix B, but it is not clear why it is not in the main analysis. There may be other variables to consider.

Response: Thank you for these suggestions. I have collected data for these three variables and considered them in the results, as mentioned in the previous item. Data on ruggedness and pre-colonial population density have been included in the "baseline" set of controls for nearly all specifications (except the raw correlations).

There are a few reasons for which I do not include Easterly and Levine (2016)'s data in the main regressions. Stata omits it due to collinearity with other variables in the "full" specification, and it has minimal overlap with the other controls from columns 3 and 4 from Table 3, thus reducing the sample to mere 27 observations.

Instead, I have decided to explore it a tentative mechanism of transmission in a separate section, supplementing it with data from "Ancestral Origins Characteristics of Modern Populations" (Giuliano and Nunn, 2018). That section reads as following:

4 Results

4.2.2. Mechanism: 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 "exclusive" institutions.

However, this theory suggests two hypothesis. Both Acemoglu et al. (2001, 2002) and Easterly and Levine (2016) imply an "additive" model: 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 process. 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 will contribute more to economic freedom in their destination colonies than those from less free

European nations.[12]

I use two proxy measures for direct and indirect rule from previous literature. Easterly and Levine (2016) estimate the prevalence of European settlers during the colonial period (*Euro Settlers*) — a more direct measure, but available for substantially fewer 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 Giuliano and Nunn (2018) to account for large discrepancies relative to Easterly and Levine (2016).[13]

Table 5 reports the results. Panel A uses the measure of Easterly and Levine (2016); Panels B and C use Giuliano and Nunn (2018)'s measure, without and with adjustments, respectively. For each proxy of direct and indirect rule,[14] 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 (either settlers of 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/ancestry in 8 out 9 specifications.

Instead, the data aligns more closely with the "multiplicative" hypothesis and suggests two key implications. First, since *Avg. HIEL* is significant in 7 out of 9 specifications, countries colonized by freer nations tend to be freer today even under 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/ancestry from colonizers with high economic freedom amplifies the transmission of economic freedom –*Avg. HIEL* × *Euro* is positive and significant in 5 out of 9 cases.[15]

Nonetheless, these results should be interpreted with caution. First, the data does not allow precise identification of settlers by country of origin. Thus,

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

[13]For three countries, despite Easterly and Levine (2016) reporting high European settlement rates and English being 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 in both Easterly and Levine (2016) and Giuliano and Nunn (2018), this likely results from differences in the measurement period.

[14]Due to 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 pre-colonial population density (measured in 1500). Columns 3 and 6 include colonizer fixed effects. In Panels B and C, they also incorporate a full set of controls (as in Table 3, Column 4).

[15]This is also suggested by the often-negative constitutive coefficients on European settlers/ancestry (*Euro Settler, Euro Origins*) but should be considered with caution because it is an extrapolation outside of support of the data —- no European country had zero economic freedom.

these interpretation rely instead on the assumption that former colonies had a larger share of settlers from their respective colonizers. While plausible, this may not hold universally. Second, as Easterly and Levine (2016) highlights, the timing of settlement is crucial – particularly early settlement – but obtaining consistent estimates for all countries at the same period is unfeasible. [16] Finally, the interaction term of Column 6 of Panel 5B is quite sensitive to selection on unobservables (see section C.2 in Appendix C).

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

Table 5: 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**	0.337*	-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	0.00239	-0.000394	-0.0159	-0.206***	0.0596	-1.344**
	(0.00132)	(0.00263)	(0.00819)	(0.0560)	(0.181)	(0.466)
Avg. HIEL× Euro Settlers				0.0263***	-0.00753	0.167**
				(0.00712)	(0.0224)	(0.0590)
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)
Adj. Euro Origins	0.00501**	-0.0000870	-0.0158	-0.277***	-0.214	-1.433**
	(0.00148)	(0.00380)	(0.00861)	(0.0311)	(0.226)	(0.470)
Avg. HIEL× Adj. Euro Origins				0.0354***	0.0269	0.178**
				(0.00394)	(0.0289)	(0.0597)
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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

2.4.4 Conley (1999) Standard Errors

In the appendix, if this is adequate, I would want you to see if the results hold with Conley standard errors accounting for spatial autocorrelation.

Response: This is a great suggestion, and I have implemented it for all the main coefficients that were significant. I estimated the errors using various distance thresholds (1,000, 2,500, 5,000, and 10,000 km). Full details are provided in Section C.3 of Appendix C.3, but I report them briefly among robustness checks as follows:

5 Robustness Checks

[...]

5.3 Spatial Correlation

As Conley and Kelly (2025) argues, 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 5.[17]

2.5 Sensitivity Analysis

If possible, you may want to add a sensitivity analysis to see how robust your results are to the selection on unobservables (see appendix C of this paper for an example of how to do that.). Not all suggestions have to work for your paper to get published, but the bottom line is that the empirics need to be more rigorous. Empirical sections also need to be better structured.

Response: Thank you for providing the reference for the sensitivity analysis, which was of great help. As in your paper, I have implemented several sensitivity tests, including Oster (2019)'s δ and the alternative methods discussed in Diegert et al. (2022) and Masten and Poirier (2024). As per your suggestion below to shorten Section 5 (Robustness Checks), I have reported them briefly in that section as follows:

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

5 Robustness Checks

Beyond the numerous specifications in the main results, this section briefly reports additional robustness checks that further support the findings. A detailed discussion of each test is provided in Appendix C.

[...]

5.2 Sensitivity Analysis

I conduct several sensitivity tests to assess whether the results may be driven by omitted variable bias. First, I report the test proposed by Oster (2019), where δ indicates how large selection on unobservables must be, relative to selection on observables, to "explain away" the results (i.e., $\beta = 0$). 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 Appendix C, Section C.2, and results are reported in Tables C2.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).

Then, on Appendix C, Section C.2, I provide a full explanation of the tests, as follows:

Appendix C: Robustness Checks

[...]

C.2 Sensitivity Analysis

I perform several robustness checks for potential selection on unobservables. First, I compute Oster (2019)'s δ, which indicates the ratio of selection on unobservables to selection on observables required for a zero effect ($\beta = 0$). For instance, a δ of 2 means that unobservables would have to have twice the explanatory power of observables to "explain away" the results.

However, Oster's δ suffers from two potential problems. As argued in Diegert et al. (2022), Oster's approach uses a method called *residualization* to avoid making assumptions about the exogeneity of the controls. As the name suggests, *residualization* "replaces the unobservables by the portion of the unobservables that is uncorrelated with the included controls." (Diegert et al., 2022, p. 3). Nonetheless, in practical applications, unobservables are likely correlated with the included controls.[18] Thus, Oster's δ suffers from inverse monotonicity biases, whereby excessive weight is given to unobservables when most selection is done by observables, and too much weight is given to observed variables when most of the selection is done by unobservables (Diegert et al., 2022, p. 5).

The second problem, described in Masten and Poirier (2024), is that the "explain away" breakdown point – the smallest value of δ required for $\beta = 0$ – is not necessarily the same as the smallest δ required for β to flip its sign – the *sign change* breakdown point.[19]

Their sensitivity parameter, $\bar{r}_X$, follows the intuition of Oster's δ – Selection on Unobservables / Selection on Observables –, but accounts for correlation between observables and unobservables. More generally, their method allows researchers to set the problem as an inequality (in this case $\beta > 0$). Their method also allows for controlling for a maximum amount of correlation ($\bar{c}$) between unobservables and included controls X. When $\bar{c} = 1$, by construction, $\bar{r}_X < 1$.

The interpretation of $\bar{r}_X$ generally follows that of Oster's δ in the sense that a $\bar{r}_X = 0.5$ implies that selection on unobservables would have to be 50% as large as selection on observables, but the outcome and benchmark differ, as discussed below.

Table C2.A reports the results for Tables 3 and 4.[20] In column (1), I report Oster (2019)'s δ. I follow Oster's rule of thumb for assuming that R^2 would rise by a maximum of 30% if all unobservables were included in the regression ($R^2_{long} = 1.3 \times R^2_{med}$).

Columns (2) through (5) report the values of $\bar{r}_X$ under different assumptions of maximum correlation ($\bar{c}$) between unobservables and included controls X. In these columns, there is no constraint on the relative impact of unobservables on the outcome variable.[21] However, as argued in Diegert et al. (2022,

[18] On this topic, see Angrist and Pischke (2017, p. 129).

[19] As explained in Masten and Poirier (2024, p. 2): "This can occur when the omitted variable bias is discontinuous in the sensitivity parameter, allowing the value of the bias adjusted estimand to jump across the horizontal axis at zero as the sensitivity parameter varies. [...] Such discontinuities can arise in regression analysis because the sensitivity parameters often involve covariance and variance terms, which lead to nonlinear restrictions on the value of the bias."

[20] Because these tests are always performed *relative to* a baseline set of parameters, I do not report the least-specified equation of each Table. Following the recommendations of Diegert et al. (2022), I use the basic geographical characteristics (continent, island, and landlocked dummies, as well as latitude) as the baseline.

[21] Formally, this is denoted by $\bar{r}_Y$, which is the analogous measure to $\bar{r}_X$, but relates the ratio of unobservables to observables to Y, the outcome variable.

p.40-42), this is a conservative estimate. The authors suggest $\bar{r}_X = \bar{r}_Y$ as an alternative benchmark, which assumes that the impact of unobservables (relative to observables) is the same for treatment (X) and for outcomes (Y). However, the process of imposing this constraint requires a numerical optimization algorithm, which can be extremely demanding in terms of computational capacity. Therefore, I was not able to obtain it for some specifications, denoted in the tables with (–).

Most results for specifications including all controls are quite robust to selection on observables according to Oster's δ. For instance, the specifications of Table 3, Col.4, and Columns (3) and (6) of Table 5 (Panels B and C), would require selection on unobservables from 105.2% to 507.1% that of on observables to drive the results to zero. Notice that Column 3 of Table 5 follows the same specification as Table 3, Column 4, but includes a control for European ancestry, and the sensitivity parameters are substantially improved. Thus, the inclusion of this control eliminates a large portion of selection on unobservables.

In turn, when no restriction on $\bar{r}_Y$ is applied (Columns 2-5 of Tables C2.A-C2.B), the $\bar{r}_X$ parameters hover around 0.4-0.7 in the tests for *Avg. HIEL*. This can be considered robust according to the discussion in Diegert et al. (2022, pp. 31, 40).[22]

Moreover, when we apply the restriction $\bar{r}_X = \bar{r}_Y$ – assuming the impact of unobservables (relative to observables) is the same for treatment (X) and for outcomes (Y) –, the results are deemed much more robust to unobservables.

[22]They suggest a cutoff of 0.5 as a "more reasonable value for determining robustness." (Diegert et al., 2022, p.31). As they argue, this is sensible assumption because researchers do not choose controls at random. It is likely that they first include the most important variables, and thus omitted ones will likely have less predictive power. Also see Altonji et al. (2005).

Table C2.A: Sensitivity Analysis, Tables 3-4

Parameters	Oster (2019)	Diegert et al. (2022)				
	δ $(R^2_{long} = 1.3 \times R^2_{med})$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.25$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.5$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.75$	$\bar{r}_Y = +\infty$ $\bar{c} = 1$	$\bar{r}_Y = \bar{r}_X$ $\bar{c} = 1$
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Table 3:						
Avg. HIEL						
Column 3	0.685	0.339	0.337	0.337	0.337	0.614
Column 4	1.054	0.471	0.459	0.459	0.459	0.702
Table 4:						
Postwar						
Column 4	0.977	0.248	0.248	0.248	0.248	–
Postwar×HIEL Indep.						
Column 5	0.149	0.047	0.047	0.047	0.047	–

Notes: Sensitivity analysis not provided for insignificant coefficients or columns with less than the baseline controls (e.g. Column 2, Table 3). Estimates could not be obtained for cells with –. See main text for details.

Table C2.B: Sensitivity Analysis, Table 5

Parameters	Oster (2019)	Diegert et al. (2022)				
	δ $(R^2_{long} = 1.3 \times R^2_{med})$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.25$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.5$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.75$	$\bar{r}_Y = +\infty$ $\bar{c} = 1$	$\bar{r}_Y = \bar{r}_X$ $\bar{c} = 1$
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Table 5A:						
Column 2						
Avg. HIEL	0.942	0.389	0.385	0.385	0.385	0.626
Euro Settlers	0.207	0.148	0.148	0.148	0.148	0.375
Table 5B:						
Avg. HIEL						
Column 2	0.659	0.632	0.591	0.588	0.588	0.745
Column 3	1.512	0.471	0.459	0.459	0.459	0.648
Column 5	0.668	0.633	0.592	0.589	0.589	0.747
Column 6	1.919	0.463	0.452	0.452	0.452	0.613
Euro Origins						
Column 6	0.379	0.376	0.376	0.376	0.376	-
Avg. HIEL×Euro O.						
Column 6	0.901	0.377	0.374	0.374	0.374	0.561
Table 5C:						
Avg. HIEL						
Column 2	0.872	0.715	0.655	0.645	0.645	0.798
Column 3	2.875	0.418	0.412	0.412	0.412	0.599
Column 5	0.731	0.635	0.593	0.590	0.590	0.775
Column 6	3.075	0.410	0.405	0.405	0.405	0.565
Adj. Euro Origins						
Column 6	3.616	0.092	0.092	0.092	0.092	–
Avg. HIEL×Adj. Euro O.						
Column 6	5.071	0.091	0.091	0.091	0.091	0.264
Table 6:						
HIEL Indep						
Column 3	0.354	0.360	0.358	0.358	0.358	0.740
HIEL Indep.× Years since Indep.						
Column 3	1.045	0.420	0.414	0.414	0.414	0.729
Avg. HIEL						
Column 5	0.289	0.289	0.289	0.289	0.289	0.679
Column 6	0.398	0.154	0.154	0.154	0.154	0.775
Avg. HIEL× Years since Indep.						
Column 6	0.275	0.373	0.370	0.370	0.370	0.786

Notes: Sensitivity analysis not provided for insignificant coefficients or columns with less than the baseline controls (e.g. Column 2, Table 3). Estimates could not be obtained for cells with –. See main text for details.

2.6 Persistence

My final main comment has to do with the persistence literature, which you use to motivate your paper. Since this is the approach you choose, why not test for persistence in section 4.3 (or in another section if the paper's organization changes too drastically)? For instance, you could use a panel to see if the colonizers' economic freedom has an effect on the economic freedom of the former colony in year/decade t+1, t+2, t+n after independence. If the effect attenuates in the years or decades after independence, this is evidence *against* persistence.

Response: I closely followed this suggestion, thank you. I find no evidence that this relationship fades away, thus weighting in favor of persistence. The paper now includes the following:

4. Results

[...]

4.4 Persistence

The main results support the idea that colonizers transmit their levels of economic freedom to their colonies, which remains observable in former colonies' economic freedom in the 21st century. A large literature emphasizes the long-run persistence of colonial institutions, making it important to assess the durability of these effects in the case of economic freedom. To address this, I construct a panel of colonies' economic freedom from 1950 to 2019. The estimated equation is:

$$\begin{aligned} ColonyEFW_{ict} = \alpha + \beta HIEL_i + \mu YearsFromIndependence_{it} \\ + \delta(HIEL_i \times YearsFromIndependence_{it}) \\ + \lambda TimeTrend_{it} + \phi X_i + \tau_t + \rho_c \end{aligned}$$

where $ColonyEFW_{ict}$ is the EFW score in year t for 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.[23] 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

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

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 colonies "lose" the economic freedom initially inherited from their colonizers. An insignificant coefficient would indicate that this relationship remains stable over time, while a positive coefficient would imply that the relationship strengthens as time since independence increases.

I present the results in Table 6. Columns 1-3 use *HIEL at Independence*, while columns 4-6 use *Avg. HIEL* as measures of the colonizer's economic freedom. As noted earlier, the constitutive terms – textitHIEL 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 measuring the colonizer's economic freedom at independence (columns 1-3), I find limited evidence of a direct relationship with its 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* $\times$ *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.[24]

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

Table 6: 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	0.006	0.003*			
	(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	0.005	0.009*
				(0.006)	(0.005)	(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
			(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
R^2	0.284	0.609	0.769	0.359	0.636	0.756

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

2.7 Minor comments:

1) Please try to improve your writing whenever possible. For instance: "Due to its robust association with positive outcomes such as economic growth or human capital, trying to understand why some countries have more economic freedom than others has sparked a large literature reviewed by Lawson et al. (2020). Remarkably, however, only a few studies look far back to historical or geographical facts as a source of today's levels of economic freedom." (p.4) can be simplified as "Despite the large body of work on the determinants of economic freedom (Lawson et. al. 2020), few studies analyze the deep historical and geographical roots of contemporary economic freedom."

Response: Thank you for the careful reading of the manuscript. I have made several adjustments throughout the text for conciseness. In particular, as mentioned earlier, the literature review has been completely revised, along with Section 5, which you pointed out as excessively long.

2) You cite Nattinger and Hall (2012). I believe Justin Callais wrote an article on the impact of civil law in Louisiana.

Response: I have now cited his work (Callais, 2021). Thank you for the suggestion.

3) In the data section, it would be good to include a map of the economic freedom of colonizers as well as a map of how colonized what next to a map of the EFW for former colonies.

Response: I was able to merge the two maps you suggested into a single map, in which EFW varies from light to dark, and colonies are color-coded by colonizer. This has been included as Figure 1. I am happy to perform any adjustments you may see fit.

4) A graph showing the raw correlation between the EFW of the colonizers and that of the colonized would be nice.

Response: I have included this plot along with descriptions of the data as Figure A1, and its breakdown by continent in Figure A2, both in Appendix A. They are both mentioned in the Data section of the main text. If you prefer, I can also move them to the main text.

5) The title of section 4.4 should probably be changed to "Categories of EFW."

Response: I have changed the section title per you suggestion. Additionally, I have been more rigorous on the results for this section and included all controls following your previous comments. I should emphasize that the results for Area 4, covering international trade, are very robust. It reads as follows:

4.5.2. Categories of the EFW

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 previous 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 answer these questions 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 in the colonizer's economic freedom, colonies gain up to 2.8 points in this sub-index, 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.

Table B2: Economic Freedom of Colonizer and Areas of Economic Freedom (2000-2019)

Dependent Variable:	*Area 1 - Size of Government*			
Panel A:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.325**	0.204	-0.0373	0.415
	(0.131)	(0.170)	(1.242)	(1.038)
R^2	0.029	0.205	0.745	0.789
Dependent Variable:	*Area 2 - Property Rights and Rule of Law*			
Panel B:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	1.124***	0.650**	1.956*	2.372
	(0.290)	(0.252)	(0.753)	(1.626)
R^2	0.176	0.476	0.821	0.849
Dependent Variable:	*Area 3 - Sound Money*			
Panel C:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.505***	0.451	1.797	2.089
	(0.135)	(0.314)	(1.213)	(1.200)
R^2	0.043	0.249	0.728	0.749
Dependent Variable:	*Area 4 - Freedom to Trade Internationally*			
Panel D:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.740**	0.650*	2.288***	2.867***
	(0.302)	(0.317)	(0.321)	(0.615)
R^2	0.078	0.282	0.757	0.805
Dependent Variable:	*Area 5 - Regulation*			
Panel E:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.881***	0.638***	0.106	0.616
	(0.124)	(0.165)	(1.145)	(0.937)
R^2	0.158	0.359	0.661	0.699
Controls				
Continent Dummies	No	Yes	Yes	Yes
Basic Geographical	No	Yes	Yes	Yes
Ruggedness	No	No	Yes	Yes
Pop Density in 1500	No	No	Yes	Yes
Settler Mortality	No	No	Yes	Yes
Humidity/Temperature	No	No	Yes	Yes
Climate/Social	No	No	Yes	Yes
Natural Resources	No	No	Yes	Yes
Legal Origins	No	No	No	Yes
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53

Notes: All panels average the dependent variable for the 2000-2019 period. Controls report the variables included in each column, identical across panels.

6) Section 5 likely can be shortened and written more efficiently.

Response: Thank you for the feedback. I have made several edits to Section 5 for conciseness, briefly reporting the results and directing the reader to Appendix C for additional details.

3 Reviewer 1

This manuscript assesses the legacy of European colonial rule on economic freedom in former colonies in 2000-19, as measured by the Economic Freedom of the World (EFW) index. It finds that former colonies that were colonized by relatively "freer" colonizers – per their average EFW index during the colonization period – also have a higher EFW index today. It also shows that the length of colonial rule is also associated with a higher EFW index today.

Main comments

3.1 Conceptualize "economic freedom" theoretically and empirically.

The manuscript focuses on the concept of economic freedom. However, economic freedom is not properly conceptualized, either theoretically or empirically. What are the theoretical foundations of this concept? How does it differ from the "quality" of institutions as understood in the literature? Is it biased toward the functioning of a market economy? Beyond this conceptualization, an empirical exploration seems necessary. What exactly distinguishes the EFW index from other measures (rule of law, polity IV, legal origins, etc.)? For instance, one area of the index is precisely the "rule of law" . If the author wants to make a specific argument about economic freedom, then they need to document which dimensions of the EFW index are orthogonal to the standard measures of institutional quality. The regression analysis should also control for these alternative measures to highlight what distinguishes economic freedom.

Response: Thank you for the opportunity to clarify this issue. I have been more precise in defining the index and relating it to other measures of institutional quality from previous literature. First, when explaining the EFW index, I refer to the developers of the index:

> Estimates of economic freedom are derived from two sources. Modern-day economic freedom for colonies comes from the Economic Freedom of the World (EFW) Index (Gwartney et al., 2021). Conceptually, the EFW 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.[9]
>
> **Footnote 9:** The authors explain that to achieve a high EFW rating, 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 (Gwartney et al., 2021).

Thus, while is true that EFW is "biased toward the functioning of a market economy," it is also much broader than simply measuring institutional quality (e.g., rule of law). As you correctly observed, Area 2 indeed considers these measures of institutional quality, but that leaves four areas unexplained by it. Although related to broader institutions, many of the areas in the EFW index are perhaps better described as policy choices. Thus, I emphasize its difference from other measures of institutional quality, as you suggested in the paragraph following the previous one:

> As such, it covers a much broader set of institutions than those considered in previous work, such as Acemoglu et al. (2001, 2002), who focus on the "institutions of property rights" and constraints on the executive. These measures would be captured by Area 2 of the EFW. In turn, the related work of La Porta et al. (1997, 1998, 1999) focus on legal origins, which again will be captured by Area 2, and is likely correlated with Area 5 - Regulation. However, at least three areas of the EFW index remain largely unexplored by the existing literature.

In explaining the *Historical Index of Economic Liberty*, I likewise explain that several measures included in that index come from national accounts, and are not strictly measures of institutional quality in the usual sense:

> 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, the remaining four areas align with the structure of the EFW described above. Seven of the 15 variables in the four sub-indices are sourced from the V-Dem project (Coppedge et al., 2019), while the rest are proxied using national accounts from economic history literature.[10]
>
> **Footnote 10:** 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 is inferred from the ratio of total tariff revenue to total trade value.

A similar discussion can also be found in the introduction (please refer to my reply to your next point) and in the empirical section on the areas of the EFW (see below). I hope these additions are satisfactory and better explain the concept of economic freedom, but I would be happy to make further adjustments as you see fit.

In terms of empirical results differentiating economic freedom from other measures, I first included controls for legal origins in the main results, and included the following discussion:

> 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).[25] Notably, after accounting for legal origins, the relationship between the colonizer's and colony's economic freedom becomes approximately 40% stronger in magnitude.

Because including modern controls for related outcome variables is arguably a case of "bad controls" (in the sense of Angrist and Pischke, 2008), I instead followed the standard practice in the economic freedom literature of using each of the five areas of the index separately and including historical legal origins as controls. These are reported in Section 4.5.2 (reproduced below). The idea here is that this enables us to observe which elements of economic freedom are not explained by colonizer fixed effects and historical legal origins. As expected, the areas of EFW that are most related to legal origins are fully explained by them, leaving little room to be explained by the economic freedom of the colonizer more broadly -although I maintain that the rule of law and other outcomes of legal origins are a fundamental part of economic freedom. Crucially, the results show that openness to international trade (Area 4) has a very robust relationship, which is not at all explained by other measures of institutional quality.

4.5.2 Categories of the EFW

> 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 previous literature (e.g.

[25] 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.

Acemoglu et al., 2001, 2002), making it important to isolate the components of economic freedom not explained by these measures.

In Table B2, I answer these questions 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 in the colonizer's economic freedom, colonies gain up to 2.8 points in this sub-index, 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.

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	(0.290)	(0.252)	(0.753)	(1.626)
R^2	0.176	0.476	0.821	0.849
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R^2	0.078	0.282	0.757	0.805
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R^2	0.158	0.359	0.661	0.699
Controls				
Continent Dummies	No	Yes	Yes	Yes
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Ruggedness	No	No	Yes	Yes
Pop Density in 1500	No	No	Yes	Yes
Settler Mortality	No	No	Yes	Yes
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Climate/Social	No	No	Yes	Yes
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Legal Origins	No	No	No	Yes
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53

Notes: All panels average the dependent variable for the 2000-2019 period. Controls report the variables included in each column, identical across panels.

3.2 What is the argument?

Even if the results were valid, what is the author's argument? First, why do we see a positive correlation between the economic freedom of colonizers during colonization and that of colonized countries today? It is still not clear to me why this should be the case. Second, the rationale for the "positive" effect of the length of colonization is even less clear. Third, what is the relationship between the two mechanisms? The analysis in Columns 5-6 of Table B3 is interesting, but should be explored further. Overall, while the author rejects possible explanations through various empirical exercises, I am still unclear about what the main argument is. Also, in addition to a better theorization of the argument, it would be very helpful to have at least a some institutional analysis with some case studies (or developed examples).

Response: I thank the reviewer for these careful comments, some of which were shared by the editor. I have attempted to make the argument clearer, especially in the introduction, while relating the contribution to the development literature (e.g., La Porta et al., 1997, 1998; Acemoglu et al., 2001, 2002). As in that literature, I find that colonizers transmit their institutions to their colonies during the colonial period. Relative to Acemoglu et al. (2001, 2002), I show that colonies' institutional quality is not determined alone by settlement patterns, but by the "quality" of colonizer's institutions. In other words, while intense European settlement brought on average more "inclusive" European institutions to the colonies, I also exploit variation in institutional quality both across colonizers and across time.

Of course, La Porta et al. (1997, 1998) have argued that variation in institutions across colonizers is important, but relative to their work, and related to your previous comment, I show that economic freedom encompasses a wider set of institutions that are not entirely captured by legal systems, property rights, and the rule of law. This is discussed (e.g.) in the introduction:

1 Introduction

[...]

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, it suggests that additional settlers implied by 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) overall economic freedom of their colonies. However, it also highlights that settlement is not the only relevant mechanism: the transmis-

sion of economic freedom from colonizers to their colonies occurs even under strictly indirect rule (implied by 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 their 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. While several studies highlight the superiority of common law (La Porta et al., 1997, 1998, 2008), and British rule over its French and Spanish counterparts (Grier, 1999), my identification strategy also allows leveraging variation in colonizer institutions over time. As a result, even after accounting for legal systems 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,Äîthose of economic freedom,Äîwhich include sound money, regulation, and international trade freedom. In fact, the strongest result from the sub-indexes of economic freedom shows that former colonies of freer European colonizers are significantly more open to international trade, which is not accounted by their legal systems, the identity of their colonizer, nor by geographical variables.

In line with that conclusion, the empirical results are robust to the inclusion controls for legal origins in several specifications. It is also robust to the settlement channels presented in Acemoglu et al. (2001, 2002) and Easterly and Levine (2016). I now include the following section which directly engages that literature:

4 Results

4.2.2. Mechanism: 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 "exclusive" institutions.

However, this theory suggests two hypothesis. Both Acemoglu et al. (2001, 2002) and Easterly and Levine (2016) imply an "additive" model: 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 process. 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 will contribute more to economic freedom in their destination colonies than those from less free European nations.[26]

I use two proxy measures for direct and indirect rule from previous literature. Easterly and Levine (2016) estimate the prevalence of European settlers during the colonial period (*Euro Settlers*) — a more direct measure, but available for substantially fewer 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 Giuliano and Nunn (2018) to account for large discrepancies relative to Easterly and Levine (2016).[27]

Table 5 reports the results. Panel A uses the measure of Easterly and Levine (2016); Panels B and C use Giuliano and Nunn (2018)'s measure, without and with adjustments, respectively. For each proxy of direct and indirect rule,[28] 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 (either settlers of 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/ancestry in 8 out 9 specifications.

Instead, the data aligns more closely with the "multiplicative" hypothesis and suggests two key implications. First, since *Avg. HIEL* is significant in 7 out

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

[27]For three countries, despite Easterly and Levine (2016) reporting high European settlement rates and English being 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 in both Easterly and Levine (2016) and Giuliano and Nunn (2018), this likely results from differences in the measurement period.

[28]Due to 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 pre-colonial population density (measured in 1500). Columns 3 and 6 include colonizer fixed effects. In Panels B and C, they also incorporate a full set of controls (as in Table 3, Column 4).

of 9 specifications, countries colonized by freer nations tend to be freer today even under 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/ancestry from colonizers with high economic freedom amplifies the transmission of economic freedom –*Avg. HIEL* × *Euro* is positive and significant in 5 out of 9 cases.[29]

Nonetheless, these results should be interpreted with caution. First, the data does not allow precise identification of settlers by country of origin. Thus, these interpretation rely instead on the assumption that former colonies had a larger share of settlers from their respective colonizers. While plausible, this may not hold universally. Second, as Easterly and Levine (2016) highlights, the timing of settlement is crucial – particularly early settlement – but obtaining consistent estimates for all countries at the same period is unfeasible. [30] Finally, the interaction term of Column 6 of Panel 5B is quite sensitive to selection on unobservables (see section C.2 in Appendix C).

I have also followed your suggestion and included the following developed examples:

To illustrate this relationship, consider the cases of Benin and Burkina Faso, and then Mali and Senegal, all four contiguous neighbors in West Africa. They were all colonized by France and adopted the French legal system following their independence in 1960. Data from Acemoglu et al. (2002) codes them as having identical pre-colonial levels of development (data for Mali is unavailable). To a great extent, they also share similar climates and disease environments, with tropical forest in the south and arid lands in the north, lying on the southern edge of the Sahara desert.[31]

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. That is, 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 co-existed as a single country under the Mali Federation around independence. Yet, Senegal's economic freedom exceeds Mali's by a proportion consistent with the difference in France's economic freedom during their respective periods.

[29]This is also suggested by the often-negative constitutive coefficients on European settlers/ancestry (*Euro Settler, Euro Origins*) but should be considered with caution because it is an extrapolation outside of support of the data —- no European country had zero economic freedom.

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

[31]Granted, Mali has a much larger share of desert land, and perhaps Niger may serve as a better counterfactual. The same story applies: Niger was also a French colony until 1960, with similar settler mortality rates than those of Benin and Burkina Faso. However, 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 post-war period. As a result, its EFW score, at 5.11, is the lowest in French West Africa.

Table 5: 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**	0.337*	-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	0.00239	-0.000394	-0.0159	-0.206***	0.0596	-1.344**
	(0.00132)	(0.00263)	(0.00819)	(0.0560)	(0.181)	(0.466)
Avg. HIEL× Euro Settlers				0.0263***	-0.00753	0.167**
				(0.00712)	(0.0224)	(0.0590)
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)
Adj. Euro Origins	0.00501**	-0.0000870	-0.0158	-0.277***	-0.214	-1.433**
	(0.00148)	(0.00380)	(0.00861)	(0.0311)	(0.226)	(0.470)
Avg. HIEL× Adj. Euro Origins				0.0354***	0.0269	0.178**
				(0.00394)	(0.0289)	(0.0597)
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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

3.3 Empirical analysis

3.3.1 Is the author making a causal claim?

This should be clarified. If so, then there should be an argument about the empirical design at hand. But even if not – the claim is only correlational – there are many potential confounders of the relationship between current EWF and colonizer's EWF. While the author controls for a few observables in the analysis, these should be included altogether and not separately. These should also include pre-colonization characteristics throughout, such as the pre-colonization population density (along with a set of geographic characteristics).

Response: I appreciate these concerns, which again were mostly shared by the editor. As mentioned in my response to him, I have now restructured all main tables to report the inclusion of controls together (sequentially) instead of separately as before. The last column reflects a "fully specified" model with all the variables that have been highlighted by the editor and the referees, including continent dummies, absolute latitude, dummies for islands and landlocked, terrain ruggedness (Nunn and Puga, 2012), log settler mortality (Acemoglu et al., 2001), pre-colonial population density (Acemoglu et al., 2002), indicators for soil, temperature, and presence of natural resources, as well as dummies for British and French legal origins (La Porta et al., 1999). I also included colonizer fixed effects.

In sets of secondary results, or when the number of observations is very low, I retain the variables you mentioned – geographical and pre-colonial characteristics – as a "baseline" set of controls. These specifications show that the relationship between the economic freedom of the colonizer and that of its colonies is in fact *stronger*, both in terms of magnitude and significance, conditional on these observed controls – see column 4 of Table 3, reported below.

Still, there is the concern that the results might be driven by *un*observables. Thus, in addition to the inclusion of colonizer fixed effects and all controls together, I also performed an extensive battery of sensitivity tests for selection on unobservables in the robustness checks. The main takeaway from these tests is that selection on unobservables is unlikely. I report the results of the sensitivity analysis, in Table C3.A, just below for your convenience. For a full discussion, please see Section C.2 in Appendix C.

In similar settings of institutional transmission (e.g., Pavlik and Young, 2021; Ashraf and Galor, 2011), but especially in colonial settings, such as the contributions by AJR and La Porta *et al.*, most authors interpret their results as making a causal argument for the historical/colonial origins of modern-day outcomes. I, too, believe there's a causal argument to be made here. While one can never be entirely sure of closing all the doors to potential confounders, the main channels identified in previous literature have been accounted for, and the sensitivity results suggest that the remaining unobservable factors are unlikely to

be driving the main results. Other factors, such as reverse causality, are also ruled out by historical accounts of the colonial period and by chronology alone, since I am measuring current economic freedom. Still, I am cautious in interpreting these results as causal due to potential measurement errors in the historical data. I make this clear in the concluding remarks:

> A final contention is in order. While a large literature has argued for causality in similar arguments of 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 strong 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. However, on the other, there is only so much that can be inferred from historical data, which is often permeated by measurement errors.

I also highlighted this along the text whenever additional caution was in order. For instance, along the results on European settlement (Section 4.3), I warn the readers:

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

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

Table 3: 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			-0.000917	0.000340
			(0.00154)	(0.00231)
Log Settler Mortality			-0.164	-0.388***
			(0.164)	(0.0592)
Pop. Density in 1500			-0.0582	0.000869
			(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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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.

5 Robustness Checks

[...]

5.2 Sensitivity Analysis

I conduct several sensitivity tests to assess whether the results may be driven by omitted variable bias. First, I report the test proposed by Oster (2019), where δ indicates how large selection on unobservables must be, relative to selection on observables, to "explain away' the results (i.e., $\beta = 0$). 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 Appendix C, Section C.2, and results are reported in Tables C2.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).

Table C2.A: Sensitivity Analysis, Tables 3-4

	Oster (2019)	Diegert et al. (2022)				
Parameters	δ $(R^2_{long} = 1.3 \times R^2_{med})$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.25$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.5$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.75$	$\bar{r}_Y = +\infty$ $\bar{c} = 1$	$\bar{r}_Y = \bar{r}_X$ $\bar{c} = 1$
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Table 3:						
Avg. HIEL						
Column 3	0.685	0.339	0.337	0.337	0.337	0.614
Column 4	1.054	0.471	0.459	0.459	0.459	0.702
Table 4:						
Postwar						
Column 4	0.977	0.248	0.248	0.248	0.248	–
Postwar×HIEL Indep.						
Column 5	0.149	0.047	0.047	0.047	0.047	–

Notes: Sensitivity analysis not provided for insignificant coefficients or columns with less than the baseline controls (e.g. Column 2, Table 3). Estimates could not be obtained for cells with –. See main text for details.

3.3.2 EFW at the beginning of colonization

In addition, it is not entirely clear to me why the author focuses on the average EFW of the colonizer during colonization. Arguably, colonial institutions exhibit path dependence, so they should be set at the beginning of the colonization period. Could the author use this variable instead? This would also have the advantage of allowing the use of colonizer FE in these regressions to remove potential confounders introduced by a particular colonizer (in the spirit of Table 4), in order to discard potential confounders that are brought by a given colonizer.

Response: Thank you for your concern, as this is an important point. While I agree that path dependence is certainly an important mechanism, one could also make the argument (as the editor did here) that later periods matter relatively more because they are closer to the date when the economic freedom of the colony is being measured. In the original manuscript, I was agnostic as to which was more relevant, and so I opted to use the average as a parsimonious measurement that assigns equal weight to both early and late periods of colonization. Further, one additional difficulty with the first-HIEL approach is that the *first* colonizer is not necessarily the *main* colonizer, which complicates the inclusion of colonizer fixed effects. The average accounts for that relatively smoothly.

In this revised version, I introduced a discussion of this issue (see below) and leveraged these two potential hypotheses to reestimate the main results using the economic freedom of the colonizer both at the beginning (your suggestion) and at the end (editor's suggestion) of colonization. I have also included colonizer fixed effects in the "full" specifications, and the main results are robust to these fixed effects.

The discussion of timing reads as follows, and the results table is provided at the end.

4 Results

[...]

4.2.1 Timing

This section investigates the timing and mechanisms of transmission of economic freedom from the colonizers to their colonies. First, consider the role of timing in transmission. One explanation is that a colonizer's economic freedom at the start of colonization is most influential, for it establishes a path dependence for the entire colonial period – what I call the "early hypothesis."[33] Conversely, the "late hypothesis" suggests that economic freedom near

[33]This is similar to the view of Easterly and Levine (2016) in which early European settlement is more relevant than current shares of population with European ancestry.

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 post-war period (Bauer, 2004) – the "Bauer hypothesis" – which I also test.

Table 5 consider these three hypotheses. For the "early hypothesis" (columns 1-2), I regress the average EFW score of the colonies on the very first available HIEL, which is only available for countries colonized at 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 where the first colonizer was also the *main* colonizer, enabling the inclusion of colonizer fixed effects.[34] In both cases, *HIEL at Independence* is insignificant, 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. As in previous columns, the results remain insignificant. These findings suggest that economic freedom at a single point in time does not predict future economic freedom. By contrast, 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 tests Bauer's hypothesis by regressing average economic freedom on a post-1945 independence dummy, along with baseline controls. Indeed, countries that gained independence postwar tend to have lower present-day economic freedom. Column 5 presents a specification more directly related to this paper. Specifically, I interact the postwar dummy with the colonizer's economic freedom at independence. Taken together, even though all postwar countries have lower economic freedom on average (column 4), the interaction term suggests that colonies with freer postwar colonizers have higher economic freedom on the margin, though this should be interpreted cautiously due to potential selection on unobservables (see Section C.2, in Appendix C).[35]

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

[35] Alternatively, we 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).

Table 4: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019): Alternative Measures

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 First HIEL	-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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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 post-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, beggining with the America dummy row. Cells with - or (–) have been omitted for lack of observations of collinearity.

3.4 Other Comments

[i] The literature review is interesting but should be tied more systematically to the argument of the manuscript. Moreover, it should highlight the specific contribution relative to the AJR and La Porta literature. It wasn't very clear.

Response: Thank you for this suggestion. As detailed in my response to the editor, I have made several edits to better connect the development literature, especially the contributions of AJR and La Porta *et al.*. Apart from the excerpt from the Introduction that I reported in responding to your earlier comment (3.2), the literature review has been completely revised and is now much more tied to the development literature, following the editor's guidance. For your convenience, I have included the new literature review along with my response to the editor's point about it here.

[ii] Typo: p11 "Estimations without the Americas..." The sentence is not finished here.

Response: Thank you for the attentive reading. The issue no longer appears in the text.

[iii] I like Figure B1 but it is difficult to understand which units matter more from just the map. I would suggest to also showing a table that provides the relative weight (as a share in percent) of each observation in generating the overall estimate. Also, provide the shares of each continent, so as to support the claim that "[t]his also dissuades concerns that the lack of significance in specifications without Africa may be caused by colonies in that continent driving the overall results" (p. 18).

Response: I thank the referee for this suggestion, which is indeed a better way to report. The main text now reads as follows:

5 Robustness Checks

[...]

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 under-represented in the main results (Table 3). This ensures that the findings are not driven by any specific continent or colonizer — see Section C.1 for details.

And then, Appendix C details:

C Robustness Checks

C.1 Effective Regression Weights

Tables C1.A and C1.B report the distribution of effective regression weights by continent and by colonizer for each of the four specifications of Table 3, as in Aronow and Samii (2016). The second column, Expected Weight, reports the percentage of observations coming from each continent/colonizer, thus also implying the percentage of expected regression weights assigned to that continent/colonizer if all observations contributed identical weights to the estimation of *HIEL Colonizer*. The third column, Effective Weight, report the percentage of regression weights effectively received by each continent/colonizer. The last column reports the ratio of effective to expected weight; thus, values greater than 1 indicate overrepresentation, while values less than 1 indicate underrepresentation.

Although there is some variation across specifications, no continent/colonizer is consistently over- or under-represented across all specifications. Discrepancies greater than 10 percentage points (i.e., Ratio < 0.9 or Ratio > 1.1) are also mostly restricted to continents/colonizers with very small numbers of observations, presumably because their distribution of weights is not so smooth. However, this also indicates that relatively large localized imbalances have small impacts on the overall sample.

Table C1.A: Regression Weights for HIEL Colonizer Coefficient, by Continent

Colonizer	Obs.	Expected Weight (%)	Effective Weight (%)	Ratio
Table 3, Column 1				
Africa	48	0.552	0.532	0.965
America	8	0.092	0.102	1.105
Asia	28	0.322	0.326	1.014
Oceania	3	0.034	0.040	1.155
Table 3, Column 2				
Africa	46	0.657	0.709	1.078
America	8	0.114	0.081	0.712
Asia	13	0.186	0.195	1.052
Oceania	3	0.043	0.015	0.344
Table 3, Column 3				
Africa	32	0.604	0.668	1.106
America	8	0.151	0.107	0.708
Asia	11	0.208	0.222	1.068
Oceania	2	0.038	0.004	0.101
Table 3, Column 4				
Africa	32	0.604	0.669	1.108
America	8	0.151	0.107	0.709
Asia	11	0.208	0.220	1.061
Oceania	2	0.038	0.004	0.101

Notes: See Table 3 for specifications.

Table C1.B: Regression Weights for HIEL Colonizer Coefficient, by Colonizer

Colonizer	Obs.	Expected Weight (%)	Effective Weight (%)	Ratio
Table 3, Column 1				
Belgium	1	0.011	0.012	1.002
Britain	48	0.552	0.600	1.088
France	25	0.287	0.258	0.899
Germany	4	0.046	0.045	0.989
Italy	1	0.011	0.008	0.726
Netherlands	2	0.023	0.026	1.125
Portugal	5	0.057	0.041	0.721
Spain	1	0.011	0.009	0.766
Table 3, Column 2				
Belgium	0	0	0	–
Britain	37	0.529	0.528	0.999
France	21	0.300	0.321	1.070
Germany	4	0.057	0.061	1.069
Italy	1	0.014	0.020	1.393
Netherlands	2	0.029	0.033	1.140
Portugal	4	0.057	0.031	0.540
Spain	1	0.014	0.007	0.472
Table 3, Column 3				
Belgium	0	0	0	–
Britain	26	0.491	0.472	0.963
France	19	0.358	0.375	1.045
Germany	4	0.075	0.076	1.013
Italy	0	0	0	–
Netherlands	2	0.038	0.041	1.080
Portugal	2	0.038	0.036	0.956
Spain	0	0	0	–
Table 3, Column 4				
Belgium	0	0	0	–
Britain	26	0.491	0.471	0.961
France	19	0.358	0.375	1.047
Germany	4	0.075	0.077	1.014
Italy	0	0	0	–
Netherlands	2	0.038	0.041	1.082
Portugal	2	0.038	0.036	0.958
Spain	0	0	0	–

Notes: See Table 3 for specifications.

[iv] It could be interesting to see in robustness population-weighted regressions.

Thank you for the suggestion. I have produced these estimates and reported them in Appendix C, Table C4. They are referred to in the main text as follows:

5 Robustness Checks

[...]

5.4 Population-Weighted Results

As a final exercise, Table C4 reestimates the main results from Table 3, 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.

Table C4: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019), Population Weighted

Dependent Variable:	*Avg. EFW (2000-2019)*			
	(1)	(2)	(3)	(4)
HIEL Colonizer	0.453***	0.236	0.621	1.659**
	(0.122)	(0.179)	(0.317)	(0.399)
America dummy		-0.0603	-0.723	0.0229
		(0.120)	(0.586)	(1.007)
Africa dummy		-1.789***	-1.324	0.304
		(0.280)	(0.927)	(1.818)
Asia dummy		-1.470***	-1.538	-0.546
		(0.217)	(0.848)	(1.202)
Abs. Latitude		-1.153	-3.712**	-1.346
		(0.936)	(1.272)	(2.172)
Landlocked		0.259	1.122*	1.497***
		(0.436)	(0.412)	(0.293)
Island		0.334*	0.930	1.064
		(0.160)	(0.490)	(0.561)
Ruggedness			-0.00226	0.0000893
			(0.00296)	(0.00197)
Log Settler Mortality			-0.173	-0.399**
			(0.207)	(0.124)
Pop. Density in 1500			-0.0692	0.0397
			(0.140)	(0.227)
French Legal Origin				0.413
				(0.748)
British Legal Origin				1.517***
				(0.217)
P-val. humidity			[0.002]	[0.000]
P-val. temperature			[0.013]	[0.000]
P-val. climate/soil			[0.322]	[0.000]
P-val. nat. resources			[0.200]	[0.417]
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53
R^2	0.090	0.329	0.882	0.914

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. Observations weighted by population at independence. 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.

[v] The results in Table B5 – where the change in EFW is the dependent variable – are interesting, but the author could be even more direct and run a series of regressions where the dependent variable is the EFW in the decade after independence, then 2 decades after, 3 decades after,..., then today. It would give a profile of correlations over time.

Response: This is a great suggestion and the editor has made the same point as a direct test of persistence. I have estimated these specifications using a panel from 1950 to 2019 to test for persistence, and reported them on Table 6. In the main text, I report them as follows:

4. Results

[...]

4.4 Persistence

The main results support the idea that colonizers transmit their levels of economic freedom to their colonies, which remains observable in former colonies' economic freedom in the 21st century. A large literature emphasizes the long-run persistence of colonial institutions, making it important to assess the durability of these effects in the case of economic freedom. To address this, I construct a panel of colonies' economic freedom from 1950 to 2019. The estimated equation is:

$$\begin{aligned} ColonyEFW_{ict} = \alpha + \beta HIEL_i + \mu YearsFromIndependence_{it} \\ + \delta(HIEL_i \times YearsFromIndependence_{it}) \\ + \lambda TimeTrend_{it} + \phi X_i + \tau_t + \rho_c \end{aligned}$$

where $ColonyEFW_{ict}$ is the EFW score in year t for 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.[36] 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.

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

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 colonies "lose" the economic freedom initially inherited from their colonizers. An insignificant coefficient would indicate that this relationship remains stable over time, while a positive coefficient would imply that the relationship strengthens as time since independence increases.

I present the results in Table 6. Columns 1-3 use *HIEL at Independence*, while columns 4-6 use *Avg. HIEL* as measures of the colonizer's economic freedom. As noted earlier, the constitutive terms – textitHIEL 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 measuring the colonizer's economic freedom at independence (columns 1-3), I find limited evidence of a direct relationship with its 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* $\times$ *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.[37]

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

Table 6: 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	0.006	0.003*			
	(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	0.005	0.009*
				(0.006)	(0.005)	(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
			(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
R^2	0.284	0.609	0.769	0.359	0.636	0.756

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

4 Reviewer 2

This paper studies the legacy of European colonial rule for economic freedom in former colonies today. Using data on 107 former European colonies, the author studies how colonizer's identity and colonial rule characteristics - duration and timing - are associated with current economic freedom. The author uses a historical index of economic freedom to provide evidence that the level of economic freedom of colonies is directly related to the level of economic freedom of their colonizers, both at the time of independence and in the 21st century. The length of colonial rule is also positively and significantly correlated with average economic freedom from 2000 to 2019. These findings are robust to controlling for geography, climate, natural resource endowments, the identity of the colonizer, and the timing of colonization.

General Comments

The article is well written and deals with an important issue. However, to be considered for publication at Public Choice, the author will have to make some major revisions to the article. I outline the required changes below.

Major Comments

4.1 Clustering Standard Errors

Those regressions including as explanatory variable the economic freedom of colonizer should control for the possible cross-correlation in the error term that having the same value in many colonies (of the same colonizer) can bring. That should be controlled for in the estimation procedures, or at least present a table with robustness checks to this, using for instance cross-correlation robust standard errors.

Response: I thank the reviewer for this great suggestion (also made by the Editor). I have included standard errors clustered at the colonizer level as the default in all regressions, and the results are, in general, more significant.

In addition, I now present robustness checks in which I use Conley (1999) standard errors that account for spatial correlation. Again, the results are robust to this method. For instance, Table C3.A compares standard errors for the significant coefficients of interest from Tables 3 and 4 when clustered at the colonizer level and when using Conley (1999). The results for remaining are reported in Tables C3.B and C3.C, reported at the end of

this document.

Table C3.A: Reproduction of Tables 3-4, Accounting for Spatial Correlation

		Clustered	Conley (1999) with Distance Threshold:			
	Coefficient	(1)	1,000km (2)	2,500km (3)	5,000km (4)	10,000km (5)
Table 3						
HIEL Colonizer						
Column 1	0.716	0.153***	0.188***	0.191***	0.185***	0.152***
Column 2	0.521	0.206**	0.208**	0.200**	0.211**	0.208**
Column 3	1.199	0.325**	0.527**	0.446**	0.341**	0.000***
Column 4	1.648	0.206***	0.537***	0.415***	0.354***	0.249***
Table 4						
Postwar						
Column 4	-0.451	0.148*	0.266*	0.255*	0.297*	0.230*
Column 5	-1.228	0.381**	2.486	2.368	2.361	2.217
Postwar × *HIEL Indep.*						
Column 5	0.117	O.057*	0.344	0.332	0.334	0.317

Notes: Estimations not performed for insignificant results. See main tables for full specification.

4.2 Setter Mortality and Population Density

On page 11, the author controls for several controls such as location, latitude, island status and landlockedness, arguing that this aims to control for environmental factors (climate, disease environment) that may condition settlements as held by Acemoglu and coauthors. Strictly speaking, these variables control for the geography hypothesis and not for the endowment view of Acemoglu et al. (2001, AER). Hence, I suggest the authors controlling for potential settler mortality and even precolonial population density to control for that.

Response: Thank you for this suggestion, which again was shared by the editor and Referee #1. I have now restructured all main tables to report the inclusion of controls together (sequentially) instead of separately as before,Äîwhich also addresses your next point. The last column of each table reflects a "fully specified" model with all the variables that have been highlighted by the editor and the referees, including continent dummies, absolute latitude, dummies for islands and landlocked countries, terrain ruggedness (Nunn and Puga, 2012), log settler mortality (Acemoglu et al., 2001), precolonial population density (Acemoglu et al., 2002), indicators for soil, temperature, and presence of natural resources, as well as dummies for British and French legal origins (La Porta et al., 1999). The main results are robust to these controls.

Further, I have included new section that discusses the issue of settlement at length, and presents econometric results relative to this point. It reads as follows:

4.3 Mechanism: 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 "exclusive" institutions.

However, this theory suggests two hypothesis. Both Acemoglu et al. (2001, 2002) and Easterly and Levine (2016) imply an "additive" model: 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 process. 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 will contribute more to economic freedom in their destination colonies than those from less free European nations.[38]

I use two proxy measures for direct and indirect rule from previous literature. Easterly and Levine (2016) estimate the prevalence of European settlers during the colonial period (*Euro Settlers*) — a more direct measure, but available for substantially fewer 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 Giuliano and Nunn (2018) to account for large discrepancies relative to Easterly and Levine (2016).[39]

Table 5 reports the results. Panel A uses the measure of Easterly and Levine (2016); Panels B and C use Giuliano and Nunn (2018)'s measure, without and with adjustments, respectively. For each proxy of direct and indirect rule,[40] I test both the "additive" (columns 1-3) and the "multiplicative" (columns 4-6) hypotheses.

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

[39]For three countries, despite Easterly and Levine (2016) reporting high European settlement rates and English being 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 in both Easterly and Levine (2016) and Giuliano and Nunn (2018), this likely results from differences in the measurement period.

[40]Due to 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 pre-colonial population density (measured in 1500). Columns 3 and 6 include colonizer fixed effects. In Panels B and C, they also incorporate a full set of controls (as in Table 3, Column 4).

I find limited evidence for the "additive" model. The coefficients indicating larger shares of Europeans (either settlers of 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/ancestry in 8 out 9 specifications.

Instead, the data aligns more closely with the "multiplicative" hypothesis and suggests two key implications. First, since *Avg. HIEL* is significant in 7 out of 9 specifications, countries colonized by freer nations tend to be freer today even under 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/ancestry from colonizers with high economic freedom amplifies the transmission of economic freedom –*Avg. HIEL* × *Euro* is positive and significant in 5 out of 9 cases.[41]

Nonetheless, these results should be interpreted with caution. First, the data does not allow precise identification of settlers by country of origin. Thus, these interpretation rely instead on the assumption that former colonies had a larger share of settlers from their respective colonizers. While plausible, this may not hold universally. Second, as Easterly and Levine (2016) highlights, the timing of settlement is crucial – particularly early settlement – but obtaining consistent estimates for all countries at the same period is unfeasible. [42] Finally, the interaction term of Column 6 of Panel 5B is quite sensitive to selection on unobservables (see section C.2 in Appendix C).

4.3 Control variables together

Another concern is the inclusion of control variables separately. I know that lack degrees of freedom is a concern in papers with such a low N value, but perhaps one can make the effort to include those explanatory variables that are individually significant together, to see whether the main finding holds. Otherwise, results in this type of papers are not too robust to me.

Thank you for this feedback. My reply to your previous comments details all control measures that have been made to strengthen confidence in the econometric results. I should add that, in addition to all controls for observables, I have conducted an extensive set of robustness checks that address the sensitivity of the results to selection on unobservables, as suggested by the editor. Section C.2 provides all the details, but they are summarized in the main text as follows:

[41] This is also suggested by the often-negative constitutive coefficients on European settlers/ancestry (*Euro Settler, Euro Origins*) but should be considered with caution because it is an extrapolation outside of support of the data —- no European country had zero economic freedom.

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

5.2 Sensitivity Analysis

I conduct several sensitivity tests to assess whether the results may be driven by omitted variable bias. First, I report the test proposed by Oster (2019), where δ indicates how large selection on unobservables must be, relative to selection on observables, to "explain away" the results (i.e., $\beta = 0$). 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 Appendix C, Section C.2, and results are reported in Tables C2.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).

4.4 Minor commments

1) Page 2, line 46. There is a typo. It should be written as "I show that countries colonized by European".

Response: I appreciate your attentive reading in spotting this issue and the remaining typos you mentioned in points (3) and (4) below. They have all been fixed.

2) On the third paragraph on page 5, the author should also make reference to the type of government implemented by the British Empire: indirect rule in those colonies not settled massively as the Neoeuropes. In India there was a mix of direct and indirect rule.

Response: Thank you for the suggestion. I have made this explicit in the text and have also introduced a full section on the topic, as highlighted in my response to your point 4.2.

3) Page 9, line 39. It should be written as "However, 21 colonies, for which EFW data are not available, were dropped".

Response: I have fixed the typo, thank you.

4)Page 11, lines 46 and 47: The sentence "Estimations without the Americas (4) and "Neo-Europes" (Australia, Canada, and New Zealand)" is unfinished. I imagine the author meant to say that such regressions provide also un-

changed results.

Response: Thank you for spotting that as well. This issue is no longer in the paper.

5) Page 18, lines 36-37. The author argues that "Thus, large population densities are indicative of areas more susceptible to settlement and with greater labor force, both of which could be desirable by colonizers." This is not totally correct. Strictly speaking, according to the endowment view of Acemoglu and coauthors, higher precolonial density is an unfavorable endowment that did not promote mass settlement, rather the opposite. In his 2002 QJE paper, precolonial population density (population density in 1500) is used as an alternative endowment variable to potential settler mortality employed in his 2001 AER paper.

Response: You are absolutely correct. Thank you for pointing this out. This was an unfortunate use of the word "settlement." What I meant was [native] population settlements, which is, of course, not the best use of the term. While this specific passage no longer appears in the paper, I have been careful when detailing the Acemoglu et al. (2002) argument elsewhere in the paper.

6) Page 19, line 39. It should be written as "similar magnitudes to those of Table 4".

Response: This issue has been fixed.

7) More generally, revise the writing and possible typos throughout the paper.

Response: Again, I appreciate your attentive reading. The paper has gone through substantial edits to improve correctness and overall readability. I hope the final results are satisfactory.

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Tables and Figures

Table 1: Summary statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Economic Freedom of Colonies (avg. 2000-2019)					
Avg. EFW	107	6.442	0.959	3.860	8.751
EFW Area 1	107	6.888	1.024	4.186	8.916
EFW Area 2	107	4.555	1.347	2.258	8.538
EFW Area 3	107	7.645	1.316	3.654	9.711
EFW Area 4	107	6.518	1.372	2.305	9.412
EFW Area 5	107	6.607	1.102	3.779	8.884
Std. Dev. across Areas	107	1.445	0.407	0.517	2.318
Economic Freedom of Colonizers					
Avg. HIEL Colonizer	87	7.463	0.514	6.342	8.416
First HIEL	87	7.668	0.726	5.397	8.454
HIEL at Independence	87	7.555	0.733	4.918	8.554
Geographical Controls					
America*	107	0.262	0.442	0	1
Africa*	107	0.449	0.500	0	1
Asia*	107	0.262	0.442	0	1
Absolute Latitude	90	0.178	0.116	0.011	0.667
Landlocked*	90	0.167	0.375	0	1
Island*	107	0.187	0.392	0	1
% of world's Gold	89	0.753	5.122	0	47
% of world's Iron	89	0.451	2.045	0	16
% of world's Silver	89	0.618	2.583	0	13
% of world's Zinc	89	0.663	2.598	0	15
Coal reserves*	90	0.322	0.470	0	1
Oil Reserves†	89	127.9K	577.3K	0	4,500K
Development Literature Controls					
Ruggedness	107	119.341	118.516	1.600	674
Log Settler Mortality	76	4.716	1.194	2.146	7.986
Pop. Density in 1500	86	0.499	1.558	-3.831	4.610
British Legal Origins*	105	0.400	0.492	0	1
French Legal Origins*	105	0.562	0.499	0	1
Socialist Legal Origins*	105	0.038	0.192	0	1
Scandinavian Legal Origins*	105	0	0	0	0
German Legal Origins*	105	0	0	0	0
Prevalence of European Settlers	59	0.112	0.199	0	0.905

Notes: * denotes dummy variables. Colonies' economic freedom are measured by the *Economic Freedom of the World Index* (EFW), and colonizer's use the *Historical Index of Economic Liberty* (HIEL). Both scale from 0 to 10. *First HIEL* is the HIEL measured at the first year of colonization (if post-1850). † in thousands of barrels per capita.

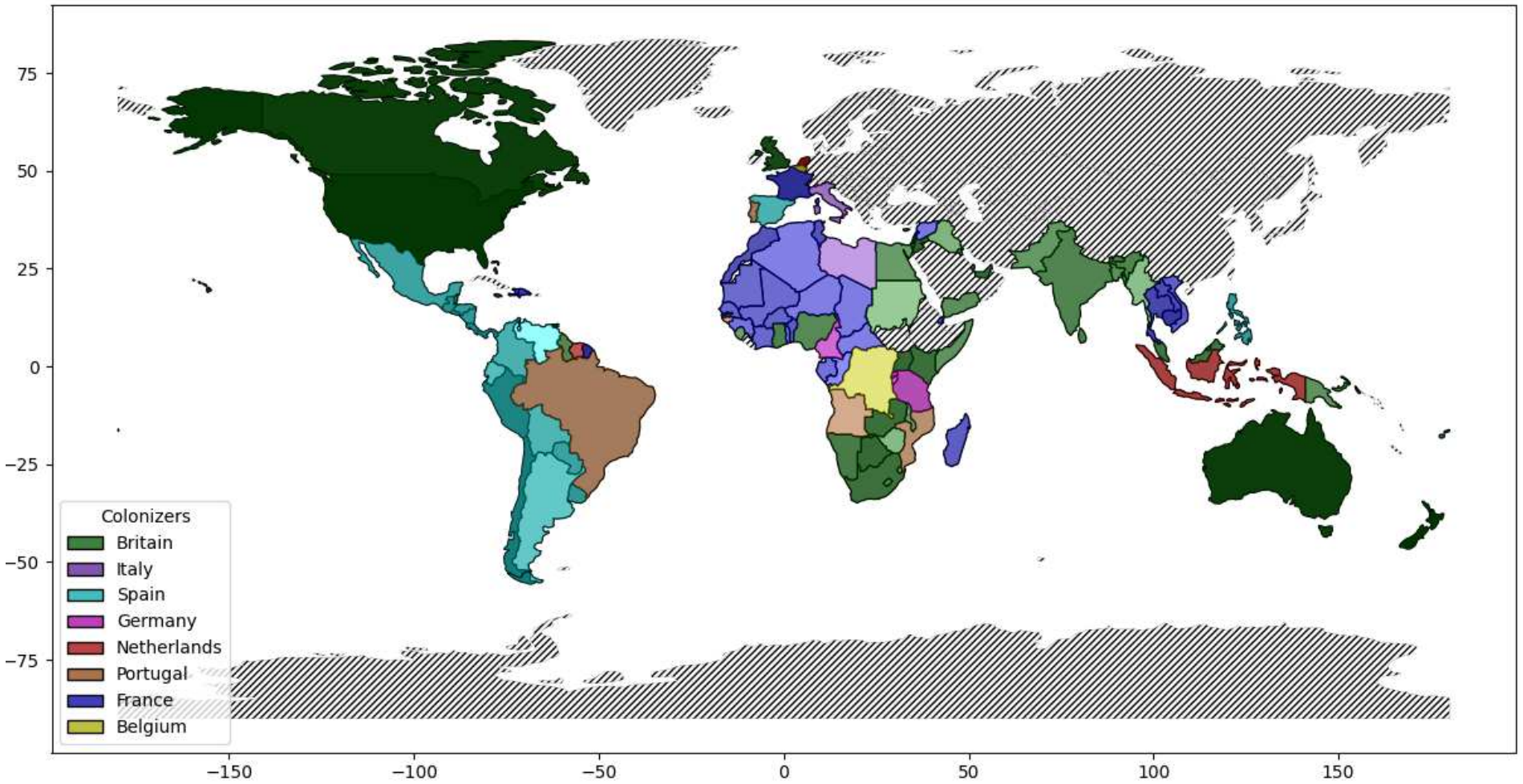

Figure 1: Colonization Map and Economic Freedom

Notes: Darker colors represent higher economic freedom scores.

Table 2: List of Former Colonies with Available EFW Data, Base Sample

Belgium: 1	**Britain (cont.)**	**France (cont.)**
Dem. Rep. of the Congo	Singapore	Tunisia
Britain: 49	Somalia*	Vietnam
Australia	South Africa	**Germany: 4**
Bahamas	Sri Lanka	Burundi*
Bahrain	Sudan	Cameroon*
Bangladesh	Swaziland	Rwanda*
Barbados	Tanzania	Tanzania*
Belize	Trinidad & Tobago*	**Italy: 1**
Bhutan	Uganda	Libia*
Botswana	United Arab Emirates	**Netherlands: 2**
Brunei Darussalam	United States	Indonesia
Cameroon*	Yemen	Suriname
Canada*	Zambia	**Portugal: 6**
Cyprus	Zimbabwe	Angola
Egypt	**France: 27**	Brazil
Fiji	Algeria	Cabo Verde
Gambia	Benin	Guinea-Bissau
Ghana*	Burkina Faso	Mozambique
Guyana	Cambodia	Timor-Leste
India	Central African Republic	**Spain: 17**
Iraq	Chad	Argentina
Israel	Comoros	Bolivia
Jamaica*	Congo	Chile
Jordan	Côte d'Ivoire	Colombia
Kenya	Djibouti	Costa Rica
Kuwait	Gabon	Dominican Republic
Lesotho	Guinea	Ecuador
Malawi	Haiti	El Salvador
Malaysia*	Laos	Guatemala
Mauritius*	Lebanon	Honduras
Myanmar (Burma)	Madagascar	Mexico
Namibia*	Mali	Nicaragua
New Zealand	Mauritania*	Panama
Nigeria	Morocco*	Paraguay
Pakistan	Niger	Peru
Papua New Guinea	Senegal*	Philippines
Qatar	Syria	Uruguay*
Seychelles*	Thailand	Venezuela
Sierra Leone	Togo*	$N = 107$

Notes: Excludes 21 countries without EFW data. Countries with multiple colonizers (*) have been classified following Table A2.

Table 3: 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			-0.000917	0.000340
			(0.00154)	(0.00231)
Log Settler Mortality			-0.164	-0.388***
			(0.164)	(0.0592)
Pop. Density in 1500			-0.0582	0.000869
			(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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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.

Table 4: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019): Alternative Measures

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 First HIEL	-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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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 post-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, beggining with the America dummy row. Cells with - or (–) have been omitted for lack of observations of collinearity.

Table 5: 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**	0.337*	-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	0.00239	-0.000394	-0.0159	-0.206***	0.0596	-1.344**
	(0.00132)	(0.00263)	(0.00819)	(0.0560)	(0.181)	(0.466)
Avg. HIEL× Euro Settlers				0.0263***	-0.00753	0.167**
				(0.00712)	(0.0224)	(0.0590)
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)
Adj. Euro Origins	0.00501**	-0.0000870	-0.0158	-0.277***	-0.214	-1.433**
	(0.00148)	(0.00380)	(0.00861)	(0.0311)	(0.226)	(0.470)
Avg. HIEL× Adj. Euro Origins				0.0354***	0.0269	0.178**
				(0.00394)	(0.0289)	(0.0597)
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

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

Table 6: 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	0.006	0.003*			
	(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	0.005	0.009*
				(0.006)	(0.005)	(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
			(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
R^2	0.284	0.609	0.769	0.359	0.636	0.756

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. The scores range from 0 to 10.

Appendices

A Data Description

Table A1: Summary statistics of main variables by colonizer and continent.

Variable:	*Avg. EFW*		HIEL Colonizer			
	Mean	Std	Mean	Std	Obs.	(%)
By Main Colonizer						
Belgium	5.062	–	7.470	–	1	0.93
Britain	6.712	0.975	7.815	0.206	49	45.79
France	5.921	0.678	7.059	0.272	27	25.23
Germany	6.068	0.570	7.420	0.146	4	3.74
Italy	4.604	–	6.366	–	1	0.93
Netherlands	6.521	0.421	7.962	0.034	2	1.87
Portugal	5.974	0.804	6.345	0.005	6	5.61
Spain	6.922	0.921	6.525	–	17	15.89
By Continent						
Africa	5.965	0.838	7.322	0.506	48	44.86
America	6.954	0.843	7.882	0.080	28	26.17
Asia	6.618	0.843	7.517	0.507	28	26.17
Oceania	7.647	1.158	8.083	0.191	3	2.80
Total	6.442	0.959	7.463	0.514	107	100.00

Notes: Colonies' economic freedom are measured by the *Economic Freedom of the World Index* (EFW), and colonizer's use the *Historical Index of Economic Liberty* (HIEL). Both scale from 0 to 10. Countries with multiple colonizers have been classified according to Table A2. Shares may not add to 100% due to rounding. Excludes 21 colonies without EFW data.

Table A2: Classification of Countries with Multiple Colonizers

Source Country	Becker (2019) (Longest)	La Porta et al. (1999) (Main)	Base Sample (Adopted)
Belize	Spain	Britain	Britain
Burundi	Belgium	Germany	Germany
Cameroon	Britain	Germany	German
Canada	France	Britain	Britain
Ghana	Portugal	Britain	Britain
Guyana	Netherlands	Britain	Britain
Jamaica	Britain	Britain	Britain
Libya	Italy	Italy	Italy
Malaysia	Portugal	Britain	Britain
Mauritania	Spain	France	France
Mauritius	Britain	Britain	Britain
Morocco	Spain	France	France
Namibia	Germany	Britain	Britain
Rwanda	Belgium	Germany	Germany
Senegal	France	France	France
Seychelles	Britain	n/a	Britain
Somalia	Britain	Britain	Britain
South Africa	Netherlands	Britain	Britain
Sri Lanka	Britain	Britain	Britain
Tanzania	Britain	German	German
Togo	France	France	France
Trinidad & Tobago	Spain	Britain	Britain
Uruguay	Spain	Spain	Spain

Note: All the main regressions adopt the Base Sample.

Table A3: Summary Statistics, Panel Data

Variable	Obs	Mean	Std. dev.	Min	Max
Economic Freedom of Colonies					
EFW_t	4,198	6.435	1.242	2.370	9.145
EFW Area 1_t	3,210	6.894	1.018	4.186	8.916
EFW Area 2_t	3,210	4.556	1.345	2.258	8.538
EFW Area 3_t	3,210	7.650	1.314	3.654	9.711
EFW Area 4_t	3,210	6.522	1.360	2.305	9.412
EFW Area 5_t	3,210	6.594	1.097	3.779	8.884
Std. Dev. across Areas	3,210	1.444	0.402	0.517	2.318
Economic Freedom of Colonizers					
Avg. HIEL Colonizer	2,590	7.462	0.513	6.342	8.416
First HIEL	2,590	7.669	0.716	5.397	8.454
HIEL at Independence	2,590	7.556	0.733	4.918	8.554
Geographical Controls					
America*	4,922	0.175	0.380	0.000	1.000
Africa*	4,922	0.301	0.459	0.000	1.000
Asia*	4,922	0.179	0.383	0.000	1.000
Absolute Latitude	2,819	0.179	0.116	0.000	0.667
Landlocked*	2,814	0.171	0.377	0.000	1.000
Island*	4,922	0.127	0.333	0.000	1.000
% of world's Gold	2,793	0.744	5.064	0.000	47.000
% of world's Iron	2,793	0.445	2.022	0.000	16.000
% of world's Silver	2,793	0.610	2.554	0.000	13.000
% of world's Zinc	2,793	0.656	2.569	0.000	15.000
Coal reserves*	2,820	0.318	0.466	0.000	1.000
Oil Reserves†	2,792	121.4K	552.6K	0.000	4,500K
Development Literature Controls					
Ruggedness	3,210	117.646	114.902	1.600	674.000
Log Settler Mortality	2,379	4.679	1.207	2.146	7.986
Pop. Density in 1500	2,708	0.505	1.577	-3.831	4.610
British Legal Origins*	3,152	0.395	0.489	0.000	1.000
French Legal Origins*	3,152	0.569	0.495	0.000	1.000
Socialist Legal Origins*	3,152	0.000	0.000	0.000	0.000
Scandinavian Legal Origins*	3,152	0.000	0.000	0.000	0.000
German Legal Origins*	3,152	0.036	0.185	0.000	1.000
Prevalence of European Settlers	1,792	0.111	0.198	0.000	0.905

Notes: Summary statistics for panel data used in Table 6. * denotes dummy variables. Colonies' economic freedom are measured by the *Economic Freedom of the World Index* (EFW), and colonizer's use the *Historical Index of Economic Liberty* (HIEL). Both scale from 0 to 10. *First HIEL* is the HIEL measured at the first year of colonization (if post-1850). † in thousands of barrels per capita.

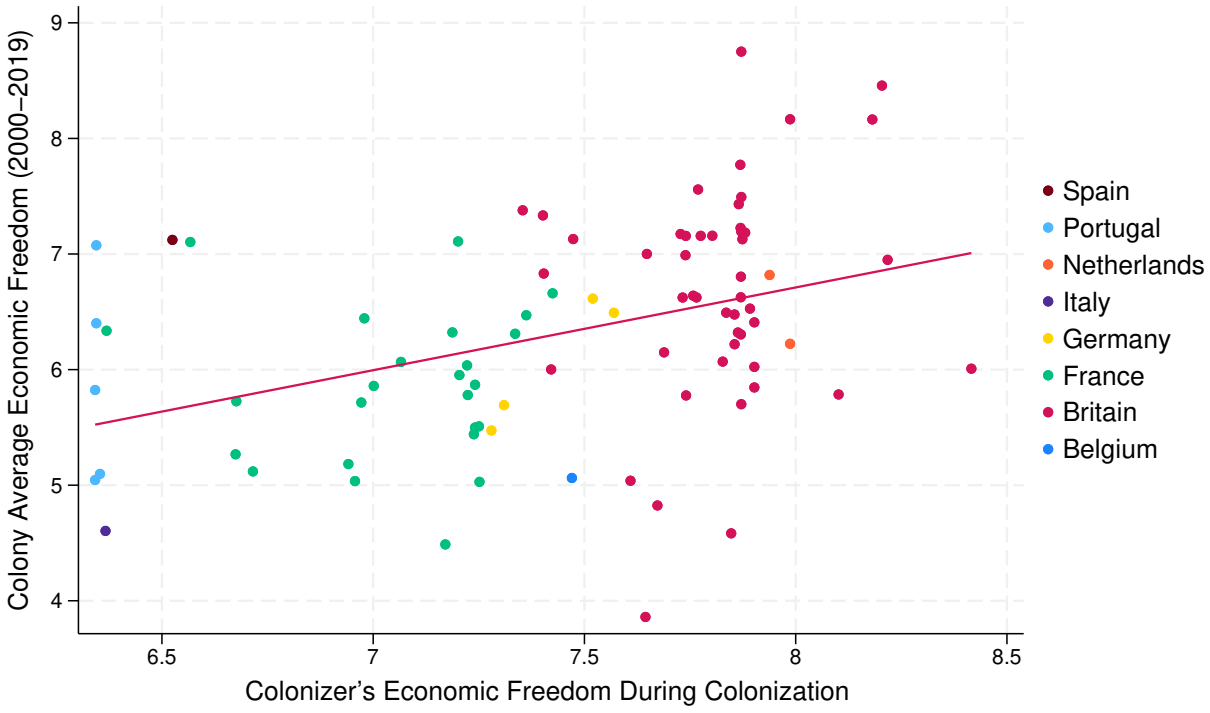

Figure A1: Raw correlation between economic freedom of colony and its colonizer

Notes: See Table A2 for details.

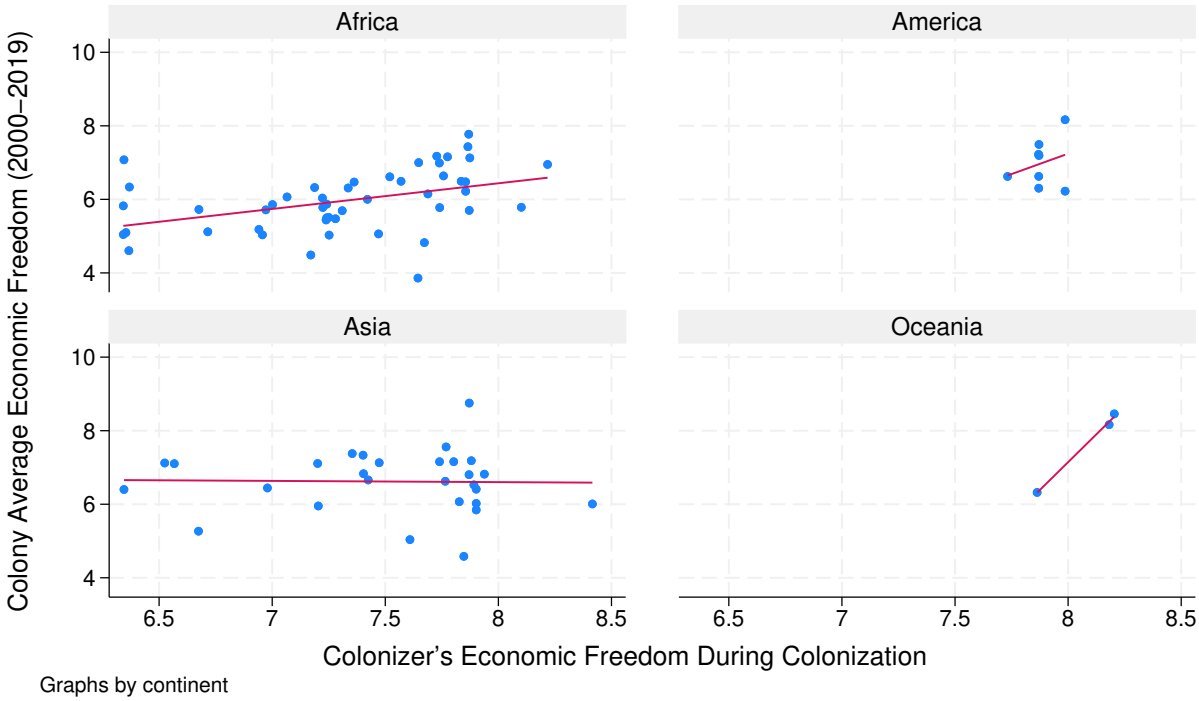

Figure A2: Raw correlation between economic freedom of colony and its main colonizer, by continent

Notes: See Table A2 for details.

B Additional Results

Table B1: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019), Sample Splits

Dependent Variable:	*Avg. EFW (2000-2019)*			
	Colonized Post-1850	Without Africa	Without Americas	Without "Neo-Europes"
	(1)	(2)	(3)	(4)
HIEL Colonizer	0.579***	-0.533*	0.426**	0.424**
	(0.125)	(0.187)	(0.169)	(0.166)
America dummy	-	-0.198**	-	-
	(–)	(0.0586)	(–)	(–)
Africa dummy	0.330	-	-0.910**	-0.174
	(0.407)	(–)	(0.366)	(0.256)
Asia dummy	-	0.175**	-0.609**	0.121
	(–)	(0.0361)	(0.245)	(0.147)
Abs. Latitude	-0.0192	1.722***	-0.453	-0.266
	(2.476)	(0.284)	(1.324)	(1.230)
Landlocked	0.386	-0.254	0.203	0.223
	(0.382)	(0.204)	(0.366)	(0.358)
Island	0.417	1.114***	0.803*	0.863**
	(0.304)	(0.0228)	(0.350)	(0.292)
Ruggedness	0.001	-0.001**	0.001	0.001
	(0.001)	(0.000)	(0.001)	(0.001)
Pre-Colonial Pop. Density	-0.045	-0.279***	-0.157**	-0.146**
	(0.090)	(0.008)	(0.043)	(0.046)
N	40	22	58	63
R^2	0.239	0.746	0.481	0.408

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, 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. Column (4) excludes Australia, Canada, New Zealand from the sample; the United States is not in this sample because it became independent before 1850. All columns use the same set of controls; cells with - or (–) have been omitted for lack of observations or collinearity.

Table B2: Economic Freedom of Colonizer and Areas of Economic Freedom (2000-2019)

Dependent Variable:	*Area 1 - Size of Government*			
Panel A:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.325**	0.204	-0.0373	0.415
	(0.131)	(0.170)	(1.242)	(1.038)
R^2	0.029	0.205	0.745	0.789
Dependent Variable:	*Area 2 - Property Rights and Rule of Law*			
Panel B:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	1.124***	0.650**	1.956*	2.372
	(0.290)	(0.252)	(0.753)	(1.626)
R^2	0.176	0.476	0.821	0.849
Dependent Variable:	*Area 3 - Sound Money*			
Panel C:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.505***	0.451	1.797	2.089
	(0.135)	(0.314)	(1.213)	(1.200)
R^2	0.043	0.249	0.728	0.749
Dependent Variable:	*Area 4 - Freedom to Trade Internationally*			
Panel D:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.740**	0.650*	2.288***	2.867***
	(0.302)	(0.317)	(0.321)	(0.615)
R^2	0.078	0.282	0.757	0.805
Dependent Variable:	*Area 5 - Regulation*			
Panel E:	(1)	(2)	(3)	(4)
Avg. HIEL Colonizer	0.881***	0.638***	0.106	0.616
	(0.124)	(0.165)	(1.145)	(0.937)
R^2	0.158	0.359	0.661	0.699
Controls				
Continent Dummies	No	Yes	Yes	Yes
Basic Geographical	No	Yes	Yes	Yes
Ruggedness	No	No	Yes	Yes
Pop Density in 1500	No	No	Yes	Yes
Settler Mortality	No	No	Yes	Yes
Humidity/Temperature	No	No	Yes	Yes
Climate/Social	No	No	Yes	Yes
Natural Resources	No	No	Yes	Yes
Legal Origins	No	No	No	Yes
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53

Notes: All panels average the dependent variable for the 2000-2019 period. Controls report the variables included in each column, identical across panels.

Table B3: Multiple Colonizers and Institutional Cohesion

Dependent Variable:	*St. Dev. Across Areas of EFW (2000-2019 avg.)*			
	(1)	(2)	(3)	(4)
Multiple Colonizers	-0.141**	-0.100	-0.201**	-0.217***
	(0.0450)	(0.0562)	(0.0732)	(0.0374)
America dummy		0.434	0.301	0.187
		(0.237)	(0.437)	(0.371)
Africa dummy		0.409*	0.170	-0.0134
		(0.184)	(0.537)	(0.403)
Asia dummy		0.240*	0.0347	0.108
		(0.116)	(0.380)	(0.501)
Abs. Latitude		-0.483**	1.329*	1.320*
		(0.154)	(0.563)	(0.635)
Landlocked		0.0438	0.271	0.233
		(0.104)	(0.202)	(0.219)
Island		0.0384	0.116	-0.00770
		(0.231)	(0.374)	(0.268)
Ruggedness			-0.00136	-0.000903
			(0.000773)	(0.00111)
Log Settler Mortality			0.000986	0.0268
			(0.0674)	(0.0835)
Pop. Density in 1500			0.0942	0.0705
			(0.0583)	(0.0622)
French Legal Origin				0.671*
				(0.323)
British Legal Origin				0.238
				(0.182)
P-val. humidity			[0.118]	[0.002]
P-val. temperature			[0.006]	[0.000]
P-val. climate/soil			[0.518]	[0.000]
P-val. nat. resources			[0.064]	[0.000]
Colonizer FE	No	No	Yes	Yes
N	107	90	73	73
R^2	0.020	0.094	0.470	0.520

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. Dependent variable is the average standard deviation across the five sub-indexes of the *Economic Freedom of the World* (EFW) Index score in the 2000-2019 period. 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 (not reported). Dummies for German and Scandinavian not included for lack of observations.

C Robustness Checks

C.1 Effective Regression Weights

Tables C1.A and C1.B report the distribution of effective regression weights by continent and by colonizer for each of the four specifications of Table 3, as in Aronow and Samii (2016). The second column, Expected Weight, reports the percentage of observations coming from each continent/colonizer, thus also implying the percentage of expected regression weights assigned to that continent/colonizer if all observations contributed identical weights to the estimation of *HIEL Colonizer*. The third column, Effective Weight, report the percentage of regression weights effectively received by each continent/colonizer. The last column reports the ratio of effective to expected weight; thus, values greater than 1 indicate overrepresentation, while values less than 1 indicate underrepresentation.

Although there is some variation across specifications, no continent/colonizer is consistently over- or under-represented across all specifications. Discrepancies greater than 10 percentage points (i.e., Ratio < 0.9 or Ratio > 1.1) are also mostly restricted to continents/colonizers with very small numbers of observations, presumably because their distribution of weights is not so smooth. However, this also indicates that relatively large localized imbalances have small impacts on the overall sample.

Table C1.A: Regression Weights for HIEL Colonizer Coefficient, by Continent

Colonizer	Obs.	Expected Weight (%)	Effective Weight (%)	Ratio
Table 3, Column 1				
Africa	48	0.552	0.532	0.965
America	8	0.092	0.102	1.105
Asia	28	0.322	0.326	1.014
Oceania	3	0.034	0.040	1.155
Table 3, Column 2				
Africa	46	0.657	0.709	1.078
America	8	0.114	0.081	0.712
Asia	13	0.186	0.195	1.052
Oceania	3	0.043	0.015	0.344
Table 3, Column 3				
Africa	32	0.604	0.668	1.106
America	8	0.151	0.107	0.708
Asia	11	0.208	0.222	1.068
Oceania	2	0.038	0.004	0.101
Table 3, Column 4				
Africa	32	0.604	0.669	1.108
America	8	0.151	0.107	0.709
Asia	11	0.208	0.220	1.061
Oceania	2	0.038	0.004	0.101

Notes: See Table 3 for specifications.

Table C1.B: Regression Weights for HIEL Colonizer Coefficient, by Colonizer

Colonizer	Obs.	Expected Weight (%)	Effective Weight (%)	Ratio
Table 3, Column 1				
Belgium	1	0.011	0.012	1.002
Britain	48	0.552	0.600	1.088
France	25	0.287	0.258	0.899
Germany	4	0.046	0.045	0.989
Italy	1	0.011	0.008	0.726
Netherlands	2	0.023	0.026	1.125
Portugal	5	0.057	0.041	0.721
Spain	1	0.011	0.009	0.766
Table 3, Column 2				
Belgium	0	0	0	–
Britain	37	0.529	0.528	0.999
France	21	0.300	0.321	1.070
Germany	4	0.057	0.061	1.069
Italy	1	0.014	0.020	1.393
Netherlands	2	0.029	0.033	1.140
Portugal	4	0.057	0.031	0.540
Spain	1	0.014	0.007	0.472
Table 3, Column 3				
Belgium	0	0	0	–
Britain	26	0.491	0.472	0.963
France	19	0.358	0.375	1.045
Germany	4	0.075	0.076	1.013
Italy	0	0	0	–
Netherlands	2	0.038	0.041	1.080
Portugal	2	0.038	0.036	0.956
Spain	0	0	0	–
Table 3, Column 4				
Belgium	0	0	0	–
Britain	26	0.491	0.471	0.961
France	19	0.358	0.375	1.047
Germany	4	0.075	0.077	1.014
Italy	0	0	0	–
Netherlands	2	0.038	0.041	1.082
Portugal	2	0.038	0.036	0.958
Spain	0	0	0	–

Notes: See Table 3 for specifications.

C.2 Sensitivity Analysis

I perform several robustness checks for potential selection on unobservables. First, I compute Oster (2019)'s δ, which indicates the ratio of selection on unobservables to selection on observables required for a zero effect ($\beta = 0$). For instance, a δ of 2 means that unobservables would have to have twice the explanatory power of observables to "explain away" the results.

However, Oster's δ suffers from two potential problems. As argued in Diegert et al. (2022), Oster's approach uses a method called *residualization* to avoid making assumptions about the exogeneity of the controls. As the name suggests, *residualization* "replaces the unobservables by the portion of the unobservables that is uncorrelated with the included controls." (Diegert et al., 2022, p. 3). Nonetheless, in practical applications, unobservables are likely correlated with the included controls.[43] Thus, Oster's δ suffers from inverse monotonicity biases, whereby excessive weight is given to unobservables when most selection is done by observables, and too much weight is given to observed variables when most of the selection is done by unobservables (Diegert et al., 2022, p. 5).

The second problem, described in Masten and Poirier (2024), is that the "explain away" breakdown point – the smallest value of δ required for $\beta = 0$ – is not necessarily the same as the smallest δ required for β to flip its sign – the *sign change* breakdown point.[44]

Their sensitivity parameter, $\bar{r}_X$, follows the intuition of Oster's δ – Selection on Unobservables / Selection on Observables –, but accounts for correlation between observables and unobservables. More generally, their method allows researchers to set the problem as an inequality (in this case $\beta > 0$). Their method also allows for controlling for a maximum amount of correlation ($\bar{c}$) between unobservables and included controls X. When $\bar{c} = 1$, by construction, $\bar{r}_X < 1$.

The interpretation of $\bar{r}_X$ generally follows that of Oster's δ in the sense that a $\bar{r}_X = 0.5$ implies that selection on unobservables would have to be 50% as large as selection on observables, but the outcome and benchmark differ, as discussed below.

Table C2.A reports the results for Tables 3 and 4.[45] In column (1), I report Oster (2019)'s δ. I follow Oster's rule of thumb for assuming that R^2 would rise by a maximum of 30% if all unobservables were included in the regression ($R^2_{long} = 1.3 \times R^2_{med}$).

Columns (2) through (5) report the values of $\bar{r}_X$ under different assumptions of maximum correlation ($\bar{c}$) between unobservables and included controls X. In these columns, there is no constraint on the relative impact of unobservables on the outcome variable.[46] However, as argued in Diegert et al. (2022, p.40-42), this is a conservative estimate. The authors suggest $\bar{r}_X = \bar{r}_Y$ as an alternative benchmark, which assumes that the impact of unobservables (relative to observables) is the same for treatment (X) and for outcomes (Y). However, the process of imposing this constraint requires a numerical optimization algorithm, which can be extremely demanding in terms of

[43] On this topic, see Angrist and Pischke (2017, p. 129).

[44] As explained in Masten and Poirier (2024, p. 2): "This can occur when the omitted variable bias is discontinuous in the sensitivity parameter, allowing the value of the bias adjusted estimand to jump across the horizontal axis at zero as the sensitivity parameter varies. [...] Such discontinuities can arise in regression analysis because the sensitivity parameters often involve covariance and variance terms, which lead to nonlinear restrictions on the value of the bias."

[45] Because these tests are always performed *relative to* a baseline set of parameters, I do not report the least-specified equation of each Table. Following the recommendations of Diegert et al. (2022), I use the basic geographical characteristics (continent, island, and landlocked dummies, as well as latitude) as the baseline.

[46] Formally, this is denoted by $\bar{r}_Y$, which is the analogous measure to $\bar{r}_X$, but relates the ratio of unobservables to observables to Y, the outcome variable.

computational capacity. Therefore, I was not able to obtain it for some specifications, denoted in the tables with (–).

Most results for specifications including all controls are quite robust to selection on observables according to Oster's δ. For instance, the specifications of Table 3, Col.4, and Columns (3) and (6) of Table 5 (Panels B and C), would require selection on unobservables from 105.2% to 507.1% that of on observables to drive the results to zero. Notice that Column 3 of Table 5 follows the same specification as Table 3, Column 4, but includes a control for European ancestry, and the sensitivity parameters are substantially improved. Thus, the inclusion of this control eliminates a large portion of selection on unobservables.

In turn, when no restriction on $\bar{r}_Y$ is applied (Columns 2-5 of Tables C2.A-C2.B), the $\bar{r}_X$ parameters hover around 0.4-0.7 in the tests for *Avg. HIEL*. This can be considered robust according to the discussion in Diegert et al. (2022, pp. 31, 40).[47]

Moreover, when we apply the restriction $\bar{r}_X = \bar{r}_Y$ – assuming the impact of unobservables (relative to observables) is the same for treatment (X) and for outcomes (Y) –, the results are deemed much more robust to unobservables.

Table C2.A: Sensitivity Analysis, Tables 3-4

	Oster (2019)	Diegert et al. (2022)				
Parameters	δ ($R^2_{long} = 1.3 \times R^2_{med}$)	$\bar{r}_Y = +\infty$ $\bar{c} = 0.25$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.5$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.75$	$\bar{r}_Y = +\infty$ $\bar{c} = 1$	$\bar{r}_Y = \bar{r}_X$ $\bar{c} = 1$
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Table 3:						
Avg. HIEL						
Column 3	0.685	0.339	0.337	0.337	0.337	0.614
Column 4	1.054	0.471	0.459	0.459	0.459	0.702
Table 4:						
Postwar						
Column 4	0.977	0.248	0.248	0.248	0.248	–
Postwar×HIEL Indep.						
Column 5	0.149	0.047	0.047	0.047	0.047	–

Notes: Sensitivity analysis not provided for insignificant coefficients or columns with less than the baseline controls (e.g. Column 2, Table 3). Estimates could not be obtained for cells with –. See main text for details.

[47] They suggest a cutoff of 0.5 as a "more reasonable value for determining robustness." (Diegert et al., 2022, p.31). As they argue, this is sensible assumption because researchers do not choose controls at random. It is likely that they first include the most important variables, and thus omitted ones will likely have less predictive power. Also see Altonji et al. (2005).

Table C2.B: Sensitivity Analysis, Table 5

Parameters	Oster (2019)	Diegert et al. (2022)				
	δ $(R^2_{long} = 1.3 \times R^2_{med})$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.25$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.5$	$\bar{r}_Y = +\infty$ $\bar{c} = 0.75$	$\bar{r}_Y = +\infty$ $\bar{c} = 1$	$\bar{r}_Y = \bar{r}_X$ $\bar{c} = 1$
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Table 5A:						
Column 2						
Avg. HIEL	0.942	0.389	0.385	0.385	0.385	0.626
Euro Settlers	0.207	0.148	0.148	0.148	0.148	0.375
Table 5B:						
Avg. HIEL						
Column 2	0.659	0.632	0.591	0.588	0.588	0.745
Column 3	1.512	0.471	0.459	0.459	0.459	0.648
Column 5	0.668	0.633	0.592	0.589	0.589	0.747
Column 6	1.919	0.463	0.452	0.452	0.452	0.613
Euro Origins						
Column 6	0.379	0.376	0.376	0.376	0.376	-
Avg. HIEL×Euro O.						
Column 6	0.901	0.377	0.374	0.374	0.374	0.561
Table 5C:						
Avg. HIEL						
Column 2	0.872	0.715	0.655	0.645	0.645	0.798
Column 3	2.875	0.418	0.412	0.412	0.412	0.599
Column 5	0.731	0.635	0.593	0.590	0.590	0.775
Column 6	3.075	0.410	0.405	0.405	0.405	0.565
Adj. Euro Origins						
Column 6	3.616	0.092	0.092	0.092	0.092	–
Avg. HIEL×Adj. Euro O.						
Column 6	5.071	0.091	0.091	0.091	0.091	0.264
Table 6:						
HIEL Indep						
Column 3	0.354	0.360	0.358	0.358	0.358	0.740
HIEL Indep.× Years since Indep.						
Column 3	1.045	0.420	0.414	0.414	0.414	0.729
Avg. HIEL						
Column 5	0.289	0.289	0.289	0.289	0.289	0.679
Column 6	0.398	0.154	0.154	0.154	0.154	0.775
Avg. HIEL× Years since Indep.						
Column 6	0.275	0.373	0.370	0.370	0.370	0.786

Notes: Sensitivity analysis not provided for insignificant coefficients or columns with less than the baseline controls (e.g. Column 2, Table 3). Estimates could not be obtained for cells with –. See main text for details.

C.3 Conley Spatial Standard Errors

The main results cluster the standard errors at the colonizer level. However, a potential concern is that neighboring countries are more likely to have been colonized by the same colonizer within a relatively short period, introducing spatial correlation across observations. Conley and Kelly (2025) argue that accounting for spatial correlation is especially important in studies of persistence. Indeed, clusters of colonization are visible in Figure 1. Here, I reestimate the main results from Tables 3-5 using Conley (1999) spatial standard errors at four distance thresholds: 1,000, 2,500, 5,000, and 10,000 km. The new standard errors and their significance levels are reported in Table C3.A for Tables 3 and 4 and in Table C3.B for Table 5. Unfortunately, those for Columns 3 and 6 of Table 6 could not be estimated using Conley (1999) standard errors – see Table C3.C.[48]

The results using Conley (1999) errors are generally at the same or higher levels significance, indicating that accounting for spatial correlation actually leads to more precise estimates. A clear exception is the results involving the coefficient *Postwar* and its interaction with *HIEL Indep.*. This seems to be the case that knowing the latitude and longitude will tell one whether a country has had independence before or after the war, as discussed in Conley and Kelly (2025).

Table C3.A: Reproduction of Tables 3-4, Accounting for Spatial Correlation

		Clustered	Conley (1999) with Distance Threshold:			
	Coefficient		1,000km	2,500km	5,000km	10,000km
		(1)	(2)	(3)	(4)	(5)
Table 3						
HIEL Colonizer						
Column 1	0.716	0.153***	0.188***	0.191***	0.185***	0.152***
Column 2	0.521	0.206**	0.208**	0.200**	0.211**	0.208**
Column 3	1.199	0.325**	0.527**	0.446**	0.341**	0.000***
Column 4	1.648	0.206***	0.537***	0.415***	0.354***	0.249***
Table 4						
Postwar						
Column 4	-0.451	0.148*	0.266*	0.255*	0.297*	0.230*
Column 5	-1.228	0.381**	2.486	2.368	2.361	2.217
Postwar × *HIEL Indep.*						
Column 5	0.117	O.057*	0.344	0.332	0.334	0.317

Notes: Estimations not performed for insignificant results. See main tables for full specification.

[48] Package `conleyreg` in R informs: `Error in solve.default(crossprod(V_spatial_HAC)) : system is computationally singular: reciprocal condition number = 2.28269e-25`. This is likely due to the high dimensionality of fixed effects.

Table C3.B: Reproduction of Table 5, Accounting for Spatial Correlation

		Clustered	Conley (1999) with Distance Threshold:			
			1,000km	2,500km	5,000km	10,000km
	Coefficient	(1)	(2)	(3)	(4)	(5)
Table 5A						
Avg. HIEL						
Column 1	0.431	0.159***	0.231*	0.207**	0.206**	0.174**
Column 2	0.337	0.145*	0.216	0.188*	0.162**	0.126**
Column 4	0.349	0.169*	0.252	0.230	0.237	0.205*
Euro Settlers						
Column 1	0.021	0.002***	0.003***	0.003***	0.003***	0.003***
Column 2	0.012	0.003***	0.007	0.009	0.009	0.008
Column 4	-0.294	0.120*	0.158*	0.134**	0.110*	0.093***
Avg. HIEL × Euro Settlers						
Column 4	0.039	0.015**	0.019	0.017**	0.013***	0.012***
Table 5B						
Avg. HIEL						
Column 1	0.718	0.134***	0.213***	0.212***	0.184***	0.142***
Column 2	0.446	0.146**	0.189**	0.187**	0.197**	0.193**
Column 3	1.442	0.440***	0.461***	0.388***	0.353***	0.246***
Column 4	0.698	0.125***	0.213***	0.213*	0.186***	0.143***
Column 5	0.448	0.153**	0.189**	0.187**	0.196**	0.191**
Column 6	1.344	0.217***	0.421***	0.338***	0.289***	0.206***
Euro Origins						
Column 3	-0.016	0.008	0.004***	0.004***	0.004***	0.005***
Column 4	-0.206	0.056***	0.184	0.161	0.157	0.146
Column 6	-1.344	0.466**	0.521**	0.514**	0.450***	0.384***
Avg. HIEL × Euro Origins						
Column 4	0.026	0.007***	0.023	0.020	0.020	0.018
Column 6	0.167	0.060**	0.066**	0.065**	0.057***	0.048***
Table 5C						
Avg. HIEL						
Column 1	0.648	0.124***	0.208***	0.204***	).173***	0.139***
Column 2	0.443	0.141**	0.191**	0.189**	0.201**	0.200**
Column 3	1.299	0.432**	0.486**	0.412***	0.359***	0.234***
Column 4	0.615	0.114***	0.209***	0.207***	0.179***	0.147***
Column 5	0.427	0.141**	0.194**	0.206**	0.206**	0.204**
Column 6	1.067	0.227***	0.450**	0.368**	0.289***	0.184***
Adj. Euro Origins						
Column 1	0.005	0.001**	0.003	0.004	0.005	0.004
Column 3	-0.016	0.008	0.004***	0.004***	0.005***	0.005***
Column 4	-0.277	0.031***	0.137**	0.123**	0.124**	0.116**
Column 6	-1.433	0.470**	0.543**	0.457***	0.345***	0.245***
Avg. HIEL × Adj. Euro Origins						
Column 4	0.035	0.004***	0.017**	0.015**	0.015**	0.014**
Column 6	0.178	0.060**	0.068**	0.058***	0.044***	0.031***

Notes: Estimations not performed for insignificant results. See main tables for full specification.

Table C3.C: Reproduction of Table 6, Accounting for Spatial Correlation

		Clustered	Conley (1999) with Distance Threshold:			
			1,000km	2,500km	5,000km	10,000km
	Coefficient	(1)	(2)	(3)	(4)	(5)
Table 6 *HIEL at Indep.*						
Column 1	-0.031	0.321	0.192	0.204	0.214	0.205
Column 2	0.117	0.316	0.322	0.326	0.265	0.240
Column 3	1.245	0.399***		[see Table Notes]		
HIEL at Indep. × *Years since Indep.*						
Column 1	0.003	0.003	0.003	0.003	0.003	0.002
Column 2	0.006	0.003	0.005	0.004	0.004	0.004
Column 3	0.003	0.001*		[see Table Notes]		
Avg. HIEL						
Column 4	0.840	0.288**	0.354**	0.365**	0.360**	0.298***
Column 5	0.691	0.299*	0.351**	0.369*	0.349*	0.256***
Column 6	1.827	0.459		[see Table Notes]		
Avg. HIEL × *Years since Indep.*						
Column 4	-0.003	0.006	0.006	0.006	0.007	0.006
Column 5	0.005	0.005	0.006	0.006	0.007	0.006
Column 6	0.009	0.003*		[see Table Notes]		

Notes: Columns 3 and 6 could not be estimated using Conley (1999) standard errors. Package `conleyreg` in R informs: `Error in solve.default(crossprod(V_spatial_HAC)) : system is computationally singular: reciprocal condition number = 2.28269e-25`. This is likely due to the high dimensionality of fixed effects.

C.4 Population-Weighted Regressions

Table C4: Economic Freedom of Colonizer and Average Economic Freedom (2000-2019), Population Weighted

Dependent Variable:	*Avg. EFW (2000-2019)*			
	(1)	(2)	(3)	(4)
HIEL Colonizer	0.453***	0.236	0.621	1.659**
	(0.122)	(0.179)	(0.317)	(0.399)
America dummy		-0.0603	-0.723	0.0229
		(0.120)	(0.586)	(1.007)
Africa dummy		-1.789***	-1.324	0.304
		(0.280)	(0.927)	(1.818)
Asia dummy		-1.470***	-1.538	-0.546
		(0.217)	(0.848)	(1.202)
Abs. Latitude		-1.153	-3.712**	-1.346
		(0.936)	(1.272)	(2.172)
Landlocked		0.259	1.122*	1.497***
		(0.436)	(0.412)	(0.293)
Island		0.334*	0.930	1.064
		(0.160)	(0.490)	(0.561)
Ruggedness			-0.00226	0.0000893
			(0.00296)	(0.00197)
Log Settler Mortality			-0.173	-0.399**
			(0.207)	(0.124)
Pop. Density in 1500			-0.0692	0.0397
			(0.140)	(0.227)
French Legal Origin				0.413
				(0.748)
British Legal Origin				1.517***
				(0.217)
P-val. humidity			[0.002]	[0.000]
P-val. temperature			[0.013]	[0.000]
P-val. climate/soil			[0.322]	[0.000]
P-val. nat. resources			[0.200]	[0.417]
Colonizer FE	No	No	Yes	Yes
N	87	70	53	53
R^2	0.090	0.329	0.882	0.914

Notes: Standard errors clustered at the colonizer level in parenthesis. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively. Observations weighted by population at independence. 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.