

The Blessings of Scarcity: The Institutional Underpinnings of Small States' Prosperity*

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Abstract

Is smaller better for economic development? By investigating the economic performance of states with low populations today, much research on small states and development overlooks how population levels of the past can shape economic and demographic outcomes of the present. We argue that states' past demographic size is a powerful predictor of long-term economic development. Population scarcity in the early years of independence pressures leaders of newly independent small states to open their markets and employ large public sectors. Because these policies emerged in the early years of independence, they establish strong institutional precedents and persist over time. Open markets and large public sectors help “embed” small states into the global economy, engendering political stability, strong private sector institutions and long-term development. We test this argument by examining the developmental trajectories of 82 states that gained independence between 1946 and 1975. States born with lower population levels during this period outperform their larger peers across many measures of long-term economic development. These findings are robust to numerous model specifications, mediation analysis and an instrumental variable's approach. A comparative case study of Oman and the People's Democratic Republic of Yemen (PDRY) illustrates the mechanisms linking population size during early statehood and long-term economic development.

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1 Introduction

Policymakers and academics disagree whether smaller populations are better for economic development. On the one hand, the World Bank (WB) and the International Monetary Fund (IMF) have long warned of the economic challenges confronting population scarce states. Low populations condemn small states to monoculture economies, soaring state debts, and brain drain [Beine et al., 2008, World Bank, 2017]. This renders low population states highly vulnerable to economic and environmental shocks [Armstrong and Read, 2002, Payne, 2004]. Lacking manpower, population scarce states' bureaucracies are over-stretched, under-specialized [Jugl, 2019], and prone to corruption [Corbett, 2015, Gerring and Veenendaal, 2020, Veenendaal and Corbett, 2015]. Though “small” states - which we and others [Easterly and Kraay, 2000] define as states with a population of one million or less - represent almost a fifth of United Nations (UN) member states [World Population Review, 2022], they constituted roughly a third of the World Bank (WB)'s list of states with high institutional and social fragility in 2021 [World Bank, 2021].

Others are more optimistic about small population states' economic potential. Some argue that states with smaller populations have lower barriers to political participation and accountability [Dahl and Tufte, 1973, Stasavage, 2010], encouraging cleaner and more responsive governance [Fors, 2014, Rigobon and Rodrik, 2005].¹ They are also more likely to trade because of their smaller domestic markets [Alesina et al., 2005]. Smaller states' greater reliance on imports discourages protectionism in favor of open trade policies, generating economic gains from trade [Easterly and Kraay, 2000]. Indeed, Spolaore and Alesina [2003, p.83] argue that by providing access to larger markets, trade integration corrects the inherent economic disadvantages of small population size.

However, much of this scholarship ignores that demographic size and economic development are endogenous. As some small states attain higher levels of economic development, their prosperity may expand their population by attracting migration, curtailing emigration, and lengthening life expectancy. Only examining the relationship between economic development and population size today overlooks yesterday's small states that grew demographically *because* of economic development. These formerly small states' developmental success may rest on political and economic arrangements that were forged when they had small populations. Their omission biases the sample

¹Sub-nationally, [Post and Kuipers, 2022] find that smaller cities in Brazil and Indonesia have better public service provision.

of commonly studied small states to population scarce states that are unable or unwilling to enlarge their populations. This biased sample may lead scholars and policymakers to underestimate the developmental advantages of small population states.

We address this limitation by investigating how population size in the past can influence economic development in the present. We find that population size in the early years of independence has profound implications for states' long-term economic development. We argue that low populations during this period push leaders of small newly independent states to adopt two policies that are vital for long-term economic growth: open markets and large public sectors.

Leaders of small newly independent states accept economic integration because they lack a domestic labor force large enough to produce diverse goods. Their economies must rely on imports. Leaders of small newly independent states also acquiesce to relatively larger public sectors. This is due to the minimum labor needed to govern and protect a modern state. This minimum manpower consumes a relatively larger share of small states' labor force.

Combined, open markets and large public sectors “embed” small states into the global economy [Ruggie, 1982], pairing economic integration with political stability [Katzenstein, 2016] and strong private sector institutions. Because these policies emerge in the early years of independence, they carry a powerful institutional precedent and persist over time. This underpins newly independent small states' long-term economic success. It also enables population growth. Once prosperous, leaders of small states then choose whether to grow their populations with open labor migration policies, as has occurred in the Gulf, or remain small, as is more common among small states in the Caribbean and Mediterranean.

We test this argument by examining the developmental trajectories of 82 states that gained independence between 1946 and 1975. We find that newly independent states that had smaller populations during these early decades of statehood have higher contemporary levels of economic development than their larger peers. This finding is robust to different measurements of “small” and economic development, a range of geographic, political and historical controls, expanding our analysis to states that gained independence between 1946 and 1980, and excluding Gulf states from the analysis.² Newly independent small states have had more stable political regimes and stronger private sector institutions as well. They embraced Embedded Liberalism (EL) too. On average

²These are Bahrain, Kuwait, Oman, Qatar, and the United Arab Emirates (UAE).

newly independent small states had more open markets and larger public sectors than states with larger populations at independence.

A mediation analysis confirms the importance of open markets and large public sectors in buttressing small newly independent states' strong private sector institutions, political stability and economic development. To address endogeneity concerns, we complement our analysis with an instrumental variables (IV) estimation that uses the quality and size of states' fertile land during their early periods of independence as an instrument for population size. The IV analysis confirms our main findings.

Finally, a comparative case study of Oman and the People's Democratic Republic of Yemen (PDRY or South Yemen) illustrates the mechanisms underpinning the association between population size in the early years of independence and long-term economic development. Like North and South Korea [Acemoglu and Robinson, 2013], Oman and the PDRY is a tragic case of neighboring states with innumerable pre-independence similarities but diverging post-independence development outcomes. Though both states were some of the world's poorest in the 1970s, by 1990 - the last year before the PDRY's unification with the Yemen Arab Republic - Oman's Gross National Production per capita (GNP) was more than ten times higher than South Yemen's [United Nations Development Programme, 1990, p.76]. The comparative case study exposes how these two states' varying population levels after independence engendered contrasting trade and public sector employment policies. It then traces these contrasting institutional paths' persistence and contribution to the chasm in economic development between Oman and South Yemen.

Our findings contribute to and connect three strands of scholarship. We add to a robust literature on critical junctures and development [Collier and Collier, 1991]. We demonstrate that states' population size in the early years of independence is a powerful predictor of long-term economic development. Low populations during this crucial period of governance form a bedrock of policies and political arrangements that uphold strong private sector institutions *and* political stability. These institutions endure as small states' populations evolve after independence.

Second, our argument is inspired by and aligned with [Ruggie, 1982]'s theory of EL: economic integration requires state intervention to compensate and insulate citizens harmed by global competition [Hays et al., 2005, Nooruddin and Rudra, 2014]. The concurrent deepening of economic integration and gutting of social safety nets across the Global South made some wonder whether

EL was a high-income state phenomenon. We follow [Nooruddin and Rudra, 2014] and present further evidence that EL exists outside of continental Europe. While small European states are flagship cases in the EL literature [Katzenstein, 2016], we pave new ground by revealing that low populations drove small states across the world to adopt EL.

Third, our findings stress that ignoring formerly small states impairs our understanding of the relationship between population size and development. Many formerly small states - like Botswana [Lefko-Everett, 2001] - grew demographically because of economic success. These states remind us that population levels are not fixed. Migration policies can attenuate population constraints. Formerly small states' histories offer valuable insights and lessons for policymakers and scholars of small states. They must not be overlooked.

This article proceeds as follows. The next section maps the literature on population and economic development. The third section explains our argument and hypotheses. The fourth section describes our data, models, and identification strategies. We then present results. The Oman - PDRY case study occupies the penultimate section. The last section concludes and proposes future avenues of research.

2 Is Size a Bane or Boon for Economic Development?

Evidence on the relationship between states' population size and economic development is mixed and uncertain. Rigobon and Rodrik [2005] estimate a negative relationship between population size and income, though this relationship is marginally significant (p.546). Easterly and Kraay [2000] demonstrate little difference in the developmental performance of larger and "small" states, which they define as states with a population of one million residents or less. Alesina et al. [2005], on the other hand, find a positive association between population size and wealth, but that economic openness mitigates the economic advantages of bigger states. Summarizing the past two decades of scholarship on size and development, Gerring and Veenendaal [2020] conclude that there is little evidence of demographic size impeding or assisting economic growth in the post World War II era. "In the modern world," they note, "where populations around the world are linked by transport and communication infrastructure and where machines provide the main source of power and economic production, the role of population is less clear (p.353)."

Much of this scholarship, however, ignores that population size and development are endogenous. While economists since Malthus have debated whether more people are worse for economic development [Kelley, 1988], economic development can also affect state size. Prosperity can curb population growth by giving families less labor intensive means of income and easier access to family planning. At the same time, development can expand populations by lowering mortality rates and raising average life expectancy. It can plug brain drain and attract migrants from less prosperous states. Leaders can also influence their state's size by crafting policies that attract foreign labor [Goodman and Pepinsky, 2021]. The impact of these policies on country size is probably more substantial for smaller states. Indeed, some of the largest proportional population growth from 2009 to 2019 occurred among small population states in Africa (p.55), Asia (p.70), and Latin America (p.97) [International Organization of Migration, 2019].

Most quantitative analyses on population size and development regress an average measure of development over a period of time on an average measure of population size over that same time period [Fors, 2014, Alesina et al., 2005, Easterly and Kraay, 2000]. Econometric objections aside, these regressions may underestimate the developmental benefits of low population states by classifying smaller states that grew due to economic success as “big.” Case studies and policy reports on small states commit a similar error [Organisation for Economic Cooperation and Development, 2018]. By focusing on the developmental challenges of small states today, which is defined across a range of population thresholds (SM - footnote explain this), these studies ignore small states of the past. Yet formerly small states - states that grew to be big - can offer additional insights on whether and how population levels shape economic development. Only examining small population states of the present confines our analysis of the relationship between population size and development to a sample of small states that have not experienced substantial population growth.

This sampling bias taints our understanding of how institutions can carry small states' economic success. Institutions and practices born in times of low population may endure as a state's population grows, particularly if leaders attribute those institutions and practices to their state's economic success. Furthermore, leaders' choices in critical moments can have long-term implications on states' institutional development [Collier and Collier, 1991, Mahoney, 2001, Wantchekon and Garcia-Ponce, Forthcoming].

The years shortly before and after a state's independence are one such critical moment. The

institutions crafted in these early years of statehood can establish important institutional precedents that harden as states age. They may birth interest groups and beneficiary constituencies that mobilize to defend these institutional arrangements over time. Thus many formerly small states may share the same institutions and developmental strategies as currently small states. *When* a state is small could be central for its long-term economic development.

3 Argument: The Institutional Blessings of Population Scarcity in Early Statehood

Low populations incentivize leaders of newly independent small states to adopt two policies in the early years of statehood that are concurrently vital for long-term economic development: open markets and large public sectors.

States with smaller populations tend to have more open trade policies [Rigobon and Rodrik, 2005]. This is because protectionist policies are costlier for consumers in small population states. Smaller domestic markets tend to produce a narrower range of goods [Knack and Azfar, 2003]. As result, consumers in smaller population states are more dependent on imports. They will lobby their leaders to open their markets to international trade. More open trade policies offer many developmental benefits: cheaper inputs, more diverse products, greater competition, and access to new markets through international trade agreements.

Greater trade integration can also stimulate more inclusive private sector institutions. International commerce requires policies and norms that buttress the rule of law and protect property rights [Gerring and Thacker, 2005, Sandholtz and Gray, 2003]. A competing strand of scholarship questions this assumption [Knack and Azfar, 2003], warning that Multi-National Corporations (MNCs) often conform if not contribute to their host government's weak governance and corrupt practices [Hellman et al., 2000]. Crucially, much of this work comes from sub-national analysis of states with large domestic markets like China

stronger private sector institutions. Importers, exporters, and government officials must accommodate their trading partners' property rights regime and market regulations. This is especially the case for small states, which are price takers for most imports in the global economy. Because they are more trade dependent, newly independent states with small populations confront stronger

pressures to comply with international trade policies and regulations than their larger peers.

This incentivizes newly independent small states to form inclusive economic institutions. These institutions protect property rights, follow international standards, and enforce contracts. Indeed, applying this logic, Gerring and Thacker [2005] find that countries with more open markets tend to be less corrupt.

Need a paragraph acknowledging crony capitalism - but why this would be less apparent in small states.

Low populations also encourage leaders of small newly independent states to accept large levels of public sector employment. Small states have big public sectors relative to their population size [Randma-Liiv, 2002]. The minimum labor needed to police, protect and regulate a modern nation state occupies a relatively higher share of small states' labor force. Low populations curtail the economies of scale of public sector employment [Spolaore and Alesina, 2003, p.172]. Though costly - small states have public sectors with high per capita costs on average [Alesina and Wacziarg, 1998]- large public sectors uphold small states' long-term development in two ways.

First, larger public sectors facilitate economic openness by “embedding” or sheltering constituents disadvantaged by international trade [Ruggie, 1982]. Katzenstein [2016] argues that the necessities of economic openness and perceptions of vulnerability pressured leaders of small European states to craft cross-class coalitions through generous welfare regimes. This abetted economic integration while minimizing political discontent. Similar pressures and outcomes are likely to extend to small newly independent states.³

Second, large public sectors promote political stability. Public sector employment is a chief means of welfare in many under-developed economies [Nooruddin and Rudra, 2014], where pensions cover less than a tenth of the working population (p.607). It is also a form of patronage. Public sector employment can deepen political loyalty, allowing for greater political stability when extended broadly.

In short, low populations propel leaders of newly independent small states to open their markets and employ large public sectors. These policies promote political stability and strong private sector

³Whether large public sectors precede or follow open markets is tangential [Adsera and Boix, 2002]. Population constraints pressure rulers of small newly independent states to adopt open markets *and* large public sectors simultaneously.

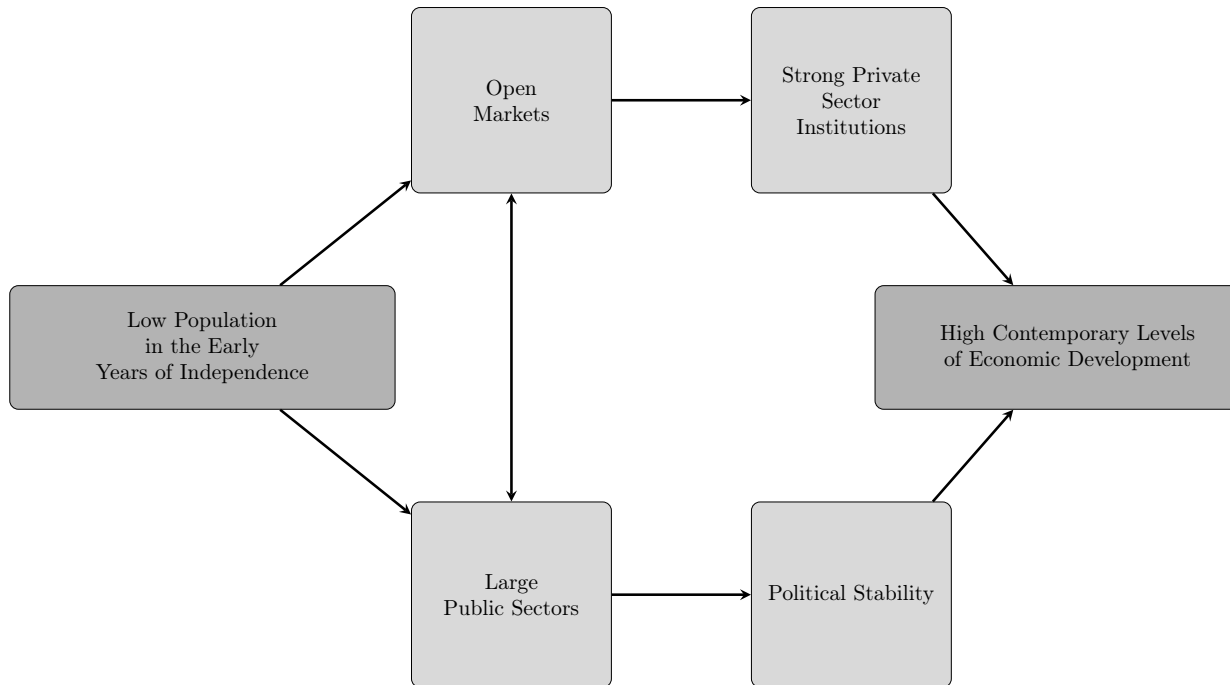
institutions. This bolsters small states' long-term economic development.

Though conceived in times of population scarcity, newly independent small states' open markets and large public sectors endure as these states age and grow demographically. Institutions founded in the early years of independence create important precedents. Interests and practices emerge and defend these founding institutional arrangements.

Furthermore, though born in times of low populations, the political and economic viability of open markets and large public sectors does not depend on population levels. Open migration policies with exclusionary political and social policies - what Goodman and Pepinsky [2021] call "exclusionary openness" - can sustain EL. So long as population growth does not expand the citizenry and dilute the public sector employment embedding native citizens, leaders can open their borders to goods and foreign labor without undermining their protected constituents. Exclusionary openness carried Germany's post-war recovery [Goodman and Pepinsky, 2021]. Small states seeking to ease their economies' labor constraints are likely to adopt similar policies.

Figure 1 illustrates the argument.

Figure 1: Argument



This argument rests on one scope condition. It applies to periods of deepening globalization. Small states' greater willingness and capacity to integrate into global markets creates economic

advantages over bigger states. This requires some bigger states to open their markets. The globalization condition anchors the argument to the second half of the 20th century. While protectionism and state-led industrialization were in vogue among newly independent states after World War II, including small states like Mauritius [Zafar, 2011] and Kuwait [Moore, 2004], low populations made these insular economic policies especially costly for newly independent small states. As a result, states with small populations in their early years of statehood were more likely to eschew protectionism in favor of economic and political arrangements that welcomed economic integration. This made newly independent small states more likely to capitalize on the gains of international trade as globalization grew exponentially over the last decades of the 20th century and the first decades of the 21st.

3.1 Hypotheses

We test the following hypotheses:

1. H1. States with *small* populations during their early years of independence have *higher* contemporary levels of economic development.
2. H2. States with *small* populations during their early years of independence have *stronger* contemporary private sector institutions.
3. H3. States with *small* populations during their early years of independence have *more stable* political regimes.

To substantiate these outcomes' mechanisms, we hypothesize:

4. H4. States with *small* populations during their early years of independence have *greater* economic openness.
5. H5. States with *small* populations during their early years of independence have *larger* public sectors.

Because these mechanisms exist in the early years of independence and persist as small states age, we expect states with *smaller* populations at independence to have *greater* economic openness and *larger* public sectors in the short and long-term.

4 Quantitative Analysis: Data and Models

To assess the long-term developmental legacies of newly independent states’ population size, we examine all states that obtained independence between 1946 and 1975. The end of World War II triggered an era of rapid decolonization and new state formation. Following the Correlates of War (COW), we deem states independent if they have United Nations (UN) membership or a population of at least half a million with diplomatic missions from two major powers [Pevehouse et al., 2020]. Because we are interested in contemporary levels of development, we exclude states that gained independence during this era but no longer exist, like West Germany or the PDRY. This generates a population of 82 states. These states’ median year of independence following COD coding criteria is 1961. The thirty-year postwar window from 1946 to 1975 represents all of these states’ early years of statehood. In robustness checks, we re-run our analysis with a smaller sample of states that gained independence between 1946 and 1970, and a larger sample of states that gained independence between 1946 and 1980.

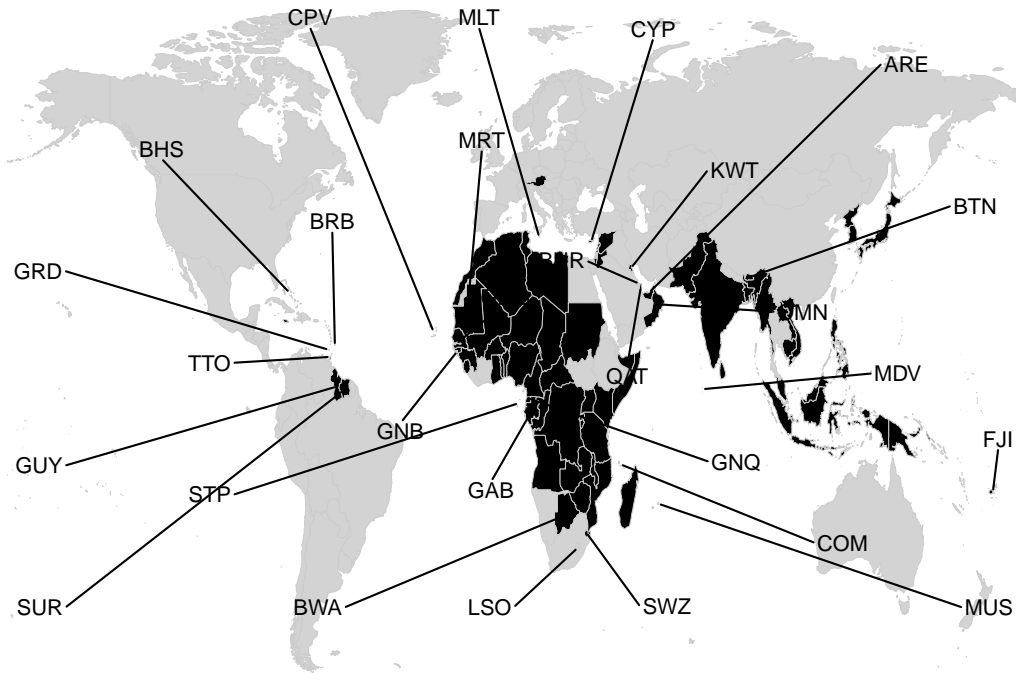
4.1 Small States

We define small or low population states as states with average populations of less than one million residents between 1946 and 1975. Our historical population data stems from Gapminder which merges data from Bolt et al. [2018] and the UN [Maddison and United Nations, 2022]. Under this metric, 28 newly independent states were “small” during this period.⁴ Fifty-five newly independent states were “larger” states.⁵ Figure 2 maps all the small and larger states in this analysis alongside small states’ country codes. In robustness checks we re-run our analysis with different population thresholds for small states, states’ population size at the year of independence, and with a continuous measure of size that logs each state’s average population between 1946 and 1975.

⁴These are the Bahamas, Bahrain, Barbados, Bhutan, Botswana, Cabo Verde, Comoros, Cyprus, Equatorial Guinea, Eswatini, Fiji, Gabon, the Gambia, Grenada, Guinea-Bissau, Guyana, Kuwait, Lesotho, the Maldives, Malta, Mauritania, Mauritius, Oman, Qatar, Sao Tome and Principe, Suriname, Trinidad and Tobago, and the United Arab Emirates.

⁵These are Algeria, Angola, Austria, Bangladesh, Benin, Burkina Faso, Cambodia, Cameroon, the Central African Republic, Chad, Congo, Congo (DRC), Ghana, Guinea, Indonesia, India, Israel, Japan, Jamaica, Jordan, Kenya, Korea (Republic), Korea (DRC), Malaysia, Madagascar, Mali, Morocco, Myanmar, Niger, Nigeria, Papua New Guinea, Pakistan, Philippines, Laos, Lebanon, Libya, Rwanda, Senegal, Sierra Leone, Singapore, Somalia, Sri Lanka, Sudan, Syria, Tanzania, Togo, Tunisia, Uganda, Vietnam, Zambia, and Zimbabwe.

Figure 2: Map of Small and Larger Newly Independent States (1946 - 1975)



More than half of our analysis' newly independent small states are no longer small, as in their current populations exceed one million residents.⁶ Post-1975 population growth varied tremendously among these newly independent small states (see Figure 8). For example, both Fiji and the UAE had roughly 600,000 residents in 1976. Today the UAE has more than nine million. Fiji has almost nine-hundred thousand. Unlike larger states, small states' population size during this early period of independence is a poor predictor of current population size. Newly independent small states' 1976 population can explain 22 percent of the variation in their 2020 population. Larger states' population size in 1976 accounts for 98 percent of the variation in their 2020 population. The vast variation in small states' long-term population growth reminds that small states are not destined to remain small. We suspect that economic success is both a cause and outcome of some newly independent small states' population growth.

⁶These formerly small states are Bahrain, Botswana, Cyprus, Equatorial Guinea, Eswatini, Gabon, The Gambia, Guinea-Bissau, Kuwait, Lesotho, Mauritania, Mauritius, Oman, Qatar, Trinidad and Tobago, and the United Arab Emirates.

4.2 Dependent Variables: Long-Term Economic Development, Strong Private Sector Institutions and Political Stability.

Long-term economic development is our main dependent variable. Our chief measure of long-term development is a state’s logged average GDP per capita based on purchasing power parity rates (PPP) between 1976 and 2020. We triangulate this measure with states’ 2019 under-five infant mortality rate⁷ and their 2019 Human Development Index (HDI) score. Compiled by the United Nations Development Program, HDI is a summary measure of health, education and standard of living outcomes. We collected all of this data from the World Bank’s World Development Indicators [World Bank, 2020].

We argue that *strong private sector institutions* and *political stability* bolster newly independent small states’ long-term economic development. We use a variety of indicators to gauge the strength of institutions governing the private sector. Our main measure is the World Bank’s *Rule of Law* index, an annual aggregate score based on experts perceived confidence in the quality of state’s property rights, contract enforcement, the police, the courts, and the likelihood of crime and violence [World Bank, 2020]. We average a country’s *Rule of Law* score, which ranges from -2.5 to 2.5, from 1996 to 2019. A higher score indicates stronger private sector institutions.

We complement the *rule* measure with Transparency International’s Corruption Perceptions Index (*CPI*), an index based on experts’ perception of public sector corruption. Higher *CPI* scores indicate *less* corruption. Transparency International’s CPI index changed its corruption measurement after 2012, so our *CPI* measure is an average score between 2012 and 2020. We collect this data from the Varieties of Democracy dataset [V-Dem Institute, 2022]. Third, we include the Credendo Group’s 2019 expropriation risk measure (*Expropriation*). This index spans from 1 (low risk) to 7 (high risk) of expropriation [Credendo Group, 2019].

We use the Center for Systemic Peace’s state fragility index to measure a state’s *Instability* [Marshall and Elzinga-Marshall, 2018]. The index ranges from 0 to 25 with higher values denoting higher state instability. This is a holistic evaluation of risks facing a country on security, political, economic and social dimensions. We average each country’s fragility score from 1995 to 2018. A higher score indicates greater *Instability*.

⁷This is the number of infant deaths for every 1000 live births.

In robustness checks, we apply the Fund for Peace’s Fragile States Index (*Instability 2*). This index is a holistic evaluation of risks facing a country [The Fund for Peace, 2020]. It comprises of 12 indicators that are categorized into four dimensions: political, economic, social, and cohesion. Each indicator ranges from 0 to 10 and a total score ranging between 0 to 120 sums the score for each indicator. The estimates for each indicator for a country are constructed using quantitative and qualitative data evaluated by experts. The data for the state fragility index spans from 2006 to 2020. We average states’ fragility index score from 2006 to 2020. A higher *Instability-2* score represents greater instability.

Lastly, we measure political stability with the PRS Group’s political risk rating from its International Country Risk Guides (*ICRG*) [The PRS Group, 2020]. The rating ranges from 0 to 100. The political risk rating is a weighted average of 12 different indicators that assess risks related to external or internal conflict, ethnic tensions, government’s capability to provide public services. We average each country’s political risk rating from 1984 to 2022. Higher *ICRG* scores represent *more* political stability.

4.3 Mechanisms: Open Markets and Large Public Sectors

Open markets and *large public sectors* underpin small states’ strong private sector institutions and political stability. We measure states’ open markets by their trade openness (*trade openness*). This is the total amount of exports and imports of goods and services measured as a share of gross domestic product. To demonstrate that open market policies existed shortly after independence, we average this measure between 1976 to 1996. To assess whether open markets have endured, we also measure a state’s trade openness from 1976 and 2006, and 1976 to 2020.

We complement this measure in robustness checks with the KOF *de jure* globalization index [Gygli et al., 2019]. This index captures tariff and non-tariff protectionist policies. We examine states’ average *KOF* score from 1976 to 1996.

We employ two measures of public sector size. Because historical public sector employment data is scarce, we use the International Monetary Fund (IMF)’s government expenditures as a percentage of GDP (*gov expenditure*) to decipher states’ public sector size in the decades after independence. Our chief measure of *expenditure* averages states’ government expenditures as a percentage of GDP from 1976 to 1996. As with *trade openness*, to illustrate the early adoption of large public sectors

and its persistence, we measure *expenditure* from 1976 to 2006.

Our second measure is public sector employment as a share of total employment. The earliest data for cross-national rates of public sector employment is from 2000. We average public sector employment for each state from 2000 to 2018 (*public sector employment*). We collect this data from the World Bank’s Worldwide Bureaucracy Indicators [Baig et al., 2021].

4.4 Controls

Many factors outside of a newly independent state’s population size could influence its long-term economic development. Geography is a powerful determinant of political stability and economic growth [Herbst, 2000]. Smaller population states may occupy smaller territory. Smaller territory may be easier to govern, and hence be more favorable for economic development. We use a host of variables to control for geographic confounders. These include population density (*density* (logged))⁸, terrain ruggedness [Nunn and Puga, 2012] (*rugged* (logged))⁹, and whether the state is an island (*island*), which is correlated with cleaner governance [Fors, 2014]. Malaria prevalence may have impacted levels of colonial settlement, with long-term implications for the quality of a newly independent state’s institutions [Acemoglu et al., 2001]. Our models incorporate a *malaria average* indicator. It represents the average percentage of a state’s population at risk of malaria between 1965 and 1975 [Conley et al., 2007]. We control for a country’s GDP from oil income by taking the oil income per capita divided by the country’s GDP and find the average between 1946 and 1975 (*Reliance on Oil*) [Haber and Menaldo, 2011]. We also use region fixed effects.

Our models incorporate socio-economic controls as well. Economic development *prior* to independence is a strong determinant of post-independence development [Mahoney, 2010]. We account for a state’s pre-independence levels of economic development by controlling for their average urbanization rate between 1946 and 1975 (*urbanization* (logged)). This data comes from Our World in Data, which compiles UN and historical sources [United Nations and Others, 2018]. In a robustness check, we log the Maddison Project’s average estimates of GDP per capita from 1946 to 1975 (*GDP 1946 - 1975*) [Bolt et al., 2018]. However, because 7 out of 28 newly independent small states are missing from the Maddison dataset, *urbanization* is our preferred measure of pre-independence

⁸We calculate this value by dividing states’ population size between 1946 and 1975 by their territorial size [Bolt et al., 2018, World Bank, 2020].

⁹We log the variable because of its skewed distribution.

development.

We control for whether a state’s colonizer was British (*UK Colony*)¹⁰ and whether the state obtained independence through violence (*Violence at Independence*)¹¹ using the Issues Correlates of War (ICOW)’s Colonial History Dataset [Hensel and Mitchell, 2007]. Our models account for external threats to sovereignty with a binary variable equal to one if a state experienced at least one interstate militarized dispute between 1946 and 1975 (*Threat to Sovereignty*) [Karreth, 2022].

In addition, we control for regime type at independence using the Varieties of Democracy’s regime variable [V-Dem Institute, 2022]. A country is coded as a *Democracy* if it was an electoral democracy or liberal democracy during its first year of independence. Finally, we account for states’ average aid per capita between 1960 and 1975 using the OECD’s Official Development Assistance dataset (*Average Aid Per Capita 1960-1975*) [OECD, 2020].

Low population states tend to be more ethnically and linguistically homogeneous [Gerring and Veenendaal, 2020, Alesina and Spolaore, 1997]. These characteristics are positively associated with public goods provision and growth [Easterly and Levine, 1997]. Greater ethnic homogeneity may explain small states’ developmental advantage. At the same time, ethnic diversity may be a function of economic development (or the lack thereof) [Weber, 1976]. We control for states’ ethnic diversity between 1946 to 1975 using Dražanová [2020] Historical Index of Ethnic Fractionalization (HIEF). This index captures’ states ethnic compositions across time. Unfortunately, six of our twenty eight small states are missing in the HIEF dataset. We therefore only control for ethnic diversity in a robustness check (Table 9). Finally, to mitigate concerns of reverse causality, all of our controls use values between 1946 and 1975. All of our dependent variable values are from years after 1975.

The table below presents mean differences between small and larger states for our outcome variables and controls. On average, newly independent small states have higher contemporary levels of economic development, stronger private sector institutions and are less politically unstable. They had more open economies and larger public sectors on average from 1976 to 1996.

¹⁰This is a dummy variable equal to one if a state was a British colony.

¹¹This is a dummy variable equal to one if a state experienced violence during independence.

Table 1: Balance Table

Variable	Larger, N = 54 ¹	Small, N = 28 ¹	p-value ²
Average GDP PPP (1976 - 2020)	5,731	15,820	0.015
Infant Mortality Rate (000, 2019)	48	30	0.011
HDI (2019)	0.61	0.72	0.001
Rule of Law (1996 to 2019)	-0.56	0.06	<0.001
State Instability (1995 - 2018)	13.4	8.3	<0.001
Trade (1976 - 1996)	62	110	<0.001
Public Sector Spending (1976 - 1996)	24	39	0.005
Island	15%	46%	0.002
Ethnic Fractionalization (1946 - 1975)	0.49	0.50	0.9
Democracy at Independence	9.6%	23%	0.2
Population Density (1946 - 1975)	120	129	>0.9
Urbanization (1946 - 1975)	26	36	0.081
Malaria Rates (1946 - 1975)	0.85	0.51	<0.001
Rugged	1.09	1.41	0.4
Reliance on Oil	0.9	6.0	0.040
Threat to Sovereignty	69%	36%	0.004
Violence at Independence			0.007
Peaceful	65%	93%	
Violent	35%	7.1%	
UK Colony			0.018
Other	63%	36%	
UK Colony	37%	64%	
Aid Per Capita (1946 - 1975)	47	84	0.058

¹Mean or Frequency

²Welch Two Sample t-test; Pearson's Chi-squared test; Fisher's exact test

In terms of controls, newly independent small states were more urban, more likely to be an island, had lower malaria rates and a higher reliance on oil exports. They were less likely to encounter foreign threats to their sovereignty or gain independence through violence. They were more likely to be UK colonies, and had higher rates of aid per capita. States with small populations at independence were not more ethnically diverse. Nor did they have greater population densities than larger states.

Our main models are Ordinary Least Square (OLS) linear regressions where for country i :

$$Y_i = \alpha + \beta Small_i + Controls_i + \gamma Region_i + \epsilon \quad (1)$$

Small, our independent variable of interest, is a binary equal to one if a newly independent state's average population was less than one million residents between 1946 to 1975. Standard errors are clustered at the country level.

5 Results

5.1 Hypothesis 1: State Size and Long-Term Economic Development

We first plot the relationship between average population size between 1946 and 1975 and average GDP per capita (PPP) between 1976 and 2020. Figure 3 illustrates a negative relationship between population size and long-term average GDP per capita. Both variables on the axes are logged. The red vertical line demarcates small and larger newly independent states.

Figure 3: Scatter Plot of Historical Population Size and GDP per capita

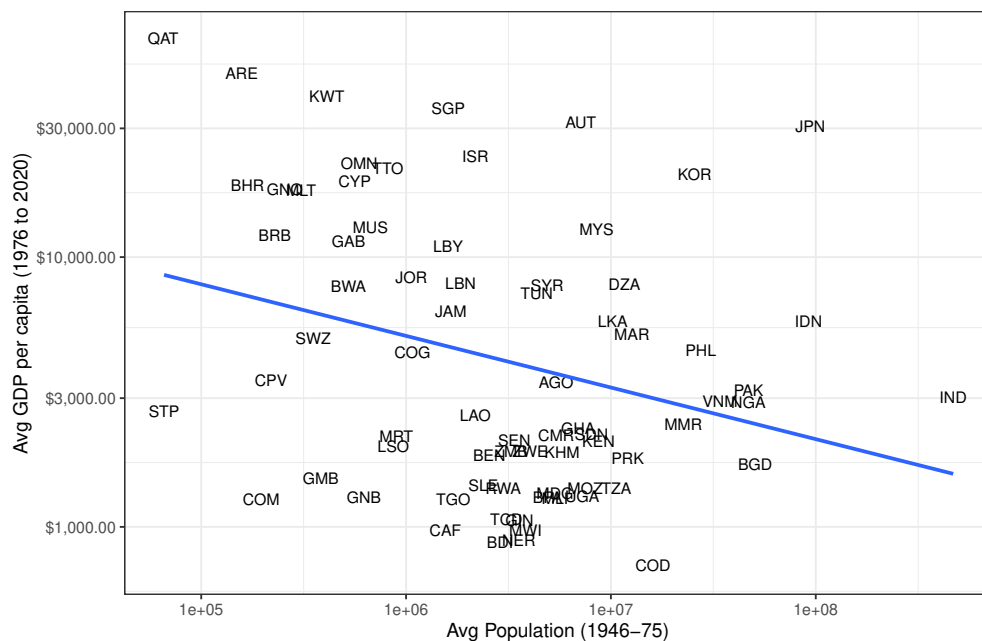


Table 2 demonstrates that newly independent small states have higher average levels of long-term economic development than newly independent larger states. Models 1 to 3 assess the relationship between state size in the early years of independence and logged average GDP per capita (PPP) between 1976 and 2020. Each model incorporates additional controls. Models 4 and 5 measure economic development by HDI levels and childhood mortality rates. The *Small State* co-

efficient is in the right theorized direction and statistically significant at the five percent level in all model specifications. Substantively, Model 3 estimates that historically small states' average GDP per capita from 1976 to 2020 is roughly 75 percent greater than larger states.

Table 2: H1 - Newly Independent Small States and Long-Term Economic Development

	<i>Dependent variable:</i>				
		Log(Avg.GDPpc (1976 - 2020))		HDI (2019)	Infant Mortality (2019)
	(1)	(2)	(3)	(4)	(5)
Avg.Population (1946-75, logged)	-0.23*** (0.07)	-0.17** (0.08)	-0.15** (0.07)	-0.02** (0.01)	5.27** (2.33)
Pop. Density (1946-75, logged)		0.11 (0.18)	0.09 (0.15)	0.03 (0.02)	-9.85** (4.59)
Rugged (logged)		-0.16* (0.10)	-0.11 (0.10)	-0.003 (0.01)	1.96 (2.16)
Malaria Risk (1965-75, logged)		-1.51** (0.69)	-0.47 (0.48)	0.03 (0.07)	-10.79 (15.58)
Island		0.15 (0.28)	-0.08 (0.34)	0.03 (0.04)	-18.20* (11.02)
Reliance on Oil (1946-75, logged)		0.36*** (0.09)	0.40*** (0.09)	0.03** (0.01)	-2.79 (3.94)
Urbanization (1946-75, logged)			0.39** (0.17)	0.05** (0.02)	3.64 (4.50)
Threat to Sovereignty			0.23 (0.15)	0.03 (0.02)	-24.12*** (6.94)
Democracy			1.19*** (0.45)	0.09 (0.07)	-24.70 (15.22)
Violence at Independence			0.18 (0.23)	0.05* (0.03)	-9.96 (6.29)
UK Colony			0.39** (0.17)	0.06** (0.02)	-10.66* (5.59)
Aid Per Capita (1961-75, logged)			0.06 (0.08)	0.01 (0.01)	0.15 (2.28)
Historical Ethnic Frac (1946-75)			-0.45 (0.40)	-0.07 (0.05)	17.19 (12.27)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	73	70	62	64	65
R ²	0.63	0.74	0.85	0.80	0.78
F Statistic	18.60***	14.66***	13.89***	9.91***	9.26***

Note:

*p<0.1; **p<0.05; ***p<0.01

These findings are robust to using a smaller (less than 800,000) (*Small State (Smaller)*) and larger (less than 2 million) (*Small State (Bigger)*) measure of small states, defining small states as states with less than a million inhabitants at their year of independence, and using a continuous average measure of state size (Table 8). These patterns hold after excluding Gulf states (Table

11) and controlling for ethnic diversity (Table 9), and historical estimates of early independence development (Table 10). These findings persist when extending our sample to include all states that gained independence from 1946 to 1980 (Table 12). The *Small State* coefficient is in the right theorized direction but loses statistical significance in models with all controls when we reduce our sample to states that gained independence between 1946 and 1970 (Table 13).

Figure 4 compares the estimated coefficient and standard errors of the *Small State* variable on average GDP per capita from 1976 to 2020 (PPP, logged) using different measures of size among the 82 newly independent states. Our main analysis uses the second measure - *Avg Pop (1946 - 1975)* - which defines small states as having an average population of less than one million between 1946 and 1975. The first measure (*Independence Pop*) defines states as small if their populations were less than a million residents at the year of their independence. The third measure *Avg Pop (1946-2020)* operationalizes small states as states whose populations averaged less than one million residents between 1946 and 2020. The last measure *Pop (2020)* ignores formerly small states and only categorizes states in 2020 with less than a population of a million residents as small.

Figure 4: Coefficient Estimates with Different Measures of Small States Across Time

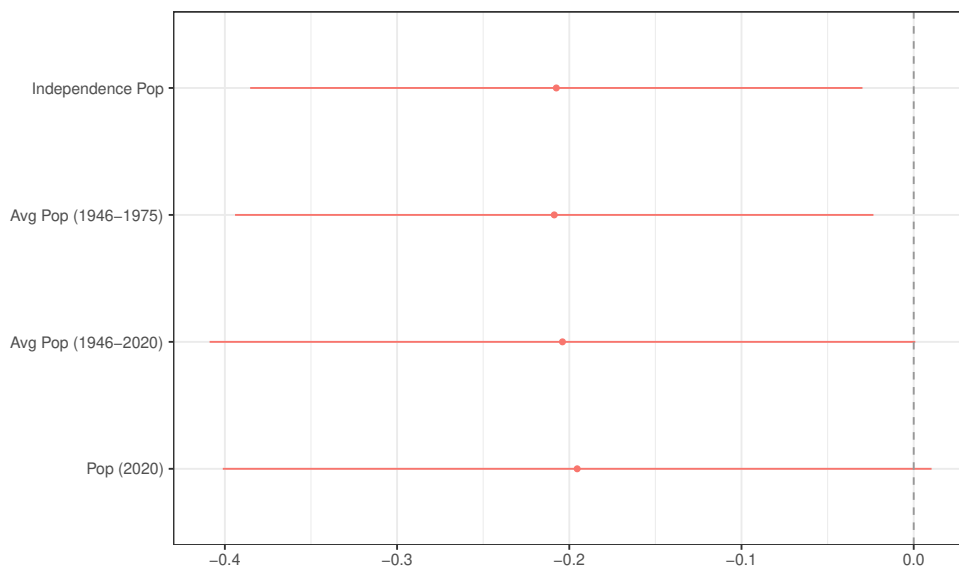


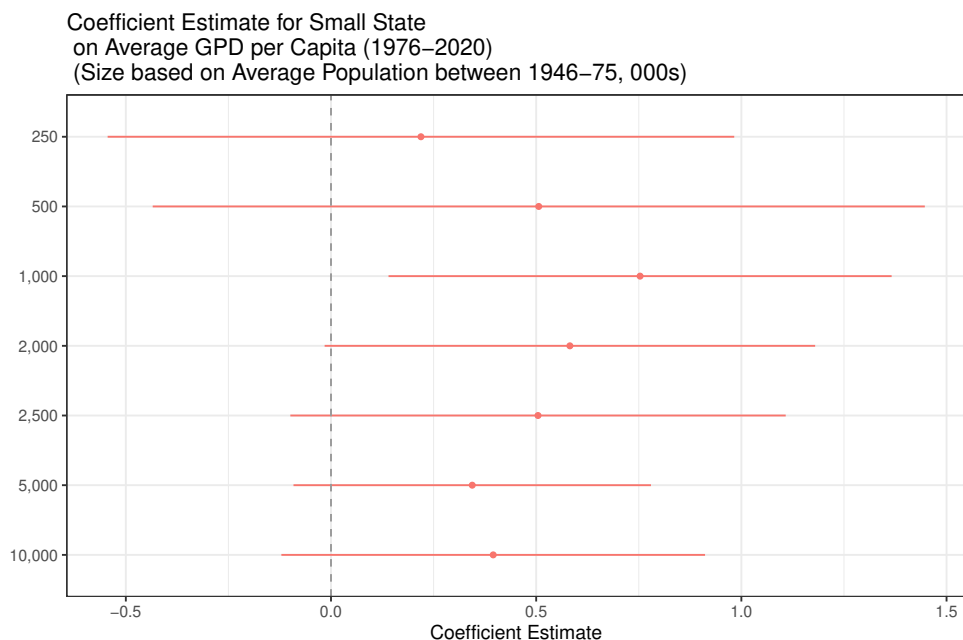
Figure 4 demonstrates that contemporary measures of small state size (*Pop (2020)*), and measures that average state size into the present (*Avg Pop (1946-2020)*) underestimate the positive association between state size and economic development. The coefficients of the two measures of

state size that take into account the early years of independence and include formerly small states (*Avg Pop(1946 - 1975)* and *Independence Pop*) are positive and larger than the more ahistorical measures of state size (*Avg Pop (1946-2020)*, *Pop (2020)*).

Though there is a negative correlation between newly independent states' population size when measured as a continuous variable and long-term development (See Model 4 of Table 8), the developmental benefits of being *small* at independence do not decrease linearly as states' population size in the early years of independence increases. There is likely a population threshold when newly independent states are demographically big enough where the pressures for open markets *and* large public sectors fizzle.

Our models estimate this threshold to be around two million inhabitants. Figure 5 plots the *Small State* coefficient of Model 3 from Table 2 with different population thresholds for small states. Under these model specifications, small population size has a positive and statistically significant association with logged average GDP (PPP, 1976 - 2020) when small is measured between half a million and two million average residents between 1946 and 1975.

Figure 5: Coefficient Estimate with Different Population Thresholds for Small States



Some may suspect that one reason small newly independent states have higher contemporary levels of economic development is that they are more likely to be democratic. There is a robust

and contested debate over whether small states are more democratic [Veenendaal and Corbett, 2015, Corbett and Veenendaal, 2018, Diamond and Tsalik, 1999]. Though our models control for regime type in a state’s early years of independence, perhaps newly independent small states democratize in the medium to long-term. Democratic governance, *not* open markets and large public sectors, explains newly independent small states’ stronger private sector institutions, greater political stability, and economic development.

We find no statistically significant evidence that newly independent states with smaller populations at independence are more likely to become democracies. Using Freedom House, Cheibub et al. [2010]’s regime index, and polity scores, Table 22 illustrates that under some model specifications small newly independent states actually have *less* democratic regimes today than larger newly independent states.

5.2 Hypothesis 2: Small States and Private Sector Institutions

Newly independent small states have stronger private sector institutions. The *Small State* coefficient in Table 3 is in the right theorized direction and statistically significant at the five percent level in all model specifications when strong private sector institutions is measured by the World Bank’s *Rule of Law* index, Transparency International’s *CPI* score, and the Credendo Group’s *Expropriation* risk indicator. This finding, however it is sensitive to different measures of state size (see Table 14).

Table 3: H2 - Small States and Strong Private Sector Institutions

	<i>Dependent variable:</i>				
		Rule of Law (1996 - 2019)		CPI (2012 - 2020)	Expropriation Risk (2019)
	(1)	(2)	(3)	(4)	(5)
Population (1946-75)	-0.10** (0.05)	-0.09 (0.06)	-0.13** (0.06)	-3.76** (1.54)	0.21 (0.15)
Density		0.38** (0.16)	0.41** (0.18)	5.47 (4.00)	-0.77* (0.43)
Rugged		-0.18** (0.08)	-0.17 (0.11)	-2.31 (2.64)	0.07 (0.22)
Malaria Risk		-0.86 (0.61)	-0.37 (0.63)	-3.85 (15.21)	0.16 (2.00)
Island		0.02 (0.23)	0.07 (0.35)	-0.61 (6.49)	-0.43 (0.58)
Reliance on Oil		-0.05 (0.09)	-0.06 (0.09)	-1.98 (2.09)	0.19 (0.23)
Urbanization			0.01 (0.17)	1.28 (3.61)	-0.41 (0.42)
Threat to Sovereignty			0.13 (0.19)	-2.29 (4.03)	-0.13 (0.49)
Democracy			-0.09 (0.57)	-5.61 (11.46)	-0.20 (1.20)
Violence at Independence			0.11 (0.25)	4.64 (4.97)	-0.95 (0.58)
UK Colony			0.34* (0.19)	8.05** (3.90)	-0.65 (0.45)
Average Aid Per Capita 1960-1975			0.001 (0.001)	0.01 (0.03)	-0.004 (0.003)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	82	75	70	69	66
R ²	0.34	0.49	0.51	0.44	0.48
F Statistic	6.52***	5.45***	3.12***	2.40***	2.58***

Note:

*p<0.1; **p<0.05; ***p<0.01

5.3 Hypothesis 3: Small States and Political Stability

Newly independent small states are also more politically stable (H3). The *Small State* coefficient in Table 4 demonstrates a consistently negative relationship between historical state size and political instability when instability is measured with the Fund for Peace's Fragile States Index (*Instability*). This negative relationship persists when using the Center for Systemic Peace's average *Instability-2* index and the *ICRG* risk index. Note that higher *ICRG* scores indicate less political risk. This relationship is statistically significant at the one percent level across all model specifications, and

robust to different measures of state size (Table 15).

Table 4: H2 - Small States and Political Stability

	<i>Dependent variable:</i>				
	(1)	Instability (1995 - 2018) (2)	(3)	Instability-2 (2006 - 2020) (4)	Political Risk (ICRG, 1984 - 2022) (5)
Population (1946-75)	1.07*** (0.34)	0.85*** (0.33)	1.10*** (0.33)	3.76*** (1.34)	-2.98*** (1.09)
Density		-1.74* (0.94)	-1.71 (1.16)	-8.53** (3.89)	3.08 (3.43)
Rugged		0.73 (0.46)	0.56 (0.63)	2.66 (2.12)	-2.10 (1.34)
Malaria Risk		8.14** (3.34)	5.31 (3.36)	6.83 (13.32)	9.72 (10.50)
Island		-0.17 (1.43)	-0.61 (2.43)	0.0004 (7.85)	4.90 (5.83)
Reliance on Oil		-0.04 (0.54)	-0.03 (0.63)	-2.79 (2.25)	0.20 (1.58)
Urbanization			-0.94 (1.12)	-3.65 (3.57)	-3.08 (2.97)
Threat to Sovereignty			-0.78 (1.19)	-1.26 (3.92)	6.30** (3.14)
Democracy			-0.07 (3.45)	1.00 (12.09)	-9.26 (8.89)
Violence at Independence			-1.32 (1.59)	-5.60 (5.58)	2.55 (3.61)
UK Colony			-1.38 (1.30)	-2.94 (4.08)	3.60 (2.92)
Average Aid Per Capita 1960-1975			-0.01 (0.01)	-0.02 (0.02)	0.01 (0.02)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	76	74	69	69	54
R ²	0.51	0.64	0.64	0.55	0.58
F Statistic	11.79***	9.96***	5.31***	3.65***	2.96***

Note:

*p<0.1; **p<0.05; ***p<0.01

5.4 Mechanisms: Newly Independent Small States have Larger Public Sectors and More Open Markets.

We find suggestive evidence that newly independent small states have bigger public sectors than their larger peers (Table 5). There is no statistically significant relationship between historical state size and public sector spending in the first two (Model 1) or three decades (Model 3) after 1976. The *Small State* coefficient is positive and statistically significant in relation to contemporary levels

of public sector employment (Model 3). These mixed patterns persist with different measures of state size (Tables 16 17 and 18).

Table 5: Small States and Public Sector Size

	<i>Dependent variable:</i>		
	Expenditures (1976-1996)	Expenditures (1976-2006)	Employment (2000 - 2018)
	(1)	(2)	(3)
Population (1946-75)	-2.82** (1.41)	-0.99 (0.89)	-0.01 (0.01)
Density	0.91 (3.13)	-0.06 (1.73)	-0.01 (0.02)
Rugged	1.58 (1.87)	0.80 (1.38)	-0.01 (0.01)
Malaria Risk	-15.96 (17.17)	-19.37** (9.01)	-0.14** (0.07)
Island	-4.88 (5.35)	-2.92 (3.13)	0.02 (0.04)
Reliance on Oil	3.72 (3.53)	2.95* (1.62)	0.03*** (0.01)
Urbanization	1.74 (2.86)	-0.27 (1.91)	0.01 (0.01)
Threat to Sovereignty	2.23 (4.22)	1.25 (2.59)	0.02 (0.02)
Democracy	1.56 (7.57)	-2.22 (5.36)	-0.06 (0.06)
Violence at Independence	-1.94 (3.69)	0.20 (3.04)	0.02 (0.02)
UK Colony	2.30 (3.74)	1.14 (1.80)	0.01 (0.02)
Average Aid Per Capita 1960-1975	0.02 (0.03)	0.03* (0.02)	0.0004* (0.0002)
Region Fixed Effects	Yes	Yes	Yes
Observations	48	66	48
R ²	0.65	0.58	0.68
F Statistic	3.32***	3.87***	3.76***

Note:

*p<0.1; **p<0.05; *** p<0.01

Newly independent small states have more open markets (Table 6). Trade represented a much higher percentage of small states' GDP, both shortly after independence (Model 1), and in the medium to long-term (Model 2 and Model 3). These patterns are robust to different measures of state size (Table 19 and Table 20). States that were small at independence have also had more liberal trade policies (Table 21). Pairing large public sectors with open markets, newly independent small states were more embedded in the global economy than larger states.

Table 6: Newly Independent Small States and Trade Openness

	<i>Dependent variable:</i>		
	Trade (Per GDP) (1976-1996)	Trade (Per GDP) (1976-2006)	Trade (Per GDP) (1976 - 2020)
	(1)	(2)	(3)
Population (1946-75)	-14.16*** (3.60)	-16.19*** (3.57)	-15.08*** (3.60)
Density	19.25** (8.32)	15.64* (8.72)	13.17 (8.98)
Rugged	-14.58* (8.42)	-13.60 (9.17)	-12.33 (9.37)
Malaria Risk	-9.30 (48.58)	-0.72 (46.45)	-1.44 (46.59)
Island	19.68 (20.57)	17.75 (20.59)	8.51 (20.50)
Reliance on Oil	-6.97 (7.10)	-3.12 (6.87)	-3.87 (6.81)
Urbanization	8.11 (6.08)	13.33** (5.63)	13.84** (5.67)
Threat to Sovereignty	9.78 (11.37)	10.47 (11.49)	2.27 (12.57)
Democracy	-24.44 (35.81)	-16.07 (36.13)	-19.04 (35.16)
Violence at Independence	-4.91 (10.00)	12.12 (13.87)	9.45 (12.06)
UK Colony	21.65** (11.00)	15.09 (9.74)	13.70 (9.81)
Average Aid Per Capita 1960-1975	0.05 (0.10)	0.05 (0.09)	0.02 (0.08)
Region Fixed Effects	Yes	Yes	Yes
Observations	64	69	69
R ²	0.65	0.58	0.57
F Statistic	4.96***	4.07***	3.97***

Note:

*p<0.1; **p<0.05; ***p<0.01

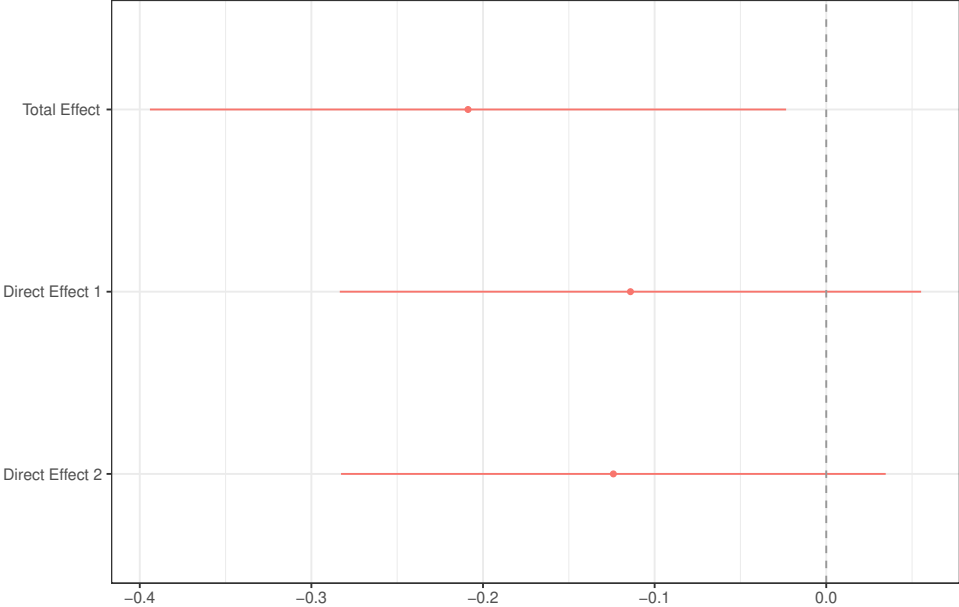
5.5 Mediation Analysis

We propose trade openness and public sector size during and after the early years of independence mediate the relationship between state size at independence and long-term economic development. Economic integration bolsters strong private sector institutions, while large public sectors promote political stability, both of which are strong predictors of economic development. We can test for the two channels outlined in our argument (Figure 1) through a mediation analysis. While a mediation effects analysis requires strict assumptions of sequential ignorability that are unlikely to

be satisfied in this context (See B.7 in the SI), we provide suggestive evidence of trade openness and public sector employment’s mediating the relationship between population size in the early years of independence and development by re-running our analysis while controlling for these mediators.

The coefficient plot in Figure 6 suggests that trade and private sector institutions mediate the effect of state size on development. All three coefficients denote the effect of state size on logged average GDP (PPP) from 1976 to 2020. The Total Effect coefficient denotes the effect of state size on logged average GDP (PPP) after controlling for the standard controls as in Model 3 of Table 2. In Direct Effect 1, we add average trade as a percentage of GDP between 1976 and 1996 as an additional control, whereas in Direct Effect 2, we add both average trade and rule of law as additional controls. The magnitude of the small state coefficient decreases as we include average trade and rule of law as controls. This trend suggests that average trade and rule of law mediate the relationship between state size in the early years of independence and long-term economic development.

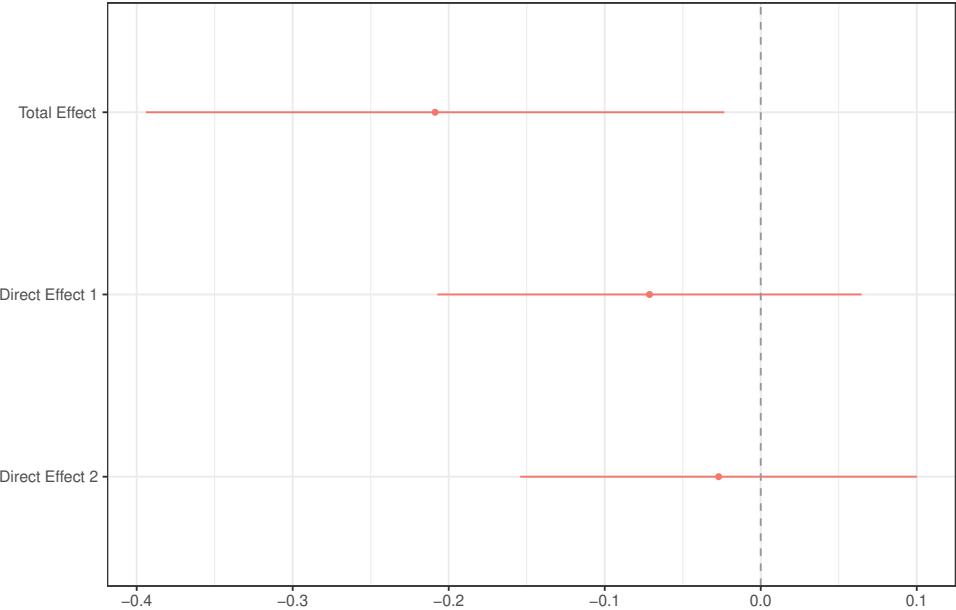
Figure 6: Mediation Effect of Trade and Private Sector Institutions



The coefficient plot in Figure 7 tests for mediation effects of public sector size and state instability. As before, the Total Effect coefficient denotes the effect of state size on long-term economic development after controlling for the standard controls in Model 3 of of Table 2. In Direct Effect

1, we add post independence public sector employment as an additional control, whereas in Direct Effect 2, we add both public sector employment and state instability as additional controls. The coefficient plot shows that the effect of population size in the early years of independence on long-term economic development decreases as we control for public sector size and state fragility. This suggests that public sector size and state fragility mediate the relationship between states' post-independence population size and long-term economic development.

Figure 7: Mediation Effect of Public Sector Size and State Fragility



5.6 Instrumental Variable Analysis

Population size in the early years of independence is not exogenous to long-term economic development. Independence was not inevitable [Lawrence, 2013]. There are undoubtedly observable and unobservable differences between low population territories that became independent states and those that did not. Newly independent small and larger states also differed across a range of historical and geographic dimensions (See Table 1). Though our models control for these factors, these differences and others are likely to influence long-term economic development as well and thus potentially bias our estimate of the developmental benefits of smaller populations in the early years of independence.

We use a two-stage least squares (2SLS) regression to account for this endogeneity. Like others

[Jugl, 2019, Gerring et al., 2018, Gerring and Veenendaal, 2020], we apply *territory* and *agricultural suitability* as an instrument for state size in our two-stage least square regressions. *Territory* is a state’s logged average arable land in square kilometers between 1946 and 1975. *Agricultural suitability* is an index of caloric suitability among a state’s pre-Columbian crops¹² This index measures the average potential (not actual) caloric yield (in millions of kilocalories) per hectare per year of the crops grown in a state before 1500 CE [Galor and Özak, 2016].¹³

A central assumption in these IV regressions is that *territory* and *agricultural suitability* can only affect long-term economic development through their impact on state population size in the early years of independence (the exclusion restriction). Some may worry that agricultural suitability would directly influence pre-independence levels of economic development, which in turn impacts newly independent states’ long-term economic development. As in the OLS models, our IV regressions control for states’ urbanization rates, population densities and other confounders to account for a state’s pre-independence levels of economic development. These controls attenuate concerns that territory and agricultural suitability in the early years of independence can influence development in ways outside of population size during that critical period.

¹²These are crops grown in a state *before* the Columbian Exchange in 1500 CE.

¹³Galor and Özak [2016] calculate this yield assuming a low level of inputs, rain-fed irrigation and whether the crops were available for cultivation in a state before 1500 CE.

Table 7: Instrumental Variable Results

	<i>Dependent variable:</i>					
	log(Pop) (1946 - 1975)	Log(Avg.GDPpc) (1976 - 2020)	Rule of Law (1996 - 2019)	Instability (1995 - 2018)	Public Exp (1976-1996)	Trade Open (1976-1996)
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-1500 Caloric Yield	-0.0002 (0.0001)					
Arable Land (1975)	0.62*** (0.04)					
Avg. Population (1946-75, logged)		-0.20*** (0.05)	-0.23*** (0.06)	1.26*** (0.34)	-3.47*** (1.05)	-5.95*** (1.24)
Pop. Density (1946-75, log)	0.82*** (0.14)	0.21 (0.16)	0.37** (0.15)	-1.36 (1.03)	2.68 (3.16)	6.44*** (2.40)
Rugged (logged)	-0.05 (0.08)	-0.03 (0.09)	-0.06 (0.08)	0.13 (0.50)	2.20 (1.46)	-0.44 (1.70)
Malaria Risk (1965-75, logged)	1.34* (0.74)	0.17 (0.44)	0.15 (0.52)	1.68 (2.73)	-19.65 (12.68)	-1.98 (15.16)
Island	0.15 (0.37)	0.15 (0.32)	0.21 (0.26)	-1.50 (1.85)	-7.73* (4.24)	-0.55 (6.08)
Reliance on Oil (1946-75, logged)	0.10 (0.09)	0.40*** (0.09)	-0.02 (0.08)	-0.46 (0.54)	3.82** (1.92)	-2.73 (1.68)
Urbanization (1946-75, logged)	0.17** (0.08)	0.62*** (0.10)	0.19* (0.11)	-2.14*** (0.81)	2.75 (1.90)	9.80*** (2.38)
Threat to Sovereignty	0.06 (0.19)	0.31* (0.16)	0.16 (0.19)	-0.99 (1.25)	1.02 (3.50)	8.26** (4.11)
Democracy	0.54 (0.43)	0.33 (0.39)	-0.33 (0.36)	-1.01 (2.05)	0.73 (8.62)	2.27 (9.43)
Violence at Independence	0.37* (0.21)	0.50*** (0.18)	0.46** (0.20)	-2.98** (1.26)	0.63 (2.91)	0.20 (4.93)
UK Colony	0.18 (0.17)	0.42** (0.17)	0.50*** (0.17)	-2.85*** (1.08)	1.80 (2.67)	11.23*** (3.37)
Aid Per Capita (1960-75, logged)	-0.20** (0.09)	0.0000 (0.07)	0.06 (0.08)	-0.52 (0.43)	-1.51 (1.75)	0.33 (1.83)
Historical Ethnic Frac (1946-75)	-0.15 (0.36)	-0.71** (0.32)	0.02 (0.38)	2.98 (2.21)	1.89 (6.60)	0.53 (6.78)
Weak instruments		132.9	140.8	140.8	125.5	144.2
Region Fixed Effects	No	No	No	No	No	No
Observations	63	60	63	63	43	61
R ²	0.90	0.79	0.43	0.58	0.68	0.61
F Statistic	29.50***					

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 7 runs our analysis for all outcome variables with a 2SLS.¹⁴ The F-statistic (denoted as Weak instruments) is well above 10 in each model, confirming that the instrument of *territory and agricultural suitability* is not weak. The magnitude of the small state coefficient is larger than in the OLS models. This suggests that our OLS analysis may underestimate the effects of state size on development.

Low populations levels in the early years of statehood correlate with higher contemporary levels of economic development. To further illustrate the mechanisms linking newly independent states' population levels and their long-term prosperity, the next section conducts a most-similar case

¹⁴Note that because of high levels of collinearity, these models do not use region fixed effects.

comparison of two neighboring states with contrasting early state population levels and long-term development outcomes: Oman and the People’s Democratic Republic of Yemen (PDRY).

6 Comparative Case Study: State Size and Developmental Divergence in Oman and the PDRY

When Oman’s ruler Sultan Qaboos usurped his father and came to power in a British-backed coup in 1970, he inherited “a territory without a state [Valeri, 2009, p.71].” His regime was fighting its second separatist insurrection since independence two decades ago.¹⁵ And though commercial quantities of oil had been discovered six years prior and constituted 95 percent of its state’s revenue [Halliday, 1974, p.286], Oman was one of the poorest countries in the Arabian peninsula. Qaboos ruled a territory with an infant mortality rate of 75 percent, three primary schools, and a five percent literacy rate [Halliday, 1974, p.274 - 275].

Many of Qaboos’ challenges mirrored those of the Marxist National Liberation Front (NLF) in neighboring South Yemen. The NLF came to power in 1967 through guerrilla warfare. Like Qaboos, they ruled a newly independent state with British-created borders that grouped a mix of peripheral rural sultanates with a more populous port city. The two former British colonies also had similar geographies. They covered roughly 300,000 km² of desert, arid plains and mountainous terrain. Like Qaboos at the time, the NLF governed while fighting a foreign funded insurgency. Though the NLF was a party and Qaboos a sultan, the two regimes were autocracies propped by foreign patrons.¹⁶ Finally, South Yemen, officially the People’s Democratic Republic of Yemen (PDRY), was also destitute. The country had 127 paved roads [Rabi, 2014, p.84]. Less than a fifth of its population was literate [Stookey, 1982, p.86], with illiteracy rates reaching 95 percent outside of Aden [Rabi, 2014, p.84]. Almost four out of ten South Yemeni children died before turning five in 1960, an infant mortality rate identical to Oman’s at the time [United Nations Development Programme, 1990, p.96].

Population size, however, was a central difference between these neighboring states during their early years of independence. Oman had a population of roughly 800,000 in 1970 [Bolt et al.,

¹⁵The first insurrection was the Jebel Akhdar rebellion (1954 - 1957). The second was the Dhofar rebellion (1963 - 1976).

¹⁶The United Kingdom supported Sultan Qaboos, the USSR supported the NLF.

2018]. The PDRY had twice as many [World Bank, 1982, p.22]. Technology and geography explain this difference. Pre-modern irrigation techniques, epitomized by the Great Dam of Marib, a dam that is twice as large as the Hoover Dam [Romey, 2015], helped nurture a substantial agricultural community in the western part of South Yemen [Stookey, 1982, p.3]. South Yemen also had Aden, the Arabian peninsula's best natural port [Halliday, 1974, p.154] and the world's second busiest in 1958 after New York [Stookey, 1982, p.77]. A quarter million residents lived in Aden in 1967 [Halliday, 1974, p.156], more than ten times larger than Oman's capital port city of Muscat [Valeri, 2009, p.81].

Oman and the PDRY's contrasting population size during their first decades of independence helped engender diverging trade and public sector employment policies. The PDRY's larger population whetted the NLF's ambition to transform South Yemen from a trade-oriented service economy into a primarily industrial and agricultural one [Halliday, 1974, p.249; Stookey, 1982, p.80 - 81]. In its first party congress after coming to power, the NLF emphasized the importance of the "masses'" of workers and peasants in powering South Yemen's development [Rabi, 2014, p.84; Halliday, 1974, p.232]. While many of Aden's urban workers fled north after the NLF's ascension, a much larger peasantry lived in the western cotton-picking regions of South Yemen [Dresch et al., 2000, p.121].

NLF leaders believed that South Yemen's reorientation towards agriculture and industry required shunning foreign trade and capital [Halliday, 1974, p.251]. In 1970 the NLF abolished Aden's free port status [Halliday, 1979, p.5]. Imports to South Yemen plummeted almost forty percent in the first five years of the NLF's rule [Halliday, 1974, p.251]. The NLF restricted foreign capital and labor. It nationalized all foreign banks [Stookey, 1982, p.81], and required three quarters of firms' employees and half of senior staff to be South Yemeni [Halliday, 1974, p.252].

The NLF adopted import-substitution industrialization to catalyze South Yemen's economic autonomy [World Bank, 1984, p.vi]. This meant that the NLF led and invested heavily in industry and agriculture. These two sectors consumed half of government expenditures in the NLF's first two five year plans [Halliday, 1979, p.5; World Bank, 1982]. The NLF redistributed small plots of agricultural land [Rabi, 2014, p.85] to poor peasants and established cooperatives to manage larger farms and fisheries [Halliday, 1974, p.244; Stookey, 1982, p.83 - 85; Lewis, 1987, p.362]. Congruently, the NLF nationalized industry [Halliday, 1974, p.250 - 252; Stookey, 1982, p.81]. State-Owned Enterprises (SOEs) produced tradable goods like textiles, flour, dairy and tomato

paste [Stookey, 1982, p.81]. By 1984, SOEs and Public-Private Partnerships (PPPs) directed South Yemen's handful of large firms. Small enterprises, however, absorbed the majority of employment in manufacturing [World Bank, 1984, p.vi].

While the NLF led, participated and invested in the PDRY's industry and agriculture in the 1970s and 1980s, the Qaboos regime in Oman prioritized expanding public sector employment. Government administration – which includes spending on defense and public sector employment - constituted almost a third of government expenditures in Qaboos' first [Alshanfari, 1989, p.41] and second [Alshanfari, 1989, p.42] five year development plans. Industry and agriculture received less than six percent of government investment. Public sector employment grew exponentially under Qaboos. In 1971, 5,500 Omanis worked in public administration and the military – 5.5 percent of the labor force [Halliday, 1974, p.292]. Four years later the number of Omanis employed in the military and public administration was 25,000 – almost a third of the Omani labor force [Al Yousef, 1997, p.360] – and roughly ten percentage points higher than South Yemen's rate of employment in public services in 1980 [World Bank, 1982, p.12]. By 1993, over 170,000 Omanis worked in public administration and defense. This was more than 70 percent of the Omani labor force [Al Yousef, 1997, p.360]. The state had become Oman's “universal employer [Valeri, 2009, p.84].”

Though high oil prices funded Qaboos' massive public sector hiring, Oman's small population at the time ensured that the public sector would consume a relatively large share of the local labor force. The Qaboos regime needed the country's scarce labor to staff its state building endeavors [Swales and Al Fahdi, 2011, p.684]. Local labor was predominantly Omani when Qaboos came to power [Halliday, 1974, p.292]. Greater job security and higher wages from public sector employment entrenched Omanis' preferences for public over private sector jobs [Swales and Al Fahdi, 2011, p.684]. Meanwhile Oman's smaller private sector met its labor needs by employing cheaper foreign workers. A slight exporter of labor in the 1950s and 1960s, Oman had positive net migrant flows in the 1970s and 1980s [Abdul Nasir and Tahir, 2011, p.181]. This coated Oman's public and private sector divide with a domestic - foreign cleavage. Omanis' strong preferences for public sector employment and cheap access to foreign labor in the private sector sustained Oman's relatively large public sector over time as its population expanded.

Oman's larger public sector contributed to two institutional outcomes that buttressed its long-term prosperity. First, it facilitated trade liberalization. Unlike in South Yemen, Oman's public

sector employees were not involved in the production of tradable goods. The Ministry of Education and the Ministry of Health were Oman's largest civil service employers [Valeri, 2009, p.88]. Cheap imports do not threaten civil servants' livelihoods. This made it politically easier for the Qaboos regime to open Oman's markets to foreign goods and capital.

Oman's smaller population size in its early years of independence further facilitated its economic opening. The country lacked the manpower to produce most goods. Industry was virtually non-existent [Halliday, 1974, p.292]. The Omani regime could also use oil revenue to pay for imports. Between 1966 and 1972 imports to Oman grew from 4 million pounds to 55 million, with the imports of electrical goods growing more than 280 percent, and cars 600 percent [Halliday, 1974, p.293].

The Qaboos regime actively sought international trade agreements. Qaboos consistently pushed for greater trade with Oman's neighbors, including Iran [O'reilly, 1998, p.71, p.76]. In 1981 Oman joined the Gulf Cooperation Council (GCC). While its impetus was to create a security buffer against the Islamic Republic of Iran, the GCC would become an engine for deeper economic integration in the Gulf. Indeed, in 2003 the GCC formed a customs union – the only in the Arab world. In 1995 Oman became a founding member of the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), an international organization dedicated to expanding trade across the Indian Ocean. Five years later Oman joined the World Trade Organization (WTO) and then signed a Free Trade Agreement (FTA) with the United States (US), one of four Arab states to have an FTA with the US. Free trade is so entrenched in Omani economic policy that it is engraved in the Omani constitution [Jones and Ridout, 2015, p. 227 -229].

Qaboos also sought foreign investment [Halliday, 1974, p.289]. Lacking domestic capital and labor, he hired foreign firms to build Oman's infrastructure [Halliday, 1974, p.287]. Unlike in South Yemen, the Qaboos regime did not redistribute land, expropriate or nationalize foreign industries and banks. On the contrary, Qaboos invited foreign banks to Oman [Hanieh, 2011, p. 80]. The 1974 law founding Oman's Central Bank had provisions facilitating foreign-owned banks' entrance into Oman [Hanieh, 2011, p. 81]. The British Bank of the Middle East managed 85 percent of all banking in Oman [Halliday, 1974, p.293]. In 1993, the Omani regime passed an investment law that protected foreign firms from nationalization [Jones and Ridout, 2015, p. 224]. The heavy footprint of foreign goods and capital in Omani markets demanded strong property rights and clear rule of

law to sustain foreign involvement in the Omani economy.

Oman's open markets in the 1970s and 1980s seeded powerful precedents that locked in liberalizing policies as Oman's population grew in the 1990s and 2000s. The crush of international competition and the allure of public sector employment prevented a local protectionist constituency from surfacing to contest liberalizing policies. On the contrary, fortunes from imports and services enriched a coterie of merchant families that backed the Qaboos regime and pressed for the continuation of open markets [Valeri, 2013, p.20; Valeri, 2009, p.103 - p.117].

In addition to easing market openness, Oman's relatively larger public sector buttressed political stability. As in South Yemen, the Omani regime ruled an ethnically, religiously and socio-economically diverse territory. However, public sector jobs and social services weakened citizens' tribal and parochial loyalties in favor of a more inclusive Omani state [Valeri, 2009, p.88]. This helped make Oman a paragon of political stability. Qaboos ruled Oman for fifty years when he died in 2020. The peaceful transition of power to Qaboos' cousin, Haitham bin Tarik, is the greatest testament of the political stability of the Qaboos era.

In contrast, political instability perennially rocked South Yemen. The PDRY had five presidents between 1967 and 1986, three of whom left power violently [Rabi, 2014, p.106]. Each presidential turnover sprang from ideological divisions among the ruling NLF's centrist and leftist flanks. Regional rivalries tainted these ideological divides. The NLF's urban constituents gravitated towards Marxist ideologies and preferred industrialization. Its rural constituents favored Maoist policies and agricultural development. Political turnover and elite factions fragmented and balkanized ministries and military units along regional and familial lines [Kostiner, 1990, p.27; Rabi, 2014, p.85]. The communal calculus guiding the NLF's hiring and pruning of administrative and military appointments cut the size of the South Yemeni public sector and military. Though estimates vary, the South Yemeni military had roughly 50,000 enlistees in 1994 [Rabi, 2014, p.115], a third of the size of Oman's military and security services a decade later [Valeri, 2009, p.88]. The PDRY's smaller, more factionalized state and security apparatus destabilized governance.

By 1990 South Yemen and Oman bore contrasting levels of economic development. Once one of the poorest states in the Arabian peninsula, Oman had reached medium levels of human development in the UNDP's first human development report [United Nations Development Programme, 1990, p.185]. South Yemen still had low levels of human development according to UNDP indica-

tors [United Nations Development Programme, 1990, p.185]. Previously identical, Oman's under five infant mortality rate was now a third the rate of the PDRY's. Between 1960 and 1988 Oman experienced the fourth largest reduction in infant mortality rates in the world [United Nations Development Programme, 1990, p.30]. Ninety percent of Omani one year olds were immunized, compared to thirty seven percent in South Yemen [United Nations Development Programme, 1990, p.96].

To be fair, the PDRY outperformed Oman in some facets of development. Its adult literacy rates had grown to 47 percent, sixteen percentage points higher than Oman's [United Nations Development Programme, 1990, p.76]. The PDRY was also a beacon for women's rights in the region [Halliday, 1979].

Nevertheless, the PDRY began the 1990s in economic turmoil. Food production per capita in the 1980s fell below levels in the 1970s due to the NLF's mismanagement of agricultural cooperatives [Lewis, 1987, p.362]. Government spending depended heavily on foreign loans and grants, especially from socialist states [World Bank, 1984, p.iii]. The PDRY lost its chief foreign donor in the Soviet Union when the Cold War ended. Unrestrained spending and poor fiscal capacity brought the PDRY to the brink of fiscal collapse [Rabi, 2014, p.104]. Economic hardship and oil discoveries near the border with North Yemen pushed North and South Yemen into an uneasy unification in 1990. When civil war erupted between the north and south four years later, the north's army crushed the PDRY's military and occupied Aden, ending South Yemen's sovereignty.

Two confounding explanations shadow this comparative analysis. The first is oil. Oman's oil wealth was undeniably integral to its developmental success. But oil can only explain part of its success. Scholars disagree whether and when oil is a blessing or curse [Ross, 2015, Kurtz and Brooks [2011]]. Nor does oil wealth predetermine open markets and large public sectors. Oil abundant Iran and Venezuela have not embraced open trade policies. We argue that Oman's smaller population in its early years of state formation incentivized open markets and large public sectors that helped the Omani regime capitalize on its resource abundance. The Oman case supports Kurtz and Brooks [2011]'s claim that economic openness is a condition for oil wealth to generate prosperity.

Regime type is a second competing explanation. Perhaps Marxism doomed South Yemen and Qaboos' benign but absolutist rule saved Oman. Population levels, however, may have contributed to this ideological divide. More populous states may provide more fertile grounds for more redis-

tributive and by extension interventionist economic policies because there are larger populations of workers and peasants to mobilize for these policies.

Lastly, the drastic differences between Qaboos and his father – a recluse who once banned glasses [Halliday, 1974, p.275] – underscore the importance of agency and Qaboos’ leadership for Oman’s developmental success. Despite access to oil wealth, Qaboos’ father resisted investing in education and health for fear it would lead to popular rebellion [Halliday, 1974, p.276]. Thus conditional on having rulers who want to develop their country, a condition Qaboos’ father lacked, smaller populations in the early years of independence can help promote economic development by incentivizing leaders to embed their economies.

7 Conclusion

This article demonstrates that past size at critical historical moments is a powerful predictor of long-term prosperity. Population constraints in the early years of independence push leaders of newly independent small states to employ larger public sectors and open their markets. These policies embed small states into the global economy - enabling strong private sector institutions *and* political stability. This powers small states’ long-term developmental success.

Our findings add to three areas of scholarship. To scholars of development, we stress that *when* a state is small has profound long-term developmental implications. The early years of independence are critical junctures for states’ institutional development [Collier and Collier, 1991, Wantchekon and Garcia-Ponce, Forthcoming, Mahoney, 2001]. Population constraints in this critical period help orient newly independent small states towards policies and institutions that are conducive for long-term growth. These orientations endure as small states grow demographically and economically. Size at independence is an important but overlooked determinant of why some states are rich and others are poor.

To scholars of small states, our findings stress that states’ size is neither fixed nor exogenous. Open migration and exclusive welfare policies can ease small states’ population constraints while keeping politically privileged constituents embedded from global and local competition [Goodman and Pepinsky, 2021]. Indeed, the *formerly* small states in our analysis have higher rates of international migrant labor as a share of their populations than larger and currently small states (Table

24).¹⁷ We suspect these formerly small states’ demographic growth is a cause and consequence of their economic growth. Ignoring formerly small states or categorizing formerly small states as “big” underestimates small states’ developmental advantages (Figure 4). It also biases studies of small states to states that are unwilling or unable to grow demographically. Formerly small states, however, can offer important insights for small states confronting demographic and developmental challenges.

Lastly, we confirm that, far from being a strictly European or Northern phenomenon, EL exists across the world. Nooruddin and Rudra [2014] have shown that public sector employment buttresses EL in developing contexts. We advance their research and reveal that population constraints helped spread EL among newly independent states as well.

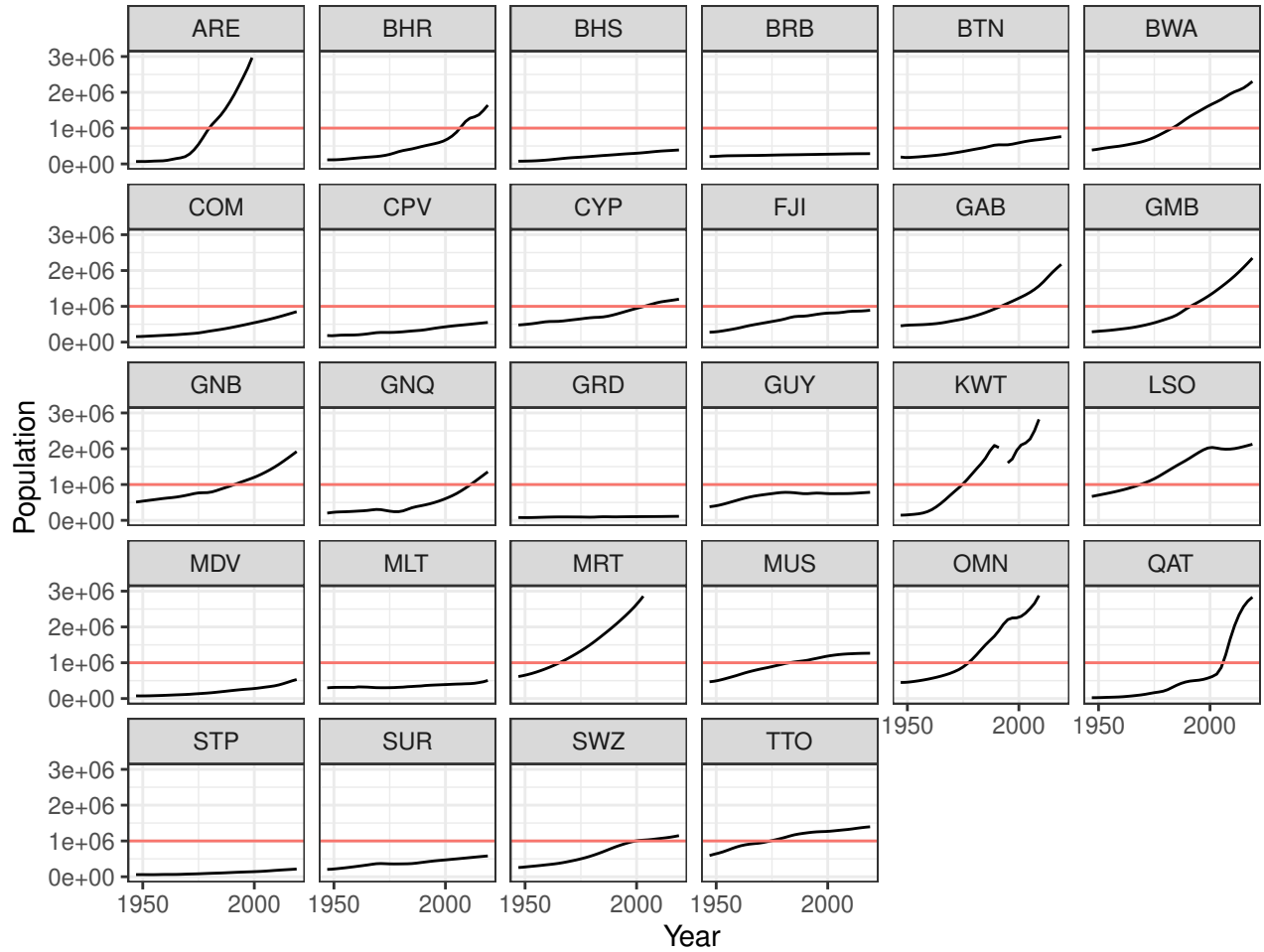
These findings prompt two avenues of future research. The first asks why and how some small states have eased their population constraints (Qatar) while others have not (Malta). If embeddedness *and* labor force expansion require exclusive welfare policies and exclusive citizenship regimes [Goodman and Pepinsky, 2021], perhaps authoritarian small states are more likely to become “big”. This may explain why smaller states are not associated with greater democratization when size is measured by past population size (Table 22). Domestic politics undoubtedly structure whether and how small states grow demographically and economically.

This points to a second avenue of research. *Who* participates in domestic politics shapes small states’ policies and institutions. Most measures of state size ignore this difference by measuring state size in terms of residents, not citizenry. Though both citizens and migrants are residents, citizens wield much greater political weight. Our argument expects a state with a large population but small citizenry to adopt the same public sector and open market policies as a state with a small population *and* small citizenry. Thus the size of a state’s *citizenry* may be a more politically consequential marker of population size than its residents.

¹⁷We calculate international migrant rates as an average between 1990 and 2015. This data comes from [World Bank, 2020].

A Appendix

Figure 8: Variation in Newly Independent Small States' Population Growth (1950 - 2020)



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B Supplementary Information

Note that *Small State (Smaller)* is a binary variable equal to one if a state had an average population of less than 800,000 between 1946 and 1975. *Small State (Bigger)* is a binary variable equal to one if a state had an population of less than two million between 1946 and 1975. *Small State (at Independence)* is a binary variable equal to one if a state had a population of less than one million the year of its independence. *Population (Continuous)* is a state's logged average population between 1946 and 1975. *Formerly Small State* is a binary variable equal to one if a state had a population that averaged less than one million between 1946 and 1975 but currently has a population that exceeds one million.

Finally, models with *instrumental variable* present the second regression of a two-stage least square (2SLS) regression where a state's logged average arable land (*territory*) and *agricultural suitability* are instruments for its early independence population size.

B.1 Robustness Checks: Development

Table 8: Size and Development with Different Measures of State Size

	<i>Dependent variable:</i>			
	Log GDP PPP (1976 - 2020)			
	(1)	(2)	(3)	(4)
Small State (Smaller)	0.72** (0.31)			
Small State (Bigger)		0.58* (0.30)		
Small State (at Independence)			0.72** (0.31)	
Population (Continuous)				-0.21*** (0.07)
Density	0.10 (0.16)	0.13 (0.16)	0.15 (0.16)	0.13 (0.16)
Rugged	-0.11 (0.11)	-0.05 (0.10)	-0.10 (0.11)	-0.06 (0.09)
Malaria Risk	-0.56 (0.49)	-0.03 (0.56)	-0.22 (0.48)	-0.44 (0.62)
Island	-0.18 (0.33)	-0.12 (0.31)	-0.14 (0.32)	-0.09 (0.32)
Reliance on Oil	0.28*** (0.10)	0.35*** (0.10)	0.29*** (0.10)	0.35*** (0.11)
Urbanization	0.42** (0.17)	0.40** (0.19)	0.45** (0.18)	0.45*** (0.15)
Threat to Sovereignty	0.25 (0.17)	0.25 (0.19)	0.28* (0.17)	0.29 (0.20)
Democracy	1.01** (0.42)	1.29*** (0.35)	1.09*** (0.36)	0.94 (0.57)
Violence at Independence	0.07 (0.23)	0.20 (0.24)	0.13 (0.24)	0.21 (0.24)
UK Colony	0.21 (0.18)	0.33* (0.19)	0.22 (0.19)	0.26 (0.19)
Average Aid Per Capita 1960-1975	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)
Region Fixed Effects	Yes	Yes	Yes	Yes
Observations	65	65	65	65
R ²	0.82	0.81	0.82	0.82
F Statistic	12.88***	11.58***	12.92***	12.28***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 9: Size, Development and Ethnic Fractionalization

	<i>Dependent variable:</i>	
	Log GDP PPP (1976 - 2020)	
	<i>OLS</i>	<i>instrumental variable</i>
	(1)	(2)
Population (1946-75)	-0.13*	-0.19***
	(0.07)	(0.05)
Density	0.10	0.21
	(0.14)	(0.15)
Rugged	-0.12	-0.03
	(0.10)	(0.09)
Malaria Risk	-0.38	0.18
	(0.44)	(0.42)
Island	-0.12	0.15
	(0.34)	(0.32)
Reliance on Oil	0.41***	0.41***
	(0.09)	(0.08)
Urbanization	0.37**	0.62***
	(0.17)	(0.11)
Threat to Sovereignty	0.22	0.31*
	(0.15)	(0.16)
Democracy	1.29***	0.33
	(0.47)	(0.38)
Violence at Independence	0.15	0.50***
	(0.23)	(0.18)
UK Colony	0.39**	0.42**
	(0.16)	(0.17)
Average Aid Per Capita 1960-1975	0.002	0.0004
	(0.002)	(0.002)
Ethnic Fractionalization	-0.41	-0.69**
	(0.41)	(0.31)
Weak instruments		127.6
Region Fixed Effects	Yes	No
Observations	62	60
R ²	0.86	0.79
F Statistic	14.28***	

Note: *p<0.1; **p<0.05; ***p<0.01

Table 10: Size and Development with Maddison GDP Data as a Control

	<i>Dependent variable:</i>	
	Log GDP PPP (1976 - 2020)	
	<i>OLS</i>	<i>instrumental variable</i>
	(1)	(2)
Population (1946-75)	-0.15 (0.11)	-0.11 (0.08)
Density	0.07 (0.15)	0.26 (0.19)
Rugged	-0.09 (0.08)	-0.04 (0.09)
Malaria Risk	-0.32 (0.45)	0.17 (0.51)
Island	0.09 (0.24)	0.37* (0.21)
Reliance on Oil	0.20** (0.09)	0.24*** (0.09)
GDP (logged, 1946 - 1975)	0.60*** (0.12)	0.73*** (0.10)
Threat to Sovereignty	0.35** (0.16)	0.43*** (0.15)
Democracy	0.66 (0.42)	-0.06 (0.29)
Violence at Independence	0.13 (0.18)	0.39** (0.19)
UK Colony	0.18 (0.18)	0.22 (0.18)
Average Aid Per Capita 1960-1975	0.002 (0.002)	0.002 (0.002)
Weak instruments		104.8
Region Fixed Effects	Yes	No
Observations	65	63
R ²	0.84	0.76
F Statistic	14.46***	
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table 11: Size and Development Without Gulf States

	<i>Dependent variable:</i>				
	Log Avg GDP PPP (1976 - 2020)			HDI (2019)	Infant Mortality (2019)
	(1)	(2)	(3)	(4)	(5)
Population (1946-75)	-0.18** (0.08)	-0.15 (0.10)	-0.08 (0.11)	-0.01 (0.01)	5.14* (2.88)
Density		0.20 (0.17)	0.20 (0.15)	0.04* (0.02)	-11.26** (4.71)
Rugged		-0.19** (0.10)	-0.15 (0.10)	-0.01 (0.01)	2.83 (2.59)
Malaria Risk		-1.60** (0.71)	-0.71 (0.49)	-0.01 (0.08)	-6.30 (18.66)
Island		0.20 (0.29)	0.09 (0.35)	0.05 (0.05)	-24.57** (11.62)
Reliance on Oil		0.35*** (0.12)	0.39*** (0.11)	0.03** (0.01)	-2.88 (4.73)
Urbanization			0.35** (0.17)	0.04* (0.02)	5.04 (4.51)
Threat to Sovereignty			0.37** (0.15)	0.04 (0.03)	-27.37*** (8.17)
Democracy			1.03** (0.47)	0.07 (0.07)	-19.87 (15.44)
Violence at Independence			0.10 (0.25)	0.05 (0.03)	-10.57 (6.59)
UK Colony			0.36* (0.19)	0.05* (0.03)	-10.31 (6.43)
Average Aid Per Capita 1960-1975			0.12 (0.10)	0.02 (0.02)	0.14 (2.89)
Ethnic Fractionalization			-0.44 (0.41)	-0.06 (0.06)	17.53 (11.80)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	68	65	57	59	60
R ²	0.54	0.66	0.81	0.77	0.78
F Statistic	11.81***	9.51***	9.03***	7.41***	7.94***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 12: Size and Development with Extended Independence Time Period (1946-1980)

	<i>Dependent variable:</i>				
	Log Avg GDP PPP (1981 - 2020)	HDI (2019)	Infant Mortality (2019)		
	(1)	(2)	(3)	(4)	(5)
Population (1946-75)	-0.20*** (0.07)	-0.17** (0.08)	-0.13* (0.07)	-0.02** (0.01)	5.27** (2.33)
Density		0.11 (0.18)	0.10 (0.14)	0.03 (0.02)	-9.85** (4.59)
Rugged		-0.16* (0.10)	-0.12 (0.10)	-0.003 (0.01)	1.96 (2.16)
Malaria Risk		-1.51** (0.69)	-0.38 (0.44)	0.03 (0.07)	-10.79 (15.58)
Island		0.15 (0.28)	-0.12 (0.34)	0.03 (0.04)	-18.20* (11.02)
Reliance on Oil		0.36*** (0.09)	0.41*** (0.09)	0.03** (0.01)	-2.79 (3.94)
Urbanization			0.37** (0.17)	0.05** (0.02)	3.64 (4.50)
Threat to Sovereignty			0.22 (0.15)	0.03 (0.02)	-24.12*** (6.94)
Democracy			1.29*** (0.47)	0.09 (0.07)	-24.70 (15.22)
Violence at Independence			0.15 (0.23)	0.05* (0.03)	-9.96 (6.29)
UK Colony			0.39** (0.16)	0.06** (0.02)	-10.66* (5.59)
Average Aid Per Capita 1960-1975			0.002 (0.002)		
Ethnic Fractionalization				0.01 (0.01)	0.15 (2.28)
Europe and Central Asia			-0.41 (0.41)	-0.07 (0.05)	17.19 (12.27)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	77	70	62	64	65
R ²	0.56	0.74	0.86	0.80	0.78
F Statistic	14.94***	14.66***	14.28***	9.91***	9.26***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 13: Size and Development with Shorter Independence Time Period (1946-1970)

	<i>Dependent variable:</i>				
	Log Avg GDP PPP (1971 - 2020)	HDI (2019)	Infant Mortality (2019)		
	(1)	(2)	(3)	(4)	(5)
Population (1945-75)	-0.25** (0.10)	-0.19* (0.10)	-0.01 (0.09)	0.01 (0.01)	0.53 (3.36)
Density		0.27 (0.17)	0.31** (0.12)	0.06*** (0.02)	-13.94*** (5.02)
Rugged		-0.17** (0.08)	-0.20** (0.10)	-0.02 (0.02)	4.64 (3.14)
Malaria Risk		-1.55** (0.71)	-1.22** (0.62)	-0.07 (0.09)	0.11 (18.43)
Island		0.32 (0.26)	0.34 (0.28)	0.07* (0.04)	-29.43** (12.52)
Reliance on Oil		0.31*** (0.10)	0.39*** (0.09)	0.03** (0.01)	-4.41 (4.95)
Urbanization			0.29** (0.15)	0.04 (0.02)	4.58 (4.43)
Threat to Sovereignty			0.34** (0.16)	0.07** (0.03)	-34.07*** (8.30)
Democracy			0.44 (0.36)	0.07 (0.07)	-27.73* (16.76)
Violence at Independence			-0.004 (0.26)	0.02 (0.04)	-6.50 (7.59)
UK Colony			0.29* (0.15)	0.05** (0.03)	-10.40* (6.01)
Average Aid Per Capita 1960-1975			0.01*** (0.002)		
Europe and Central Asia				0.04** (0.02)	-3.94 (2.60)
Latin America and The Caribbean			-0.54 (0.40)	-0.10* (0.06)	26.02** (10.80)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	62	61	54	55	56
R ²	0.57	0.72	0.88	0.83	0.81
F Statistic	12.26***	11.51***	14.60***	9.59***	8.95***

Note:

*p<0.1; **p<0.05; ***p<0.01

B.2 Robustness Checks: Private Sector Institutions

Table 14: Small States and Private Sector Institutions with Different Measures of State Size

	<i>Dependent variable:</i>		
	Rule of Law (1996 - 2019)		
	(1)	(2)	(3)
Small State (Smaller)	0.51** (0.23)		
Small State (Bigger)		0.32 (0.24)	
Population (Continuous)			-0.13** (0.06)
Density	0.38** (0.17)	0.38** (0.19)	0.41** (0.18)
Rugged	-0.20* (0.11)	-0.16 (0.12)	-0.17 (0.11)
Malaria Risk	-0.46 (0.65)	-0.26 (0.68)	-0.37 (0.63)
Island	0.07 (0.34)	0.06 (0.34)	0.07 (0.35)
Reliance on Oil	-0.12 (0.09)	-0.07 (0.10)	-0.06 (0.09)
Urbanization	-0.03 (0.16)	-0.01 (0.18)	0.01 (0.17)
Threat to Sovereignty	0.11 (0.19)	0.07 (0.20)	0.13 (0.19)
Democracy	-0.11 (0.54)	0.02 (0.56)	-0.09 (0.57)
Violence at Independence	0.03 (0.24)	0.09 (0.27)	0.11 (0.25)
UK Colony	0.32* (0.18)	0.38** (0.19)	0.34* (0.19)
Average Aid Per Capita 1960-1975	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Region Fixed Effects	Yes	Yes	Yes
Observations	70	70	70
R ²	0.52	0.48	0.51
F Statistic	3.33***	2.88***	3.12***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01		

B.3 Robustness Checks: Political Stability

Table 15: Size and Political Stability with Different Measures of Size

	<i>Dependent variable:</i>		
	Instability (1995 - 2018)		
	(1)	(2)	(3)
Small State (Smaller)	-4.71*** (1.31)		
Small State (Bigger)		-4.43*** (1.31)	
Population (Continuous)			1.10*** (0.33)
Density	-1.53 (1.05)	-1.60 (1.11)	-1.71 (1.16)
Rugged	0.81 (0.57)	0.35 (0.58)	0.56 (0.63)
Malaria Risk	6.01* (3.28)	2.06 (3.10)	5.31 (3.36)
Island	-0.71 (2.40)	-0.37 (2.37)	-0.61 (2.43)
Reliance on Oil	0.53 (0.64)	0.13 (0.64)	-0.03 (0.63)
Urbanization	-0.53 (0.99)	-0.62 (1.06)	-0.94 (1.12)
Threat to Sovereignty	-0.70 (1.13)	-0.45 (1.15)	-0.78 (1.19)
Democracy	0.15 (2.93)	-1.77 (3.19)	-0.07 (3.45)
Violence at Independence	-0.73 (1.58)	-1.71 (1.64)	-1.32 (1.59)
UK Colony	-1.21 (1.19)	-1.79 (1.22)	-1.38 (1.30)
Average Aid Per Capita 1960-1975	-0.004 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Region Fixed Effects	Yes	Yes	Yes
Observations	69	69	69
R ²	0.67	0.66	0.64
F Statistic	6.14***	5.80***	5.31***

Note: *p<0.1; **p<0.05; ***p<0.01

B.4 Robustness Checks: Public Sector Size (KOF Trade Globalisation De Jure Index (1976 - 1996))

Table 16: Small States and Public Sector Spending with Different Measures of State Size (Public Sector Expenditures, 1976 - 1996)

	<i>Dependent variable:</i>		
	Public Expenditures (1976-1996)		
	(1)	(2)	(3)
Small State (Smaller)	7.97 (6.72)		
Small State (Bigger)		5.13 (5.69)	
Population (Continuous)			-2.82** (1.41)
Density	1.74 (3.30)	1.46 (3.33)	0.91 (3.13)
Rugged	1.57 (1.84)	2.28 (2.27)	1.58 (1.87)
Malaria Risk	-16.35 (16.90)	-13.79 (19.56)	-15.96 (17.17)
Island	-8.74 (5.70)	-7.45 (5.40)	-4.88 (5.35)
Reliance on Oil	3.46 (3.58)	4.45 (3.56)	3.72 (3.53)
Urbanization	1.82 (2.84)	1.63 (3.24)	1.74 (2.86)
Threat to Sovereignty	-0.78 (3.88)	-0.65 (4.32)	2.23 (4.22)
Democracy	4.84 (9.40)	5.27 (8.85)	1.56 (7.57)
Violence at Independence	-4.95 (3.52)	-3.86 (3.67)	-1.94 (3.69)
UK Colony	1.32 (3.87)	2.94 (3.89)	2.30 (3.74)
Average Aid Per Capita 1960-1975	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)
Region Fixed Effects	Yes	Yes	Yes
Observations	48	48	48
R ²	0.63	0.61	0.65
F Statistic	3.04***	2.78***	3.32***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 17: Small States and Public Sector Spending with Different Measures of State Size (Public Sector Expenditures, 1976 - 2006)

	<i>Dependent variable:</i>		
	Public Expenditures (1976-2006)		
	(1)	(2)	(3)
Small State (Smaller)	0.97 (3.31)		
Small State (Bigger)		1.39 (3.24)	
Population (Continuous)			-0.99 (0.89)
Density	-0.39 (1.85)	-0.38 (1.82)	-0.06 (1.73)
Rugged	0.75 (1.38)	0.84 (1.43)	0.80 (1.38)
Malaria Risk	-21.03** (8.77)	-19.78* (10.21)	-19.37** (9.01)
Island	-2.93 (2.89)	-2.93 (2.88)	-2.92 (3.13)
Reliance on Oil	2.95* (1.59)	2.96* (1.57)	2.95* (1.62)
Urbanization	-0.32 (1.91)	-0.37 (1.95)	-0.27 (1.91)
Threat to Sovereignty	0.67 (2.51)	0.72 (2.48)	1.25 (2.59)
Democracy	-2.35 (5.54)	-1.81 (5.62)	-2.22 (5.36)
Violence at Independence	-0.68 (3.00)	-0.31 (2.97)	0.20 (3.04)
UK Colony	1.21 (1.85)	1.37 (1.80)	1.14 (1.80)
Average Aid Per Capita 1960-1975	0.03* (0.02)	0.03* (0.02)	0.03* (0.02)
Region Fixed Effects	Yes	Yes	Yes
Observations	66	66	66
R ²	0.56	0.57	0.58
F Statistic	3.65***	3.67***	3.87***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 18: Small States and Public Sector Employment with Different Measures of Size (Public Sector Employment)

	<i>Dependent variable:</i>		
	Public Sector Employment (2000 - 2018)		
	(1)	(2)	(3)
Small State (Smaller)	0.05*		
	(0.03)		
Small State (Bigger)		0.03	
		(0.02)	
Population (Continuous)			-0.01
			(0.01)
Density	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.02)
Rugged	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)
Malaria Risk	-0.14**	-0.12*	-0.14**
	(0.06)	(0.07)	(0.07)
Island	0.01	0.02	0.02
	(0.03)	(0.04)	(0.04)
Reliance on Oil	0.03***	0.03**	0.03***
	(0.01)	(0.01)	(0.01)
Urbanization	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)
Threat to Sovereignty	0.02	0.02	0.02
	(0.01)	(0.02)	(0.02)
Democracy	-0.04	-0.04	-0.06
	(0.06)	(0.06)	(0.06)
Violence at Independence	0.01	0.02	0.02
	(0.02)	(0.02)	(0.02)
UK Colony	0.01	0.01	0.01
	(0.02)	(0.02)	(0.02)
Average Aid Per Capita 1960-1975	0.0004*	0.0004**	0.0004*
	(0.0002)	(0.0002)	(0.0002)
Region Fixed Effects	Yes	Yes	Yes
Observations	48	48	48
R ²	0.71	0.68	0.68
F Statistic	4.29***	3.76***	3.76***

Note:

*p<0.1; **p<0.05; ***p<0.01

B.5 Robustness Checks: Trade Openness

Table 19: State Size and Trade Openness with Different Measures of State Size (Trade as a percentage of GDP from 1976 - 1996)

	<i>Dependent variable:</i>		
	Trade (GDP, 1976-1996)		
	(1)	(2)	(3)
Small State (Smaller)	23.80 (17.03)		
Small State (Bigger)		56.35*** (12.61)	
Population (Continuous)			-14.16*** (3.60)
Density	15.17 (10.33)	18.00** (8.40)	19.25** (8.32)
Rugged	-17.09* (10.09)	-12.00 (7.85)	-14.58* (8.42)
Malaria Risk	-31.52 (55.47)	31.29 (43.69)	-9.30 (48.58)
Island	16.49 (22.83)	16.43 (18.87)	19.68 (20.57)
Reliance on Oil	-9.93 (9.28)	-10.04 (6.77)	-6.97 (7.10)
Urbanization	5.34 (6.66)	3.86 (6.04)	8.11 (6.08)
Threat to Sovereignty	3.06 (12.40)	5.23 (11.31)	9.78 (11.37)
Democracy	-27.21 (40.27)	-3.47 (31.59)	-24.44 (35.81)
Violence at Independence	-18.84* (10.93)	-1.17 (9.84)	-4.91 (10.00)
UK Colony	21.46* (12.72)	27.38*** (10.17)	21.65** (11.00)
Average Aid Per Capita 1960-1975	0.10 (0.10)	0.04 (0.08)	0.05 (0.10)
Region Fixed Effects	Yes	Yes	Yes
Observations	64	64	64
R ²	0.56	0.69	0.65
F Statistic	3.40***	6.04***	4.96***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 20: State Size and Trade Openness with Different Measures of State Size (Trade as a percentage of GDP from 1976 - 2006)

	<i>Dependent variable:</i>		
	Trade (GDP, 1976-2006)		
	(1)	(2)	(3)
Small State (Smaller)	26.00*		
	(15.73)		
Small State (Bigger)		57.39***	
		(13.43)	
Population (Continuous)			-16.19***
			(3.57)
Density	9.93	13.44	15.64*
	(10.66)	(9.34)	(8.72)
Rugged	-15.61	-11.10	-13.60
	(11.07)	(8.80)	(9.17)
Malaria Risk	-26.44	35.93	-0.72
	(51.20)	(41.25)	(46.45)
Island	18.34	15.53	17.75
	(23.13)	(19.51)	(20.59)
Reliance on Oil	-5.90	-5.81	-3.12
	(9.33)	(7.25)	(6.87)
Urbanization	11.38*	9.06	13.33**
	(6.67)	(6.08)	(5.63)
Threat to Sovereignty	3.01	4.95	10.47
	(12.50)	(11.03)	(11.49)
Democracy	-19.11	4.98	-16.07
	(40.34)	(31.82)	(36.13)
Violence at Independence	-1.28	15.45	12.12
	(15.03)	(15.03)	(13.87)
UK Colony	15.63	21.09**	15.09
	(11.37)	(9.64)	(9.74)
Average Aid Per Capita 1960-1975	0.08	0.05	0.05
	(0.10)	(0.08)	(0.09)
Region Fixed Effects	Yes	Yes	Yes
Observations	69	69	69
R ²	0.45	0.58	0.58
F Statistic	2.46***	4.20***	4.07***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 21: State Size and Liberal Trade Policies

	<i>Dependent variable:</i>		
	Global Trade Policies (1976-1996)		
	(1)	(2)	(3)
Small State (Smaller)	12.73** (5.04)		
Small State (Bigger)		24.03*** (3.85)	
Population (Continuous)			-5.77*** (1.29)
Density	5.73 (3.61)	7.17** (2.89)	7.57*** (2.90)
Rugged	-0.79 (2.46)	1.01 (1.75)	0.04 (1.96)
Malaria Risk	-3.41 (18.69)	21.67 (15.41)	4.62 (16.45)
Island	-8.05 (7.52)	-9.03 (6.46)	-8.47 (7.74)
Reliance on Oil	-2.20 (2.98)	-2.14 (2.20)	-1.07 (2.20)
Urbanization	9.00*** (3.03)	7.97*** (2.56)	9.89*** (2.79)
Threat to Sovereignty	3.78 (4.99)	4.78 (4.35)	5.78 (4.66)
Democracy	17.71 (13.14)	27.76*** (10.30)	18.70 (11.95)
Violence at Independence	-7.12 (6.35)	-0.26 (5.37)	-3.16 (6.16)
UK Colony	7.99* (4.76)	10.66*** (3.61)	8.09* (4.36)
Average Aid Per Capita 1960-1975	0.03 (0.04)	0.02 (0.03)	0.02 (0.03)
Region Fixed Effects	Yes	Yes	Yes
Observations	68	68	68
R ²	0.58	0.71	0.65
F Statistic	4.13***	7.08***	5.53***

Note:

*p<0.1; **p<0.05; ***p<0.01

B.6 Robustness Checks: Alternative Explanations

Table 22: State Size and Democracy with different measures of Democracy

	<i>Dependent variable:</i>		
	FH Score (2006 - 2021)	Vreeland Regime (1976 - 2008)	Polity (1976 - 2020)
	(1)	(2)	(3)
Population (1946-75)	4.46** (1.88)	-0.34*** (0.08)	1.34*** (0.29)
Density	7.70 (5.34)	-0.23 (0.18)	0.83 (0.89)
Rugged	-3.83 (3.13)	0.12 (0.10)	-0.29 (0.71)
Malaria Risk	-35.42** (15.05)	1.94** (0.94)	-8.50*** (3.20)
Island	2.87 (9.95)	-0.38 (0.39)	1.38 (1.78)
Reliance on Oil	-3.46 (2.60)	0.07 (0.15)	-1.02* (0.57)
Urbanization	0.62 (4.75)	-0.20 (0.20)	0.83 (0.79)
Threat to Sovereignty	-3.50 (6.36)	-0.09 (0.20)	0.38 (1.03)
Democracy	0.17 (11.99)	-1.14 (0.81)	2.96 (1.97)
Violence at Independence	-2.13 (6.74)	-0.16 (0.35)	-1.57 (1.38)
UK Colony	4.15 (5.92)	-0.04 (0.20)	0.04 (1.11)
Average Aid Per Capita 1960-1975	0.08*** (0.03)	-0.004 (0.003)	0.01* (0.01)
Region Fixed Effects	Yes	Yes	Yes
Observations	70	70	69
R ²	0.50	0.70	0.66
F Statistic	3.08***	7.06***	5.88***

Note:

*p<0.1; **p<0.05; ***p<0.01

Note that with the Vreeland Regime Index higher scores indicate more authoritarian regimes.

Table 23: Formerly Small States and Democratization

	<i>Dependent variable:</i>		
	FH Score (2006 - 2021)	Vreeland Regime (1976 - 2008)	Polity (1976 - 2020)
	(1)	(2)	(3)
Formerly Small	-4.17 (6.92)	0.51* (0.27)	-1.49 (1.57)
Density	9.55* (5.19)	-0.37 (0.23)	1.41 (1.08)
Rugged	-3.57 (3.36)	0.11 (0.13)	-0.23 (0.82)
Malaria Risk	-27.28* (16.21)	1.42 (1.06)	-6.35* (3.39)
Island	2.27 (11.34)	-0.33 (0.44)	1.30 (2.17)
Reliance on Oil	-3.11 (2.81)	0.01 (0.15)	-0.94 (0.80)
Urbanization	0.70 (5.03)	-0.21 (0.22)	0.83 (0.86)
Threat to Sovereignty	-0.78 (6.24)	-0.30 (0.23)	1.21 (1.10)
Democracy	1.15 (14.16)	-1.21 (0.99)	3.18 (2.81)
Violence at Independence	1.97 (6.90)	-0.45 (0.34)	-0.33 (1.39)
UK Colony	3.87 (6.18)	-0.04 (0.22)	0.04 (1.11)
Average Aid Per Capita 1960-1975	0.07* (0.04)	-0.003 (0.003)	0.01 (0.01)
Region Fixed Effects	Yes	Yes	Yes
Observations	70	70	69
R ²	0.45	0.62	0.57
F Statistic	2.55***	4.99***	4.05***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 24: Formerly Small States and Migrant Labor

	<i>Dependent variable:</i>
	International Migrant Stock (Percent of Pop, 1990 - 2015)
Formerly Small	8.435** (3.781)
Density	3.037 (2.703)
Rugged	-0.997 (1.677)
Malaria Risk	8.722 (11.971)
Island	-4.331 (4.233)
Reliance on Oil	2.915 (2.703)
Urbanization	3.000 (2.342)
Threat to Sovereignty	-5.537 (3.672)
Democracy	-7.638 (4.667)
Violence at Independence	-8.461** (3.982)
UK Colony	5.108** (2.590)
Average Aid Per Capita 1960-1975	0.019 (0.015)
Region Fixed Effects	Yes
Observations	69
R ²	0.711
F Statistic	7.367*** (df = 17; 51)

Note:

*p<0.1; **p<0.05; ***p<0.01

B.7 Mediation Analysis

The idea behind a simple mediation analysis is to determine how does the effect of an independent variable on an outcome change after controlling for the mediator. If the change is statistically significant, then the potential mediation effect is valid [Imai et al., 2011]. We determine how the effect of state size on development changes after we separately control for the mediators—trade, rule

of law, public sector size, and state instability. A serial mediation model will most accurately fit our hypothesis. In serial mediation, there is more than one mediators and they are correlated. In our hypothesis, trade improves rule of law, and public sector size lowers state instability. Therefore, trade will be correlated with rule of law, and public sector size will be correlated with state fragility.

While serial mediation model accurately fits our hypothesis, we might not be able to satisfy the sequential ignorability assumption required to obtain an unbiased mediator effect. Sequential ignorability assumption requires the following two conditions [Imai et al., 2010].

1. Conditional on pretreatment covariates, the treatment should be independent of the potential values of mediator and the outcome variables. This condition would be violated if there is a confounding variable that both affects the likelihood of a state being small and the potential value of its public sector size and state fragility. After including a range of control variables and separating out the time periods for the treatment and mediator/outcome variables, we can be confident that this condition will likely not be violated.

2. Conditional on the treatment and pretreatment covariates, the mediators are independent of all potential values of the outcome variable. Or more simply, the mediator variables are as good as random within the treatment group. This condition will be violated under two situations: i) there is an unobserved pretreatment confounder that simultaneously affects the mediator variables and the outcome variable within a given treatment group i.e. if small states that had a popular independence movement are more likely to have a large public sector and are also more developed due to a more inclusive government, then not controlling for the type of independence movement will confound the mediating effect of public sector size on development.

Fortunately, with our rich set of controls, we are less worried about this kind of violation and we can also test for this kind of violation using a sensitivity analysis [Imai et al., 2010]. 2) There is an unobserved post treatment confounder that affects both the mediator variables and the outcome variables within a treatment group i.e. suppose that small states that have large public sectors are also the ones with an educated citizenry, and education is correlated with state instability and long-term development, then the mediating effect of public sector size cannot be unbiasedly estimated. We think this kind of violation is a bigger concern especially with serial mediation, because small states with lower state instability might be different from other small states on many other different variables which also affect development. This makes it challenging to identify the mediating effect

that goes through state instability on development.