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ABSTRACT

Studies have observed a correlation of wealth with democracy, yet it remains unclear how wealth can cause or stabilize democracy. Recent research has shown how the causal mechanism may lie in the economic norm of contracting, as democracy becomes valued as the best means for sustaining a nonpredatory government that enforces contracts with impartiality. We extend this research to investigate if norms of economic contracting in societies give rise to, and strengthen, the democratic civil liberties of free speech and association. Drawing on the World Bank's Financial Structure Database and data on civil liberties from the Varieties of Democracy dataset, analyses of most countries from 1961 to 2019 show that the economic norms of contracting have significant positive effects on the civil liberties of free speech and association and press freedom. With instrumental variable regression, we statistically isolate the causation from contracting to these civil liberties. This study pinpoints that contracting economic activities may strengthen the foundation of civil liberties in countries.

Introduction

Many governments of countries around the world have scant respect for the democratic civil liberties of free speech and association, yet we have little understanding of why this is. We have long observed a strong correlation of GDP *per capita* with democracy and democracy-related institutions (Boix & Stokes, 2003; Dahl, 1997; Lipset, 1959), but correlation is not causal explanation. The classical sociologists—such as Henry Maine, Ferdinand Tonnies, and Max Weber—all observed an association of rising commercial contracting in societies with rising individualism and rule of law, but no explanation for this association has endured. As explained by one of the world's foremost experts on democracy, Robert Dahl, "the exact nature of the relationship among socioeconomic modernization, democratization, and the creation of a democratic culture is almost as puzzling today as it was a quarter–century ago" (1997, p. 35).

This article corroborates a promising new perspective on how economic conditions can promote or sustain democracy-related values and rights in countries. We draw on new economic norms theory (Mousseau, 2000, 2002) to show how a rise in commerce can impact societal values regarding the democratic rule of law (see also: Aytac et al., 2016; Boehmer & Daube, 2013; Enia, 2018; Enia & James, 2015; Krieger & Meierrieks, 2015; Meierrieks, 2012; Mousseau and Mousseau, 2008). A contract-intensive economy is one in which most households obtain their material needs by engaging in contract with strangers in an open marketplace. This kind of

economy is strongly associated with measures of GDP, in part because GDP is constructed from surveys of merchants, manufacturers, and financiers reporting contract flows to government agencies (Mousseau, 2000, 2012).

Because there is no basis for trusting the contractual commitments of strangers, citizens of high GDP *per capita*—commercialized—societies value a state that reliably enforces property rights and contracts with impartiality. To constrain authorities toward these values, they demand the democratic rule of law. Drawing on data on contracting from the World Bank, Aytac et al. (2016) found that countries with contact-intensive economies appear to be immune to the political resource curse—the detrimental effect of natural resource dependence on democracy—and report that no country with a contract-intensive economy has every suffered a democratic reversal.

We extend the pioneering study of Aytac et al. (2016) in three main ways. First, we document the interdisciplinary foundations of economic norms theory by showing that the existence of the two kinds of economic norms identified by the theory—contact-intensive and gift-intensive—are well known and revealed in various subfields in the disciplines of anthropology, economics, psychology, and sociology.

Second, we corroborate the results of Aytac et al. (2016) using divergent measures for both the independent (economic norms) and dependent (democracy) variables, and extend the analyses to the broader domain of most countries from 1960 to 2019.

Third, we extend economic norms theory and examine a key characteristic of liberal democracy: the democratic civil liberties of free speech, association, and press freedom. We offer that in the logic of economic norms theory (Mousseau, 2000), democracy may not be enough to sustain a nonpredatory state: To constrain elected officials from corrupt and partialist behaviors, citizens must also have the freedoms of speech and assembly so the media can monitor and report misconduct and the people can organize opposition political parties. In contract-poor countries, in contrast, officials are pressured to repress the rights of citizens, because where commerce is weak, people form into social and political groups that compete over state rents. Because privileges for some groups mean discrimination for others, intergroup competition is zero-sum-like. Groups in power are thus incentivized to repress out-groups from voicing their political preferences and to restrain their media from disclosing their predatory behaviors.

If our extension of economic norms theory is correct, consideration of a direct gauge of the contract-intensity of national economies could cause GDP *per capita* to become insignificant in analyses of democratic civil liberties. Drawing on data on contracting from the World Bank's Financial Structure Database (Čihák et al., 2012) and data on civil liberties from the Varieties of Democracy (V-Dem) dataset (Coppedge et al., 2021; Pemstein et al., 2021), we find that contract flows, and not GDP, are associated with the democratic rights of free speech and association in countries. In further tests we show the same results for analyses of press freedom, and with consideration of time and country fixed effects and a battery of potentially confounding variables. In addition, we statistically isolate the causation *from* commerce *to* civil liberties with instrumental variable analyses, enhancing confidence that the results are not likely attributable to reverse causality, measurement error, or omitted variable bias (Leigh & Schembri, 2004, p. 286). The impact of a contract-intensive economy on political rights is highly robust: A change from the 10th to 90th percentiles in a contract-intensive economy is associated in the long run with 47 to 64 percent increase in local average treatment effect (LATE) across the V-Dem index of civil liberties, and a 40–42% increase in LATE across the V-Dem measure of press freedom.

We do not examine measures of democratic institutions *per se*, because Aytac et al. (2016) have already showed that the economic norms of contract appear to promote or stabilize democratic institutions. In addition, all measures of democracy offered in the V-Dem dataset are defined in part with civil liberties: The V-Dem *Political Civil Liberties Index* examined here is highly correlated with the V-Dem *Electoral Democracy Index* (Pearson's $r = .92$). We do,

however, control for a proxy gauge of democracy that is not defined in any way with civil liberties: the share of population with suffrage. Thus, our empirical analyses corroborate the earlier findings of Aytac et al. (2016) using a different measure for democracy—democratic rights—that is closer to our argument for how the democratic values for free speech and association can come to be valued in a society.

We organized this article as follows. Section two discusses the several studies in the literature that offer explanations on the institutionalization of democratic civil liberties associated with GDP *per capita*. Section three presents our application of economic norms theory to this puzzle. Section four reviews data sources and test procedures. Section five reports the results.

Section six concludes with the implications: The long-known association of wealth with democracy may be a function of rising commercialization of a society, which causes citizens to value a state that reliably enforces property rights and contracts with impartiality. This causal path may help explain the existence of *illiberal* democracies—democracies with weak rights and rule of law that are often found in countries with lower levels of wealth gauged with GDP. To expand the democratic rule of law with rights and civil liberties, the task is to promote the economies of countries at risk.

Commerce and rights: Prior views

Traditional theorists of democracy have long maintained that the long-term stability of equal rights and law requires a democratic political culture (e.g., Almond & Verba, 1963). Weingast has shown formally that the institutionalization of equal law requires citizens to have "a consensus on values" (1997, p. 246). The literature yields four plausible accounts for societal value change related with GDP *per capita* and democratic rights in countries.

The oldest effort to account for economic-related value change is the idea of functionalism: Democratic values emerge at the micro-level of the individual because they serve macro-level societal interests. This idea originates with 19th-century theorist Emile Durkheim, who suggested that societal individualization results from the rising division of labor, which weakens traditional authority patterns and collectivist values and beliefs. The value for law and contracts—and, by implication, equal rights in law and contract—is said to emerge because it serves the societal need or order, which collapses with the more complex divisions of labor. Although widely shared among "modernization" theorists of the 1950s and 1960s (e.g., Parsons, 1967), the functionalist idea is largely discounted today. As Coleman explained: "collectivities are often not organized to act," and, even if they are, "the diversity of interests in the collectivity makes it difficult to determine a single direction of action" (1990, p. 336).

A second common explanation for an association of wealth and democracy ties democratic values with Western culture, variously defined (e.g., Huntington, 1996/2007). From this perspective, the values for democratic law and rights originated in Europe and, through processes of diffusion, have been adopted in various non-Western societies, such as Japan and South Korea. A major weakness of this thesis, however, is that no one has been able to identify what it is about Western culture that causes these values. Max Weber suggested their origins in the Protestant Reformation (1905/1958), but value and economic change in Europe began happening before the Protestant Reformation (Hirschman, 1977/2013, p. 9; Braudel, 1979, p. 24). In addition, the theory needs something more to explain why some countries have adopted "Western" values and others have not.

One explanation for the adoption of Western values is the third idea for value change: a progression of ideas. In this perspective, "good" ideas, once arrived at, overcome "bad" ones. Often these good ideas are credited to the West, particularly the Enlightenment thinkers of 17th- and 18th-century Europe (Mueller, 2010, pp. 171, 178; Pinker, 2019).

The progression of ideas thesis has two manifest problems, however. First, it does not explain why some ideas catch on at some times and places and not others, or the content of these ideas. It cannot be that humans have some innate ability to identify and embrace good ideas over bad ones, because we know that different ideas are popular at different times and places. The good idea of democracy was discovered by the Greeks of the Classical Age, and widely rejected for at least two millennia afterward. Second, good ideas can be found all over the world, and many of them appeared before the Europeans happened upon them. Beyond the classical Greeks, examples include 17th-century Ethiopian philosopher Zera Yacob, who advocated for the supremacy of reason, independent inquiry, and political equality (Herbjornsrud, 2017).

The fourth common explanation for an association of wealth and democratic values has more traction today than the others: the idea of path dependency. In this view, societies change slowly, and shocks deep in history alter societies' historical paths, and values centuries later. Acemoglu and Johnson (2005) reported convincing evidence that some critical juncture of the 16th and 17th centuries set Europe and the settler countries apart from the rest of the world. North et al. (2009) suggested that, when leaders create organizations for the impersonal distribution of rents—as they think may have happened in 17th-century England—the conditions are ripened for further impersonalization of the political economy.

Unfortunately, the path-dependent approaches have not so far yielded testable explanations for social and economic change. Acemoglu and Johnson (2005, p. 35) speculated the potentially crucial role of geographic access to the Atlantic, but acknowledged that this is "no more than a conjecture" (see also North et al., 2009, p. 28; Tabellini, 2008).

How wealth institutionalizes the values of democracy and democratic rights remains one of the major puzzles of the social sciences. We suggest that, for these values to emerge, there must be some way individuals benefit from the rights of strangers. Below we show one way this can happen.

The contracting origins of democratic civil liberties

Myriad studies across multiple social science disciplines agree on the existence of two primary kinds of economic norms in history: contracting and gift-giving. Contracts are *quid pro quo* exchanges that imply no lasting relationship among contractees. Gift exchanges, in contrast, cannot be explicit *quid pro quos*, and are always passed among those in relationships or initiated by someone seeking to start a relationship. Whereas in contract-intensive societies gifts are largely shared among friends and family as tokens of affection, in gift-intensive societies gifts are also passed among householders for the purpose of nurturing long-term relationships for economic protection and gain. Those with fewer resources come to depend on those with greater resources, as the weak give the gifts of loyalty and tribute in exchange for protection from the strong (Mousseau, 2002).

The distinct economic types of contracting and gift-giving were initially discovered by the classical sociologists of the 19th and early 20th centuries, led by Henry Maine, Emile Durkheim, and Max Weber. This first generation of scholars highlighted the rise of contracting in Europe at the time. The generation that followed them—spearheaded by Marcel Mauss (1925/1990) and Bronislaw Malinowski (1920)—documented the phenomenon of gift-giving. Countless studies have since verified that through most of human history most individuals normally obtained their food, dwellings, and securities in the form of gifts reciprocated among those in groups of families, clans, tribes, mafias, and other forms of hierarchical networks.

Today gift-giving is widely known in most research fields as the prevailing economic practice in many societies all over the world. It is well documented and addressed in the fields of sociology (Eisenstadt & Roniger, 1980; Lemarchand & Legg, 1972), social psychology (Fiske, 1992), international business (Ferraro & Briody, 2017; Hofstede, 1980), and some subfields in economics

(Schumpeter, 1943/2003; Polanyi, 1944/1957; North et al., 2009). In sociology and political science, gift exchange is often linked with the phenomenon of "patron-clientelism," meaning networks based on gift-giving are ultimately linked to privileges from government agencies of some kind (Eisenstadt & Roniger, 1980; Lemarchand & Legg, 1972, pp. 150, 151). Students of African politics sometimes call patron-clientelism "big-man" rule and "neo-patrimonialism" (Kiser & Sacks, 2011). Hobsbawn (1959) differentiated the "mafia" from "social banditry," but described both as very much based on gift-giving. Where the state has completely receded from a region, patrons are sometimes called "warlords" (Marten, 2012; Mousseau, 2009; Olson, 1993).

In their recent study, Aytac et al. (2016) drew on the two kinds of economic norms to show that countries with contract-intensive economies are immune to the political resource curse—the phenomenon that natural resource export wealth tends to promote or stabilize autocracy. Studies in other areas have shown that countries with contract-intensive economies also tend to have more capable states (Enia, 2018), and better human rights (Mousseau and Mousseau 2008; Wright & Moorthy, 2018). They also seldom, if ever, have widespread support for terrorism against out-groups in their societies (Boehmer & Daube, 2013; Krieger & Meierrieks, 2015; Meierrieks, 2012; Mousseau, 2002), and they are less likely than others to fight each other (Enia & James, 2015; Hegre et al., 2020; Mousseau, 2000).

As mentioned, in gift-giving those with fewer resources come to depend on those with greater resources, as weaker clients give the gifts of loyalty and tribute to stronger patrons for protection (Mousseau, 2002). Hierarchical groups align into larger hierarchical groups, as an individual may be a client to a patron at the next higher ranked, but at the same time be a patron to others at the next lower ranked, and so on. Along the hierarchies loyalty is deeply personalized, as patrons must always have the capacity for violence to protect their clients, and clients, being loyal to patrons, normally abide by their patrons' orders. In other words, whereas in contract-intensive orders the state has the legitimate monopoly on violence, in gift-intensive orders groups have the legitimate monopoly on violence.

According to economic norms theory, the legitimacy of the democratic rule of law is in the norms of commercial contract (Mousseau, 2000, 2012). In societies in which individuals normally find living-wage incomes in contracting with strangers in a commercialized economy, individuals are relatively free from patrons. For economic security, most rely not on groups but on the commitments of strangers in contract. Because there is no prior basis for trusting strangers and no protection from patrons, individuals need a state with a monopoly on violence that generally acts impartially in the enforcement of law and contracts. Democracy emerges as the essential mechanism for constraining the state toward impartiality in the enforcement of law and contracts (Aytac et al., 2016).

Following the logic of economic norms theory, we add that democracy may not be enough to constrain the state: Civil liberties may also be essential. If the purpose of democracy is to ensure a credibility impartial state, citizens must have the capacity to scrutinize it to verify that it is not behaving with partiality. For instance, no business can survive long, or attract investors, if there is no assurance that the state is not acting in favor of its competitors in the enforcement of laws and contracts. Yet no citizen or enterprise can do this alone. The solution we suggest comes with the freedom of speech, which gives rise to a free press that can profit from monitoring the state and the crimes of fellow citizens. People thus pay for maintaining a credibly impartial law-enforcing state when they pay for the media outlets that keep a sharpened eye on it (or are affected by the advertisements in them). In this way, the "fourth estate" is an essential part of democracy, if the purpose of democracy is to have an impartial contract and law-enforcing state that is indispensable for any commercial economy (Mousseau, 2000).

How does change happen? Merchants have long existed in most societies through history, often forming networks to monitor and report one another's reputations for fulfilling contractual obligations (Braudel, 1992, p. 152; Greif, 1989; Kranton, 1996; Milgrom et al., 1990; Rider, 1995,

pp. 66–73). It follows that if a society experiences a rise of commerce, it is the merchants, more than anyone, who are most accustomed to the new norms and initially have the most direct interests in lobbying authorities to bear the burden of enforcing contracts. Their influence too must increase as their control of the economy expands and gift-elite rent-seekers become progressively dependent on them. Their ascending influence increases the odds that they get what they want: a state that protects property and contract rights, at least for some segments of society. If commerce continues to rise, many merchants may gradually see that universal property and contract rights are more profitable than limited ones, as the expansion of rights enlarges the universe of customers willing and able to trust them in contract.

If commerce continues to rise, merchants are increasingly not alone in their economic dependency on trusting strangers in contracts: Freehold farmers, shippers, and those with the power to choose where they commit their time and labor to strangers become also dependent on trusting the commitments of strangers. To affect such trust, they value democracy with civil liberties of speech and association.

This process of change matches T. H. Marshall's (1964) observation that in Europe property rights preceded political and universal voting rights, and were enjoyed first by the merchants. It also fits Charles Tilly's (1990) observation that rights emerged side-by-side with state-building. Whereas rulers increasingly relied on capitalists to finance the state and military, capitalists needed states as guarantors of private property. As the sizes of states increased in the 18th and 19th centuries and rulers collected taxes from larger populations, they began to make concessions and gradually granted political rights to ordinary citizens, including the right to association and universal suffrage. We think this process of expansion of rights through bargaining with the state also fits the US experience during the American Revolution, as Northern leaders were typically freehold farmers, artisans, and shippers—such as John Adams, Benjamin Franklin, and John Hancock.[1]

We are not suggesting, however, that humans are fully informed rational actors who consciously select democracy and civil liberties for material ends. On the contrary, economic norms theory is squarely in the Durkheimian tradition of the "conscious collective" (1893/2013), as the theory offers a way economic norms can become internalized and affect values. The theory follows the insights of bounded rationality that originated with Herbert Simon, who reasoned that if we make the same decisions often enough—if we abide by the same norms often enough—we develop "rules of thumb" and they become internalized (1955).

In this way, we suggest, the values of democracy and civil liberties emerge as rules of thumb from countless decisions to trust the commitments of strangers. They stick in part because we learn the values and outlooks of our parents, teachers, and cohorts (Bowles, 1998, p. 83), and because "the greater the number of people who appear to hold a given opinion, the more validity it will assume" (Kuran, 1987, p. 655). Although internalized and sticky, however, in economic norms theory the norm of contracting remains at the foundation of the values for democracy and a free press, as these institutions render the confidence that most in society are abiding by the rules of the system. Thus, internalization can explain why relatively few contracts are litigated in courts, yet democracy and a free press remain valued as institutions because they yield the necessary confidence that those who violate the rules of the game generally get caught and punished for it.

A gift-intensive economy, in contrast, is incompatible with democratic rights in two ways. First, rights are not realized from state protections alone: Householders must also be free and independent agents. Most clients who are dependent on patrons for economic security are reluctant to sue their patrons for the protections of property rights or the enforcement of contracts. Such acts could mean the loss of a lifetime accumulation of gift-credit and the loss of protection for one's household. Thus, even if the state seeks to protect civil liberties, in a gift-intensive economy, many in a society cannot realize them.

Second, states with gift-intensive economies not only lack domestic incentives to protect civil liberties, they are incentivized to repress them. As mentioned, where gift-giving prevails—where labor markets are weak—householders align into groups, such as neighborhood and political groups, gangs, and so on. Group competition over state-rents is zero-sum-like, as allocations for one group mean fewer allocations for others. The primary aim of ruling groups is to stay in power so they can distribute state rents to supporters with partiality. As a result, groups that control the state have direct incentives to repress out-groups. Because out-groups naturally protest their exclusion, to stay in power ruling groups are induced to restrict their freedoms of speech and association: To hide their own corruption, they have an interest in limiting the freedom of the press and restricting their opponents' capacities for organizing against them.

In these ways, a contract-intensive economy can lie at the root not only of democracy (Aytac et al., 2016; Mousseau, 2000) but also of the civil liberties of free speech and association often associated with liberal or consolidated democracy. Dwellers of contract-intensive societies—wherever most everyone is protected equally in law and contracts—don't just want civil liberties for themselves; they habitually care about the rights of strangers, as the freedoms of speech and association for everyone in the society are essential bulwarks for a functional democratic state that reliably enforces contracts with impartiality.

Nothing in our argument suggests that everyone in all societies always behaves according to the two primary economic norms of gift-giving and contracting. The theory can predict only the tendency for pluralities of voters in contract-intensive societies to be more likely than those of other societies to rank respect for impartial and transparent governance as an essential standard for elected office—even as identity and ideological issues may yet be present and sometimes even prevail in these societies. Nor is the theory necessarily at the country level: States, especially federally organized ones, can have majority contractualist regions with minority regions with weak contract norms, such as the US southern states until the 1960s and Northern Ireland in the United Kingdom until the 1990s; both regions switched from net-negative to net-positive immigration in these respective decades, suggesting changes from weak to robust labor markets.

Also, systems and voters are not perfect: In the US system in recent decades electoral minorities have often chosen the US president, and expert marketers can repackage anti-contractualist values as contractualist ones—as may have happened with Donald Trump's claim that he is the defender of law. The United States is only one country of the world, and authoritarian tendencies across countries ebb and flow. Our proposition is a generalization across time and countries: It is probabilistic, not deterministic. If the generalization is correct, then a direct gauge of the causal mechanism—a contract-intensive economy—might be able to account for the association of GDP *per capita* with democratic civil liberties. We now turn to testing this proposition.

Research design

Probably all societies have some mix of gift-giving and contracting. We know that contracting was present in ancient societies (Larsen, 2015), and that gift-giving for economic gain exists in modern commercial orders (Dolfsma et al., 2009). The key difference of the two types of economic orders is the intensity of each kind of exchange. In highly institutionalized commercial orders, gift exchanges are peripheral to contracting, perhaps most common among business agents seeking to form and sustain contractual relationships (Dolfsma et al., 2009). In highly institutionalized gift-exchange orders, in contrast, the gift exchanges are more central to the political and economic order, as patrons protect clients and dole out gifts to them with partiality, while clients gift back loyalty and tribute.

As mentioned, GDP *per capita* is a rough proxy gauge of contracting because it is largely based on surveys of merchants, manufacturers, and financiers reporting contract flows to government agencies. As both Mauss (1925/1990) and Polanyi (1944/1957) noted, economists tasked

with estimating the size of an economy tend to count contractual exchanges but not gift exchanges, because they think gift-exchanges are somehow noneconomic. We add that gift exchanges are also overlooked in the construction of GDP measures because they cannot be directly recorded, being that they are passed as favors. For instance, a patron who finds a client a job does so in the form of a gift, as does a client who washes his or her patron's car. Both activities are services that in a contract-intensive economy would be more likely to involve an exchange of money in the form of job-finding and car-washing fees. Thus, only contractual flows—not gift flows—can be tallied and recorded.

Nevertheless, although reflective of contracting, GDP is not a reliable measure of its institutionalization, for two main reasons. First, in most constructions of GDP, economists survey both synchronous and asynchronous contracting. The former are spot trades: The *quid* and the *quo* occur simultaneously. In an asynchronous contract there is time period between the *quid* and the *quo*. In economic norms theory it is this time element that transforms societies, because in an asynchronous exchange strangers must be trusted to fulfill the terms of the contract. Such trust is only possible when at least one contractee can have confidence that in the event of a contract breach there is a state that reliably enforces contracts with credible impartiality—and thus societies dependent on asynchronous contracting value liberal democratic institutions (Aytac et al., 2016). Therefore, to the extent that GDP accounts for synchronous as well as asynchronous flows, it departs from the causal mechanism of economic norms theory.

The second reason GDP is not a direct gauge of the causal mechanism of contracting is that GDP is a human-created concept conceived for the purpose of estimating a country's income, production, or expenditures; it is not designed to gauge asynchronous contracts *per se*. In the various and sundry ways economists manipulate various data sources for their ends, the final estimates of GDP can be further distorted away from asynchronous contract flows.

To directly gauge the causal mechanism of the intensity of asynchronous contracting in countries we follow most studies (e.g., Aytac et al., 2016; Enia, 2018; Enia & James, 2015; Krieger & Meierrieks, 2015; Meierrieks, 2012; Mousseau, 2009) and draw on contracting in life insurance as reported in the World Bank's *Financial Structure Database* (Čihák et al., 2012). Of all kinds of contracts, life insurance contracts are the most reliably dependent on state enforcement because at least one party, the policyholder, must trust the institutions of society enough that he or she can be confident that the other party, the insurance company, will meet its obligation after his or her death (North et al., 2009, p. 159). Because the obligations of other kinds of contracts can occur before death and thus be enforced with personal sanctions, the existence of a vibrant life insurance marketplace yields the most reliable indication that a country's economy and institutions are contract-intensive (Cashman, 2013, p. 273; Mousseau, 2012, p. 475).

Ideally, we would have a measure that gives us the percentage of households in societies that are protected from income losses with life insurance. To our knowledge, however, there are no such available data. Data on *per capita* life insurance consumption should reflect the ideal, however, in two main ways. First, median-income households need life insurance more than wealthy households, as the latter can rely on their investments to protect their households after death. Thus, *per capita* life insurance is not likely skewed by distributions of income. Second, it is not rational to purchase life insurance protection for amounts larger than the amount needed to cover income loss resulting from death. Thus, if calculated in purchasing power parity (PPP) rates, *per capita* life insurance consumption likely reflects the behavior of typical households in a country.

Due to data availability, the Aytac et al. (2016) analyses had to be limited to the years 1973 to 2000. The World Bank's *Financial Structure Database* (Čihák, 2012) is now regularly updated, however, and we were able to extend the analyses over the large span of 1960 to 2019. These data are in the form of life insurance "penetration," or premium revenue as a percentage of GDP (*DI09*), which, when combined with a prior release of this same measure (*INSLIFE*) by Beck et al.

(2010), go back as far 1960. To convert penetration to *per capita*, or "density," we calculated the product of penetration and real (constant) GDP in PPP (*RGDPE*) available in the Penn World data (Feenstra et al., 2015).

After interpolation of 56 values by year, data are available for 54% of all country-years covered by the Penn World data from 1960 to 2019. Coverage is much wider, however, because missing data indicate a gift-intensive economy. As explained by Mousseau (2009, p. 66), governments of contractualist societies are more likely than gift-intensive ones to provide financial data, for several reasons. First, they have financial sectors to count: Gift-intensive economies cannot have substantial financial sectors because financial contracts are quintessentially asynchronous, and governments of gift orders do not normally enforce asynchronous contracts, at least not with reliable impartiality. Second, the state bureaucracies of contractualist states are more capable than those of gift-intensive ones, because they must have the capacity to enforce law and contracts; they thus have the greater capacity to collect data. Third, governments of contractualist societies are comparatively more pressed to achieve economic growth, and thus have a greater incentive to collect and disseminate economic data. Finally, governments of gift-intensive societies are comparatively more pressed to redistribute wealth rather than promote growth, and thus are incentivized to *not* report data, to mask the often-illegal reallocations of state funds and privileges to supporters.

Because missing values reflect gift-intensive economy, we follow Russett and Oneal's treatment of IMF trade data (2000, p. 140) and treat them as 0. As a precaution, however, we apply the 0 assumption only where it is corroborated with additional data on migration. Countries with long-term net-emigration are likely to have gift-intensive economies because, as discussed above, in gift-intensive orders households tend to form into political groups that compete over state rents. Because gains for some groups mean losses for others, there are often groups that get unsatisfactory rents and are thus pressed to rebel. Individuals in such groups often have few options but to abide by group orders to rebel or emigrate. In fact, country-years with missing data on life insurance are 27% more likely than nonmissing country-years to have net-emigration.[2]

With migration data we were able to extend coverage from 54–86% of all country-years covered by the Penn World data from 1960 to 2019. Because we draw on additional data to corroborate the 0-assumption, we do not believe these data points are less reliable than those with the original life insurance data. In fact, prevailing procedures for dealing with missing data highlight that, when data are missing not at random (MNAR), they must be accounted for, and it is always better to do so with theory rather than blunt instruments like multiple imputation (Rubin, 1996, p. 473). As a precaution, however, we report key tests with missing values treated as missing and multiply imputed.

To obtain the bimodal distribution we expect if most countries have highly institutionalized gift-intensive or contract-intensive economies, we twice-transformed the *per capita* life insurance measure to the inverse hyperbolic sine. (This functional form has the same effect as the more common natural log but has the advantage in that it accommodates values less than 1.) Because life insurance revenue and GDP fluctuate from your to year and we are using the measure to gauge long-term trends, *contract-intensive economy (CIE)* is the 10-year moving average of the resultant. As can be seen in Appendix A, the measure can be reconstructed with only seven lines of Stata code drawing from publicly available data sources linked in the bibliography.

To gauge the levels of freedom of speech and association in countries, we draw on the Varieties of Democracy (V-Dem) dataset, version 12 (Coppedge et al., 2021; Pemstein et al., 2021). The V-Dem data offers a host of democracy-related measures constructed with consideration of intercoder reliability of multiple country experts. We draw on V-Dem's *Political Civil Liberties Index* (*v2x_clpol*) variable, which considers the liberties of "freedom of association and freedom of expression" as "the most relevant for political competition and accountability" in countries (Coppedge et al., 2021, p. 294). The index is "formed by point estimates drawn from a

Bayesian factor analysis model" (Coppedge et al., 2021, p. 294), including the following indicators: government censorship effort—media, harassment of journalists, media self-censorship, freedom of discussion for men and women, freedom of academic and cultural expression, party bans, barriers to parties, opposition parties' autonomy, civil society organization entry and exit, and civil society organization repression. The variable *civil liberty* ranges between .01 and .99 and has a strong normal distribution, with a median of .56, mean of .53, and skewness (–.11) and kurtosis cores (1.43) close to 0.

To gauge GDP *per capita*, we use the *e_migdppcln* variable provided in the V-Dem dataset, which is the natural logarithm of gross domestic product (GDP) *per capita* as determined by the Maddison Project Database (2018), version 2-11 (Bolt & van Zander, 2018).

We report static and dynamic models and seek to isolate the causal effect of economic norms on civil liberty by randomizing the treatment on the population. We were able to conceive of two factors that seem plausible instruments for civil liberties: temperate climate and state age. Temperate climates are arguably more conducive than tropical climates to the emergence of contract-intensive economy because temperate climates are associated with grasslands where small, family-owned farms have historically been able to prosper selling agricultural surpluses in the marketplace. Although exceptions exist, tropical climates have been historically more associated with sugar, tobacco, and rice production—crops that have traditionally been profitable only with large enterprises and government support, including forced labor, as occurred in the infamous slave camps of the Americas. As such, lower average temperature may be a historical cause of contract flows, whereas higher temperature may act as a force retaining gift-exchange flows. We obtained average annual temperature data for most countries from the World Bank Climate Change Portal (2020), and call it *climate*.

Like temperate climate, we can imagine how the age of a country can promote contract-intensive economy. Younger countries are more likely than older ones to have been colonies, and the European imperial powers normally imposed unfair trading practices on them, which would inhibit the growth of their marketplaces (see also Acemoglu & Robinson, 2012). State age directly reflects how long a state has been free from foreign-imposed unfair trading practices, and thus the time a country has had to develop a contract-intensive economy. We thus calculated *state age* as country sovereignty, as determined by the Correlates of War (COW; see Singer et al., 1972) project.

While climate and state age are potentially strong and valid instruments, it is prudent to consider extraneous factors that could account for any relationships between the instruments and the dependent variable. Sokoloff and Engerman (2000) argued that the traditional crops of less temperate regions of the Americas—tobacco and rice—were more conducive to economies of scale than the grains of more temperate regions, giving rise to the extreme inequalities of the slave camps. They suggest that if governing institutions are path-dependent and extreme inequality impedes democracy, then temperate climate may be a cause of democracy. Likewise, state age could conceivably be linked with institutional capability, which could perhaps promote democracy.

Either pathway toward political rights would violate the exclusion restriction of the instruments. We thus include two additional controls in the I-V analyses: the percentage of population with suffrage and state authority over territory. If the effect of climate on democracy passes through historically embedded institutions, as posited by Sokoloff and Engerman (2000), then control for percentage of population with *suffrage* (V-Dem's variable *v2x_suffr*) should block this channel and enhance the validity of the instrument. If the effect of state age on democracy passes through institutional capability, then control for a *state authority* over its territory (V-Dem's variable *v2svstterr*) should block this channel and enhance the validity of the instrument.

With the independent variables lagged one year behind the dependent variable, the merging of the data yielded a sample of up to 173 countries identified by the COW over the years 1961 to

2019 with data on both civil liberties and CIE, with 161 of these having data on GDP. All outputs and source data and Stata do-files used in making and analyzing the data can be downloaded at https://sciences.ucf.edu/politics/person/michael-mousseau/.

Results

As expected, CIE and GDP *per capita* have a moderately high correlation of .76, corroborating the possibility that in prior studies GDP *per capita* has correlated with democracy or democracy-related institutions because it proxies for a contract-intensive economy. If this hunch is correct, consideration of CIE should cause the remaining (uncorrelated with CIE) variance in GDP to have no significant relationship with civil liberties.

As can be seen in Model 1 in Table 1, the coefficient for GDP *per capita* (1.40) indicates a positive impact on civil liberty over the 1961 to 2019 period of observation. The *t*-value of 10.67 indicates a highly robust coefficient. This result corroborates countless studies in the democracy literature: There is something about GDP that associates it with democracy or democracy-related institutions (Boix & Stokes, 2003; Dahl, 1997).

Model 2 examines if the feature of GDP *per capita* that associates it with civil liberty is a contract-intensive economy. As can be seen, the coefficient for CIE (1.78) is positive and significant. The *t*-value of 7.97 shows that the factor is highly robust. This is an important outcome, for it corroborates our central hypothesis that higher levels of contract norms in a society help institutionalize democratic civil liberties.

Also in Model 2, the coefficient for GDP *per capita* (.12) is near 0 and insignificant. This too is an important outcome, for it corroborates our hunch that in prior studies GDP *per capita* has correlated with democracy or democracy-related institutions because it proxies for CIE. If GDP had a causal effect on civil liberties independent of CIE, then its variance uncorrelated with CIE in Model 2 would have a significant relationship with civil liberties. It thus appears that factors associated with GDP but not reflective of asynchronous contracting—such as spot trades, income, production, or expenditures—may not influence a country's level of democracy or democracy-related institutions.

It can be seen also in Table 1 that the model R-square increases substantially from .24 in Model 1 to .38 in Model 2. For comparative purposes, we made the sample sizes of the two estimates identical by dropping missing values in CIE from the analyses of Model 1 (1,188 data

Table 1. Contract-intensive economy and democratic civil liberties, 1961–2019.

Civil liberty index		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Contract-intensive economy$_{t-1}$	β	–	1.78*	1.86*	2.11*	.76*	0.04*
	SE	–	.22	.30	.22	.22	0.01
	T	–	7.97	6.13	9.74	3.42	2.77
GDP *per capita*, ln$_{t-1}$		1.40*	.12	−.18	.07	−.83^	−.02
		.13	.22	.25	.20	.33	.01
		10.67	.57	−.73	.34	−2.50	−1.74
Lagged civil liberty		–	–	–	–	–	.98*
		–	–	–	–	–	.00
Intercept		−0.62*	.26	.54*	.21	1.06*	.02*
		0.11	.16	.19	.14	.26	.01
R-squared		0.24	.38	.24	–	.12	.98
CIE listwise deletion		–	–	✓	–	–	–
CIE multiply imputed		–	–	–	✓	–	–
Fixed effects		–	–	–	–	✓	–
Dynamic		–	–	–	–	–	✓

Notes: Standard errors clustered by country, with 7,332 observations, including 161 countries, except Model 3, in which zero values in CIE are treated as missing with 5,073 observations including 150 countries. Independent variables multiplied by 10 for presentation purposes. *$p < .05$, ^$p. < .05$ but wrong direction, two-tailed tests.

points). Accordingly, the difference in R-square values of Models 1 and 2 indicates that knowledge of economic norms alone provides a substantial 14 percent boost over our prior understanding of GDP as a correlate of democracy or democracy-related institutions.

Models 3 and 4 examine the robustness of CIE without the assumption that missing values indicate little or no life insurance sector in an economy. Model 3 reports the results with listwise deletion, with the 31 percent of cases in the CIE measure with missing values assumed 0 dropped. As can be seen, the coefficient for CIE (1.86) is positive and highly robust, and the coefficient for GDP (−.18) is not. Model 4 reports the results with missing values in CIE estimated with multiple imputation. Again, the coefficient for CIE (2.11) is positive and highly robust, and the coefficient for GDP (.07) is not.

Models 5 and 6 examine for fixed effects and serial correlation. Model 5 adds time and country fixed effects, to account for any unmeasured confounders that may vary across time and between countries. As can be seen, the coefficient for CIE (.76) is positive and robust, and the coefficient for GDP (−.83) is significant but in the wrong direction. Model 6 includes the lagged dependent variable on the right-hand side. The finite distributed lag model is in the logic of Granger causality in that the dependent variable "can be better predicted from the past of X and Y together than the past of Y alone" (Freeman, 1983, p. 328). Again, the coefficient for CIE (.04) is positive and robust, and the coefficient for GDP (−.02) is not.

Next, we consider potential confounders: factors that might account for civil liberties and contract-intensive economy and thus possibly explain the relationship between them. The broader economy and democracy literature yields many candidate confounders. Fortunately, the V-Dem dataset contains many such proxies: *education* (*e_peaveduc*), *fertility* (*e_miferrat*), *life expectancy* (*e_pelifeex*), *civil war* (*e_miinterc*), *inequality* (in education, *e_peedgini*), *urban* (percentage of population, *e_miurbani*), and economic *growth* (*e_migdpgro*) (Coppedge et al., 2021).[3] We also control for procedural (as opposed to substantive) democracy with the measure suffrage discussed above, which is defined without regard to rights, and institutional quality with state authority over territory with the measure state authority discussed above, which is defined without regard to state impartiality.

A 10th factor we consider is *social security*, as the more a government takes care of its elderly the less need a people may have for life insurance. We could not find cross-national data on retirement pensions, so we proxy social security with the World Bank measure *expenses (% of GDP)*, which is government expenses as a percentage of GDP and we call *government expenses* (World Bank, 2021).

To avoid problems of sample truncation and multicollinearities (Achen, 2005), we estimated each factor separately. As can be seen in Table 2, the coefficients for CIE are positive and robust in every estimate. Of the potential confounders, only inequality in Model 7 (−.44) is significant.

Table 3 repeats Table 1 but replaces the dependent variable with an alternative gauge of civil liberties: *press freedom*. If our thesis is on track, contract-intensive economy should affect a range of civil liberties in countries. We selected press freedom as the most obvious and direct implication of our thesis, given our argument that when many in a society are dependent on trusting strangers in contract, they value a free press as a rule-of-thumb mechanism for having confidence that few are cheating or gaming the system, including state officials. We gauged press freedom with V-Dem's measure *v2mecenefm*—one of the constituent terms of V-Dem's *Political Civil Liberties Index* (Pemstein et al., 2021).

As can be seen in Table 3, the results are identical to Table 1. In Model 1 the coefficient for GDP *per capita* (6.90) indicates a positive and robust impact on press freedom. In Model 2, however, we can see that the coefficient for CIE (8.03) is positive and highly robust, and the coefficient for GDP (1.63) is closer to 0 and not significant. As in Table 1, consideration of CIE yields a substantial increase in model R-square, indicating that economic norms alone provide a substantial 10 percent boost over our prior understanding of GDP as a correlate of press freedom in

Table 2. Contract-intensive Economy and Civil Liberties with Potential Confounders

a

Civil liberty index	Model 1 β	Model 1 SE	Model 2 β	Model 2 SE	Model 3 β	Model 3 SE	Model 4 β	Model 4 SE	Model 5 β	Model 5 SE
CIE	.61	.23*	.46	.23*	.57	.21*	.56	.25*	.57	.21*
Education	.00	.02	–	–	–	–	–	–	–	–
Fertility	–	–	–.02	.01	–	–	–	–	–	–
Life expectancy	–	–	–	–	.00	.00	–	–	–	–
Civil war	–	–	–	–	–	–	–.04	.03	–	–
State authority	–	–	–	–	–	–	–	–	.00	.00
Intercept	.43	.07*	.54	.08*	.42	.16*	.43	.02*	.40	.16*
R-square		.31		.31		.27		.28		.28
N		6,649		7,711		7,802		4,710		7,852
Countries		137		171		172		169		173

b

Civil liberty index	Model 6 β	Model 6 SE	Model 7 β	Model 7 SE	Model 8 β	Model 8 SE	Model 9 β	Model 9 SE	Model 10 β	Model 10 SE
CIE	.57	.21*	.61	.23*	.57	.25*	.62	.22*	.62	.30*
Suffrage	.07	.08	–	–	–	–	–	–	–	–
Inequality	–	–	–.44	.18*	–	–	–	–	–	–
Urbanization	–	–	–	–	.26	.38	–	–	–	–
Growth	–	–	–	–	–	–	.03	.05	–	–
Government expenses	–	–	–	–	–	–	–	–	.00	.00
Intercept	.35	.07*	.66	.10*	.36	.11*	.40	.03*	.54	.06*
R-square		.29		.44		.26		.30		.15
N		7,854		5,429		4,393		7,322		3,308
Countries		173		134		161		161		136

Notes: Time and country fixed effects estimates with standard errors clustered by country. All independent variables lagged one year behind the dependent variable. "CIE" acronym for Contract-intensive Economy. CIE multiplied by 10 and Inequality by 100 for presentation purposes. $*p < .05$, two-tailed tests.

Table 3. Contract-intensive economy and democratic freedom of the press, 1961–2019.

Press freedom		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Contract-intensive	β	–	8.03*	9.18*	9.54*	3.00*	.34*
Economy $_{t-1}$	SE	–	1.25	1.64	1.15	1.00	0.08
	T	–	6.42	5.59	8.31	3.01	4.32
GDP per capita, ln $_{t-1}$		6.90*	1.63	1.04	1.45	–.50	–.04
		0.85	1.08	1.33	1.01	1.42	.05
		8.09	1.51	.78	1.42	–.35	–.75
Lagged civil liberty		–	–	–	–	–	.97*
		–	–	–	–	–	.00
Intercept		–5.71*	–1.83*	–1.28	–2.40*	–.12	.02
		0.67	.83	1.02	.75	1.14	.04
R-squared		0.29	.39	.30	–	.23	.96
CIE listwise deletion		–	–	✓	–	–	–
CIE multiply imputed		–	–	–	✓	–	–
Fixed effects		–	–	–	–	✓	–
Dynamic		–	–	–	–	–	✓

Notes: Standard errors clustered by country, with 7,329 observations including 161 countries except Model 3, in which zero values in CIE treated as missing with 5,073 observations including 150 countries. Independent variables multiplied by 10 for presentation purposes. $*p < .05$, two-tailed tests.

countries. Model 3 shows identical results with missing values assumed 0 dropped, and Model 4 shows identical results with these values multiply imputed. Models 5 and 6 report identical results with consideration of time and country fixed effects (Model 5) and the dynamic specification as a check for serial autocorrelation (Model 6).

Table 4. Contract-intensive economy and democratic civil liberties, instrumental variable analyses.

	Civil liberty index				Press freedom			
	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Contract-intensive economy	.11	.03*	.12	.02*	.90	.22*	.80	.13*
Inequality	−.08	.02*	–	–	−.24	.10*	–	–
Suffrage	−.01	.01	.00	.01	−.06	.07	−.02	.04
State authority	.00	.00	.00	.00	.00	.00	.00	.00
Lagged dependent variable	.94	.01*	.95	.00*	.91	.01*	.92	.01*
Cragg-Donald F > Stock-Yogo		Yes		Yes		Yes		Yes
Under-ID (Kleibergen-Paap)		29.10		61.01		27.45		68.56
P-value Kleibergen-Paap		<.0001*		<.0001*		<.0001*		<.0001*
Hansen J		.026		.017		.607		.427
P-value Hansen J		.8712		.8948		.4360		.5135
Wooldridge F		.47		.88		3.10		2.30
P-value Wooldridge F		.4939		.349		.0806		.1212
R-squared		.93		.94		.90		.89
N		5,429		7,852		5,429		7,852
Countries		134		173		134		173

Notes: CIE instrumented by climate (t-1) and state age (t-1). Country fixed effects with standard errors clustered by country. CIE multiplied by 10 and inequality by 100 for presentation purposes. *$p < .05$, two-tailed tests.

Table 4 examines for reverse causality by instrumenting CIE with data on climate and state age. As discussed, we include the factors suffrage and state authority to enhance the validity of the instruments. We include control as well for inequality, which appears as the only potential confounder to have a significant impact on political rights in Table 2.

As can be seen, the instruments appear valid and strong in all models, for both civil liberty (Models 1 and 2) and press freedom (Models 3 and 4). The Cragg-Donald F statistics are greater than the Stock-Yogo critical values in all estimates, signifying that the instruments are not weak. The Kleibergen-Paap under-identification tests yield significant scores, indicating that all the models are identified and the instruments are relevant. And in all models the Hansen J tests for over identification are insignificant, indicating that the instruments are uncorrelated with the error terms and we can reject the null hypotheses that the estimators are weakly identified. The insignificance of the Wooldridge F-tests indicates that the variables can be treated as exogenous.[4]

As can be seen, the coefficients for CIE are positive and highly robust in all four models. Inequality also has a robust negative impact on civil liberty (Model 1) and press freedom (Model 3). Due to the significance of inequality, Models 2 and 4 are arguably underspecified. We report them for assurance that the coefficients for CIE in Models 1 and 3 are not fluke results of the severely truncated samples resulting from consideration of inequality.

Given the seeming validity of the instruments, it seems the causation *from* contract-intensive economy *to* civil liberties has been tentatively isolated: We can be reasonably confident that what we are seeing is not a consequence of reverse causation, of civil liberties causing contract-intensive economy (Leigh & Schembri, 2004, p. 286). The coefficients for CIE indicate that a change from the 10th to 90th percentile in a contract-intensive economy is associated in the long-run with a sizable 47 (Model 1) to 64 (Model 2) percent increase in local average treatment effect (LATE) across the V-Dem index of civil liberty, and a 40 (Model 3) to 42 (Model 4) percent increase in LATE across the V-Dem measure of press freedom.

Implications and conclusion

We began this study with the observation that the association of GDP *per capita* with democracy and democracy-related institutions is well established but largely unexplained. We noted how Aytac et al. (2016) corroborated the possibility that the association of economy with polity may be a

function of the contract-intensity of national economies, and that measures of GDP *per capita* can proxy for the norms of commercial contracting in countries. While Aytac and colleagues (2016) corroborated the linkage of contract-intensive economy with a measure for democracy, we elaborated how democracy must also be liberal: that, in addition to elections, citizens dependent on contracting with strangers and thus an impartial state must also have the capacity to effectively monitor officials with a free press and challenge a state's partialist behavior by organizing opposition political parties.

Analyses of most countries from 1961 to 2019 yielded robust support for our hypothesis: Contract-intensive economy appears to have a positive and significance impact on democratic civil liberties, and once it is considered, GDP *per capita* has no association with the democratic rights of free speech and association in countries. In further tests we show the same results for analyses of press freedom, with consideration of time and country fixed effects, and with a battery of potentially confounding variables. Using climate and state age as instruments, we were able to statistically isolate the causation *from* commerce *to* civil liberties, and thus the results are not likely attributable to measurement error, omitted variable bias, or reverse causality. We also found the impact of economic type on civil liberty to be highly robust: A change from the 10th to 90th percentiles in contract-intensive economy is associated in the long run with a 47–64% increase in LATE across the V-Dem index of civil liberties, and a 40–42% increase in LATE across the V-Dem measure of press freedom.

We think there are two primary implications of this study. First and foremost, we have added to the growing literature that has shown that economic norms have significant and substantial effects on countries' democratic institutions (e.g., Aytac et al., 2016; Boehmer & Daube, 2013; Enia, 2018; Enia & James, 2015; Krieger & Meierrieks, 2015; Meierrieks, 2012; Mousseau, 2000, 2009). The existence of different economic norms in societies has been known and widely documented in the social science discipline for over a century. This fact, coupled with the accumulating evidence, must compel researchers of democracy to consider the potential explanatory power of economic norms.

Second, results of this study should encourage scholars to investigate how different conceptualizations and measures of economic wealth may affect democracy and civil liberties. This study offered contract-intensive economy as a direct measure of asynchronous contracting—thus offering a measure that can differentiate the long-known economic norms of gift-giving and contracting. We showed how contracting economic norms can affect democratic values and institutions, but we did not dwell on how norms change. Because the evidence continues to accumulate that economic norms matter for democracy and conflict, future research might explore the question of how societies come to embrace the commercial norms of contracting—one of the core quests of the classical sociologists such as Durkheim and Weber. If contract-intensive economy matters in the establishment of democratic civil liberties, the next policy question is how to promote the commercial norms of contract in countries burdened with dictatorship.

Notes

1. Sometimes, the expansion of property rights can include the right to own people, in the form of chattel slavery, as practiced in the British colonies of North America. If commerce continues to rise, however, the influence of freeholders can surpass the influence of slaveholders, and freeholders would increasingly feel threatened by slavers because they are not playing the same rules of the game. Plausibly, this gave rise to the antislavery movement in Britain and the US northern states, which eventually ended the practice of slavery in these lands.
2. We identify net-emigrant country-years from the United Nations (2019) measure *net-immigration rate* (per 1,000 inhabitants), which covers most countries from 1950 to 2020 (these data are in five-year segments, we interpolated missing years). The United Nations measure includes noncitizens and thus war-related refugee flows. To smooth out war shocks, we transformed the measure to the inverse hyperbolic sine and then calculated the 15-year moving average; we used the positive-displaced moving average to treat net-positive country-years as net-negative if they were not sustained.
3. We draw on inequality in education rather than income to have a much larger number of datapoints.

4. To comply with the requirements of the time-series aspect of the dynamic analyses (Boef & Keele, 2008), we first experimented with a variety of specifications, moving from the general model to various restrictions. The lowest (best) Schwarz Information Criterion score was produced by the finite distributed lag model.

Disclosure statement

The authors declare that they have no conflict of interest.

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Appendix A. All information needed for replicating the measure contract-intensive economy

Three data sources

1. World Bank Financial Structure Database (Čihák, 2012). The variable *DI09* indicates life insurance penetration covering 74 percent of country years covered by the Penn World Tables from 1990 to 2019. An earlier release of the variable *Penetration* (called *INSLIFE*) by Beck et al. (2010) has values for many countries as far back as 1960.
2. United Nations (2019). The variable *net-immigration rate* is in five-year segments from 1955 to 2020.
3. Penn World Tables (Feenstra et al., 2015). Variables *RGDPE* (GDP in constant purchasing power parity rates) and *population*.

Seven lines of state coding

1. replace DI09 = INSLIFE if DI09==.
2. bysort ccode: ipolate DI09 year, g (penetration)
3. g Density=((penetration/100)*RGDPE)/population
4. bysort ccode: ipolate Net-immigration Rate year, g (m)
5. tssmooth ma UNNIRihs = asinh(m), window (0 1 14)
6. replace density = 0 if density ==. & UNNIRihs <0 & UNNIRihs ~=.
7. tssmooth ma CIE = asinh(asinh(density)), window (5 0 5)