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A Sequence to Reverse Poverty: Institutions, State Capacity and Human Empowerment*

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Abstract

This paper explores the fundamental or *deep* causes of poverty persistence, which remains a central challenge of the modern world. In theory, rising political participation in a democracy operationalises checks on state predation and cultivates development-enabling state capacity. This did not materialise in post-colonial sub- Saharan Africa. The theoretical foundation of this premise is further brought into question by the development achievements of strong, capable non-democracies like Singapore and Hong Kong. This study uses a dynamic panel-data model specification and General Methods of Moments for a sample of 105 countries over the period 1981 to 2015 to explore a probabilistic development hypothesis that fuses broad institutionalism with modernisation and human empowerment. In this model, regime-independent state capacity is relied on to trigger the transformational impetus associated with rising existential security, autonomy and individual agency. Ensuing shifts in societal value orientations towards emancipative mindsets then drive the progression towards prosperity and liberty. The results show that the poor-country deficit in human empowerment, represented by mind-broadening education and emancipative values, dwarfs the shortcomings in all other drivers of prosperity, including exports and investment. The findings rule against geography and democracy as fundamental causes of poverty or prosperity.

Keywords: Poverty Reversal, Institutions, State Capacity, Human Empowerment

JEL codes: O430, I250, P160

1 Introduction

This study proposes a development sequence synthesised from formal institutional beginnings merged with modernisation theory (Lipset 1959) and human

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empowerment (Inglehart 1997; Inglehart and Welzel 2005, 2010; Welzel and Inglehart 2006, 2008, 2009; Welzel 2014). It embodies the notion that human traits matter in comparative development outcomes; moreover, societies' progression from poverty to prosperity and liberty emerges from within as societies transform in tandem with their changing environments. It would seem then that prosperity cannot be imposed, manufactured or fast-tracked. Like liberal democracy, sustained prosperity appears to hinge on institutional and human requisites.

Democracy, as the embodiment of people power through democratic mechanisms to make rules that prioritise broad societal over elite interests and enforce executive accountability in case of non-adherence, has come to be viewed as one such institutional requisite, or perhaps as a surrogate institution precipitating other development-enabling institutions. Well performing non-democracies like Singapore and Hong Kong as well as poorly performing democracies like Zimbabwe would suggest that it is not. Regime type is not the root of poverty or prosperity.[1] Other formal institutions however may be; according to the literature on state predation (Pritchett, Andrews and Woolcock 2010; Fukuyama 2014; Boettke and Candela 2019; Murtazashvili and Murtazashvili 2019), prosperity is rooted in *state capacity*; more specifically, a *strong capable state* constrained by rules that are *enforced*. Such a state is the antithesis of a predatory state. It prioritises the common good and achieves development-enabling, high-quality governance outcomes in democracies and non-democracies alike.

State capacity is not enough. Once a developing, modernising society is released from the chokehold of existential insecurity, it becomes possible to transform in material ways. As society's command over cognitive and material resources expands, so does its sense of agency, autonomy and individualism, along with its desire to express an *emancipative* set of values in all spheres of life. From this powerful social transformation known as *human empowerment* emerges a society strong enough to counterbalance a strong capable state; a state-society partnership characterised by strength on both sides creates the conditions from which prosperity and liberty are likely (but not guaranteed) to emerge (Welzel 2014; Acemoglu and Robinson 2019).

It would seem from the literature (Acemoglu and Robinson 2019) that prosperity and liberty may be interpreted as conceptually quite similar; both embody a human existence with freedom of choice, where cognitive and material resources aid the agency and autonomy to pursue individual choices, to self-actualise and achieve success. Liberty therefore entails, in addition to coercive constraint being absent, also freedom from economic servitude. Likewise, prosperity implies in addition to material resources, the autonomy and agency to

[1] Note that a recent study by Acemoglu *et al.* (2019) indeed produces results supporting a causal link between democracy and growth, challenging the findings of both Barro (1997: 1) that "more political rights do not have an effect on growth" and Gerring *et al.* (2005: 323) that "the net effect of democracy on growth performance cross-nationally over the last five decades is negative or null." Acemolgu *et al.* (2019: 96) predict that democracy would foster growth through "enacting economic reforms, improving fiscal capacity and the provision of schooling and health care, and perhaps also by inducing greater investment and lower social unrest", provided that GDP dynamics are controlled for.

participate freely in economic exchange in a way that promotes individual as well as broad, societal interests. So, liberty implies prosperity and prosperity implies a high degree of liberty. Hence prosperous but non-democratic Singapore and Hong Kong rank as the two *freest* economies globally, outscoring well-established democracies on freedom (as long as political participation in elections is not included). Where does democracy fit in? Much as we would like to believe it is narrowly associated with both liberty and prosperity, is a belief in democracy's instrumental qualities to achieve either (or both) of these unfounded?

This study approaches these fundamental questions from a wide angle; its contribution to the literature on poverty reversal and the subsequent drivers of the progression towards prosperity is in its *comprehensiveness* and *integration of interdisciplinary theories* to formulate and *test a development sequence* rooted in the broad, interdisciplinary approach. Scrutinising some *seeming* contradictions in the diverse literature on institutionalism and modernisation for instance, upon reinterpretation is found to reinforce rather than refute existing theory. Specifically, the study relies on a dynamic panel model specification and the General Methods of Moments estimator applied to a panel of 105 countries over the period 1981 to 2015, and empirical findings suggest that prosperity fails to materialise in societies where human empowerment, founded in individual agency, autonomy and an individualistic emancipative mindset, has not emerged. The trigger for this societal transformation, is a sense of existential security. This, it would seem, is where poverty proves perpetually limiting.

In Section 2, the study proposes a hypothesised development sequence, merging institutionalism and modernisation into a phased approach relying on regime-independent state capacity to forge the sense of existential security that is instrumental for human empowerment as driver of prosperity. It is a novel approach as much for its theoretical integration as its comprehensive institutional representativity[2] to explore some fundamental questions regarding poverty, prosperity, liberty, democracy and even geographic determinism. Section 3 elaborates on the significant limitations faced by a study of this nature, aiming to specify and test a model of the deep causes of poverty (or prosperity), while Section 4 describes and motivates the data selected for inclusion in the study. Section 5 presents a preliminary set of stylised facts that emerge from associations and correlations in the data. The empirical model is specified in Section 6, followed by a presentation of the findings, and in Section 7 the marginal effects of interest are reported. Conclusions follow in Section 8.

[2] Broad institutional representativity is achieved through the inclusion of all three of Douglass North's (see for instance 1990, 1991, 1992 and 2003) classes of institutions: first, the formal rules or constraints like laws and regulations; second, rule enforcement characteristics, as non-enforcement of rules has material consequences for the actual institutional outcomes that materialise, and third, the unobservable informal institutions like culture, values, norms, belief systems and mental models that may, according to North (2003), be a more important influence on human behaviour than the parchment rules.

2 The theoretical development sequence

This study proposes a three-phased development sequence aimed at interrupting and reversing a development-inhibiting cycle of state predation.

2.1 First, state capacity

The initial phase aims to *directly* – that is, without reliance on democratic processes of accountability – limit state predation and bolster state capacity. This is attempted through a combination of formal rules that limit political discretion in the appropriation and distribution of property, and impartial enforcement of these constraints through independent courts of law protecting citizens' property and contract rights.

The proposal that the poverty cycle should be interrupted through institutions (formal rules and enforcement of these rules) that establish *state capacity* – that is, a capable but *rule-bound* state – relies on scholarly work from the disciplines of institutional economics[3] and political science[4].

Douglass North (1990, 1991, 1992, 2003 and 2005) theorises that institutions are the deep cause of economic outcomes through their incentivising (or disincentivising) effects on society. North's (2003) formal institutions – the objective, *ex ante* parchment rules – dominate the empirical literature. Several studies emphasise the importance of property-right protection (North 1990; De Soto 2000; Platteau 2000; Rodrik 2000; Kerekes and Williamson 2008; Williamson and Kerekes 2009). In a seminal study, Hall and Jones (1999) illustrate the importance of anti-diversion rules that would prevent state predation and contribute to a growth-enabling social infrastructure. A further seminal work that influenced empirical work on formal institutions significantly, is the well-known paper by Acemoglu, Johnson and Robinson (2001) linking European settler mortality to modern-day institutional quality and economic outcomes. Subsequent studies emphasise constraints on the executive (see for instance Glaeser 2004), while several others explore specifically the efficacy of *democratic* constraints (Persson and Tabellini 2006, 2008 and 2009; Glaeser *et al.* 2007; Rodrik 2007). Apart from investigating the role of property-right enforcement through impartial courts of law (Hedlund 2001, 2005; La Porta *et al.* 2004), rule *enforcement* has received scant empirical attention in comparison. Taking enforcement of the rules into account shifts the institutional role towards the *actual* institutional environment that incentivises decision making, away from objective, *ex ante* rules. It is the institutional outcomes as they manifest in the quality of bureaucracy and governance that then matter for economic development (see

[3] See for instance North (1990, 1991, 1992, 2003 and 2005), North, Wallis and Weingast (2009), Acemoglu and Robinson (2008, 2012, 2013 and 2019), Acemoglu, Johnson and Robinson (2001, 2005) and Rodrik (2002, 2004 and 2007).

[4] See for instance Lipset (1959), Buchanan (1975 [2000]), Przeworski (2004a), Inglehart and Welzel (2005, 2009 and 2010), Welzel (2006, 2007 and 2014), Welzel and Inglehart (2006, 2008 and 2009), Bratton (2007) Fukuyama (2014), Inglehart *et al.* (2014), Welzel and Delhey (2015), Boettke and Candela (2019) and Vahabi (2019).

for instance a study by La Porta *et al.* 1998). Divorcing the rules from their enforcement outcomes risks more than being wrong about the role of institutions; it would not inform reality-rooted policy proposals well.

Interestingly, institutional *outcomes* appear to be regime-independent; in fact, early democratisation in a disempowered, non-emancipated society (as is found in chronically poor countries) may prove counterproductive for institutional quality (Landes 1998; Van de Walle 2003a, 2003b ; Keefer and Vlaicu 2004; Keefer 2005, 2007; Fukuyama 2014).[5] This body of literature sheds light on the observation that poverty reversal attempted through universal suffrage in post-independence sub-Saharan Africa has not achieved that objective,[6] while Singapore and Hong Kong have achieved prosperity without prior democratisation.

2.2 Second, human empowerment

Should institutional outcomes, or state capacity, enable economic development and growth, the second phase commences. Phase two is triggered by societies' growing sense of existential security when the chokehold of poverty loosens (Welzel 2014). Societies progressing beyond survivalist concerns as a developing economy transforms through industrialisation into a knowledge economy with an educated workforce, transform in important social ways (Lipset 1959; Inglehart 1997; Welzel, Inglehart and Klingeman 2003; Welzel 2014). As existential insecurity abates and a sense of autonomy and individual agency is cultivated among an educated, empowered middle class, an emancipative value orientation may emerge (Inglehart and Welzel 2005 and 2010; Inglehart *et al.* 2014 and Welzel 2014).

This phase embodies all the processes that cultivate human empowerment from *within* a society. It entails that society is liberated from the limiting impact of survivalist fears, has cognitive resources and acquires a sense of autonomy and individual agency, all of which culminate in shifts in mass value orientations towards emancipative mindedness. A society that is resourced in both material and cognitive terms, and incentivised by values that prioritise emancipative ideals of inclusivity, equality and universal freedoms, is an empowered society. Put differently, emancipative values establish modern individualism characterised by a cosmopolitan worldview encompassing inclusivity, equality and out-group trust. Cultivating an emancipative mindset constitutes the *cultural* transformation towards human empowerment. (Inglehart *et al.* 2014). Given how encompassing the social transformation from disempowered to empowered is, it becomes clear that human empowerment cannot be manufactured or imposed by formal reform. It has to emerge from within and is cultivated

[5] The assertion that universal suffrage in a society that has not undergone the empowering and emancipating transformation of modernisation may jeopardise economic development supports Lipset's (1959) finding that effective democracy becomes more likely after economic development.

[6] The South African experience since 1994 is a recent example of deteriorating poverty and inequality after democratisation.

over time if country specifics allow.

Emancipative values as the socio-cultural component of human empowerment is also representative of the informal institutional component in the development sequence, and constitutes a specification of informal institutions broad enough to include aspects like social capital, social networks and trust (Inglehart *et al.* 2014). Some early explorations of the role of informal institutions or culture in economic development include Greif (1994), Harrison and Huntington (2000), Platteau (2000), Barro and McCleary (2003), Guiso, Sapienza and Zingales (2003, 2006), Tabellini (2005), Knowles and Weatherston (2006), and Williamson (2009). Studies linking social capital and trust positively with economic development are Putnam (1993), Knack and Keefer (1997), La Porta *et al.* (1997) and Tabellini (2005).

Education has a prominent role in emergent human empowerment. Cognitive resources are crucial in a knowledge society to breed the sense of autonomy and individual agency that in turn cultivates emancipative values (Welzel 2014). While Welzel (2014) expounds the impact of education as a resource that shifts societies upward along the utility ladder of freedoms, cultivating emancipative values in the process, Glaeser, Ponzetto and Shleifer (2007) emphasise the socialisation attributes of education. In addition to educational content, it also teaches members of a society the skills to engage productively and constructively with one another. Helliwel and Putnam (2007: 1) nominate education as the most accurate predictor of all sorts of social engagement, "from voting to chairing a local committee to hosting a dinner party to trusting others". Social interaction requires coordination and an efficient exchange of information. Education facilitates these processes through the acquisition of the skills that are needed to interact constructively with other members of society and also with useful information (Glaeser, Ponzetto and Shleifer 2007: 83):

"Educated people are better able to express what they know, to inform, and to persuade. They are also better able to acquire new information, to understand, and to learn. Schooling also teaches rules of behavior that make a discussion between educated people both more informative and less likely to degenerate into a quarrel."

Several scholars (see for instance Easterlin 1996, Landes 1998, and Morson and Schapiro 2017) emphasise that unless education is of the right kind, that is of a secular, rationalistic kind, it merely reinforces existing mental models and worldviews, and its empowering impact is muted.

2.3 Third, liberty and prosperity, and perhaps liberal democracy

Should societies internalise an emancipative national culture and empowerment becomes embedded, phase three of the development sequence may be introduced. During this phase, the mobilisation of an empowered middle class raises the likelihood that liberty becomes formalised in an effective, liberal democracy (Lipset 1959; Inglehart and Welzel 2005, 2009 and 2010). Moreover, given that

liberty implies the individual freedom to pursue material success, these conditions not only serve liberty as a societal outcome, but also prosperity. It seems possible however, again citing the prosperity and freedom of the citizens of Singapore and Hong Kong, that liberty and prosperity may materialise without formalising these outcomes in a democratic regime.

The implications of this theoretical sequence are that although suffrage may be instituted at any developmental stage, it precipitates neither liberty nor prosperity unless supported by substrate of an emancipated, empowered society. Effective, liberal democracy cannot coexist with poverty and the disempowerment it signals. Hence democracy can, theoretically, not deep-cause liberty and prosperity. The likelihood of effective, liberal democracy as an *outcome* becomes elevated in an empowered society (Inglehart *et al.* 2014). Societies dominated by survivalist strategies and emancipatively-minded societies view democracy with very distinct expectations; the latter focuses on its empowering characteristics rather than the potential material gains and existential security that may be derived from it. The societal transformations that are likely to produce liberty and prosperity therefore also create the conditions from which liberal democracy is more likely to emerge.

The question then arises whether marginal benefit is to be had from democracy where societal wellbeing already benefits from the liberty that prosperity brings, and the prosperity that comes with liberty. The theoretical sequence suggests that although not instrumental in establishing liberty and prosperity, democracy clinches a self-actualised human existence in a society that has traversed the empowerment path successfully. It should be noted that none of these outcomes is guaranteed; the hypothesised sequence is probabilistic rather than linear or deterministic. The literature is clear that setbacks and reversals abound (Inglehart *et al.* 2014; Welzel 2014).

The literature has taken the finding that *democracy* does not cause growth and development as a refutation of institutionalists' claim that institutions are the deep cause of economic development. Instead, it is viewed as support for the claim of Lipset's (1959) early modernisation theory that economic development is one of the social requisites that render stable democracy more likely. Institutionalism and modernisation are conceptually dissimilar – the former probes deep causes of *development*, the latter probes the mechanisms that cause and sustain liberal democracy. Rather than being in tension, they in fact appear to be complementary, explaining different phases in a development sequence. Thus, institutions do cause poverty reversal and economic development. Democracy is just not (automatically) one of them. This conclusion relies on viewing institutionalism broadly, not just as broader than formal regime type, but also as broader than parchment rules; the impact of rules is filtered through the degree of their enforcement. Including informal institutions more broadly than social-capital notions (like generalised trust) to be representative of mass societal value orientations or national culture, is equally important (Inglehart *et al.* 2014; Welzel 2014).

2.4 Geography as a deep cause of poverty of prosperity

Countries' geographies frequently feature in the deep-cause literature; causal channels of transmission remain disputed however.[7] Widely acclaimed and tested in this literature, is Diamond's (1997) assertion that Eurasia benefited from an advantageous geography that assisted a transition from hunting-gathering to agriculture during the Neolithic Revolution. The geographical advantages included a pre-historic diversity of domesticable animals and plants and an East-West continental axis that facilitated the diffusion of agricultural technology and the production of an agricultural surplus. Early technological innovation accelerated, with a lasting impact on comparative development. Eurasian descendants then used their technology – "guns" and "steel" (Diamond 1997) – as well as their disease resistance (to "germs" according to Diamond) to dominate regions with a less favourable prehistoric biogeographic endowment; also, these regions lagged in contemporary development outcomes.

Diamond's theory centres on the geography-aided rapidity of the transition from hunting-gathering to agriculture and mass food production, which in turn facilitated advances in technology and development. Diamond's specific conceptualisation of geographic advantage is biographic endowment of domesticable animals and plants, and an east-west directional axis as opposed to a north-west orientation that proved a barrier to the diffusion of agricultural technology. Olsson and Hibbs (2005) offer empirical support for Diamond's thesis.

An alternative geographical path to explain divergence in modern-day development similarly relies on the disparities in technological innovation, but proposes that these disparities are explained by countries' cool-water conditions rather than biogeographic variations. High cool-water rankings would point to geographic properties that favour both water autonomy to facilitate independent small-scale agriculture, and disease security. Cool-water advantages foster existential security, which in turn, breeds individual agency and individualism. These geographic traits are associated with distributions of power and owner-

[7] Several scholars (Myrdal 1968; Kamarck 1976; Masters and McMillan 2001) contend that geographic country traits affect modern-day productivity and development outcomes directly, while some link lagged development directly to countries' disease environment (Bloom and Sachs 1998; Sachs, Mellinger and Gallup 2001; Sachs and Malaney 2002; Sachs 2003), natural-resource endowment (Sachs and Warner 2001), or terrain characteristics (Nunn and Puga 2012). Easterly and Levine (2003: 3) however find "no evidence that tropics, germs, and crops affect country incomes directly other than through institutions...". Diamond (1997) proposes that prehistoric biogeography drove the rapidity of regions' transition to agriculture and technological advancement, setting the course for modern-day development disparities. Olsson and Hibbs (2005) present empirical proof for this view. Yet another alternative view proposes that the 1500s germ environments determined whether European colonisers settled in colonised territories permanently or temporarily, causing them to establish a lasting legacy of either extractive or inclusive institutions (Engerman and Sokoloff 1997, 2002; Acemoglu, Johnson, and Robinson 2001, 2002; Easterly and Levine 2003). A view supported by Landes (1998), Glaeser *et al.* (2004), Easterly and Levine (2012), and Spolaore and Wacziarg (2013) proposes that comparative development patterns cannot be separated from human traits. Modern-day populations and societies inherit ancestral traits through a complex web of biological and cultural interaction; environmental factors have an essential role in these interactions.

ship that are horizontal rather than vertical, with lasting effects on modern-day liberty and prosperity (Welzel 2014). Hot and dry climates are associated with persistent vertical societal dynamics characterised by dependency and exploitation that may perpetuate poverty unless societies rewrite the rules.

The cold-water thesis proposes that existential security and autonomy are preconditions for the technological advancement that could liberate societies from the constraints of survivalism and authoritarian orders. The association between cool-water conditions and technological innovation emerges from the early forms of existential security and autonomy they fostered. While disease security would have an obvious positive effect on productivity and innovation, the role of water autonomy, described as "equal, easy and permanent access to safe and clean water for all individuals" in the accelerated technological progress of high cold-water zones is described as choking off a route to despotism and weakening the control of rulers over their subjects (Welzel 2014: 340). Welzel (2014: 341) finds an:

"astonishingly strong effect of the CWI on technological advancement in 2005. If we refer to both disease security and the CWI, these two natural endowments explain fully 90 percent of the cross-regional variance and 74 percent of the cross-national variance in contemporary technological advancement around the world ... Under mutual control, the CWI accounts for 72 percent of the global cross-regional variance and 45 percent of the cross-national variance in technological advancement ... This justifies a focus on the outstanding impact of the CWI."

The role of geographic variation in the deep-cause context continues to raise the question whether poor countries' fate has been sealed in deterministic fashion by unfavourable geographies; the particular channels of transmission also remain contentious. Or is geography paradoxically only destiny when human resourcefulness fails to disallow geographic disadvantage to cast a lasting shadow? Hence this study investigates whether cool-water conditions rather are instrumental in establishing the existential security, individual agency and autonomy that are the hypothesised drivers of empowering national cultures and the progression towards prosperity and liberty.

2.5 The theoretical model in functional form

Viewing prosperity as the measureable opposite of poverty on the continuum of material wellbeing and given that it can be motivated from the literature to imply liberty, it is used as the dependent variable in the hypothesised deep-cause model of poverty reversal. In function form, the model may therefore be written as:

$$\Pr osperity = f(state\ capacity; human\ empowerment; liberal\ democracy; geographical\ traits)$$

where state capacity constitutes the institutional intervention aimed at interrupting state predation to establish a capable but constrained state. These

constraints are embodied in regime-independent *formal* rules and the *enforcement* of these rules that are likely to establish development-enabling governance in any type of formal regime. The next phase, human empowerment and emancipation, ensues if existential insecurity subsides. Emancipative values augmented by mind-broadening education are viewed as the socio-cultural component of human empowerment and in this sense may be considered representative of *informal* institutions as formulated by Douglass North. Hence, through state capacity and human empowerment, the theoretical model specification includes all three classes of institutions.

Given scholarly focus on the relationship between democracy and economic outcomes, liberal democracy is included separate from state capacity as a variable of interest to investigate whether it is potentially a threshold or gateway condition for prosperity to be achieved. Geographical traits are included as well, given its prominence in the deep-causes literature. The role of geographic country traits in modern-day economic outcomes informs the debate on whether poverty is in fact the deterministic fate of geographic disadvantage, or a product of human agency.

3 Substantial limitations

Poverty is a much older phenomenon than prosperity; in fact, prior to the broad and lasting prosperity that emerged from the era of modern growth following the Industrial Revolution, poverty was the prevailing condition. The majority of the world's population have found their way out of poverty, with the onset of modern growth from 1820[8] onwards. Hence, to trace the pioneering countries' transmission sequence out of poverty would pose significant data challenges. The institutional focus of this study has been broadened deliberately to incorporate not just formal, *ex ante* parchment rules – or, in an even more restrictive approach, regime type only – as institutional representative, but also less observable and measureable *informal* institutional traits and rule *enforcement* characteristics.

A number of complications arise from this broad approach. First, tracking the evolutionary sequence of both the economic and human development of the contemporary prosperous and liberal democracies *from its nineteenth-century inception* requires time series on relevant institutional variables that do not exist. Given that the range of available data is shorter than would have been ideal for a deep-causes study, *deep* causes in the context of this study adopts the meaning of the *fundamental* causes of the proximate causes (North and Thomas 1973; North 1990 and Acemoglu, Johnson and Robinson 2005). Data on informal institutions are most reliably found in the World Values Survey that has been conducted globally in six waves[9], with the first wave commencing in

[8] Although 1650 already marked the end of the Malthusian trap in the United Kingdom, when population growth and economic growth became simultaneously positive for the first time (Our World in Data).

[9] The seventh wave was recently completed, and the results are scheduled for release in July

1981. All time series have hence been adapted to only commence from 1981 onwards, at which date the prosperous liberal democracies were already that: prosperous and liberal. Tracking their evolutionary sequence out of poverty and repression over two centuries is therefore not possible.

On the matter of data constraints, a further complication emerges from the *nature* of variables that seem to matter crucially for economic and human development. They are often qualitative and not observable. The *degree* of rule enforcement and subsequent *quality* of the *actual* as opposed to the parchment-rule institutional environment are for instance not objectively measureable. Similarly, attempting to reliably quantify people's *values* and *beliefs*, as well as their *sense* of existential security and *sense* of individual agency clearly complicates endeavours to produce concrete evidence on how these variables enter the transmission sequence. The study therefore relies on survey outcomes of perceptions as they appear in indices like Economic Freedom of the World (EFW) and the World Values Survey (WVS).

An additional, rather challenging complication arises from endogeneity concerns. There is no denying that prosperous countries where an empowered citizenry enforces accountable governance that prioritises the common good over elite interests are more likely to sustain high-quality institutions and governance. Institutional safeguards against an extractive elite and other forms of predation through protection of property rights and contract enforcement are likely to incentivise entrepreneurial risk-taking, investment, education and innovation – all of which support society's prosperity and wellbeing. Hence Acemoglu and Robinson's (2013) reference to vicious and virtuous *cycles*. In a vicious extractive cycle, the influential elite dictates rules that serve their material interests, then gains further political influence through their growing fortunes in a ruinous cycle where political and economic outcomes reinforce each other cumulatively, while the gap between the wealthy elite and poor masses widens perpetually. Similarly, liberal democracy is more likely to be sustained in an empowered, emancipatively-minded society, where its inclusive ideals of freedom and equality are more likely to incentivise further growth and development, and thus human empowerment.

Disentangling these dense webs of cause and consequence may, at the very least, point to a starting point where poverty-causing vicious spirals can be interrupted and reversed. In an ideal world, suitable instruments to overcome endogeneity may present themselves and be substituted for variables that are known to be endogenous. Acemoglu, Johnson and Robinson's (2001) use of settler mortality as exogenous instrument of institutional quality is a seminal example of an attempt to do that, the validity of which has been largely discredited (Glaeser *et al.* 2004; Przeworski 2004b; Albouy 2012). Frankel and Romer (1999) similarly constructed an instrument for trade openness, which was similarly found to measure geographical variables rather than instrument trade (Kyvik-Nordås 2018).

Hence, motivated by the scientific predilection for evidence-based conclu-

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sions, the study forges ahead into the uncertain terrain of mathematising unmeasureables despite these significant reservations, placing stock also in common sense, intuitive plausibility and pragmatism, because these questions *need* answers.

4 The data

4.1 Country selection

The range of the data set is limited to the availability of the WVS time series, which commences in 1981. Country selection was decided on the same criterion and therefore this study includes only countries included in the WVS. The WVS divides participant countries into ten cultural zones, grouped according to cultural similarities observed in the survey results.[10]

Table 1 lists the sample of 105 WVS countries[11] analysed in this study, comprising 47 high-income countries, 33 upper-middle income countries, 18 lower-middle income countries and 7 low-income countries (Yemen and Mali in the Middle Eastern cultural zone, and the remaining five in the sub-Saharan African zone). Considering that the study is centred on poverty, it is unfortunate that poor countries are under-represented in the WVS sample.

4.2 The selection of variables and sources of data series

As measures of material wellbeing, whether expressed as poverty, existential security or prosperity, the study uses two World Bank measures. The first, the percentage of the population living under $3.20 per day (in 2011 PPP $) is more closely associated with poverty or existential insecurity, while the second, GDP per capita (also in 2011 PPP $) may be viewed as a measure of prosperity although the averaging effect may obscure underlying inequalities. The latter is taken as prosperity measure in the econometric modelling reported in Section 6. The variables deemed most appropriate to represent state capacity, human empowerment, liberal democracy and geographical traits as per the theoretical specification in equation (1), are listed below. The relationship of the above determinants with poverty is also analysed and discussed in Section 5.

[10] The clustering into cultural zones may appear to reflect geographic proximity of countries; this is however the result of cultural similarity coinciding with geographic proximity (Inglehart and Welzel 2010).

[11] Table 2 shows the 105 countries out of 107 for which the WVS reports survey findings (Inglehart *et al.* 2014), grouped into ten cultural zones. Of the 107 countries for which WVS data series are available, 105 are included in the study. Northern Ireland and Palestine were discarded. The labelling of the zones may also appear incongruent with country groupings. It should be borne in mind that the groupings are based on similarities in the value dimensions measured by the WVS despite other cultural dissimilarities that may exist.

4.2.1 *State capacity*

The first phase of the development sequence – interrupting the poverty-inducing predatory cycle through a capable but rule-bound state – requires variables that represent formal rules *not* associated with any specific regime type. Provided that these rules materialise through enforcement, they would promote state capacity and quality governance in any regime type.

Four variables from the Fraser Institute's Economic Freedom of the World (EFW) online database represent state capacity – that is, a capable, rule-bound state that produces high-quality governance. They are the quality of Legal Systems and Property Rights, Freedom to Trade Internationally, Regulatory Quality and Sound Money and were included in the model specification as representative of development-enabling institutional environment of formal rules and rule enforcement. Of these, Legal Systems and Property Rights separately has the strongest association with real GDP per capita, the prosperity measure used in this study.

The summary EFW index includes, in addition to the four pillars above, also a fifth pillar representing size of government. This pillar is not included in the measure of state capacity as *size* of government does not directly relate to either better or poorer quality governance; it is *quality* that matters (La Porta *et al.* 1998; Ott 2010, 2011). Preference is given to the EFW measures over the World Governance Indicators (WGI) of the World Bank given that the latter series are only available from 1996 onwards.[12]

4.2.2 *Human empowerment*

Phase two of the development sequence describes the modernisation that ensues when citizens' material resources rise, fostering a sense of existential security. Progression into an educated, knowledge society cultivates a human empowerment sequence that emerges parallel with economic development. Mass value orientations shift from traditional to rational-secular values and from survivalism to self-expression and emancipative values as human agency and autonomy evolve (Welzel 2014). Emancipative values as recorded in the online data series of the World Values Survey (WVS) describe the *socio-cultural* dimension of human empowerment and hence correspond with the *informal* institutional country characteristics (North 2003; Inglehart *et al.* 2014). Emancipative values are measured as (www. cambridge.org/welzel Online Appendix: 20 – 29):

"12-item index measuring a national culture's emphasis on universal freedoms in the domains of (1) reproductive choice (acceptance of divorce, abortion, homosexuality), (1) gender equality (support of women's equal access to education, jobs and power), (3) people's voice (priorities for freedom of speech

[12] Despite the reduction in number of observations due to the series only being available from 1996 onwards, the associations between the five regime-independent WGI pillars and both poverty and GDP per capita were investigated. The results confirm the link between institutional quality portrayed through governance and poverty (or prosperity) seen in the similar analysis using EFW pillars of governance.

and people's say in national, local and job affairs), and (4) personal autonomy (independence, imagination and non-obedience as desired child qualities)."

The literature emphasises the importance of education – of cognitive resources – in human empowerment; also that the relevant level and type of education implied to support human empowerment and emancipation exceeds mere literacy and cannot be captured by school enrolment time series. Hence the Human Capital Index of the Penn World Tables 9.1 (PWT) is taken as a more qualitative measure of education, given the returns on education element captured in the index, over and above years of schooling (Feenstra, Inklaar and Timmer 2015). In the model specification, this human capital variable is interacted with the Emancipative Values Index of the WVS to represent the notion of quality of education conditional on the fostering of emancipated critical thinkers needed for and associated with human empowerment.

4.2.3 *Liberal democracy*

During phase three, modernisation theory predicts a considerably raised likelihood that *effective* and *liberal* democracy may emerge and be sustained in societies where emancipative value orientations dominate the national culture. In this study, the hypothesised sequence theorises that these conditions establish prosperity and liberty whether liberal democracy materialises or not, with the associated benefits for social wellbeing; although the contributary role of liberal democracy to prosperity is included in the empirical investigation. The study explores two alternative measures to reflect the notion of *liberal* democracy. The first is the adjusted Polity IV democracy score, reported as Polity2, which is a net outcome after democratic traits have been discounted by autocratic country traits (Center of Systemic Peace 2019). Polity2 is considered an appropriate measure for this study for several reasons: it has a long-run perspective and explains every country's regime classification for each year in detail. Also, the Polity IV methodology avoids sacrificing assessment quality on the altar of empirical scope (Munck and Verkuilen 2002); it however does not capture human rights specifically, nor the degree of corruption. The Liberal Democracy Index compiled by the V-Dem Institute is used as an alternative measure for democracy in the analysis.

4.2.4 *Geographical traits*

Geographic country traits are represented by the time-invariant cool-water scores reported in the Cool Water Index (Fukuyama 2014; Inglehart *et al.* 2014; Welzel 2014). These scores reflect the degree of geographic advantage afforded by the water autonomy and disease security associated with cool-water conditions. The cool-water advantage is associated with existential security and hence individual agency and autonomy that may have cultivated human empowerment and technological advancements that would reflect in its association with comparative development outcomes and disparities in modern-day prosperity.

5 The development sequence – some stylised facts

The poverty-reversal conundrum primarily entails the question of how the vicious downward spiral of extraction where poverty constitutes a breeding ground for low-quality governance, which then again fuels poverty, can be interrupted and reversed. As it manifests in the modern-day poor countries of the world, poverty and institutional outcomes are a *cycle*, characterised by endogeneity. It is not a l*inear* chain of cause and consequence. Arresting the downward spiral is about getting a grip on extractive governance through formal rules like a capable state and independent rule of law, that constrain the elite, and establish quality governance. That is, the downward cycle is arrested through formal rules other than democratic accountability. In this context, formal institutional reform other than democratisation may be viewed as a deep cause of growth and development.

5.1 Formal institutions, rule enforcement and economic outcomes

These formal rules are associated with well performing democratic governments but are not the exclusive domain of democracies. They may be implemented in other forms of governments as proven by Hong Kong and Singapore, that despite ranking low on democracy scores, perform highly on governance and freedom indices. Prioritising early democratisation under the assumption that it serves as automatic surrogate for the specific growth-and-development rules may therefore be misguided.

Evidencing causation in this theoretical sequence is clearly not simple; as a starting point, associations and correlations between the formal rules that may halt the downward cycle and countries' poverty levels are investigated. Four such rules are explored for their association with poverty levels and shown in Figure 1; they are four of the five EFW pillars of governance that in essence reflect regime-independent rules associated with development-enabling governance. Annual data for the 105 WVS countries in Table 1 are included, for the period 1981 to 2015. As the charts indicate, countries are colour coded firstly according to their World Bank income categorisation of high, upper-middle, lower-middle and low income, and then according to the WVS cultural zones.

In terms of Legal System and Property Rights, Figure 1 shows a clustering of low-income, predominantly sub-Saharan African countries around the low-legal protection and high-poverty end of the trend line. Also, high-income countries perform well on scores for Legal System and Property Rights. In fact, Figure 1 shows a relatively diffuse scattering of country performances on Legal System and Property Rights occur across the lower three income categories until a score of around 6 or 7, which seems to be a tipping point after which poverty eradication and legal protection converge rapidly in the high-income countries.

The second governance pillar, Freedom to Trade with Foreigners, is similarly negatively associated with poverty while regulatory controls prohibiting such exchange are associated with higher levels of poverty. Again, low-income

countries in sub-Saharan Africa dominate the low-freedom, high-poverty end of the trend line, while the Middle East, Latin America and even ex-Communist West underperform on freedom to trade compared against the trend line.

The Sound Money measure of monetary stability and prudence of monetary policy is again negatively associated with poverty. Lower-middle income countries perform as poorly if not worse than their low-income counterparts on monetary stability and the ability to keep inflation in check. The cultural zones produce a rather mixed performance; Sub-Saharan Africa ranks among the lowest on sound money, it fares worse on poverty. Latin America, the Middle East and both ex-Communist East and West underperform on monetary stability among the low-poverty countries. It would seem that, of the EFW pillars investigated so far, Sound Money has the most tenuous (negative) association with poverty.

Pairwise correlation analysis confirms the negative association between poverty and the EFW pillars discussed above. The signs of all the coefficients are negative, as expected, and all correlation coefficients between governance variables and poverty are statistically significant at a 1 per cent level of significance (p $<.01$). Of the individual pillars, Legal System and Property Rights and Freedom to Trade with Foreigners have the highest (negative) correlations with poverty (ρ $= -0.59$ and -0.58 respectively), while Sound Money and Regulatory Quality have weaker (negative) correlations.

5.2 Poverty reversal, existential security and human empowerment

Once the cycle of poverty is arrested, and growth and development triggered, it should serve to heighten society's sense of existential security. In this phase, the transformative force of a society being released from the grip of survivalist fears is triggered. As education improves to meet the human-capital requirements of the economic transition towards an industrial and later a knowledge economy, a rising sense of autonomy and individual agency contributes to an emancipative national culture (Welzel 2014). This phase is characterised by human empowerment reflected in the socio-cultural shifts towards emancipative mindedness following greater access to both material and cognitive resources.

Figure 2 below plots poverty against countries' emancipative value orientations for the 105 WVS countries from 1981 to 2015. The downward sloping fitted line demonstrates the expected negative relationship; that is, higher levels of poverty are associated with value orientations prioritising survival and existential security over emancipative values. The negative relationship might have been more pronounced had poor countries been better represented in the WVS sample of countries.

The right-hand chart grouping countries in cultural zones shows that in the Protestant Europe (PE) cultural zone, poverty is virtually non-existent, while emancipative orientations dominate national culture; in fact, countries in this zone score highest on emancipative values of all the WVS countries. Although countries in the Middle Eastern (ME) cultural zone generally experience lower

levels of poverty than South Asia (SA) and sub-Saharan Africa (SSA), their emancipative-value scores are not conspicuously higher. Put differently, relative to their levels of poverty, ME countries perform poorly on emancipative values, while East Asia (EA), sub-Saharan Africa (SSA) and also South Asia (SA) outperform on emancipative-value scores relative to their comparatively high poverty levels when gauged against the trend line.

In addition to the *material* resources needed to cultivate a sense of security, Welzel's (2007, 2014) and Inglehart and Welzel's (2005, 2009 and 2010) theory of modernisation and human development also emphasises the role of *education* in a knowledge society to cultivate a sense of autonomy and agency, and transform value orientations towards emancipative priorities.

Using human capital as measure of societies' level of education produces a tightly clustered positive association with the extent to which countries' national cultures prioritise emancipative orientations. In addition to the positive association between human capital and emancipative values, Figure 3 indicates that the low-income countries score disproportionately better on emancipative values given their underperformance in human-capital outcomes.

Figure 3 makes it clear that the poorest achievers on *both* human capital and emancipative values are the low and the lower-middle income countries in the sub-Saharan African and the South Asian zones, while the Middle Eastern zone performs disproportionately poorly on emancipative values given its higher human-capital scores.

Pairwise correlation analysis to test the strength of the relationship between emancipative values, poverty and the human capital index as measure of education confirms theoretically expected signs and statistical significance at the 1 per cent level; emancipative values are negatively correlated with poverty ($\rho = -0.55$), and positively with both the human capital index ($\rho = -0.70$).

5.3 Human empowerment, liberty and prosperity

Once an emancipated mind set has been cultivated in society, the next question to be addressed is whether there is evidence that the emancipative value orientation raises the likelihood of *liberal* democracy, in keeping with the modernisation sequence of Lipset (1959), Welzel (2007, 2014), and Inglehart and Welzel (2005, 2009, 2010). Eventually, the question is whether liberal democracy, should it materialise through human empowerment and emancipation, is a driver of prosperity or whether human empowerment is the driver of both prosperity and liberal democracy. As explained above, prosperity attained in the absence of liberal democracy implies significant freedoms.

The adjusted Polity IV democracy score (Polity2) is used as a measure of *liberal* democracy to distinguish it from *procedural* democracy or electoralism, which measures democracy by the extent of political participation or suffrage. The scatter graphs and trend lines in Figure 4 confirm a positive association between Polity2 scores and emancipative values for WVS countries. High-income countries are concentrated around high Polity2 scores. The lowest democracy scores are recorded in the high-income oil producers in the Middle Eastern zone.

The association between liberal democracy and emancipated values was also investigated using the liberal democracy index of the V-Dem Institute. Pairwise correlation tests confirm that emancipative values are positively correlated with Polity2 scores ($\rho = 0.59$), but even more strongly with the *libdem* measure of liberal democracy ($\rho = 0.75$). Both are highly significant at the 1 per cent level of significance and are included as independent variables in the empirical model estimated in the next section.

If the association between emancipative values and real GDP per capita (in constant 2011 PPP dollars) as measure of prosperity is investigated, the positively sloped fitted trend line confirms that higher levels of GDP per capita (or lower poverty) coincide with a higher prioritisation of emancipative values (Figure 5). A number of outlying high-income countries achieve outstandingly on GDP per capita while scoring well below the trend line on emancipative values. These are oil-producing countries in the Middle East; specifically, Qatar in 2010, Kuwait in 2014, Saudi Arabia in 2003 and Bahrain in 2014. On average, the low-income countries perform relatively better on EVI than on GDP per capita compared to the trend line. The highest country score on GDP per capita in Figure 5 was achieved by Qatar in 2010, while the matching emancipative-value score was the lowest among the high-income countries.

Countries in the sub-Saharan Africa cultural zone have low levels of GDP per capita, but rank proportionately low on emancipative values, clustered tightly around the trend line and thus confirming that national values trend towards survivalist rather than emancipative orientations where poverty robs societies of their sense of existential security.

Correlation analysis confirms that GDP per capita as measure of prosperity is particularly highly correlated with emancipative value orientations ($\rho = 0.72$).

5.4 Geographical disadvantage and economic outcomes

To investigate the potential role of geographical country traits, the Cool Water Index (CWI) used by Welzel (2014) in his exogenous source thesis, is also included in this study. As a preliminary exploration, the association between the CWI and the two measures of existential security – percentage of the population living in poverty and GDP per capita (in constant 2011 PPP dollar) – is shown in Figures 6 and 7.

Figure 6 confirms the negative association between poverty and countries' CWI scores; in low-income countries in sub-Sahara Africa in particular, poverty and low CWI scores seem to converge, although poverty exceeds the level that the trend line would suggest, given their CWI status, by quite a wide margin.

The association between GDP per capita and CWI scores shown in Figure 7 is positive, as expected, although the results are more mixed than in Figure 6. High-income countries are scattered across a wide range of CWI scores, in many cases ranking lower on the CWI than middle-income countries, although high-income oil-producers in the Middle East weaken the positive association.

6 Empirical model: What then matters most for prosperity?

It was always going to be difficult and perhaps impossible to model the prosperous, free world's development path from poverty to prosperity and liberty. The data requirements would span nearly two centuries. In addition, the variables must track pervasive societal transformation spanning economic, political and also social – or human – development and modernisation.

For the most part, culture defies mathematisation, complicating its inclusion in economic models. In the context of this study, the WVS data on national cultural orientations facilitate the mathematical modelling of cultural variables, although with circumspection since the data comprise survey responses reflecting subjective perceptions.

Endogeneity also complicates attempts to model a long-term development sequence, from poor and disempowered, to prosperous and free. The notion that development paths are *cycles*, that one period's outcomes become the determining variables for the next-period outcomes – and that setbacks and reversals occur – makes conclusive findings regarding *causation* near impossible.

6.1 Model specification

Completeness requires that an investigation of the deep causes of poverty – or prosperity – consider the three commonly cited in the literature: institutions in the broad sense (that is, inclusive of formal and informal institutions, as well as rule-enforcement) and also the potential roles of trade openness and countries' geographical traits.

Much has been said about institutional variables in the preceding sections. Inclusion of a state-capacity variable represents the hypothesis that halting predatory governance is of first-order importance for poverty reversal (Hall and Jones 1999; Fukuyama 2014; Boettke and Candela 2019). An institutional regime reflecting state capacity and governance is therefore a *regime-independent* measure (intentionally steering clear of rules that are associated with democracy), representing rule *enforcement* and the *actual* institutional environment in addition to parchment rules. Two alternative democracy variables are included independently of the governance measures, to investigate the role of democracy separately. The human-empowerment variable, which is hypothesised to drive the progression towards prosperity, represents informal institutions and consists of mind-broadening education (human capital index) interacted with emancipative value orientations.

Trade openness is also a potential deep cause of poverty of prosperity cited in the literature (Rodrik 2002, 2004; Rodrik, Subramanian and Trebbi 2004). The simplest measure of trade openness would be the ratio of exports to GDP, or alternatively the sum of exports and imports to GDP. Both are clearly outcomes of national policies and societal mindsets regarding global participation versus isolation, as well as international competitiveness, monetary prudence and the

relative strength of the exchange rate that they will be hard to defend as independent deep causes of countries' poverty or prosperity.[13] Trade openness in this model is therefore captured as part of the institutional regime through the Freedom to Trade with Foreigners pillar of governance in the EFW Index.

The deep-causes model of economic outcomes is attempted within the constraints posed by the limitations explained above. Most notably, quite a stringently simplifying assumption regarding the directionality of causation is made. Following the theoretical model in equation (1), a model postulates that real GDP per capita is a function of state capacity, education that cultivates secular-rational mental models and emancipative orientations, democracy and countries' geography.

A dynamic model specification for the deep causes of prosperity (or its inverse, poverty) is depicted in equation (1).

$$lgdppc_{it} = \beta_0 + \beta_1 lgdppc_{i,t-1} + \beta_2 lpr\_ftt\_reg\_sm_{it} + \beta_3 (hci\_evi)_{it} + \beta_4 i\_gdp_{it} + \beta_5 x\_gdp_{it} + \beta_6 g\_gdp_{it} + \beta_7 polity2_{it} + \beta_8 coolwi_{it} + \mu_i + v_{it} \quad (1)$$

The natural logarithm of GDP per capita in constant 2011 PPP dollar (*lgdppc*) is the dependent variable in the model. The lagged value of the same variable represents persistence in the development process. Starting from first principles, measures of governance to represent formal institutions and the rule enforcement that should establish state capacity and incentivise economic development are included in the equation. They are regime-independent and represented by an index (*lpr_ftt_reg_sm*) constructed from four of the five EFW pillars: Legal System and Property Rights *(lpr)* because of the bulwark it offers against state predation; Freedom to Trade with Foreigners (*ftt*) because it reflects a business- and investor-friendly regulatory regime; Regulatory Quality (*reg*) and Sound Money (*sm*), which reflect ease and cost of doing business, and monetary prudence and financial deepening respectively. This variable is an institutional-outcome measure representing state capacity and ranges between 0 and 10, where 10 would represent a perfect score on institutional quality. Each of the four pillars enters the index with equal weight (similar to the summary index of the EFW where the five pillars, which also includes government size, carry equal weights).

Next, the human capital index interacted with emancipative values ($hci\_evi = hcixevi$) is added as a measure of human empowerment that represents informal institutions. The variable *hci_evi* reflects not only the importance of education but also the *right kind of education*, one that broadens belief systems towards emancipative ideals rather than reinforcing embedded traditions that may have outlived their reality-coping value. After interacting the *hci* and *evi* indices,

[13] Frankel and Romer (1999) developed a gravity-model instrument for trade intensity that relied on geographical traits like country size, whether trading partners share a border or are landlocked, as well as the distance between them. Kyvik-Nordås (2018) reports findings that the Frankel-Romer instrument is more closely linked to income than to trade and may in fact reflect the effect of geography rather than trade openness on income.

the resulting index is standardised and scaled to be contained between 0 and 10, in line with the state capacity index above. A set of control variables is included and added in a step-wise fashion in the estimation process, namely; first, the investment to GDP ratio (*i_ gdp*), followed by the ratio of exports to GDP *(x_ gdp),* which is included as a measure of countries' global competitiveness, and finally the ratio of government expenditure to GDP (*g_ gdp*). The latter variable reflecting government size is included as a control and explicitly excluded from the set of institutional variables because size *per se* is innocuous as measure of institutional quality. The ratio of money supply to GDP on the other hand is not included as a control variable, as monetary prudence and stability has a bearing on the quality of governance and hence forms part of the institutional variable formulated as *lpr_ ftt_ reg_ sm.*

Polity2 is included as the formal institutional variable representative of democracy (*polity2*). The Polity2 index is constructed to score countries on a net democracy outcome (that is, democracy traits minus autocracy traits) on a scale of -10 to 10; hence poor-scoring countries record negative democracy scores.[14] The alternative measure for liberal democracy, V-Dem's liberal democracy index (*libdem)* is also used in the estimations to observe whether findings on the importance of democracy are robust and not specific to any particular formulation. Countries' time-invariant Cool Water Index scores *(coolwi)* are added to the theoretical model specification to observe whether geographical advantages drive economic outcomes directly. The latter two indices range between 0 and 1. Coefficient values β_2 to β_8 should be interpreted as semi-elasticities. μ_i is the unobservable country-specific effect and v_{it} is the stochastic disturbance term.

6.2 Descriptive statistics

A summary of descriptive statistics for the variables used in the estimation process, for the 105 countries included in the study over the sample period 1981 to 2015, is presented in Table 2.

The mean value for the GDP per capita, expressed in 2011 PPP dollar is 19 989, with a minimum of 503 and a maximum of 124 025. It is evident that more countries are clustered on the lower end of the income spectrum. When considering the World Bank income categories, average income per capita ranges between 1 679 for low income countries, 4 491 for low-middle income countries, 11 422 for high-middle income countries and 35 876 for high-income countries. Where 10 would represent a perfect score for institutional quality, the index *lpr_ ftt_ reg_ sm* takes on an average value of 6.67. A value of 5.51 for low-income countries is contrasted by a value of 7.61 for high-income countries.

Likewise, if 10 would represent a perfect score for human capital conditional on emancipative values, or human empowerment, the average value for all countries over the period under consideration is 4.02. With the overall *hci*

[14] For purposes of the analysis, the Polity2 index was converted to non-negative numbers ranging between 0 and 10, as (*polity2*+10)/2.

distribution skewed to the left, low-income countries record a low value of only 0.63 for *hci_evi*. For low- and high-middle income countries the score improves to 1.34 and 2.91 respectively, while a value of 5.23 is recorded for high-income countries.[15]

The average investment ratios vary between 21 and 25 per cent of GDP with an overall average of 24 per cent. Exports ratios vary between 16 per cent of GDP for low-income countries and 51 per cent for high-income countries with an average of 39 per cent. Government expenditure for low-income countries is on average 22 per cent of GDP while rich countries can afford a ratio of 40 per cent of their GDP on average. For all countries this figure is 33 per cent.

Turning to democracy, the *polity2* average score (expressed on a scale from 0 to 10), is 6.84, while these scores according to income classification are 3.82 for low-income countries, 5.24 for low-middle and 6.27 for upper-middle income countries respectively, with a score of 8.4 for high-income countries. Analysing *libdem* scores is indicative of qualitatively similar rankings for different income category countries. Finally, for the Cool Water Index, *coolwi*, an average value of 0.31 is recorded, with a low of 0.087 for low-income countries and a high of 0.45 for high-income countries.

6.3 Correlation analysis

The pairwise correlation analysis for the main variables of interest is displayed in Table 3. The correlation coefficient of $\rho = 0.99$ for the lagged dependent variable (*L.lgdppc*) confirms the persistence of GDP per capita.

As expected, the correlation results confirm that the institutional variable (*lpr_ftt_reg_sm*) constructed from the four equally weighted EFW pillars of governance is highly correlated with GDP per capita expressed in natural logarithmic form ($\rho = 0.70$). This index is taken to reflect the formal rules and rule enforcement that shape state capacity, which gauges whether a country has a capable but constrained state able to produce high-quality governance outcomes. For the human-empowerment variable, constructed by interacting the human-capital and emancipative-values indices, the positive correlation with GDP per capita is even stronger ($\rho = 0.77$).

The two democracy variables, *polity2* and *libdem*, are both positively correlated with GDP per capita (at $\rho = 0.36$ and $\rho = 0.57$ respectively), but more weakly than either the institutional or the human-empowerment variable, while geographic traits represented by the Cool Water Index (CWI) are again strongly positively correlated with GDP per capita ($\rho = 0.71$). Both democracy variables are more strongly correlated with the institutional quality ($\rho = 0.48$ and $\rho = 0.61$) and human-empowerment variables ($\rho = 0.59$ and $\rho = 0.73$) than with GDP per capita, whereas geography seems to have the strongest positive correlation with human empowerment ($\rho = 0.74$) and the weakest with the *polity2* democracy variable ($\rho = 0.55$).

[15] The high-income average EVI score is lowered by the fairly low EVI scores of high-income oil-producing countries (Bahrain, Kuwait, Qatar and Saudi Arabia) in the Middle East.

A further interesting observation from Figures 6 and 7 in Section 5.4 is that the CWI is more strongly (negatively) associated with poverty than (positively) with GDP per capita, suggesting that poverty prevails where human agency allows geographic determinism; that is, where innovation and technology fail to overcome geographic disadvantage.

The correlation results confirm the prominence of *state capacity* and *human empowerment* for GDP per capita, also of *geographic traits*; much less so *democracy*. Establishing the correlates of prosperity is however still a long way from disentangling the complex, interrelated web into an elegant, evidence-based sequence of cause and consequence.

6.4 Estimation results

As vantage point, the static version of the model specified in equation (1) is estimated using a Fixed Effects (Within) estimator to control for country heterogeneity.

The results for the Fixed Effects estimation of equation (1) are reported in Table 4. Independent variables are added sequentially to model the development sequence and to verify the robustness of the model for inclusion of additional variables. Standard control variables are included to ensure that the model is not misspecified, leading to omitted variable bias. In addition, two measures for democracy are included separately to test whether democracy may potentially be considered a significant causal determinant of prosperity. Given that the Cool Water Index is a time invariant variable, it is not possible to test for the impact of geographical traits on economic outcome using the Within estimator, as demeaning of the series will remove not only the country effects,[16] but also time invariant independent variables. The index is however included in subsequent estimations making use of appropriate estimators.[17]

The impact of both state capacity *(lpr_ftt_reg_sm)* and human empowerment *(hci_evi)* on prosperity is positive and statistically significant across all models in Table 4. This provides support for the notion that state capacity and institutional quality do matter for economic performance, as is the case for human empowerment. Exports (x_gdp) and investment (i_gdp) are both positive and significant as expected, based on economic theory. Conforming to expectation, government expenditure to GDP does not contribute significantly to economic performance, since large governments tend to crowd out private investment spending (Mitchell 2005).[18] The coefficient for g_gdp is close to zero

[16] Fixed effects are calculated after estimation, making use of first-order conditions. Removing the fixed country effects through demeaning at the estimation stage assist in minimising the impact of endogeneity in terms of biased coefficients, especially in the case of a sizable number of time observations.

[17] The Hausman & Taylor (1981) Instrumental Variable estimator or Blundell and Bond's (1998) System GMM estimator may be used. The latter result is reported in Table 6, Column (8).

[18] Mitchell (2005) cites multiple explicit and implicit costs associated with high government spending that may turn the relationship between government size and economic growth negative. He lists the costs of extraction through various taxes, the inefficiencies and displace-

and statistically insignificant. The impact of both formulations of democracy *(polity2* and *libdem)* is not statically significant, confirming the hypothesis of the study that democracy does not have a direct causal effect of prosperity.

For all models reported, results for variables of interest appear robust and statistically significant with the additional inclusion of explanatory variables. When subjecting the key variables in equation (1) to a cointegration test, we find the following results for the null of no cointegration: Westerlund's variance ratio test = 2.69 [0.0035]; Perdoni's modified Phillips-Perron t = 4.4 [0.0000]; Kao's Augmented Dickey-Fuller t = 3.15 [0.0008].

According to the R^2 statistic, independent variables jointly explain around 70 per cent of the variance in the dependent variable. The null hypothesis that the country fixed effects are all equal to zero is rejected in favour of country heterogeneity at the 1 per cent level across all models. Time effects are omitted from the model due to statistical insignificance.

The dynamic model specification as well as endogeneity concerns related to the endogenous links and reverse causality between institutional quality and economic outcomes raised earlier, necessitates further investigation.

The Hausman (1976) test results for the dynamic and static versions of equation (1) reported in Table 5 indeed leads to the conclusion that over and above the dynamic term responsible for statistical endogeneity in the model,[19] one or more independent variables included are correlated with the unobserved country effect. This may render Ordinary Least Squares parameter estimates biased and inconsistent, which requires the use of instrumental variable methods. Finding suitable instruments in the context of development economics is not an easy task[20] and there is much disagreement in the literature of what constitutes a good instrument. Given the difficulty in finding external instruments, we revert to the use of internal instruments such as the use of higher order lags of the endogenous variables.

The empirical estimation of equation (1) is repeated using the System General Methods of Moments (SYS-GMM) estimator of Blundell and Bond (1998). Arellano and Bond (1991) first proposed a GMM procedure based on the principle of using lags, in levels, as instruments for a first-differenced model (DIF-GMM). Differencing the model gets rid of individual effects, but also endogeneity. However, when the lagged dependent variable displays persistence, as is the case here with the coefficient on the dynamic term approaching unity, the result is weak instrument bias − like the Fixed Effects estimator, downwards. Arellano and Bover (1995) first showed that more moment conditions exist for the dynamic panel data model specification, that are ignored by IV estimators suggested by Arellano and Bond (1991).

Blundell and Bond (1998) extended the work of Arrellano and Bover (1995)

ment of private-sector economic activity, the cost associated with subsidising unproductive behaviour while penalising productive activity, market distortions and inefficiencies and the potential stagnation that may follow when innovation is inhibited.

[19] Nickel (1981) shows that in the case of a dynamic model specification containing individual effects, the Within estimator is biased of order $O(1/T)$ with T the number of time periods.

[20] See for example Frankel and Romer (1999); Acemoglu, Johnson and Robinson (2001).

by articulating the necessary assumptions for this augmented estimator more precisely, suggesting the use of the usual moment conditions (in levels) for the model in first differences *and* additional moment conditions (in first differences) for the model in levels. Two-step robust standard errors corrected for finite sample bias (Windmeijer 2005), without which standard errors tend to be downward biased, are reported. The forward orthogonal deviation transformation is used instead of differencing, to preserve sample size in the face of gaps in the data, as proposed by Arellano and Bover (1995). Another advantage of the system GMM estimator over the difference GMM is the identification of the impact of time-invariant variables, notably in this case, the Cool Water Index, reported in column (8) of Table 6.

The System GMM estimation results are reported in Table 6 and are consistent with *a priori* expectations. Both formal and informal institutions (represented by *lpr_ftt_reg_sm* and *hci_evi* respectively) have a positive impact on *lgdppc*, the prosperity measure. Parameter estimates are robust across different models and statistically significant at conventional levels in all instances. The positive and significant impact of investment and exports on economic wellbeing is also confirmed. Government expenditure as ratio to GDP is statistically significant at the 10 per cent level in three of the four models, but the coefficients are in all instances very close to zero. The positive (albeit small and only marginally significant) effect is not in accordance with evidence from the growth and development literature. Both liberal democracy variables (*polity2* and *libdem*) are statistically insignificant, as are the geographic advantages associated with cool-water conditions (*coolwi*). These results are justified from the preceding discussions (Keefer and Vlaicu 2004; Keefer 2005, 2007; Ott 2010, 2011; Fukuyama 2014; Welzel 2014).

Diagnostic test statistics are reported for the final GMM models in columns (5) to (8). The Arellano-Bond AR(1) test, which is a test for first-order serial correlation since the model is estimated in first differences, suggests the presence of first-order serial correlation in the model. We fail to reject the null of the Hansen J test for overidentifying restrictions at the 5 per cent level and conclude that the instruments are correctly excluded from the model. The difference-in-Hansen test verifies the validity of the additional exclusion restrictions that arise from the level equation of the System GMM model. Roodman (2009a) shows that having numerous instruments can result in over-fitting of the model. This can fail to rid the explanatory variables of their endogenous components, potentially leading to biased instruments. In this instance both Hansen tests may produce very high p-values, often implausibly close to 1. To avoid instrument proliferation, the instrument set should be reduced by either restricting the number of lags or by "collapsing" the instrument set into a smaller dimension matrix (Roodman 2009b). In the estimation results reported in Table 6, the instrument sets were collapsed for the lagged dependent and all other endogenous variables. Both the Hansen and difference-in-Hansen tests have p-values greater than 0.05, indicating that the instruments are correctly excluded. In addition, none of the p-values are close to unity, suggesting that the instrument proliferation is not an issue. In the current analysis, including more lags of the

instruments may resolve the serial correlation problem, but at the expense of instrument proliferation, and Hansen and difference-in-Hansen tests' p-values approaching unity.

All coefficients are to be interpreted as semi-elasticities. Considering the marginal effect of an improvement in state capacity and institutional quality (*lpr_ftt_reg_sm*) on prosperity (as measured by real GDP per capita), the coefficient can be interpreted as a one unit increase in institutional quality leading to a 1.3 per cent increase in real income per capita, *ceteris paribus* (for model specification in column (5) in Table 6). Likewise, a rise in human empowerment taken as a one-unit increase in the index *hci_evi*, will translate to a 1.4 per cent increase in real income per capita, *ceteris paribus.* Even though it may be possible to visualise an increase in institutional quality as a one-step increment on a scale from one to ten, and the same for human empowerment, it remains difficult to have a clear understanding of the impact and to compare the relative size or strength of the impact of the various independent variables on the dependent variable. For this purpose, the standardised beta coefficients are also determined and reported in Section 7.

The System GMM estimation results (Table 6) for the model specified in equation (1) confirm that state capacity, or formal institutions and rule enforcement *(lpr_ftt_reg_sm),* matters for prosperity measured as real GDP per capita. The evidence is particularly supportive of informal institutions, or human empowerment, represented by education-enhanced emancipative values *(hci_evi)* as driver of prosperity. Geographic traits do not emerge from these results as a direct driver of prosperity. More importantly, the causal role of democracy is not supported by the evidence, in line with our expectations that democracy is rather an *outcome* of strong institutions and human empowerment through an education-enhanced emancipative value system, than a *cause* of prosperity.[21, 22]

Overall, in the estimated models, the institutional variables of interest (*lpr_ftt_reg_sm* and *hci_evi*) are positive and highly significant, confirming Douglass North's (1990, 1991 and 2003) proposal that all three classes of institutions (that is, formal institutions, informal institutions and rule enforcement) matter for economic outcomes. It also supports Fukuyama's (2014) and Boettke and Candela's (2019) notion that *state capacity* (that is, a capable but rule-constrained state) *independent* of regime type is the specific institutional variable(s) of importance for economic development and prosperity. The modernisation theory of

[21] It would appear that the System GMM results are driven by the high and upper-middle income group of countries more than by the lower-middle and low-income group of countries, which may be expected given the disproportionately small number of countries in the second grouping.

[22] In an analysis reported in an unpublished PhD thesis (Blackmore 2020), the System GMM estimation was also run with *polity2*, the liberal democracy variable, interacted with prosperity (*gdppc)* as a compound dependent variable instead of including *polity2* as one of the independent variables. This was done to investigate whether the drivers of prosperity (with its implied liberty) also drive prosperity *and* liberty formalised in liberal democracy. The impact of institutional quality, human empowerment and geography on simultaneous liberal democracy and prosperity was very similar to the results in Table 6.

Lipset (1959) and the *humanised* version of Welzel and Inglehart[23] are also supported by the finding that society's emancipative values interacted with mind-broadening education drive society's progression towards prosperity. Liberal democracy whether specified as *polity2* or *libdem,* appears to not be instrumental in this progression.

Government size *(g_gdp)* has no significant impact on prosperity; this is in accordance with the literature that quality of government matters more than size, again due to the effect of crowding out. The impact of geography *(coolwi)* is statistically insignificant, supporting Welzel's (2014) prediction that the cool-water disadvantage as an exogenous, deep source of poverty will be eroded as globalisation disseminates technological advance and progress. This diffusion of progress allows human agency and empowerment to emerge where geographic disadvantage may have stifled development previously. Progress diffused through globalisation therefore dissociates human empowerment from advantageous cool-water conditions.[24]

6.5 Interpreting the marginal effects

Standardising variables that are diversely scaled and denominated, as in this instance, is useful for comparative and interpretative analysis as the standardised beta coefficients all measure units of change in standard deviations. Standardisation of variables implies subtracting the mean and dividing by the standard deviation, resulting in all variables having a mean of zero and standard deviation of one (also referred to as z-scores). When using estimation results employing standardised variables, the strength of the impact of different covariates included in the model can then be compared to each other. For this purpose, the estimation of model (5) in Table 6 is repeated using standardised variables and reported in Table 7, column (1), while model (5) of Table 6 is reported in the first column.

The two main variables of interest for this study are state capacity ($lpr\_ftt\_reg\_sm$) reflecting formal rules and rule (constraint) enforcement as they materialise in governance outcomes, and human empowerment (hci_evi) representing informal institutions as they manifest in mass cultural orientations. It is worth noting that the coefficient on the human empowerment variable (zee_hci_evi) is not only larger in magnitude than that of the institutional quality variable ($zee\_wlpr\_ftt\_reg\_sm$), but also than those of all control variables included. This is indicative of how powerful advances in human empowerment are relative to other relevant factors in the drive towards prosperity.

Sub-Saharan Africa (SSA) is the global region but also the WVS cultural zone most associated with persistent and rising poverty (as reflected by the lowest global mean real GDP per capita *(gdppc)* of $2 874 compared to an

[23] See for instance Inglehart and Welzel (2005, 2009 and 2010); Ingehart *et al.* (2014); Welzel and Inglehart (2006, 2008 and 2009); Welzel (2014) and Welzel and Delhey (2015).

[24] When including the Olsson-Hibbs (2005) geographical and biological conditions indices constructed through principal component analysis (similar to Spolaore and Wacziarg 2013) as alternative to Welzel's Cool-Water index, the impact remains statistically insignificant.

overall mean value of $19 989 for all regions; see Table 2). It is however also the zone ranking lowest globally on state capacity, human empowerment and export performance. It is worth noting that the region is not the worst performer on investment based on mean investment to GDP ratio *(i_gdp)*, outperforming both Latin America and the English-speaking West. Questions arise about the relative importance of these deficits and their relative contributions to poverty. Alternatively, it may be useful to understand how relative progress in one or more of these may impact countries' escape from poverty and eventual progress towards prosperity.

Standardisation of the variables allows some answers to these questions. For instance, assume state capacity (*lpr_ftt_reg_sm)* in SSA improves. Being a standardised series, the change is measured in standard deviations, which can be translated into a specific marginal effect on *gdppc*. A one-unit improvement in state capacity (or institutional quality) therefore leads to a 1.3 per cent increase in real per capita income *(gdppc)*.[25]

Assuming for instance that SSA would attempt to emulate the institutional path of East Asia (the cultural zone within which newly industrialised economies of Japan, Hong Kong, Taiwan and South Korea are categorised), it would require an institutional improvement of 2.02 units, from the SSA mean of 5.28, to the mean of 7.30 for East Asia. This improvement of 2.02 units translates into a 2.63 per cent increase in $gdppc$, raising the SSA *gdppc* by $76, from $2 874 to $2 950.

Through similar reasoning one can calculate that a single unit rise in human empowerment translates into a 1.44 per cent increase in real per capita income *(gdppc)*. If one again would attempt to emulate the modernisation path of East Asia, this time through human empowerment (*hci_evi*), it would require that the SSA mean be raised by 3.16 units, from 0.89 to 4.05. Raising SSA human empowerment on par with the East Asian mean score corresponds with an increase of 4.55 per cent or $131 in real per capita income *(gdppc)*, from the SSA mean of $2 874 to $3 005.

To put the relative impact of raised state capacity or human empowerment into perspective, consider also the effect of raising mean SSA investment (*i_gdp*) to the level of investment in East Asia. Again, translating standard deviations from the mean into units shows that a unit rise in investment raises GDP by 0.28%. Hence, raising the mean SSA investment to gdp ratio of 23.02 by 6.45 units to the East Asian mean of 29.45 gains $52 in real per capita income

[25] Given that the standard deviation for *lpr_ftt_reg_sm* and *lgdppc* is 1.461935 and 1.093803 respectively, the steps followed to translate a *standard deviation* change into a *unit* change in *wlpr_ftt_reg_sm* with a quantifiable impact on *gdppc* in percentage terms (and similar for other standardised variables) are as follows:

1 standard deviation increase in *lpr_ftt_reg_sm* → 0.01723 standard deviation increase in *lgdppc*

1.461935 units increase in *lpr_ftt_reg_sm* → 0.01723 * 1.093803 units increase in *lgdppc*

1 unit increase in *lpr_ftt_reg_sm* → 0.01723 * 1.093803/1.461935 units increase in *lgdppc*

1 unit increase in *lpr_ftt_reg_sm* → 0.0129 units increase in *lgdppc*

1 unit increase in *lpr_ftt_reg_sm* → 100(exp(0.0129)-1)% increase in *gdppc*

1 unit increase in *lpr_ftt_reg_sm* → 1.3% increase in *gdppc*

(gdppc), an increase of 1.81 per cent from $2 874 to $2 926. Similarly, if SSA should rely on export performance (x_gdp) to approach the East Asian levels of prosperity, it would require that SSA more than doubles its export units, from a mean of 21.67 to 52.97. This sizeable improvement in exports would translate into a 2.19 per cent increase in *gdppc*, adding $63 to SSA's mean of $2 874.

Based on the empirical technique employed in the analysis, it should be borne in mind that these changes are observed in a *ceteris paribus* and static first-round manner; one may assume that the impact may be more substantial should we allow for the multiplying and compounding effects of these (endogenous) changes over time.

Table 8 summarises some of these marginal effects to understand where the poor-country deficits are likely to be and where marginal changes may produce sizeable improvements in prosperity. For comparison, the East Asian and South Asian zones are used, as both categories have newly and successfully modernised economies (Taiwan, South Korea, Taiwan and Hong Kong in East Asia as explained above, and Singapore in South Asia); any number of permutations and comparisons would however be possible.

It is clear from Table 8 that the scenario's above do not produce the levels of income *(gdppc)* for SSA that South Asia and especially East Asia are capable of achieving. However, comparing scenario's 1, 2 and 3 shows that improvements in state capacity and human empowerment to come on par with South or East Asia raise real per capita GDP by more than catching up with investment ratios would accomplish. Exports remain a powerful driver of prosperity; exports remain reliant on international competitiveness though, and therefore on conducive institutional architecture.

A tentative conclusion may be that state capacity is more narrowly (negatively) associated with poverty reversal than (positively) with prosperity. That is, state capacity may be an essential but insufficient condition to halt state predation, interrupt poverty cycles and trigger development.[26] When comparing the relative size of the standardised coefficients in column (1) of Table 7, human empowerment may however be the stronger driver of prosperity of the two.[27] It is also quite noticeable from the base scenario in Table 8, that the major deficits between SSA variables of interest and their East or South Asian counterparts exist in human empowerment and export ratios. Human empowerment is an interacted variable, consisting of the human capital index and emancipative values; hence advances in human empowerment may reflect progress in either component, or both. The importance of education stressed in the literature (Glaeser, Ponzetto and Shleifer 2007; Helliwell and Putnam 2007; Welzel 2014) is once again confirmed. The emphasis is however on education that broadens and modernises mental models in support of reality-coping and progress-enabling

[26] This conclusion supports the literature political-science literature (see for instance Fukuyama 2014), the institutional literature (of for instance Acemoglu and Robinson 2013 and 2019) and the state-predation literature (see Boettke and Candela 2019, Vahabi 2019).

[27] The importance of education and human modernisation to drive a humanised development sequence towards prosperity finds support in the literature (Welzel 2014; Inglehart and Welzel 2005, 2009).

value orientations. In short, through their emphasis on inclusivity and equality, emancipative values support progress and prosperity. Hence educations that cultivate such emancipative mindsets not only contribute *directly* to productive knowledge economies, but also *indirectly* through the cultural transformation and human modernisation that they advance.

7 Conclusion

Significant limitations and constraints complicate attempts to mathematise the probe for deep causes of poverty through a model that tracks the development sequence of modern-day liberal and prosperous democracies from its pre-Industrial Revolution origins. Still, mindful of the merit of the evidence-based scientific method, an attempt was made to find some proof of the drivers of poverty reversal and eventual prosperity.

The first probe entails an investigation of the hypothesised development sequence that relies on an initial phase of institutional intervention to reverse state predation and build development-enabling state capacity. This phase emphasises the importance of capable but constrained states; it is pursued through formal rules that constrain political discretion in the appropriation of resources and are enforced by an impartial judiciary. The second phase relies on society's elevated sense of existential security that follows if phase one succeeds in triggering growth and development to activate a parallel sequence of sociocultural *human* empowerment. This powerful societal transformation cultivates a cognitively resourced, emancipatively-minded society that prioritises autonomy, individual agency and self-expression. In the third phase, mobilisation by an empowered middle class to gain political participation heightens the likelihood that broad societal interests are prioritised over narrow elite interests. Effective, liberal democracy may emerge and be sustainable as a result, but the synergistic partnership between a strong capable state and an empowered society are also the conditions that may produce prosperity and its associated freedoms directly; that is, not necessarily through democratic mechanisms.

The empirical results in this study suggest that the hypothesised sequence is plausible. Causation cannot be proven and is assumed through reliance on theories of institutionalism, modernisation and human emancipation. The results do however confirm strong correlations in the ways hypothesised by the theoretical sequence. One may therefore conclude that interrupting state predation is a plausible entry point to reverse the downward cycle of poverty-exacerbating poor governance. Poor, disempowered societies remain vulnerable to predation through their weakened capacity to enforce constraints and accountability. This would also explain why democratisation seems to prove ineffectual as an instrument for poverty reversal. Put simply, if liberty and long-run prosperity in a liberal, effective democracy are the desired outcomes, the development sequence (in reverse) theorises that the human empowerment and emancipation sequence is the mechanism through which these objectives become achievable. The human empowerment sequence, in turn, relies on a sense of existential security

to emancipate societies from survivalist concerns. A sense of existential security cannot emerge without reversing poverty, and unless state predation can be constrained (institutionally) to trigger economic development – albeit it off a low base – poverty will persist.

An interesting result from the phased and humanised development sequence entails that the seeming impasse between modernisation and institutionalism – the standoff between the development-first and democratise-first protagonists – disappears. While the democratise-first protagonists may be off the mark, the broader institutionalists are not. This would explain the phenomenon of poverty amidst rising political participation, as has materialised in newly democratic sub-Saharan African nations like Zimbabwe and South Africa, and also prosperity in non-democratic Singapore and Hong Kong. It would then support the theory that state capacity (and not political participation) is the institutional deficit that must be bridged to trigger poverty reversal; in the simplest terms, *state capacity, or a capable but constrained state,* seems to be the strongest institutional enabler of *poverty reversal* and should perhaps be promoted as that over political participation. The institutional deficit in the state capacity construct seems to emerge more from non-enforcement of rules than their non-existence.

An interesting result is that the negative association between state capacity and poverty is stronger when poverty is high than when it is low, suggesting that state capacity matters for poverty reversal; in fact, state capacity is twice as strongly (negatively) correlated with poverty in lower-middle and low-income countries, than in upper-middle and high-income countries. Also, in sub-Saharan Africa, which is viewed as the centre of modern-day poverty, as well as in the East Asian and South Asian regions that have recently emerged from poverty, the negative correlation between state capacity and poverty is approximately tenfold the strength of the correlation in low-poverty regions (Protestant Europe, for instance).

Following poverty reversal, socio-cultural *human empowerment* becomes the endogenous driver towards sustained liberty and prosperity. If the cultural orientations associated with empowered societies are viewed as *informal* institutions, the evidence seems to point to this class of institutions as being most conspicuously non-supporting of progress and prosperity in poor societies. Poor countries' human empowerment deficit dwarfs the disadvantages in all other explanatory variables. Rather than political participation, human empowerment consisting of human capital (representing mind-broadening education) interacted with emancipative values seems to be the powerful driver of prosperity that poor countries lack.

Regression analysis finds no direct contribution from liberal democracy to modern-day prosperity, nor from geographic country traits.

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Table 1: WVS countries according to the ten cultural zones and World Bank income categories

Protestant Europe (PE)	**English West (EW)**	**Catholic Europe (CE)**	**Ex-Communist West (ECW)**	**Ex-Communist East (ECE)**
All high income Denmark Finland W Germany Iceland Netherlands Norway Sweden Switzerland	*All high income* Australia Canada Ireland New Zealand United Kingdom United States	*All high income* Andorra Austria Belgium Cyprus France Greece Israel Italy Luxembourg Malta Portugal Spain	*All high income* Croatia Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia	*Upper-middle income* Albania Armenia Azerbaijan Belarus Bosnia Bulgaria Georgia Kazakhstan Macedonia Romania Russia Serbia Montenegro *Lower-middle income* Kyrgyzstan Moldova Ukraine Uzbekistan
South Asia (SA)	**Middle East (ME)**	**East Asia (EA)**	**Latin America (LA)**	**Sub-Saharan Africa (SSA)**
High income Singapore *Upper-middle income* Malaysia Thailand *Lower-middle income* Bangladesh India Indonesia Pakistan Philippines	*High income* Bahrain Kuwait Qatar Saudi Arabia *Upper-middle income* Algeria Iran Iraq Jordan Lebanon Libya Turkey *Lower-middle income* Egypt Morocco Tunisia *Low income* Mali Yemen	*High income* Japan South Korea Taiwan Hong Kong *Upper-middle income* China *Lower-middle income* Vietnam	*High income* Chile Trinidad and Tobago Uruguay *Upper-middle income* Argentina Brazil Colombia Dominican Republic Ecuador Guatemala Mexico Peru Venezuela *Lower-middle income* El Salvador	*Upper-middle income* South Africa *Lower-middle income* Ghana Nigeria Zambia Zimbabwe *Low income* Burkina Faso Ethiopia Rwanda Tanzania Uganda

Source: World Bank and World Values Survey (Inglehart *et al*. 2014)

Table 2: Summary of descriptive statistics, all countries, 1981 to 2015

Variable	Obs	Mean	Std. Dev.	Min	Max
gdppc	2 687	19 989.18	18 824.49	502.91	124 024.60
lpr_ftt_reg_sm	2 866	6.67	1.46	2.15	9.14
hci_evi	980	4.02	2.15	0	10
i_gdp	3 252	24.09	7.42	-10.74	84.20
x_gdp	3 332	38.96	30.65	0.005	231.19
g_gdp	2 634	33.49	13.62	3.55	204.17
polity2	3 336	6.84	3.47	0	10
libdem	3 504	0.45	0.28	0.015	0.90
coolwi	3 636	0.31	0.17	0.04	0.72

Table 3: Pairwise correlation results for variables of interest

	lgdppc	*L.lgdppc*	*lpr_ftt_reg_sm*	*hvi_evi*	*polity2*	*libdem*	*coolwi*
lgdppc	1.0000						
L.lgdppc	0.9983 0.0000	1.0000					
lpr_ftt_reg_sm	0.7048 0.0000	0.6978 0.0000	1.0000				
hvi_evi	0.7721 0.0000	0.7722 0.0000	0.6787 0.0000	1.0000			
polity2	0.3631 0.0000	0.3568 0.0000	0.4766 0.0000	0.5915 0.0000	1.0000		
libdem	0.5690 0.0000	0.5659 0.0000	0.6094 0.0000	0.7266 0.0000	0.8555 0.0000	1.0000	
coolwi	0.7071 0.0000	0.7075 0.0000	0.6398 0.0000	0.7350 0.0000	0.5470 0.0000	0.7121 0.0000	1.0000

Table 4: Fixed Effects estimation results for full sample of countries, 1981 to 2015

(Dependent variable: *lgdppc*)

	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE	(7) FE
lpr_ftt_reg_sm	0.206***	0.153***	0.136***	0.126***	0.148***	0.166***	0.157***
	(9.43)	(9.17)	(7.77)	(10.39)	(6.78)	(10.54)	(10.13)
hci_evi		0.158**	0.157***	0.137**	0.148**	0.00113*	0.151**
		(5.30)	(6.44)	(3.39)	(5.08)	(2.76)	(4.70)
i_gdp			0.0148**	0.0154**	0.0162**	0.0162**	0.0161**
			(3.73)	(3.71)	(5.48)	(5.59)	(5.50)
x_gdp				0.00471*	0.00553**	0.00549**	0.00558*
				(2.86)	(3.48)	(3.18)	(3.06)
g_gdp					0.00924	0.00990	0.00974
					(1.60)	(1.55)	(1.57)
polity2						-0.0237	
						(-1.68)	
libdem							-0.300
							(-1.13)
constant	8.100***	7.898***	7.680***	7.655***	7.071***	7.104***	7.154***
	(53.85)	(135.17)	(100.48)	(66.94)	(19.35)	(23.46)	(22.36)
N	2219	781	768	762	698	686	698
R-squared (Within)	0.4042	0.5621	0.6518	0.6710	0.6949	0.7040	0.6988
F-stat [p-value] (H_0: $\mu_1=\mu_2=\ldots=\mu_{N-1}=0$)	444.47 [0.0000]	170.43 [0.0000]	206.87 [0.0000]	188.58 [0.0000]	163.37 [0.0000]	168.76 [0.0000]	163.43 [0.0000]

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.

t-statistics based on standard errors that are robust to group (income category) heteroscedasticity

Table 5: Hausman Test Results

Null Hypothesis	Dynamic Model	Static Model
H_0: $E(X_{it}\|u_{it}) = 0$	$\chi^2(7) = 104.18$	$\chi^2(6) = 29.72$
Decision	Reject H_0 as p-value < 0.0001	Reject H_0 as p-value < 0.0001

Table 6: Two-step System GMM estimation results for full sample of countries, 1981 to 2015

(Dependent variable: *lgdppc*)

	1	2	3	4	5	6	7	8
	SYS-GMM	SYS-GMM	SYS-GMM	SYS-GMM	SYS-GMM	SYS-GMM	SYS-GMM	SYS-GMM
L.lgdppc	0.9362***	0.834***	0.916***	0.919***	0.919***	0.920***	00.919***	0.932***
	(45.89)	(18.79)	(33.24)	(39.25)	(36.82)	(40.62)	(37.46)	(37.23)
wlpr_ftt_reg	0.0381***	0.0419***	0.00179**	0.0135**	0.0129**	0.0112*	0.0102*	0.00924
	(3.52)	(3.55)	(2.32)	(2.27)	(2.08)	(1.86)	(1.71)	(1.60)
hci_evi		0.0334**	0.0163**	0.0159***	0.0143**	0.0129**	0.0122**	0.00966*
		(2.52)	(2.47)	(2.72)	(2.43)	(2.44)	(2.11)	(1.70)
i_gdp			0.00267***	0.00236***	0.00278***	0.00307***	0.00305***	0.00334***
			(2.82)	(2.89)	(2.83)	(3.47)	(3.20)	(4.14)
x_gdp				0.000616***	0.000702***	0.000741***	0.000774***	0.000585***
				(3.24)	(3.04)	(3.45)	(3.19)	(3.05)
g_gdp					0.000962**	0.000858*	0.000821*	0.000458
					(2.12)	(1.86)	(1.90)	(0.98)
polity2						0.00262		
						(1.04)		
libdem							0.0435	
							(1.35)	
coolwi								0.0634
								(1.31)
constant	0.398***	1.192***	0.574***	0.565***	0.528***	0.509***	0.532***	0.440**
	(2.98)	(3.47)	(2.68)	(3.03)	(2.67)	(2.97)	(2.84)	(2.31)
N	2145	754	741	735	679	668	679	660
AB(2)					Pr>z=0.018	Pr>z=0.017	Pr>z=0.017	Pr>z=0.012
Hansen					Pr>χ^2=0.572	Pr>χ^2=0.663	Pr>χ^2=0.588	Pr>χ^2=0.743
Diff-in-Hansen					Pr>χ^2=0.482	Pr>χ^2=0.672	Pr>χ^2=0.724	Pr>χ^2=0.564

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.

t-statistics based on robust standard errors

Table 7: Two-step System GMM estimation eesults for full sample of countries including standardised variables, 1981 to 2015

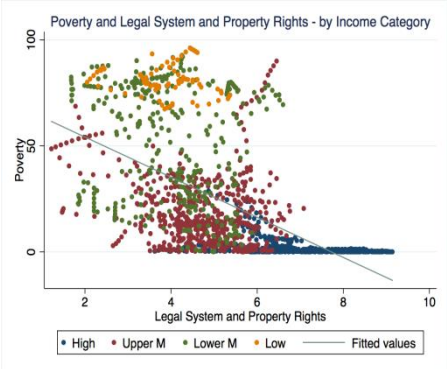
(Dependent variable: *lgdppc*)		(Dependent variable: *zee_lgdppc*)	
	(1) SYS- GMM		(2) SYS- GMM
L.lgdppc	0.919***	*L.zee_lgdppc*	0.919***
	(36.82)		(36.82)
wlpr_ftt_reg_sm	0.0129**	*zee_wlpr_ftt_reg_sm*	0.01723**
	(2.08)		(2.08)
hci_evi	0.0143**	*zee_hci_evi*	0.0281**
	(2.43)		(2.43)
i_gdp	0.00278***	*zee_i_gdp*	0.0189***
	(2.83)		(2.83)
x_gdp	0.000702***	*zee_x_gdp*	0.0196***
	(3.04)		(3.04)
g_gdp	0.000962**	*zee_g_gdp*	0.01198**
	(2.12)		(2.12)
constant	0.528***	constant	0.0339***
	(2.67)		(6.68)
N	679	N	679
AB(2)	Pr>z=0.018	AB(2)	Pr>z=0.018
Hansen	Pr>χ^2=0.572	Hansen	Pr>χ^2=0.572
Diff-in-Hansen	Pr>χ^2=0.482	Diff-in-Hansen	Pr>χ^2=0.482

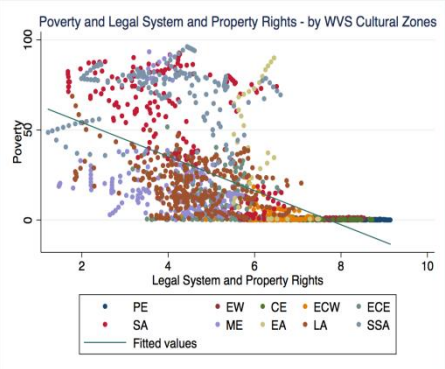
Table 8: Marginal effects of improvements in state capacity, human empowerment, investment and exports on prosperity in Sub-Saharan Africa

	Relevant changes in variables	Sub-Saharan Africa (SSA)	South Asia (SA)	East Asia (EA)
Base scenario:	Prosperity (*gdppc* in PPP $)	$2 874	$13 604	$21 412
	State capacity	5.28	6.31	7.30
	Human empowerment	0.89	1.86	4.05
	Investment	23.02	26.94	29.45
	Exports	21.67	52.52	52.97
Scenario 1:	**SSA state capacity (5.28) raised to level of state capacity in South Asia (6.31) or East Asia (7.30)**			
	Gdppc increase in SSA:	$2 874 Base scenario	$2 912 (up $39 or 1.34%)	$2 950 (up $76 or 2.63%)
Scenario 2:	**SSA human empowerment (0.89) raised to level of human empowerment in South Asia (1.86) or East Asia (4.05)**			
	Gdppc increase in SSA:	$2 874 Base scenario	$2 914 (up $40 or 1.4%)	$3 005 (up $131 or 4.55%)
Scenario 3:	**SSA investment ratio (23.02) raised to level of South Asia (26.94) or East Asia (29.45)**			
	Gdppc increase in SSA:	$2 874 Base scenario	$2 906 (up $32 or 1.10%))	$2 926 (up $52 or 1.81%)
Scenario 4:	**SSA export ratio (21.67) raised to level of South Asia (52.52) or East Asia (52.97)**			
	Gdppc increase in SSA:	$2 874 Base scenario	$2 936 (up $62 or 2.16%)	$2 937 (up $63 or 2.19%)
Scenario 5:	**Both state capacity and human empowerment in SSA raised to levels of South Asia or East Asia**			
	Gdppc increase in SSA:	$2 874 Base scenario	$2 963 (up $89 or 3.1%)	$3 081 (up $207 or 7.2%)
Scenario 6:	**All of state capacity, human empowerment, investment and exports in SSA raised to levels of South Asia or East Asia**			
	Gdppc increase in SSA:	$2 874 Base scenario	$3 057 (up $183 or 6.4%)	$3 196 (up $322 or 11.2%)

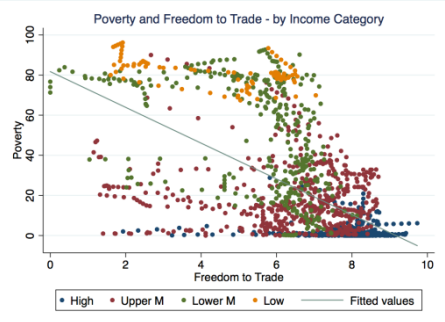
Figure 1: Poverty and regime-independent pillars of governance reflecting state capacity (WVS countries by World Bank income categories and WVS cultural zones)

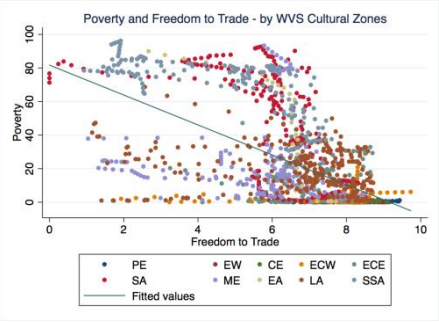
Legal System and Property Rights



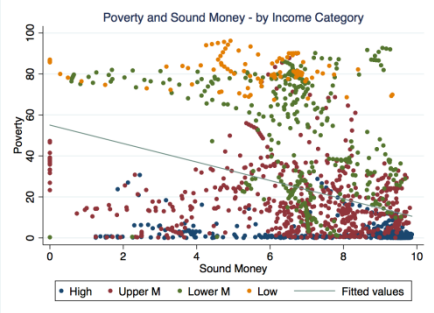


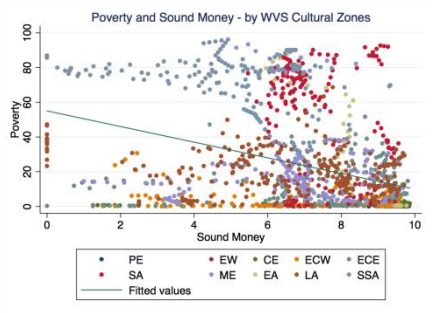
Freedom to Trade with Foreigners



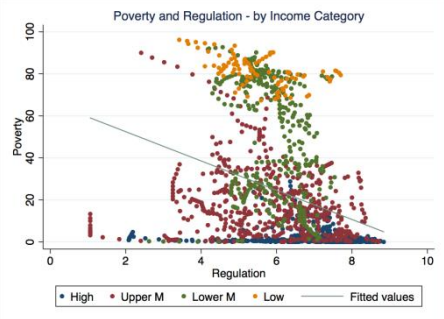


Sound Money





Regulatory Quality



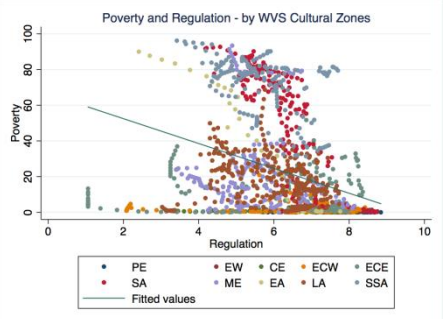
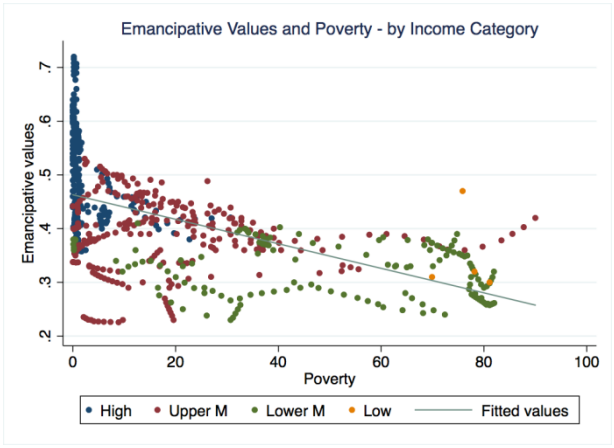


Figure 2: Poverty and emancipative values in WVS countries (by World Bank income categorisations and WVS cultural zones)



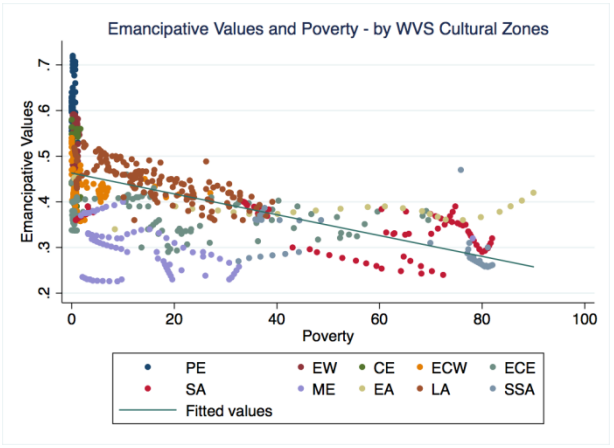
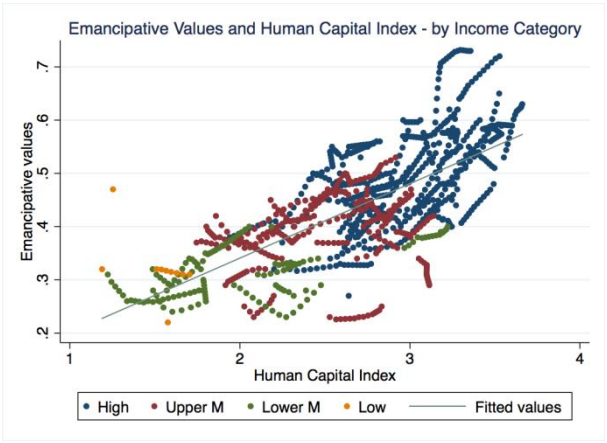


Figure 3: Human capital and emancipative values in WVS countries (by World Bank income categories and WVS cultural zones)



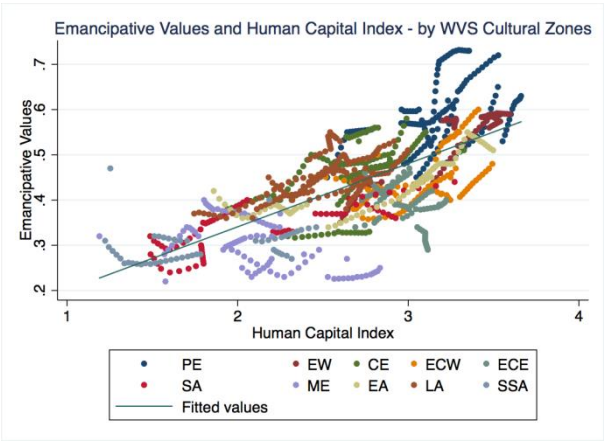
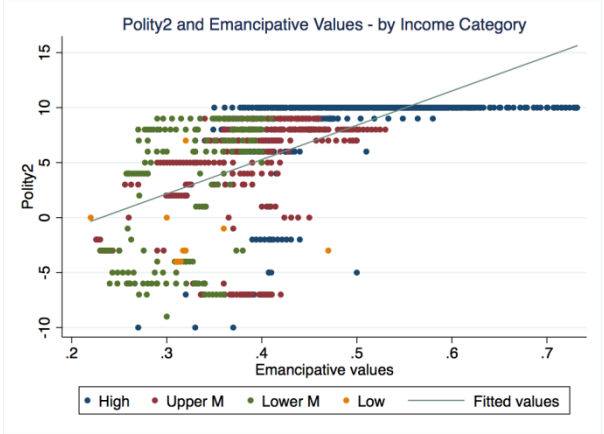


Figure 4: Polity2 and emancipative values in WVS countries (by World Bank income categories and WVS cultural zones)



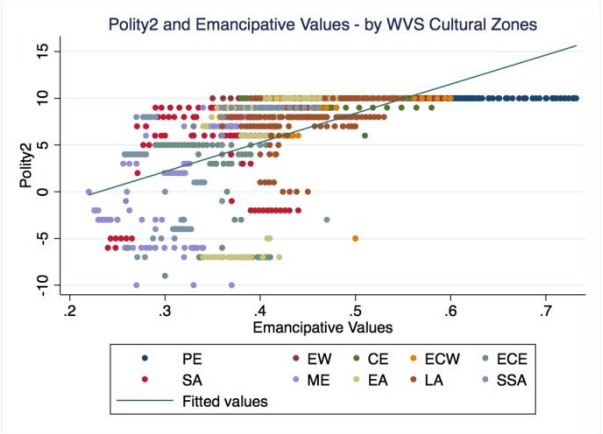
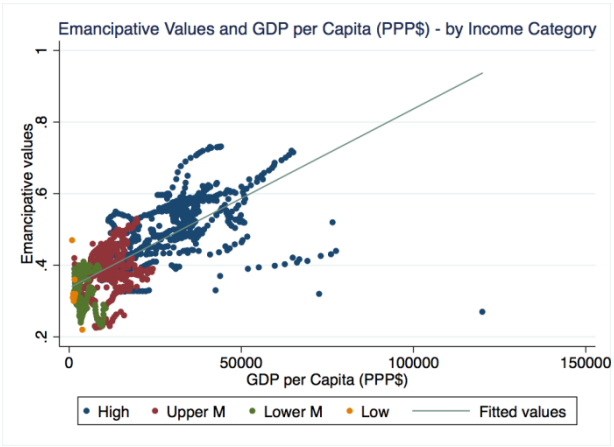


Figure 5: GDP per capita in constant PPP dollar (2011) and emancipative values (WVS countries by World Bank income categorisations and WVS cultural zones)



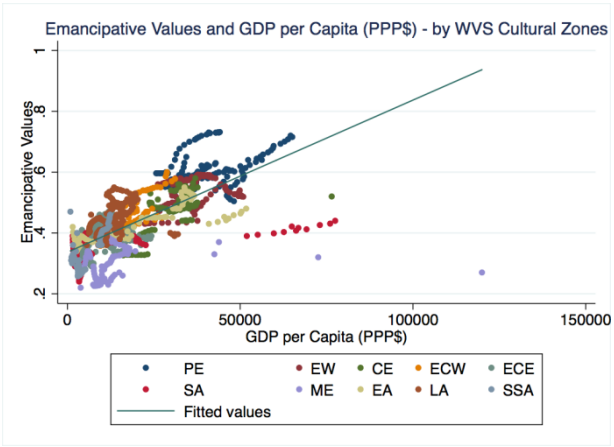
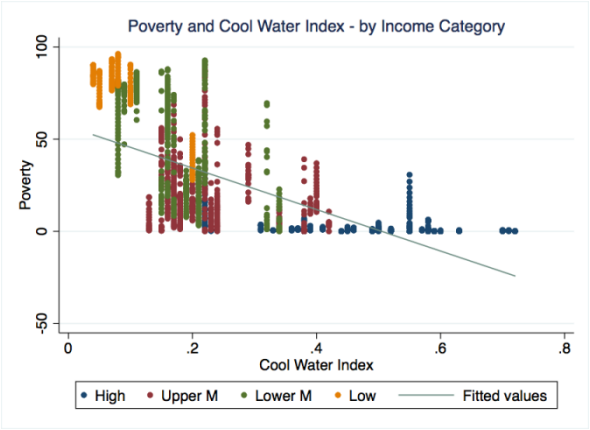


Figure 6: Poverty and the Cool Water Index in WVS countries (by World Bank income categories and cultural zones)



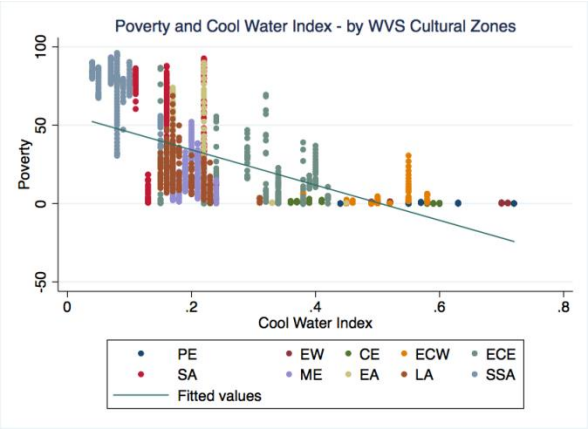


Figure 7: GDP per capita and the Cool Water Index in WVS countries (by World Bank income categories and WVS cultural zones)