

# Institutions and Poverty: A Critical Comment Based on Evolving Currents and Debates

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**Abstract** Tebaldi and Mohan (Journal of Development Studies 46:1047–1066, 2010) have established an empirical relationship between institutions and monetary poverty. We first, reflect their findings in the light of recent development models, debates and currents in post-2010 literature. We then re-examine their results with a non-monetary and multidimensional poverty indicator first published in 2010. Our findings confirm the negative relationship and the nexus disappears with control for average income. Hence, confirming the conclusions of the underlying study that institutions could have an indirect effect on multidimensional poverty. In other words, the poverty eradication effect of institutions is through average income as opposed to income inequality. We discuss how the findings provide insights into: (1) the Chinese model versus sustainable development; (2) debates over preferences in economic rights; (3) China's development and outlook; (4) the Fosu conjectures and (5) Piketty's and Kuznets' literatures.

**Keywords** Poverty · Institutions · Development

**JEL Classification** O11 · P14 · P16 · I32 · O17 · O43

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## 1 Introduction

There is a substantial bulk of literature on the theoretical relationship between poverty and institutions (Rodrik 2000; Chong and Calderon 2000; Grindle 2004; Sindzingre 2005; Bastiaensen et al. 2005; Tebaldi and Mohan 2010). Conversely, very few empirical studies have examined the link (Chong and Calderon 2000; Hasan et al. 2007). An interesting study in the latter strand is Tebaldi and Mohan (2010). According to the authors, corruption, political instability and government ineffectiveness would not only hurt income levels through market inefficiencies, but would also escalate poverty through increased income inequality. The results also imply that the quality of the regulatory system, rule of law, voice and accountability, and expropriation risk are inversely related to poverty but their effects on poverty is through average income rather than income distribution.

This note re-examines the findings of Tebaldi and Mohan (2010). It complements the underlying study by using a different measurement of poverty: the new multidimensional poverty indicator (MPI) provided by the United Nations Development Programme (UNDP, 2014). It is important to re-examine the findings of the authors because of two main developments in recent literature that have articulated the middle class and the poverty-inequality relationship: (1) the Washington Consensus versus the Beijing Model of development and (2) the nexuses between poverty, inequality and growth. According to Asongu (2016), the Washington Consensus prioritizes political governance whereas the Beijing Model prioritizes economic governance. Priorities of the dominant development models build on Asongu and Ssozi (2016, pp. 44) who have surveyed about 110 recently published studies on Sino-African relations to define the Beijing Model as “*deemphasized democracy, state capitalism, and priority in economic rights*” and the Washington Consensus as “*liberal democracy, private capitalism, and priority in political rights*”. Differences in the two models are linked to poverty-growth relations because China which focuses on the Beijing Model has substantially reduced poverty over the past decades, compared to other developing countries (especially Africa) which have fundamentally been oriented by policy prescriptions of the Washington Consensus (Babatunde 2013).<sup>1</sup> It is important to also note that the success of the Beijing Model in reducing poverty has consisted of building a Middle class at a spectacular pace.

First, on the relevance of the middle class in development, China’s breathtaking economic development has led to a new stream of research on development models, *inter alia*: (1) a reconciliation of the Washington Consensus and the Beijing Model as a development path for other developing countries (Asongu 2014a; Asongu and Ssozi 2016); (2) strategies of development founded on a mixture of the Washington Consensus with other successful development strategies (Fosu 2013); (3) self-reliance as a development path (Fofack 2014); (4) false economics of pre-conditions (Monga 2014); (5) the New Structural Economics (Stiglitz and Lin 2013; Stiglitz et al. 2013a, b; Lin and Monga 2011; Norman and Stiglitz 2012) which advocates for a synthesis of structuralism and liberalism; (6) the Liberal Institutional Pluralism<sup>2</sup> and (7) the Moyo Conjecture (Moyo 2013). According to Moyo, a middle class is needed to sustainably demand for political rights. Hence, economic rights

<sup>1</sup> For instance, a 2015 World Bank report on the achievement of Millennium Development Goals (MDGs) extreme poverty target has revealed that poverty has been decreasing in all regions of the world with the exception of Africa (Efobi et al. 2016).

<sup>2</sup> This post Washington Consensus school focuses on, among others: institutions in the delivery of good public commodities, institutional diversity and institutional conditions for successful economic prosperity. The interested reader can find more on this school in Fofack (2014, pp. 5–9; Rodrik 2008; Acemoglu et al. 2005; Brett 2009).

should be prioritised at the early stages of industrialisation. According to the narrative, the Beijing Model should be a short-run development model while the Washington Consensus should be prioritised as a long-term development model because, the Beijing Model is: (1) more effective at delivering a short-term middle-class and (2) in the long run, a less inclusive growth model compared to the Washington Consensus.<sup>3</sup> The Moyo conjecture has been partially confirmed in developing countries (Lalountas et al. 2011; Asongu 2014b).<sup>4</sup> It is important to note that the Beijing Model prioritises economic institutions in the flight against inequality and poverty whereas the Washington Consensus places more emphasis on political institutions.

Second, recent literature on inclusive development has clearly articulated the critical feature of income-distribution in the effect of growth on poverty (Fosu 2011, 2015). These narratives emphasise the imperative for policy makers to understand, among others: growth elasticity instruments; how poverty is directly affected by income distribution and the relevance of inequality in the growth-poverty relationship (Fosu 2010a, 2015; Asongu et al. 2015). Fosu (2010b, c, 2011) have shown that the response of poverty to growth is a decreasing function of inequality. The conclusions of Fosu which converge with Piketty's (2014) 'capital in the 21st century', are valid for both African (Fosu 2010a, b) and a broad sample of developing nations (Fosu 2010c; Asongu et al. 2015).<sup>5</sup>

It is important to devote space to discussing how investigating the underlying study extends the above evolving currents and debates. To the best of our knowledge, the additional motivation of this comment is at least twofold.

First, challenges to poverty and inequality reduction of the post-2015 development agenda also motivate this comment (United Nations UN 2013, pp. 7–13). Hence, policy makers could be provided with new insights into poverty reduction, based on income-distribution, the middle-class and quality of institutions. This helps in extending the evolving and interesting literature on inclusive and sustainable development (Bagnara 2012; Monika and Bobbin 2012; Ozgur et al. 2013; Singh 2014; Miller 2014; Mlachila et al. 2014).

Second, this paper improves the *evolving currents* on the nexuses between, inequality, growth and poverty by assessing how an institutional dimension affects the linkages. We have seen from the above that the growth effect of poverty depends on inequality because the inequality elasticity of poverty is higher than the growth elasticity of poverty. Tebaldi and Mohan (2010) have concluded that institutions affect poverty reduction more through average income as opposed to inequality (or income-distribution). If average income from the authors is equated to growth in Fosu (2015), the resulting comparative perspective is interesting. Accordingly, by comparing the Fosu narratives above with the conclusion of Tebaldi and Mohan, we could logically infer that the conclusions of the latter (in that average income is more relevant than inequality in poverty reduction) starkly contrast with

<sup>3</sup> Moyo defines the Washington Consensus as 'liberal democracy, private capitalism and priority in political rights', and the Beijing Model as 'de-emphasised democracy, state capitalism and priority in economic rights'. The interested reader can refer to Asongu (2014a) for insights into how a new development consensus could reconcile the Beijing Model with the Washington Consensus.

<sup>4</sup> There is an evolving literature maintaining that institutions are more endogenous to economic growth (Anyanwu and Erhijakpor 2014; Asongu 2015). While the Moyo proposal is based on the Kuznets (1955) conjecture which has been recently debunked by Piketty's (2014) 'Capital in the 21st century', we resist the itch of engaging in the debate because it is out of scope.

<sup>5</sup> More development literature on the nexuses between inequality, growth and poverty can be found in Fosu (2008, 2009).

those of the former: the response of poverty to growth is a decreasing function of inequality.

This study also complements the underlying paper by employing an alternative measurement of poverty. In essence, the motivation for employing a multidimensional poverty index (MPI) is at least twofold: time and substance. First, on the time dimension, while the MPI was first published in 2010, the final version of the underlying paper was submitted in 2009, and later published in 2010. Second, on the substantive dimension, contrary to the underlying paper which is based on a monetary measurement of poverty (people living on less than \$2 a day), the MPI considers poverty as a multidimensional concept. It complements the monetary measurement of poverty used by Tebaldi and Mohan (2010) by taking into account overlapping needs by a people within a given period. Needs identified by the index are the same as those reflected by the three dimensions of the human development index (HDI). The MPI is a better tool in policy making because it helps in enhancing effective resource allocation by enabling policy makers to devote resources to those sectors with the highest poverty intensity. The index is of great importance in strategically addressing the Millennium Development Goals (MDGs) as well as policy intervention monitoring. Moreover, the index can, *inter alia* be: adapted at the domestic levels with weights and indicators that are consistent with the country and region, used to examine variations over time and adopted for poverty eradication programs at national levels.

The rest of the comment is organised as follows. Section 2 further discusses the data. The methodology and empirical analysis are covered in Sect. 3. Section 4 provides concluding implications, caveats and future research directions.

## 2 Data

The data and methodology are typically consistent with the underpinning study.<sup>6</sup> It consists of a cross-sectional sample of 53 countries for the period 1996–2005. The main difference lies in the dependent variable. While the study motivating this inquiry has used the poverty rate (at the PPP \$2 threshold) for developing countries, we are using the MPI discussed in the introduction. It should be noted that these indicators are only limited to developing countries.

The advantage of using the MPI is because; poverty is a multidimensional and complex phenomenon which cannot exclusively be measured by money poverty metrics. The MPI which was first published in 2010 complements monetary indicators of poverty by integrating overlapping deprivations. Accordingly, the index captures deprivations across the three components of the Human Development Index (HDI), notably: education, health and standards of living. It reflects the number deprivations poor households are confronted with as well as the number of people who are poor because they are characterised with deprivations of 33% or more in the HDI components. The MPI is computed by multiplying the proportion of the multidimensionally poor in the population' (or headcount ratio) by the intensity of poverty. The policy relevance of the MPI builds on the fact that it can be used in more effective allocation of resources because it makes it possible to target people with the greatest poverty intensity. Accordingly, it can help in monitoring policy intervention.

<sup>6</sup> The terms 'underlying paper' and 'underlying study' are used interchangeably with Tebaldi and Mohan (2010).

In accordance with the underlying paper, institutional variables are obtained from Kauffman et al. (2007) and McArthur and Sachs (2001). Expropriation risk which is appreciated as the risk of forced nationalisation and risk of confiscation is used for conformity with other studies in the institutions and growth literature. It ranges from 0 to 10 and is measured as the mean value of each nation for the period 1985–1995. Therefore higher scores denote better institutions and therefore, lowered risk of forced nationalisation and risk of confiscation.

The measurements of institutions obtained from Kauffman et al. (2007) include: *political governance* (voice & accountability and political stability/no violence), *economic governance* (government effectiveness and regulation quality) and *institutional governance* (corruption-control and rule of law). Consistent with Andrés and Asongu (2013): (1) *political governance* is the election and replacement of political leaders; (2) *economic governance* is the formulation and implementation of policies that deliver public commodities and (3) *institutional governance* is the respect by the State and citizens of institutions that govern interactions between them. Higher values of the governance dynamics indicate better institutions.<sup>7</sup>

For further robustness purposes, principal component analysis (PCA) is used to obtain a general governance index. The Kaiser (1974) and Jolliffe (2002) criterion is applied. They have recommended that only a factor with an eigenvalue greater than one should be retained (see Tchamyou 2016).

The governance variables are for the years 2005, 2004, 2002, 2000, 1998 and 1996. We shall use the terms governance and institutions interchangeably. Accordingly, while the underlying paper has used ‘institutions’ in the title, the variables used in the analysis are economic, political and institutional governance dynamics. Moreover the Kauffman et al. (2007) citation used to define the variables, conceives governance in political, economic and institutional terms. In this light, our motivation for using the terms of ‘governance’ and ‘institutions’ interchangeably is to mitigate information asymmetry and enhance readability.

<sup>7</sup> (1) “Regulatory Quality ‘includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development’” (Tebaldi and Mohan 2010, p. 1063).

(2) “Rule of Law includes ‘several indicators which measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary and the enforceability of contracts. Together, these indicators measure the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions and importantly, the extent to which property rights are protected’” (Tebaldi and Mohan 2010, p. 1063).

(3) “Control of Corruption ‘measures perceptions of corruption, conventionally defined as the exercise of public power for private gain.... The presence of corruption is often a manifestation of a lack of respect of both the corrupter (typically a private citizen or firm) and the corrupted (typically a public official or politician) for the rules which govern their interactions and hence represents a failure of governance according to our definition’.” (Tebaldi and Mohan 2010 p. 1064).

(4) “Voice and Accountability measures ‘the extent to which a country’s citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media’” (Tebaldi and Mohan 2010 p. 1064).

(5) “Political Stability and Absence of Violence measure ‘perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism’” (Tebaldi and Mohan 2010, p. 1064).

(6) “Government Effectiveness measures ‘the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies’” (Tebaldi and Mohan 2010, p. 1064).

The geographic indicators which are obtained from La Porta et al. (1999) and McActhur and Sachs (2001) consist of coastal land that measures the *proportion of land* within a horizon of 100 km from the coast on the one hand and *latitude* which is scaled from 0 to 1, denoting the value of the latitude in absolute terms. *Colonial legacy* indicators that are obtained from La Porta et al. (1999) consist of a set of dummy variables, which take the value of 1 if the country is a former *French, Socialist, Scandinavian, German or English* colony. The values of *ethnolinguistic fragmentation* are also from La Porta et al. (1999).

Under the hypothesis that institutions represent an evolutionary process which is contingent on previously gained knowledge, the specifications account for indicators of human capital accumulation in terms of primary and secondary school enrolments. The variable which is obtained from Mitchell (2003a, b, c) denotes the number of students per kilometre square in the 1920s.

The measurement of country area is based on the current geopolitical arrangement from the United Nations.

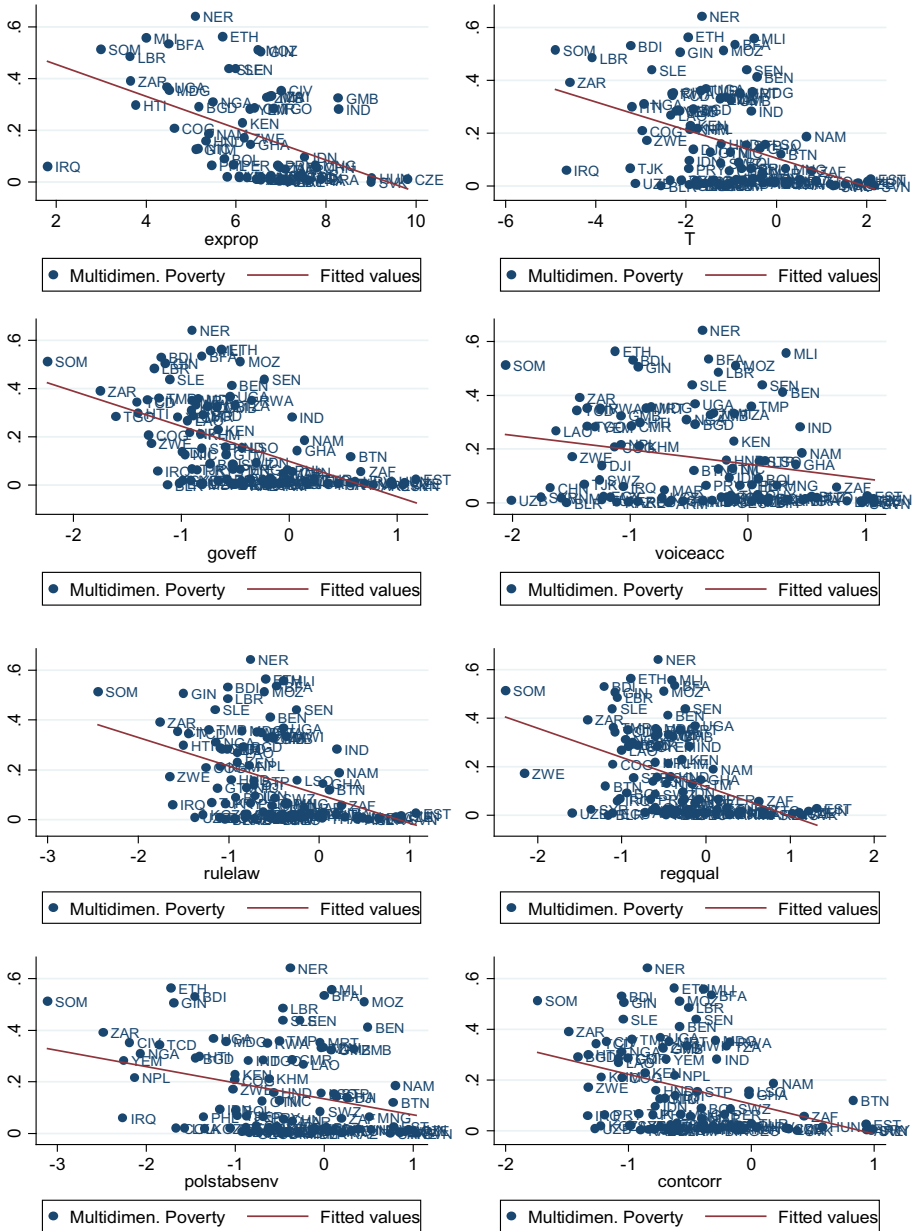
### 3 Methodology and Empirical Results

From Fig. 1, it is apparent that poverty is negatively related to institutions, since countries with better institutions are associated with lower levels of poverty. The institutional variables from left-to-right-to-bottom include: expropriation rights (*exprop*); an institutional index (T); government effectiveness (*goveff*); voice and accountability (*voiceacc*); the rule of law (*rulelaw*); regulation quality (*regqual*); political stability (*polstabenvs*) and corruption-control (*contcorr*). However, simple correlations do not enable us to conclude whether multidimensional poverty is actually reduced by better institutions. The endogeneity concern is addressed with the help of a ‘standard error robust’ instrumental variables (IV) method. The results reported in Table 1 are based on Ordinary Least Squares (OLS) whereas those in Table 2 reveal estimates from second stages.

Consistent with Tebaldi and Mohan (2010), the findings in Table 1 show geography, human capital and legal origins are relevant correlates of current institutions and elicit about 30% of the variation in the other measurements of institutions. Moreover, in terms of overall significance of models, with the exception of the ‘political stability’-oriented model, all regressions have overall significance. Hence, in these models, early twentieth century human capital density and geography-related indicators have a positive influence on all institutional measurements. This means that nations that accumulated relatively higher levels of human capital during the twentieth century have enjoyed better contemporary institutional levels. These findings are in accordance with Glaeser et al. (2004).

We find that the coefficient of ethnolinguistic fragmentation is not significant, which suggests that this variable does not impact current institutions. These findings which are consistent with Tebaldi and Mohan (2010) run counter to those of La Porta et al. (1999). The legal origin variables are not statistically significant while geographic indicators are positively significant.

Table 2 presents the results of the effect of institutions and geography on the MPI. We notice that the geographical variables are not overwhelmingly significant. Hence, the conclusions of Sachs et al. (2001) are not verifiable here. As for the institutional indicators, but for political stability, all have a significantly negative relationship with the dependent variable. Accordingly, an improvement of governance reduces multidimensional poverty. Given that the instruments are invalid, we cannot project the results with confidence.



**Fig. 1** Poverty and institutions

Table 3 below differs from the preceding table in the fact that, it controls for the impact of initial income, instead of geographical effects. However, it follows the same econometric logic. Hence, the specifications are comparable. We notice that the significance of all institutional variables disappear in the interest of average income. The signs of these institutional indicators also become very unstable.

**Table 1** The correlates of current institutions

|   | Dependent variable         |                            |                            |                             |                             |                            |                            |   |
|---|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|---|
|   | Government effectiveness   | Political stability        | Regulatory quality         | Voice and accountability    | Control of corruption       | Rule of law                | Expropriation risk         | Principal component-weighted institutions |
| Prop. land within 100 km of the sea coast       | <b>0.086*</b><br>(0.094)   | <b>-0.126*</b><br>(0.090)  | 0.026 (0.655)              | 0.057 (0.382)               | 0.036 (0.455)               | 0.009 (0.855)              | <b>0.257**</b><br>(0.029)  | 0.059 (0.604)                             |
| Absolute latitude                               | <b>1.978***</b><br>(0.003) | <b>3.390***</b><br>(0.001) | <b>1.515**</b><br>(0.041)  | 1.048 (0.203)               | <b>1.625***</b><br>(0.009)  | <b>2.384***</b><br>(0.000) | 2.445 (0.113)              | <b>5.391***</b><br>(0.000)                |
| Ethnolinguistic fragmentation                   | 0.115 (0.656)              | 0.659 (0.083)              | 0.252 (0.394)              | 0.623 (0.064)               | 0.056 (0.818)               | 0.251 (0.337)              | 0.871 (0.162)              | 0.251 (0.664)                             |
| Legal origin –British                           | -0.170<br>(0.553)          | -0.622<br>(0.137)          | -0.291<br>(0.372)          | 0.463 (0.210)               | 0.153 (0.574)               | -0.021<br>(0.941)          | -1.257<br>(0.103)          | 0.086 (0.892)                             |
| Legal origin –French                            | -0.218<br>(0.380)          | -0.505<br>(0.162)          | -0.160<br>(0.571)          | 0.437 (0.171)               | 0.159 (0.495)               | -0.093<br>(0.708)          | -1.116<br>(0.107)          | 0.201 (0.717)                             |
| Human capital density in the early 20th century | <b>0.108***</b><br>(0.000) | 0.015 (0.712)              | <b>0.094***</b><br>(0.004) | <b>0.133***</b><br>(0.000)  | <b>0.054**</b><br>(0.043)   | <b>0.078***</b><br>(0.008) | <b>0.273***</b><br>(0.001) | <b>0.149**</b><br>(0.020)                 |
| Constant  | <b>-1.605**</b><br>(0.015) | 0.599 (0.522)              | -0.774<br>(0.294)          | <b>-1.734***</b><br>(0.040) | <b>-1.387***</b><br>(0.026) | -1.043<br>(0.112)          | <b>3.691**</b><br>(0.029)  | <b>-2.894**</b><br>(0.049)                |
| Observations                                    | 63                         | 63                         | 63                         | 63                          | 63                          | 63                         | 55                         | 63  |
| R-squared                                       | 0.4279                     | 0.2740                     | 0.2593                     | 0.2911                      | 0.2460                      | 0.3630                     | 0.3709                     | 0.3576                                    |

lo\_socialist, lo\_german and lo\_scandindropped because of collinearity. All regressions are estimated using heteroskedasticity correction

Values in bold represent significant estimated coefficients

Prop proportion

P-values are in parentheses

\*, \*\*, \*\*\*: Significance levels of 10, 5 and 1% respectively



Table 2 IV regressions of multidimensional poverty on institutions and geography

|  | Model 1                     | Model 2                    | Model 3                     | Model 4                     | Model 5                    | Model 6                     | Model 7                     | Model 8                     |
|--|-----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Government effectiveness                                     | <b>-0.337***</b><br>(0.000) |                            |                             |                             |                            |                             |                             |                             |
| Political stability  |                             | 0.210<br>(0.169)           |                             |                             |                            |                             |                             |                             |
| Regulatory quality   |                             |                            | <b>-0.381***</b><br>(0.003) |                             |                            |                             |                             |                             |
| Voice and accountability                                     |                             |                            |                             | <b>-0.131**</b><br>(0.029)  |                            |                             |                             |                             |
| Control of corruption  |                             |                            |                             |                             | <b>-0.568**</b><br>(0.019) |                             |                             |                             |
| Rule of law  |                             |                            |                             |                             |                            | <b>-0.354***</b><br>(0.008) |                             |                             |
| Expropriation risk   |                             |                            |                             |                             |                            |                             | <b>-0.143***</b><br>(0.000) |                             |
| Principal component-weighted institutions                    |                             |                            |                             |                             |                            |                             |                             | <b>-0.232***</b><br>(0.007) |
| Prop. land within 100 km of the seacoast                     | 0.004<br>(0.805)            | 0.022<br>(0.377)           | <b>-0.009</b><br>(0.647)    | 0.001<br>(0.940)            | 0.000<br>(0.998)           | -0.011<br>(0.563)           | 0.027<br>(0.122)            | -0.008<br>(0.736)           |
| Absolute latitude  | 0.206<br>(0.478)            | <b>-1.315**</b><br>(0.014) | 0.090<br>(0.797)            | <b>-0.568***</b><br>(0.004) | 0.346<br>(0.507)           | 0.230<br>(0.572)            | -0.096<br>(0.698)           | 0.713                       |
| Constant   | -0.055<br>(0.803)           | 0.305<br>(0.252)           | 0.136<br>(0.593)            | 0.242<br>(0.234)            | -0.188<br>(0.612)          | 0.091<br>(0.715)            | <b>0.762***</b><br>(0.003)  | -0.112<br>(0.723)           |
| Observations   | 63                          | 63                         | 63                          | 63                          | 63                         | 63                          | 55                          | 63                          |
| Uncentered R-squared   | 0.6314                      | 0.3555                     | 0.4372                      | 0.6298                      | 0.1488                     | 0.4889                      | 0.6441                      | 0.3012                      |
| Anderson Underidentification test ( <i>p</i> value)          | 0.0042                      | 0.3182                     | 0.0710                      | 0.0015                      | 0.2201                     | 0.0552                      | 0.0103                      | 0.1668                      |
| Sargan statistic (overidentificationtest ( <i>p</i> -value)) | 0.0609                      | 0.0095                     | 0.0838                      | 0.0004                      | 0.2009                     | 0.0196                      | 0.0010                      | 0.1621                      |

Table 2 continued

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| Hausmann test overidentification test ( <i>p</i> -value) | 0.0596  | 0.0060  | 0.0853  | 0.0000  | 0.2174  | 0.0154  | 0.0002  | 0.1740  |
| Anderson-Rubin Wald test ( <i>p</i> -value)              | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000  |

All regressions are estimated using heteroskedasticity correction. *P*-values are in parentheses. The dependent variable is the Multidimensional Poverty Index between 1996–2005; all regressions were run with standard errors robust to arbitrary heteroskedasticity. All first-stage regressions are estimated including the following set of variables: In human capital density in the early twentieth century, dummies for the origin of the legal system, absolute latitude, proportion of land within 100 km of the seacoast, and ethnolinguistic fragmentation. The dependent variable is the Multidimensional Poverty Index (MPI)

Values in bold represent significant estimated coefficients

*IV* instrumental variable

\*,\*\*,\*\*\* Significance levels of 10, 5 and 1% respectively

**Table 3** IV regressions of multidimensional poverty on institutions and initial GDP per capita

|   | Model 1                    | Model 2                     | Model 3                     | Model 4                     | Model 5           | Model 6                    | Model 7                     | Model 8           |
|---|----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|----------------------------|-----------------------------|-------------------|
| Government effectiveness  | -0.138<br>(0.169)          |                             |                             |                             |                   |                            |                             |                   |
| Political stability   |                            | -0.0514<br>(0.455)          |                             |                             |                   |                            |                             |                   |
| Regulatory quality  |                            |                             | -0.080<br>(0.490)           |                             |                   |                            |                             |                   |
| Voice and accountability  |                            |                             |                             | 0.040 (0.364)               |                   |                            |                             |                   |
| Control of corruption   |                            |                             |                             |                             | -0.111 (0.778)    |                            |                             |                   |
| Rule of law   |                            |                             |                             |                             |                   | -0.187<br>(0.152)          |                             |                   |
| Expropriation risk  |                            |                             |                             |                             |                   |                            | 0.015 (0.658)               |                   |
| Principal component-weighted institutions                       |                            |                             |                             |                             |                   |                            |                             | -0.023<br>(0.837) |
| Log of average income   | <b>-0.102**</b><br>(0.048) | <b>-0.156***</b><br>(0.000) | <b>-0.136***</b><br>(0.007) | <b>-0.184***</b><br>(0.000) | -0.137<br>(0.247) | <b>-0.106**</b><br>(0.029) | <b>-0.186***</b><br>(0.000) | -0.147<br>(0.191) |
| Constant  | <b>0.932**</b><br>(0.040)  | <b>1.389***</b><br>(0.000)  | <b>1.233***</b><br>(0.006)  | <b>1.656***</b><br>(0.000)  | 1.207<br>(0.294)  | <b>0.917**</b><br>(0.043)  | <b>1.572***</b><br>(0.000)  | 1.3226<br>(0.191) |
| Observations  | 63                         | 63                          | 63                          | 63                          | 63                | 63                         | 55                          |                   |
| Uncentered R-squared  | 0.8223                     | 0.8361                      | 0.8376                      | 0.8654                      | 0.8260            | 0.7635                     | 0.8461                      | 0.8484            |
| Anderson Underidentification test<br>( <i>p</i> value)          | 0.0920                     | 0.2753                      | 0.3708                      | 0.0056                      | 0.9718            | 0.3243                     | 0.0170                      | 0.8832            |
| Sargan statistic (overidentification test<br>( <i>p</i> value)) | 0.1285                     | 0.0538                      | 0.0502                      | 0.0272                      | 0.0537            | 0.3034                     | 0.0286                      | 0.0316            |

All regressions are estimated using heteroskedasticity correction. The dependent variable is the Multidimensional Poverty Index (MPI)

Values in bold represent significant estimated coefficients

*Prop* proportion, *IV* instrumental variable

*P* values are in parentheses

\*, \*\*, \*\*\* Significance level of 10, 5 and 1% respectively



The weakness of Table 2 is based on the fact that the instruments are not efficient and may be of questionable validity. On this account, we follow the same econometric logic as in Table 4 while using only human capital as an instrument. The table in the Appendix represents the first-stage of Table 4. Based on the results, we ascertain that the instruments are valid this time. Accordingly, with the exception of political stability, all the governance variables are significant.

It should be noted that Table 4 is a reproduction of Table 3. While in Table 3 we have instrumented our indicators of interest with many variables (legal origins, human capital and geographic aspects), we have retained only human capital accumulation as instrument in Table 4. Accordingly geographic aspects and legal origins have been used as instruments for institutions respectively by La Porta et al. (1999) and Hall and Jones (1999).

In Table 4, the choice human capital accumulation as instrument for institutions is based on the hypothesis that institutions denote a process of evolution that is contingent on the accumulation of human capital in terms of primary and secondary school enrolments (see Glaeser et al. 2004).

Since we do not have at least two instruments for the over-identification test, we present the regression in two stages. The first-stage in which we investigate if cumulative human capital is a good instrument is provided in the appendix. In this light, Table 4 is the second-stage of the estimation.

When the instruments of the Appendix are employed in the specifications of Table 3, the same results are obtained.<sup>8</sup> In other words, the institutional variables are not significant. This implies that the effect of institutions disappears when we control for the revenue effect. Hence, consistent with the underlying paper, the effects of institution on multidimensional poverty are indirect.<sup>9</sup>

#### 4 Concluding Implications, Caveats and Future Research Directions

After employing the same economic techniques and data (with exception to the dependent variable) as in Tebaldi and Mohan (2010), we have established the same conclusion: institutions mitigate poverty through the average income channel, as opposed to the inequality mechanisms. In other words, we have used a non monetary and multidimensional poverty measurement to confirm the findings of the underlying study that have been based on a monetary measurement of poverty. Hence, we have used a more holistic poverty measurement, published in 2010 (i.e. after the findings we are extending), to confirm the results of the underlying study. However, our findings are distinct from those we have extended in the perspective that the conception of poverty should not be exclusively monetary. Non-monetary poverty is also affected by macroeconomic and structural factors in an economy, notably: institutions and economic prosperity. An in-depth discourse of the non-monetary poverty measurement in the light of the study we have extended has been provided in the introduction.

<sup>8</sup> Results can be provided upon request.

<sup>9</sup> It is important to note that the table found in the appendix is not related to an over-identification test. Instead, it is part of a two-stage regression process. It is the results of the first step that establish if the human capital variable is linked to institutions or not. The choice of this variable as an instrument has been demonstrated by Glaeser et al. (2004) which is the theoretical basis for the choice of this instrument. Some degree of statistical significance is apparent in the table in the appendix which reports first stage estimations. Moreover, because only one instrument is employed, an overidentification test is not feasible. Hence a two stage least squares (2SLS) approach is used in Table 4 to assess if the instruments are good or not.

**Table 4** IV regressions of multidimensional poverty on institutions and geography

|   | Model 1                     | Model 2             | Model 3                     | Model 4                     | Model 5                     | Model 6                     | Model 7                     | Model 8                     |
|---|-----------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Government effectiveness                  | <b>-0.341***</b><br>(0.000) |                     |                             |                             |                             |                             |                             |                             |
| Political stability                       |                             | 48.174<br>(0.983)   |                             |                             |                             |                             |                             |                             |
| Regulatory quality                        |                             |                     | <b>-0.436***</b><br>(0.003) |                             |                             |                             |                             |                             |
| Voice and accountability                  |                             |                     |                             | <b>-0.291***</b><br>(0.002) |                             |                             |                             |                             |
| Control of corruption                     |                             |                     |                             |                             | <b>-0.6523**</b><br>(0.016) |                             |                             |                             |
| Rule of law                               |                             |                     |                             |                             |                             | <b>-0.475***</b><br>(0.005) |                             |                             |
| Expropriation risk                        |                             |                     |                             |                             |                             |                             | <b>-0.178***</b><br>(0.001) |                             |
| Principal component-weighted institutions |                             |                     |                             |                             |                             |                             |                             | <b>-0.238***</b><br>(0.008) |
| Prop. land within 100 km of these coast   | -0.0019<br>(0.906)          | 4.883 (0.983)       | -0.0177<br>(0.429)          | -0.0089<br>(0.674)          | -0.0048<br>(0.859)          | -0.0193<br>(0.423)          | 0.023 (0.313)               | -0.0115<br>(0.643)          |
| Absolute latitude                         | 0.275 (0.342)               | -138.742<br>(0.983) | 0.283 (0.465)               | -0.2997<br>(0.234)          | 0.460 (0.398)               | 0.486 (0.305)               | 0.053 (0.866)               | 0.630 (0.252)               |
| Constant                                  | 0.0027 (0.990)              | -4.482 (0.985)      | 0.185<br>(0.508)            | 0.252 (0.350)               | -0.2039<br>(0.615)          | 0.0633 (0.837)              | <b>0.991***</b><br>(0.007)  | -0.0677<br>(0.844)          |
| Observations                              | 66                          | 66                  | 66                          | 66                          | 66                          | 66                          | 57                          | 66                          |
| Uncentered R-squared                      | 0.5750                      | -1.6e + 04          | 0.2490                      | 0.2880                      | 0.1702                      | 0.1458                      | 0.2942                      | 0.0362                      |

All regressions are estimated using heteroskedasticity correction. The dependent variable is the Multidimensional Poverty Index (MPI)

Values in bold represent significant estimated coefficients

Log logarithm, IV Instrumental Variable

P values are in parentheses

\*, \*\*, \*\*\* significance levels of 10, 5 and 1% respectively

Given the growing currents and debates, the results we have established provide insights into: (1) China's development and outlook; (2) the Chinese model versus sustainable development; (3) the debate over preferences in economic rights; (4) Fosu's conjectures; (5) Piketty's literature contrasting with Kuznets'; (6) some caveats and (7) future research to ascertain the inequality mechanism.

The threefold motivation at the beginning of the note can be summarised as follows. (1) Africa, MDGs and role of the middleclass. (2) Poverty and inequality in the post-2015 development agenda. (3) The role of institutions in the response of poverty to growth in the light of findings we are extending. The first-three strands of 'discussion of results' provide insights into the threefold motivation chronologically.

First, the findings may also reflect the current Chinese development outlook and the Beijing Model. While poverty has decreased substantially over the past decades due to the country's breathtaking economic growth, inequality has also risen sharply (Asongu 2014a). This implies, institutional development or governance in China has enabled the mitigation of poverty through average income (which has risen) as opposed to income-inequality (which has also risen). A natural criticism that may counter this line of inference in relation to the findings should be that China has questionable institutional quality. Accordingly, while China may have questionable political governance standards (i.e., the election and replacement of political leaders), the other two governance dynamics of economic governance (regulation quality and government effectiveness) and institutional governance (corruption-control and rule of law) escape this criticism. Moreover, a dimension of political governance (political stability/no violence) is consistently insignificant in our findings, which gives more weight to the other two governance dynamics that are relevant to the Chinese model. This has implications for Africa in the post-2015 development agenda, since a recent World Bank report has revealed that extreme poverty has been decreasing in all regions of the world with the exception of Africa (World Bank 2015). According to the narrative, 45% of countries in the Sub-Saharan African region were off-track from achieving the MDG extreme poverty target.

Second, the Chinese model as conceived by the Moyo conjecture discussed in the introduction is not a sustainable development model because it mitigates inequality at a lower rate than the Washington Consensus. Hence in light of the post-2015 development agenda, putting economic growth before income-inequality may not be the right way forward towards inclusive and sustainable development.

Third, the results have critical implications on preferences in economic rights. In simple terms, the conclusions sound like: economic rights to 'equitable income distribution' are less important than economic rights 'to economic growth or average income', as a mechanism from institutions to poverty mitigation. The logical inference is that in order to fight poverty institutions should be at the service of economic growth instead of inequality. This implies income-average is a more instrumental poverty eradication channel than income-inequality. But this implication reminds us of Lewis (1955): 'Output may be growing, and yet the mass of the people may be becoming poorer'. Accordingly, 'Lewis led all developing countries to water, proverbially speaking, some African countries have so far chosen not to drink' (Amavilah 2014). This may paint a picture showing why Africa is the continent with the highest poverty rate despite the evolving 'Africa rising' narrative (Obeng-Odoom 2013, 2015). But we resist the itch of further looking at this direction and debate because we are more concerned with the underlying paper.

Fourth, the findings run counter to the Fosu conjectures discussed in the introduction that are valid for both African and a broad sample of developing countries. As a reminder,

we have seen that the response of poverty to growth is a decreasing function of inequality because the growth elasticity of poverty is lower than the inequality elasticity of poverty.

Fifth, Piketty's '*capital in the 21st century*' which has debunked the Kuznets (1955) conjectures is indirectly called to question. In other words, the findings have the following policy implication: institutions should be developed at the service of economic growth if poverty is to be eradicated. This substantially contradicts a growing strand of literature calling for less developed countries to be oriented towards industrialisation in the perspective of Piketty, as opposed to Kuznets (Asongu and Nwachukwu 2016). Overall, the findings seriously challenge the substantially documented concern of inequality as a critical set back to 21st century capitalism (Brada and Bah 2014).

Sixth, it is important to note that whereas there are 53 sampled countries; reference to the Beijing model from China is because the inquiry is motivated by the need to engage evolving currents and debates on dominant development models.<sup>10</sup> The Beijing Model is a dominant model of development that now rivals the Washington Consensus. Moreover, while reference to Piketty's work may be cursory and incidental because Piketty has not focused only on the size distribution of income (but also on the functional distribution of income), emphasis on Piketty's work is based on the notion that the response of poverty to growth is a decreasing function of inequality.

Seventh, the above criticisms would have some substance as long as the dimension of inequality in the conclusions of Tebaldi and Mohan (2010) is not backed by some empirical validity. Accordingly, the channel of inequality is used as a logical alternative to the average income mechanism without empirical justification. While the intuition for this inference by the authors is logical and sound, it nonetheless has to be backed by sound empirical validity. The evolving currents and debates after the published paper cannot be overlooked. In this light, introducing inequality indicators into the analysis is an interesting future research direction that would improve the extant of literature on the issues and enrich the debate.

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## Appendix

See Table 5.

<sup>10</sup> First, Africa which was qualified to be on time for certain Millennium Development poverty targets (Pinkivskiy and Sala-i-Martin 2014) due to its growth miracle (Young 2012) has been experiencing substantial growth of its middle class (Kodila-Tedika et al. 2016; Ncube et al. 2011, 2014; Ncube and Shimeles 2013). Accordingly, the continent's decline in poverty relative to other regions of the world (Fosu 2015) maybe more traceable to the middle class than to recent narratives of growing inequality marring its growth (Blas 2014).

Table 5 The correlates of current institutions

|   | Government effectiveness     | Political Stability         | Regulatory quality          | Voice and accountability    | Control of corruption       | Rule of law                  | Expropriation risk          | Principal component-weighted institutions |
|---|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|---|
| Human capital density in the early 20th century | <b>0.11077***</b><br>(0.000) | -0.0007<br>(0.984)          | <b>0.0868***</b><br>(0.003) | <b>0.1300***</b><br>(0.000) | <b>0.0580**</b><br>(0.017)  | <b>0.07966***</b><br>(0.003) | <b>0.2848***</b><br>(0.001) | <b>0.1588**</b><br>(0.011)                |
| Prop. land within 100 km of the sea coast       | <b>0.0832*</b><br>(0.091)    | -0.1019<br>(0.175)          | 0.0288<br>(0.597)           | 0.0736<br>(0.257)           | 0.0391<br>(0.390)           | 0.0232 (0.644)               | <b>0.2894**</b><br>(0.034)  | 0.0791 (0.498)                            |
| Absolute latitude                               | <b>1.9828***</b><br>(0.000)  | <b>2.8716***</b><br>(0.000) | <b>1.5729***</b><br>(0.006) | 0.3529<br>(0.592)           | <b>1.3227***</b><br>(0.006) | <b>1.869***</b><br>(0.001)   | 1.859 (0.193)               | <b>4.3328***</b><br>(0.001)               |
| Constant  | <b>-1.7027***</b><br>(0.005) | 0.1051<br>(0.907)           | -0.9169<br>(0.170)          | -1.1425<br>(0.148)          | <b>-1.209**</b><br>(0.031)  | <b>-1.097*</b><br>(0.075)    | 2.655 (0.111)               | <b>-2.7378*</b><br>(0.056)                |
| Observations                                    | 66                           | 66                          | 66                          | 66                          | 66                          | 66                           | 57                          | 66  |
| R-squared                                       | 0.4617                       | 0.2280                      | 0.3032                      | 0.2352                      | 0.2579                      | 0.3619                       | 0.2892                      | 0.3304                                    |

All regressions are estimated using heteroskedasticity correction

Values in bold represent significant estimated coefficients

Prop proportion

P values are in parentheses

\*, \*\*, \*\*\* significance level of 10, 5 and 1% respectively



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