# Inclusive Human Development in Pre-crisis Times of Globalization-driven Debts

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**Abstract**: The paper verifies the Azzimonti *et al.* (2014) conclusions on a sample of 53 African countries for the period 1996–2008. Authors of the underlying study have established theoretical underpinnings for a negative nexus between rising public debt and inequality in OECD nations. We assess the effects of four debt dynamics on Inequality Adjusted Human Development. Instrumental variable and interactive regressions were employed as empirical strategies. Two main findings were established which depend on whether debt is endogenous to or interactive with globalization. First, when external debt is endogenous to globalization, the effect on inclusive human development is negative, whereas when it is interactive with globalization, the effect is positive. This may reflect the false economics of preconditions. The magnitudes of negative estimates from endogenous related effects were higher than the positive marginal interactive effects. Policy implications were discussed in light of the post-2015 development agenda.

## 1. Introduction

The 15 April 2015 World Bank publication on Millennium Development Goals (MDGs) has shown that poverty has been decreasing in all regions of the world with the exception of Africa (World Bank, 2015). According to the report, about 45 percent of countries in sub-Saharan Africa are off-track from attaining the MDGs extreme poverty target. Hence, the 'Africa rising' narrative may be concerned about extolling appeals of neoliberal ideology and capital accumulation while neglecting fundamental ethical issues like inequality (Obeng-Odoom, 2014).

While the debate on the outcome of trade globalization is gradually reaching some consensus, the discussion on financial liberalization is increasingly taking centre stage, especially with the recurrences of financial crises. Accordingly, the potential benefits from international risk sharing and allocation efficiency in countries with scarce capital have been substantially outweighed by the downsides of the global financial meltdown (Kose *et al.*, 2011; Asongu, 2013a), especially in more integrated economic/monetary zones (Price and Elu, 2014). According to this narrative, global financial instability is the result of increasing financial openness (Rodrik, 1998). This anti-thesis raises doubts on the financial openness rewards in terms of stability in developed nations and economic growth in less developed countries (Summers, 2000). Some accounts even suggest that financial globalization may entail hidden ambitions of extending the rewards of international trade to benefits in assets (Asongu, 2014a).

Two important trends have marked globalization over the past 30 years: burgeoning financial liberalization and growing inequality (Azzimonti *et al.*, 2014). Evidence of these tendencies are valid both for developing and developed nations. In the latter countries, while Atkinson *et al.* (2011) and Piketty (2014) have presented evidence of inequality, tendencies of evolving capital mobility have been documented by Obstfeld and Taylor (2005) and Abiad *et al.* (2008). With regard to the former or developing countries, whereas financial openness has been promoted by structural adjustment policies (Batuo and Asongu, 2015; Batuo *et al.*, 2010), with the exceptions of Latin American and South East Asian countries, which have witnessed lower inequality associated with lower economic prosperity, inequality has been rising for the most part.[1] Therefore, Piketty's recently celebrated literature in developed nations is broadly consistent with accounts from broad samples of developing nations (Fosu, 2010a; Mlachila *et al.*, 2014; Ncube *et al.*, 2014) and African countries (Fosu, 2008, 2009, 2010b, 2010c; Elu and Loubert, 2013; Asongu, 2013b).

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In the light of the above, there are growing discussions in policy-making circles on the need for inclusive development in the post-2015 sustainable development goals (SDGs) agenda (UN, 2013a, pp. 7–13).[2] One of the most discussed findings in 2014 is Piketty's celebrated 'capital in the 21st century', which has established a u-shaped nexus between industrialization and inequality. In other words, developing countries should not be prepared for industrialization in light of Kuznets' conjectures (1955, 1971) because '*output may be growing and yet the mass of the people may be becoming poorer*' (Lewis, 1955). Given that one of the most important instruments of industrialization in the 21st century is globalization, a recent interesting finding in this direction has concluded that globalization-driven debts have increased inequality in the Organization of Economic Co-operation and Development (OECD) countries (Azzimonti *et al*., 2014).[3]

The Azzimonti *et al*. (2014) conclusions are worth investigating in developing countries in general and African countries in particular for at least two main reasons. First, relative to other developing regions, Africa is less industrialized with more than a third having a manufacturing value added per capita of less than US$100 (UN, 2013b). Second, there are suggestions that the continent's remarkable growth over the past decade may be marred by rising inequality (Blas, 2014). As noted by the World Bank (2013), almost one out of every two Africans lives in extreme poverty, and it is expected that this rate will fall to between 16 percent and 30 percent by 2030: albeit, most of the world's poor will live in Africa by 2030.

We refer the interested reader to the underlying study motivating this paper for the theoretical underpinnings surrounding the nexuses among globalization, debts and inequality. We believe that the context of inequality also applies to developing countries because economies of both developed and developing countries are influenced by globalization-driven debts. We assess the effects of a plethora of debt dynamics on inequality adjusted human development.[4] Instrumental variable and interactive regressions were employed as empirical strategies. Two main findings are established which depend on whether debt is endogenous to or interactive with globalization. Under the assumption that debt is endogenous to (interactive with) globalization, the impact on inclusive human development is negative (positive).

The rest of the study is organized as follows. Section 2 discusses the data and methodology. The empirical analysis and discussion of results are covered in Section 3 while Section 4 concludes.

## 2. Data and Methodology

### 2.1 Data

We assess a panel of 53 African countries with data from World Bank Development Indicators for the period 1996–2008. The end date is limited to 2008 for a twofold interest: (1) the objective of capturing the pre-crisis period; and (2) Washington consensus policies that have pushed globalization-driven debts were no longer (in principle) dominant in African development policy models after 2008 (Fofack, 2014, pp. 5–6).

The dependent variable is the inequality adjusted human development index (IHDI). Though it was first published in 2010, data on it is available from 1970 (Asongu, 2014b, p. 464). Financial liberalization and trade openness variables are respectively foreign direct investment (FDI) and trade openness. While the theory proposed by the underlying study (Azzimonti *et al*., 2014) is limited to financial liberalization, we use trade openness and globalization (FDI and trade) to improve subtlety of the analysis. Four main debt indicators were used: debt outstanding and disbursed (DOD), debt on concessional terms (DC), debt on non-concessional terms (DNC) and debt forgiveness or reduction (DFR). It should be noted that $DOD = DNC + DC$. The control variables are: gross domestic product (GDP) growth, financial depth, tertiary school enrolment, mobile phones subscriptions and government effectiveness. We justify and discuss the expected signs of control variables concurrently with the findings in Section 3. Definitions of these variables and corresponding summary statistics are presented in Panel A of Table 1.

### 2.2 Methodology

While the model proposed in the underlying study supposes that debt is endogenous to financial liberalization, in this paper we assumed debt-driven globalization as both endogenous and interactive. Instrumental variable regressions are employed in the former, whereas interactive regressions are applied in the latter. The objective of this distinction is to limit the weight that an assumption of unidirectional causality may have on the estimated coefficients.

## Table 1:  Variable definitions and summary statistics

Panel A: Variable definitions and summary statistics for Development, Debt and Control variables

|  | Mean | S.D. | Min. | Max. | Obs |
|---|---|---|---|---|---|
| Inequality Adjusted Human Development Index (IHDI) | 1.482 | 6.792 | 0.127 | 47.48 | 479 |
| Debt Outstanding and Disbursed (DOD) in % of GDP | 96.587 | 118.97 | 3.202 | 1520.6 | 632 |
| Debt on Concessional Terms (DC) in % of GDP | 55.786 | 54.936 | 0.000 | 376.89 | 632 |
| Debt on Non-concessional Terms (DNC) in % of GDP | 40.801 | 87.598 | 0.283 | 1143.7 | 632 |
| Debt Forgiveness or Reduction (DFR) in % of GDP | −0.024 | 0.092 | −1.353 | 0.000 | 671 |
| Foreign Direct Investment (FDI) in % of GDP | 4.118 | 8.532 | −8.629 | 145.20 | 510 |
| Net Official Development Assistance (NODA) in % of GDP | 10.868 | 12.943 | −0.251 | 148.30 | 653 |
| Gross Domestic Product Growth rate (GDPg) in annual % | 4.917 | 7.724 | −31.300 | 106.28 | 659 |
| Financial Depth (Money Supply) in % of GDP | 0.311 | 0.228 | 0.001 | 1.279 | 530 |
| Tertiary School Enrolment (TSE) % of Gross | 6.217 | 8.733 | 0.219 | 54.355 | 357 |
| Mobile Cellular Subscriptions (Mobile) per 100 people | 10.817 | 18.805 | 0.000 | 119.99 | 684 |
| Government Effectiveness (Gov. E) | −0.675 | 0.616 | −1.853 | 0.807 | 496 |

Panel B: Variable definitions and summary statistics of loadings or globalization-driven debt dynamics

|  | Mean | S.D. | Min. | Max. | Obs |
|---|---|---|---|---|---|
| FDI Driven DOD (DODFDI) | 81.163 | 46.588 | −23.529 | 634.52 | 483 |
| Trade Driven DOD (DODTrade) | 91.636 | 48.605 | 41.898 | 636.59 | 594 |
| Globalisation Driven DOD (DODGlo) | 80.550 | 46.951 | −16.608 | 647.17 | 467 |
| FDI Driven DC (DCFDI) | 47.337 | 25.728 | −6.107 | 293.79 | 483 |
| Trade Driven DC (DCTrade) | 51.355 | 27.984 | 3.590 | 331.33 | 594 |
| Globalisation Driven DC (DCGlo) | 46.171 | 25.286 | −13.483 | 281.25 | 467 |
| FDI Driven DNC (DNCFDI) | 33.826 | 25.462 | −20.302 | 340.74 | 483 |
| Trade Driven DNC (DNCTrade) | 40.280 | 24.942 | −5.642 | 305.26 | 594 |
| Globalisation Driven DNC (DNCGlo) | 34.379 | 27.340 | −4.475 | 365.92 | 467 |
| FDI Driven DFR (DFRFDI) | −0.022 | 0.020 | −0.232 | 0.014 | 501 |
| Trade Driven DFR (DFRTrade) | −0.022 | 0.017 | −0.202 | 0.005 | 623 |
| Globalisation Driven DFR (DFRGlo) | −0.021 | 0.021 | −0.234 | 0.015 | 485 |

*Notes*: S.D.: Standard Deviation. Min: Minimum. Max: Maximum. Obs: Observations.

The first-stage of the instrumental variable (IV) regression consists of instrumenting the debt variables with globalization dynamics, conditional on other covariates (or control variables). The fitted values or 'globalization-driven debt' loadings are then saved and employed in the second-stage regressions as the independent variables of interest. The second-stage estimations are either based on fixed- or random-effects regressions depending on the outcome of the Hausman test for endogeneity. The summary statistics corresponding to the loadings from the first-stage regressions are presented in Panel B of Table 1.

Under a scenario whereby debt-driven globalization is the origin of interactions between debt dynamics and globalization, interactive variable modelling is employed based on fixed- or random-effects regressions. Accordingly, when the Hausman test is significant, a fixed-effects model is recommendable. In the interactive models, all constitutive terms enter into the specifications because concerns of multicollinearity and overparameterization are not relevant in the specifications of such models (see Brambor *et al*., 2006, Section 3). This is essentially because, unlike linear additive models, estimated coefficients corresponding to the interactive variables are not treated as elasticities but considered as marginal effects of the modifying or globalization variable.

Equation (1) is broadly consistent with the second-stage of the IV estimation and the interactive regression, except for the fact that loadings are employed in the former (to account for debts endogenous to globalization) and interactions employed in the latter (to account for a modifying globalization variable).

$$IHDI_{i,t} = \alpha + \sum_{j=1}^{n} \sum_{h=1}^{m} \delta_j W_{h,i,t} + \eta_i + \xi_t + \varepsilon_{i,t} \tag{1}$$

where $IHDI_{i,t}$ is the Inequality-adjusted Human Development Index for country $i$ at period $t$; $\alpha$ is a constant, $W$ is the vector of determinants, $\eta_i$ is the country-specific effect, $\xi_t$ is the time-specific effect and $\varepsilon_{i,t}$ the error term. All the regressions are based on Heteroscedasticity and Autocorrelation Consistent (HAC) standard errors. The fixed-effects regressions are specified to control for time-effects in an effort to further control for time invariant omitted variables and unobserved heterogeneity.

## 3. Empirical Analysis

### 3.1 Presentation of Results

*Instrumental Variable Estimations*

The correlation matrix on which the first-stage regressions are based is provided in Table 2. Table 3 presents the findings of the first-stage regressions from which the globalization-driven debt loadings are obtained. In Panel A, the debt dynamics are regressed on globalization variables conditional on other covariates. The regressions are classified into financial globalization, trade globalization and globalization (which integrates the first two).

Financial liberalization substantially drives 'Debt Outstanding and Distributed' due to its effect on 'Debt on Non-concessional Terms', while trade openness has insignificant positive effects on both. The two globalization dynamics mitigate 'Debt on Concessional terms', with the effect of trade openness significant at the 10 percent level. Neither forms of globalization have a significant effect on 'Debt Forgiveness or Reduction'. The positive (negative) effect of financial (trade) liberalization on 'Debt on Non-concessional Terms' ('Debt on Concessional Terms') might be explained by the fact that globalization reduces short-term debts and favours long-term debt (Schmukler and Vesperoni, 2006). Accordingly, long- (short-) term finance is preferred for investment (trade) purposes. In essence, there are two principal motivations for lending by international financial institutions: investment and trade finance. The latter embodies projects of shorter duration and hence, an expected positive nexus between short-run debt and trade activities.

In Panel B, the validity of the loadings or instruments is tested by regressing the debt dynamics on the loadings. The results broadly confirm the validity of the instruments at the 1 percent significance level, though explanatory powers of the instruments vary across specifications; stronger for 'Debt Outstanding and Distributed' and 'Debt on Concessional Terms' relative to 'Debt on Non-concessional Terms' and 'Debt Forgiveness or Reduction'. We also notice that the explanatory powers are highest in increasing order for: 'Debt Forgiveness or Reduction', 'Debt on Non-concessional Terms', 'Debt Outstanding and Distributed', and 'Debt on Concessional Terms'. It is logical to expect that globalization instruments explain 'Debt on Concessional Terms' highest, because these concessional debts are loans with some grant element in the threshold of 25 percent or more. Since 'Debt Outstanding and Distributed' is the sum 'Debt on Concessional Terms' and 'Debt on Non-concessional Terms', its high value is driven by 'Debt on Concessional Terms'. It is also logical to expect 'Debt on Non-concessional Terms' and 'Debt Forgiveness or Reduction' to take the third and fourth positions. Accordingly, as we have already emphasized, while 'Debt on Concessional

### Table 2: Correlation matrix for first-stage regressions

| Debts | | | | Globalization | | Control variables | | |
|---|---|---|---|---|---|---|---|---|
| DOD | DC | DNC | DFR | FDI | Trade | NODA | GDPg | |
| 1.000 | 0.726 | 0.902 | 0.012 | 0.232 | −0.005 | 0.545 | 0.109 | DOD |
| | 1.000 | 0.359 | −0.007 | −0.003 | −0.176 | 0.609 | −0.020 | DC |
| | | 1.000 | 0.022 | 0.319 | 0.100 | 0.360 | 0.156 | DNC |
| | | | 1.000 | −0.030 | 0.044 | −0.186 | −0.058 | DFR |
| | | | | 1.000 | 0.445 | 0.156 | 0.219 | FDI |
| | | | | | 1.000 | −0.095 | 0.151 | Trade |
| | | | | | | 1.000 | 0.044 | NODA |
| | | | | | | | 1.000 | GDPg |

*Notes*: DOD: Outstanding and Disbursed Debt; DC: Concessional Debt; DNC: Non Concessional Debt; DFR: Debt Reduction or Forgiveness; NODA: FDI: Foreign Direct Investment; Net Official Development Assistance; GDPg: GDP growth rate.

# Table 3: Deriving globalization-fuelled debt factor loadings

**Panel A: Instrumentation (Dependent variables: Debt dynamics. Independent variables: Globalization dynamics)**

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) |
| Constant | 54.540*** (0.000) | 40.501*** (0.000) | 14.039 (0.134) | 0.0007 (0.800) | 39.898*** (0.000) | 42.283*** (0.000) | -2.385 (0.877) | -0.011** (0.038) | 49.157*** (0.000) | 49.535*** (0.000) | -0.378 (0.976) | -0.002 (0.689) |
| FDI | 1.706** (0.021) | -0.899 (0.149) | 2.605** (0.023) | 0.0003 (0.154) | — | — | — | — | 1.491* (0.088) | -0.404 (0.439) | 1.895* (0.068) | 0.0001 (0.533) |
| Trade | — | — | — | — | 0.077 (0.583) | -0.157 (0.109) | 0.235** (0.047) | 0.00007 (0.212) | 0.065 (0.682) | -0.133* (0.087) | 0.199 (0.114) | 0.00004 (0.466) |
| NODA | 3.544*** (0.000) | 2.110*** (0.000) | 1.434 (0.106) | -0.001*** (0.000) | 3.871*** (0.000) | 2.190*** (0.000) | 1.680* (0.089) | -0.001*** (0.000) | 3.637*** (0.000) | 1.989*** (0.000) | 1.648* (0.053) | -0.001*** (0.000) |
| GDPg | -3.608*** (0.001) | -2.476*** (0.000) | -1.131 (0.127) | -0.001*** (0.003) | 0.952 (0.675) | -0.538 (0.534) | 1.490 (0.310) | -0.0005 (0.202) | -3.478*** (0.000) | -2.418*** (0.001) | -1.059 (0.128) | -0.001*** (0.007) |
| Adjusted $R^2$ | 0.327 | 0.370 | 0.178 | 0.077 | 0.214 | 0.347 | 0.097 | 0.046 | 0.328 | 0.375 | 0.198 | 0.080 |
| Fisher | 79.074*** | 95.586*** | 35.904*** | 14.995*** | 55.002*** | 106.13*** | 22.461*** | 11.141*** | 58.093*** | 71.071*** | 29.930*** | 11.646*** |
| Observations | 483 | 483 | 483 | 501 | 594 | 594 | 594 | 623 | 467 | 467 | 467 | 485 |
| Countries | 42 | 42 | 42 | 45 | 47 | 47 | 47 | 50 | 42 | 42 | 42 | 45 |

**Panel B: Testing the strength of factor loadings (Dependent variable: Debt dynamics. Independent variables: instruments or globalization-fuelled debts loadings)**

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) | Debt Outstanding & Disbursed (DOD) | Debt on Concessional Terms (DC) | Debt on Non-concessional Terms (DNC) | Debt Forgiveness or Reduction (DFR) |
| Constant | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) | 0.000 (1.000) |
| Loading | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) | 1.000*** (0.000) |
| Adjusted $R^2$ | 0.329 | 0.373 | 0.181 | 0.081 | 0.217 | 0.349 | 0.100 | 0.049 | 0.333 | 0.379 | 0.204 | 0.086 |
| Fisher | 238.214*** | 287.95*** | 108.16*** | 45.167*** | 165.56*** | 319.48*** | 67.611*** | 33.533*** | 233.880*** | 286.131*** | 120.49*** | 46.876*** |
| Observations | 483 | 483 | 483 | 501 | 594 | 594 | 594 | 623 | 467 | 467 | 467 | 485 |
| Countries | 42 | 42 | 42 | 45 | 47 | 47 | 47 | 50 | 42 | 42 | 42 | 45 |

*Notes*: FDI: Foreign Direct Investment; NODA: Net Official Development Assistance; GDPg: GDP growth rate.
*, **, ***: significance levels at 10%, 5% and 1% respectively.

Terms' is preferred to 'Debt on Non-concessional Terms' at the advent of globalization, 'Debt Forgiveness or Reduction' occurs as a random effect of the phenomenon.

The control variables are significant with the expected signs. First, economic prosperity in terms of GDP growth consistently mitigates dependence on debts and forgiveness of debts. This is essentially because of the increasing ability of the recipient country to service/reimburse its debts and sustains its 'reimbursement credibility' respectively. Second, while foreign aid is positively associated with debt dependence (Ouattara, 2006; Kanbur, 1998), it is also logically negatively linked with reduction/forgiveness of debts.

The correlation matrix corresponding to the loadings is presented in Table 4. It enables us to mitigate issues of over-parameterization and multicollinearity in the second-stage regressions presented in Table 5. A Hausman test is performed before any specification. A rejection of the null hypothesis favours fixed-effects (FE) regressions as opposed to random-effects (RE) estimations. From the outcome, the null hypotheses of various specifications are overwhelmingly rejected. Hence, all specifications in Table 5 are based on FE regressions, with additional control for time-effects. Based on the results, the Azzimonti *et al.* (2014) conclusions on a negative nexus between globalization-driven debt and inequality are confirmed with respect to inequality adjusted human development. On a specific note, this is valid for: FDI driven 'Debt Outstanding and Distributed', FDI driven 'Debt on Concessional Terms' (DC), Trade driven DC, globalization-driven 'Debt Outstanding and Distributed' and globalization driven DC.

The findings are consistent with our previous elucidations on the quality of debt dynamics, with respect to the quality or explanatory power of corresponding instruments. First, we have established that 'Debt Outstanding and Distributed' is substantially explained by 'Debt on Concessional Terms'. Consequently, all significant estimates are either 'Debt Outstanding and Distributed' or 'Debt on Concessional Terms' oriented. Second, the first affirmation is substantiated by the globalization-driven DC having a higher magnitude, relative to globalization-driven 'Debt Outstanding and Distributed' (see DODFDI versus (vs) DCFDI and DODGlo vs DCGlo). This implies that the lower magnitude of 'Debt Outstanding and Distributed' is due to the attenuation of the 'Debt on Concessional Terms' effect by the insignificant 'Debt on Non-concessional Terms' impact.

With the exception of mobile phone penetration, the three other control variables have the expected signs. While the effect of tertiary school enrolment is insignificant, those of financial depth and government effectiveness are positively significant. Accordingly, financial depth has been established to be pro-poor in Africa (Asongu, 2013b; Batuo *et al.*, 2010; Kai and Hamori, 2009). Government effectiveness is intuitively expected to improve inclusive development because it is defined/measured as the formulation and implementation of policies that deliver public commodities to citizens. The unexpected effect of mobile phones has at least a twofold explanation. On the one hand, it starkly contrasts the pro-poor conclusions of Asongu (2015) because the author has used cross-sectional data for the period 2009, whereas data in this study is for the period 1996–2008. On the other hand, Aker and Mbiti (2010) have concluded that the phenomenon of mobile phones is not a 'silver bullet' for the development of Africa.

## Interactive Estimations

Table 6 reveals interactive estimations based on panel fixed -and random-effects regressions. Like in the second-stage of the IV procedure in the preceding section, the choice of either model is decided by the outcome of the Hausman test. The specifications are fixed-effects because the Hausman test is overwhelmingly rejected. The following findings are established: first, the effects of debt dynamics on inclusive development are consistently negative across specifications. This confirms narratives challenging the legitimacy of some external debt in Africa; *inter alia*, past external debts have failed to benefit the poor/people; the borrowing was for the most part done without the consent of the people and 'creditor awareness test' can be established by historical evidence (Boyce and Ndikumana, 2011).

Second, a possible reason for the positive association between financial globalization and debts is that the former could provide incentives for long-term unsustainable debts. Third, the interactive marginal effects are overwhelmingly positive in financial liberalization and globalization interactions for the most part. The absence of significant marginal interactive effects with trade openness implies that the positive effects between globalization and the debt dynamics are substantially driven by financial globalization. We do not lay much emphasis on the magnitude of interactive estimates because of high decimal values. What is interesting to note, however, is that the results contrast with those in Table 5. Hence, it may be established that the effect of globalization-driven debts on inclusive human development may be positive or negative depending on whether debts are modelled as endogenous to globalization or interactive with globalization.

## Table 4: Correlation matrix for second stage regressions

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | | Control variables | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DODFDI | DCFDI | DNCFDI | DFRFDI | DODTrade | DCTrade | DNCTrade | DFRTrade | DODGlo | DCGlo | DNCGlo | DFRGlo | Fin. D | Gov.E | Mobile | TSE | IHDI |
| DODFDI | 1.000 | | | | | | | | | | | | | | | | |
| DCFDI | 0.911 | 1.000 | | | | | | | | | | | | | | | |
| DNCFDI | 0.909 | 0.656 | 1.000 | | | | | | | | | | | | | | |
| DFRFDI | −0.733 | −0.710 | −0.625 | 1.000 | | | | | | | | | | | | | |
| DODTrade | 0.902 | 0.850 | 0.793 | −0.948 | 1.000 | | | | | | | | | | | | |
| DCTrade | 0.893 | 0.918 | 0.708 | −0.884 | 0.927 | 1.000 | | | | | | | | | | | |
| DNCTrade | 0.779 | 0.642 | 0.776 | −0.882 | 0.908 | 0.685 | 1.000 | | | | | | | | | | |
| DFRTrade | −0.838 | −0.832 | −0.695 | 0.963 | −0.973 | −0.940 | −0.841 | 1.000 | | | | | | | | | |
| DODGlo | 0.998 | 0.907 | 0.911 | −0.733 | 0.909 | 0.884 | 0.802 | −0.835 | 1.000 | | | | | | | | |
| DCGlo | 0.894 | 0.982 | 0.647 | −0.699 | 0.831 | 0.944 | 0.572 | −0.852 | 0.882 | 1.000 | | | | | | | |
| DNCGlo | 0.888 | 0.649 | 0.966 | −0.612 | 0.792 | 0.645 | 0.848 | −0.647 | 0.900 | 0.591 | 1.000 | | | | | | |
| DFRGlo | −0.735 | −0.714 | −0.624 | 0.996 | −0.946 | −0.906 | −0.853 | 0.976 | −0.738 | −0.725 | −0.596 | 1.000 | | | | | |
| Fin. D | −0.200 | −0.240 | −0.097 | 0.244 | −0.271 | −0.329 | −0.138 | 0.315 | −0.199 | −0.300 | −0.011 | 0.276 | 1.000 | | | | |
| Gov. E | −0.324 | −0.336 | −0.265 | 0.297 | −0.258 | −0.315 | −0.154 | 0.262 | −0.301 | −0.331 | −0.223 | 0.297 | 0.569 | 1.000 | | | |
| Mobile | −0.185 | −0.269 | −0.066 | 0.224 | −0.216 | −0.308 | −0.074 | 0.285 | −0.173 | −0.315 | −0.005 | 0.246 | 0.492 | 0.371 | 1.000 | | |
| TSE | −0.442 | −0.418 | −0.341 | 0.407 | −0.483 | −0.474 | −0.370 | 0.462 | −0.452 | −0.427 | −0.319 | 0.415 | 0.583 | 0.357 | 0.422 | 1.000 | |
| IHDI | −0.069 | −0.056 | −0.072 | 0.091 | −0.082 | −0.051 | −0.103 | 0.062 | −0.073 | −0.031 | −0.098 | 0.079 | 0.080 | 0.187 | 0.004 | −0.062 | 1.000 |

*Notes*: DOD: Outstanding and Disbursed Debt; DC: Concessional Debt; DNC: Non-Concessional Debt; DFR: Debt Reduction or Forgiveness; DODFDI: FDI Driven DOD; DODTrade: Trade Driven DOD; DODGlo: Globalization Driven DOD; DCFDI: FDI Driven DC; DCGlo: Globalization Driven DC; DCTrade: Trade Driven DC; DNCGlo: Globalization-Driven DNC; DFRFDI: FDI Driven DFR; DFRTrade: Trade Driven DFR; DFRGlo: Globalization Driven DFR; Fin. D: Financial Depth; Gov. E: Government Effectiveness; Mobile: Mobile phone penetration; TSE: Tertiary School Enrolment; IHDI: Inequality Adjusted Human Development Index.

## Table 5: Second-stage regressions (based on panel fixed- or random-effects)

Dependent variable: Inequality Adjusted Human Development Index

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt (DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt (DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) |
| Constant | **1.027*** (0.000)** | **1.029*** (0.000)** | **1.021*** (0.000)** | **1.021*** (0.000)** | **0.955*** (0.000)** | **0.964*** (0.000)** | **0.948*** (0.000)** | **0.954*** (0.000)** | **1.065*** (0.000)** | **1.068*** (0.000)** | **1.060*** (0.000)** | **1.058*** (0.000)** |
| DODFDI | **−0.0001** (0.015)** | — | — | — | — | — | — | — | — | — | — | — |
| DCFDI | — | **−0.0002*** (0.000)** + | — | — | — | — | — | — | — | — | — | — |
| DNCFDI | — | — | −0.0004 (0.788) | — | — | — | — | — | — | — | — | — |
| DFRFDI | — | — | — | 0.044 (0.735) | — | — | — | — | — | — | — | — |
| DODTrade | — | — | — | — | −0.000 (0.519) | — | — | — | — | — | — | — |
| DCTrade | — | — | — | — | — | **−0.0002*** (0.005)** + | — | — | — | — | — | — |
| DNCTrade | — | — | — | — | — | — | 0.00009 (0.496) | — | — | — | — | — |
| DFRTrade | — | — | — | — | — | — | — | 0.093 (0.627) | — | — | — | — |
| DODGlo | — | — | — | — | — | — | — | — | **−0.0001** (0.013)** | — | — | — |
| DCGlo | — | — | — | — | — | — | — | — | — | **−0.0003*** (0.000)** | — | — |
| DNCGlo | — | — | — | — | — | — | — | — | — | — | −0.0001 (0.492) | — |
| DFRGlo | — | — | — | — | — | — | — | — | — | — | — | 0.014 (0.922) |
| Financial Depth | 0.060 (0.109) | **0.068* (0.065)** | 0.045 (0.229) | 0.044 (0.246) | 0.020 (0.545) | 0.030 (0.356) | 0.016 (0.622) | 0.019 (0.563) | **0.073* (0.083)** | **0.079* (0.051)** | 0.061 (0.136) | 0.057 (0.168) |
| Gov. Effectiveness [0.013] | 0.009 (0.248) | 0.008 (0.210) | 0.008 (0.455) | 0.011 (0.461) | 0.012 (0.219) | 0.008 **(0.076)** | 0.007 (0.331) | 0.011 (0.225) | **0.015* (0.015)** | 0.009 (0.154) | 0.011 (0.363) | 0.012 (0.427) |
| Mobile Phone | **−0.0005* (0.053)** | **−0.0005** (0.028)** | −0.0004 (0.104) | **−0.0004* (0.094)** | −0.0003 (0.211) | −0.0003 (0.163) | −0.0002 (0.282) | −0.0002 (0.218) | −0.0005 (0.152) | −0.0005 (0.108) | −0.0004 (0.204) | −0.0004 (0.219) |
| Tertiary School | 0.001 (0.131) | 0.001 (0.094) | 0.001 (0.185) | 0.001 (0.176) | 0.001 (0.231) | 0.001 (0.197) | 0.001 (0.258) | 0.001 (0.232) | 0.001 (0.179) | 0.001 (0.134) | 0.001 (0.226) | 0.001 (0.230) |
| Time effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Continued

**Table 5.** (*Continued*)

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dependent variable: Inequality Adjusted Human Development Index | Outstanding & Disbursed Debt (DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt (DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt (DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) |
| Hausman test | 32.372*** | 32.291*** | 32.309*** | 33.395*** | 37.192*** | 36.327*** | 37.498*** | 37.355*** | 32.911*** | 31.779*** | 32.866*** | 33.235*** |
| | (0.003) | (0.003) | (0.003) | (0.002) | (0.000) | (0.000) | (0.000) | (0.000) | (0.002) | (0.004) | (0.000) | (0.002) |
| Within $R^2$ | 0.757 | 0.770 | 0.744 | 0.744 | 0.726 | 0.736 | 0.727 | 0.726 | 0.727 | 0.740 | 0.714 | 0.712 |
| Fisher | 928272*** | 981740*** | 881969*** | 881984*** | 729718*** | 756044*** | 731662*** | 728721*** | 905354*** | 952858*** | 863798*** | 857508*** |
| Observations | 156 | 156 | 156 | 156 | 179 | 179 | 179 | 179 | 148 | 148 | 148 | 148 |
| Countries | 28 | 28 | 28 | 28 | 32 | 32 | 32 | 32 | 28 | 28 | 28 | 28 |

*Notes*: *, **, ***: significance levels at 10%, 5% and 1% respectively. DOD: Outstanding and Disbursed Debt; DC: Concessional Debt; DNC: Non-Concessional Debt; DFR: Debt Reduction or Forgiveness; DODFDI: FDI Driven DOD; DODGlo: Globalization Driven DOD; DODTrade: Trade Driven DOD; DCFDI: FDI Driven DC; DCGlo: Globalization-Driven DC; DCTrade: Trade Driven DC; DNC FDI: FDI Driven DNC; DNCTrade: Trade Driven DNC; DNCGlo: Globalization Driven DNC; DFRFDI: FDI Driven DFR; DFRTrade: Trade Driven DFR; DFRGlo: Globalization Driven DFR; Gov. Effectiveness: Government Effectiveness.

## Table 6: Interactive regressions (based on panel fixed- or random-effects)

Dependent variable: Inequality Adjusted Human Development Index

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) |
| Constant | 1.035*** (0.000) | 1.031*** (0.000) | 1.025*** (0.000) | 1.008*** (0.000) | 0.965*** (0.000) | 0.955*** (0.000) | 0.958*** (0.000) | 0.938*** (0.000) | 0.946*** (0.000) | 0.938*** (0.000) | 0.936*** (0.000) | 0.919*** (0.000) |
| DOD | -0.0002*** (0.000) | — | — | — | -0.0002** (0.011) | — | — | — | -0.0003*** (0.000) | — | — | — |
| DC | — | -0.0003*** (0.000) | — | — | — | -0.0003** (0.026) | — | — | — | -0.0004*** (0.002) | — | — |
| DNC | — | — | -0.0002* (0.084) | — | — | — | -0.0004* (0.075) | — | — | — | -0.0005** (0.016) | — |
| DFR | — | — | — | -0.012 (0.409) | — | — | — | -0.094** (0.013) | — | — | — | -0.031* (0.053) |
| FDI | 0.0002 (0.810) | 0.0004 (0.587) | 0.0007 (0.337) | 0.001** (0.026) | — | — | — | — | — | — | — | — |
| Trade | — | — | — | — | 0.00002 (0.911) | 0.0001 (0.517) | 0.00001 (0.946) | 0.0002 (0.079) | — | — | — | — |
| Globalisation (Glob) | — | — | — | — | — | — | — | — | -0.0001 (0.170) | -0.0001 (0.409) | -0.0001 (0.284) | 0.00003 (0.651) |
| DOD*FDI | 0.00002** (0.017) | — | — | — | — | — | — | — | — | — | — | — |
| DC*FDI | — | 0.00003* (0.066) | — | — | — | — | — | — | — | — | — | — |
| DNC*FDI | — | — | 0.00004* (0.084) | — | — | — | — | — | — | — | — | — |
| DFR*FDI | — | — | v | -0.001 (0.710) | — | — | — | — | — | — | — | — |
| DOD*Trade | — | — | — | — | 0.000001 (0.287) | — | — | — | — | — | — | — |
| DC*Trade | — | — | — | — | — | 0.000001 (0.539) | — | — | — | — | — | — |
| DNC*Trade | — | — | — | — | — | — | 0.000006 (0.138) | — | — | — | — | — |
| DFR*Trade | — | — | — | — | — | — | — | 0.001** (0.010) | — | — | — | — |
| DOD*Glo | — | — | — | — | — | — | — | — | 0.000002** (0.019) | — | — | — |
| DC*Glo | — | — | — | — | — | — | — | — | — | 0.000002 (0.122) | — | — |
| DNC*Glo | — | — | — | — | — | — | — | — | — | — | 0.000007** (0.014) | — |
| DFR*Glo | — | — | — | — | — | — | — | — | — | — | — | 0.0005** (0.014) |
| Financial | 0.055 | 0.055 | 0.052 | 0.053 | 0.030 | 0.036 | 0.019 | 0.015 | 0.026 | 0.031 | 0.014 | 0.009 |

Continued

**Table 6.** (*Continued*)

Dependent variable: Inequality Adjusted Human Development Index

| | Financial globalization-fuelled debts | | | | Trade globalization-fuelled debts | | | | Globalization-fuelled debts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) | Outstanding & Disbursed Debt(DOD) | Concessional Debt (DC) | Non-concessional Debt (DNC) | Forgiveness or Reduction of Debt (DFR) |
| Depth | (0.123) | (0.125) | (0.173) | (0.173) | (0.347) | (0.223) | (0.557) | (0.642) | (0.420) | (0.338) | (0.668) | (0.772) |
| Gov. | 0.008 | 0.006 | 0.008 | 0.004 | 0.011* | 0.009 | 0.014* | 0.011 | 0.010 | 0.008 | 0.012 | 0.010 |
| Effectiveness | (0.237) | (0.374) | (0.365) | (0.656) | (0.068) | (0.105) | (0.079) | (0.146) | (0.125) | (0.212) | (0.112) | (0.205) |
| Mobile Phone | -0.0004* | -0.0003 | -0.0006** | -0.0005* | -0.0001 | -0.00005 | -0.0003 | -0.0002 | -0.0002 | -0.0001 | -0.0003* | -0.0003 |
| | (0.016) | (0.187) | (0.020) | (0.052) | (0.403) | (0.799) | (0.150) | (0.285) | (0.245) | (0.499) | (0.098) | (0.136) |
| Tertiary School | 0.001* | 0.001 | 0.002* | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.057) | (0.147) | (0.057) | (0.106) | (0.119) | (0.245) | (0.135) | (0.223) | (0.121) | (0.234) | (0.138) | (0.210) |
| Time effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Hausman test | 34.389*** | 31.616** | 32.751*** | 32.099*** | 35.633*** | 33.290*** | 38.464*** | 35.425*** | 34.814*** | 33.567*** | 37.674*** | 36.439*** |
| | (0.000) | (0.011) | (0.007) | (0.009) | (0.003) | (0.006) | (0.001) | (0.003) | (0.004) | (0.006) | (0.001) | (0.002) |
| Within $R^2$ | 0.810 | 0.805 | 0.786 | 0.768 | 0.760 | 0.757 | 0.747 | 0.737 | 0.781 | 0.774 | 0.773 | 0.752 |
| Fisher | 1116453*** | 1088147*** | 991406*** | 898305*** | 784409*** | 777465*** | 746026*** | 705853*** | 795990*** | 772368*** | 766520*** | 692350*** |
| Observations | 156 | 156 | 156 | 158 | 179 | 179 | 179 | 181 | 187 | 187 | 187 | 189 |
| Countries | 28 | 28 | 28 | 29 | 32 | 32 | 32 | 33 | 32 | 32 | 32 | 33 |

*Notes*: \*\*\*, \*\*, \*: significance levels at 10%, 5% and 1% respectively. DOD: Outstanding and Disbursed Debt; DC: Concessional Debt; DNC: Non-Concessional Debt; DFR: Debt Reduction or Forgiveness; DOD\*FDI: FDI and DOD; DOD\*Trade: Trade and DOD; DOD\*Glo: Globalization and DOD; DC\*FDI: FDI and DC; DC\*Trade: Trade and DC; DC\*Glo: Globalization and DC; DNC\* FDI: FDI and DNC; DNC\*Trade: Trade and DNC; DNC\*Glo: Globalization and DNC; DFR\*FDI: FDI and DFR; DFR\*Trade: Trade and DFR; DFR\*Glo: Globalization and DFR; Gov. Effectiveness: Government Effectiveness.

The discussions related to the significance and signs of the control variables are consistent with the elucidations relevant for Table 5.

## 4. Concluding Implications and Future Directions

With growing evidence that public support for globalization is waning in both developed and developing nations, studies have emerged with a frantic search for avenues out of a regime characterized by a morally enervating unvarnished capitalism. The paper has contributed to this narrative by investigating the Azzimonti *et al.* (2014) conclusions and responding to the increasing demand for globalization to be given a human face in the light of the post-2015 development agenda.

We have investigated the impact of debts on inclusive human development using two assumptions of globalization-driven debt. Under the assumption that debt is endogenous to (interactive with) globalization, the impact on human development is negative (positive). The following policy implications are worthwhile.

First, whereas the findings may reflect the false economics of pre-conditions in which access to external debt is conditioned on the adoption of more friendly policies towards financial liberalization and trade openness, we wish to stay away from the debate because it is out of scope. Accordingly, while resisting the itch, we welcome the debate as an interesting future research direction. Moreover, the interested reader may refer to Monga (2014) for more insights.

Second, we have found that the magnitudes of estimates confirming the conclusions of the underlying paper are higher relative to those rejecting them. Hence, globalization could be a substantial instrument in improving human development if it is tailored with equitable and sustainable human development policies.

Third, the influence of debt on concessional (non-concessional) terms is more (less) significant in the scenario where the conclusions of the underlying paper are confirmed. This implies that loans incorporating a grant element have a better chance of affecting inclusive development.

As a broad policy implication, the findings could be viewed in light of Piketty's celebrated capital in the 21st century in the perspective that globalization should not lead African countries to industrialization according to Kuznets' conjectures. Hence, with the evidence that 45 percent of sub-Saharan African countries are off-track from the MDGs poverty target, in order to achieve the post-2015 inclusive development objectives, external debt acquisition policies by sampled countries (conditional on globalization) should be tailored towards their effects on human development. This would require, *inter alia*, improving the credibility and legitimacy of some external debts in the continent. Measures tailored along this line of policy should involve, amongst others, ensuring that: external debt benefits the people, domestic governments' borrowings are mandated by the people, and creditors restrain from some capitalistic ideals by imposing some inclusive human development lending conditions.

Inequality as a problem goes beyond financial crisis, and is not exclusively driven by globalization policies. It also depends on a set of heterogeneities, which we have accounted for with country-fixed and time effects. Hence, future lines of inquiry could categorize sampled countries for more focused policy implications. Such categorization could entail: sub-Saharan Africa, South African counties, Maghreb, middle-income countries, least developed countries, oil exporters, *inter alia*.

## Notes

1. It is relevant to note that the comparative periodicity affects the outcome. Accordingly, the 1980–2010 and 1990–2010 periods may reveal different findings on the reduction of poverty in Africa (Young, 2012). Moreover, according to Fosu (2015), tendencies also differ between 1995–2010 and 1980–2010.

2. This is consistent with recent African development literature that has been focusing on, *inter alia*, unemployment (Anyanwu, 2013; Inekwe, 2013), pro-poor growth (Daouda, 2013), income-inequality (Caracciolo and Santeramo, 2013), gender-inequality (Anyanwu and Augustine, 2013) and poverty (Iwasaki and El-Laithy, 2013; Mkondiwa *et al.*, 2013).

3. Globalization-driven debts refer to acquisitions of debts that are facilitated by the process of globalization.

4. This refers to the Human Development Index that has been adjusted for inequality with the GINI coefficient.

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