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# Trade Liberalization and the Breakdown of Classical Trade Theory: Evidence from Sub-Saharan Africa

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## Abstract

This paper isolates and interrogates one of the most theoretically disruptive findings to emerge from recent dynamic panel research on globalization and inequality in Sub-Saharan Africa (SSA): that trade openness exerts a positive and statistically significant effect on income inequality. Descriptive trends across Nigeria, South Africa, and Kenya initially appear to support the opposite conclusion; a raw bivariate correlation between trade openness and the Gini coefficient is negative and significant ($r = -0.481$), but this pattern is shown to be a product of cross-country confounding rather than a genuine causal relationship. Using a system Generalized Method of Moments (GMM) estimator, the analysis finds that, net of country-specific effects and the endogeneity of trade policy, a one-unit increase in trade openness is associated with a 0.0403-unit increase in the Gini coefficient ($p = 0.0000$). This result directly contradicts the Heckscher-Ohlin-Stolper-Samuelson (HOSS) theorem, which predicts that trade liberalization should compress inequality in labour-abundant developing economies by raising the relative return to unskilled labour. The paper argues that the Skill-Biased Technological Change (SBTC) hypothesis offers the more empirically consistent account: trade liberalization in these three economies has facilitated the importation of capital- and skill-intensive technologies that complement educated labour while marginalizing the unskilled majority. Methodologically, the paper demonstrates why raw correlations, ordinary least squares, and static panel estimators are unsuited to testing trade theory in this setting, and justifies the system GMM approach as a corrective. The paper concludes with policy implications centred on pairing trade liberalization with deliberate skills-upgrading and redistributive investment.

## Keywords:

*Trade openness, income inequality, Stolper-Samuelson theorem, skill-biased technological change, system GMM, Sub-Saharan Africa.*

## 1.0 Introduction

Trade liberalization has been one of the central planks of Sub-Saharan Africa's (SSA) integration into the global economy over the past three decades, promoted by multilateral institutions and domestic reformers alike on the promise that expanded trade would lift the incomes of the region's abundant unskilled workforce and narrow domestic inequality. That promise rests on a specific and long-standing piece of economic theory: the Heckscher-Ohlin model of comparative advantage (Heckscher, 1919; Ohlin, 1933), extended by the Stolper-Samuelson theorem, which predicts that when a labour-abundant country opens to trade, the

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relative price of labour-intensive goods rises, pulling up the real return to unskilled labour and compressing the income distribution. For a region such as SSA, characterized by a comparatively young and unskilled labour force, the Heckscher-Ohlin-Stolper-Samuelson (HOSS) framework therefore generates an optimistic and specific prediction: trade openness should reduce, not widen, income inequality.

This paper interrogates that prediction directly. Drawing on a dynamic panel dataset covering Nigeria, South Africa, and Kenya over a 35-year period (105 country-year observations), it first documents the descriptive trends in trade openness and inequality across the three countries and shows that the raw, cross-country correlation between the two variables is negative — an initially reassuring pattern for HOSS. It then shows that this pattern is an artefact of cross-country confounding: once a system Generalized Method of Moments (GMM) estimator is used to isolate the within-country, endogeneity-corrected effect of trade openness on the Gini coefficient, the result flips and becomes positive and statistically significant. The result is not a statistical curiosity confined to this sample; it sits within a growing body of SSA-focused evidence that trade liberalization has coincided with, and plausibly contributed to, rising inequality rather than its reduction (Dorn et al., 2021; Xu et al., 2021; Yameogo & Omojolaibi, 2022).

The purpose of this paper is threefold. First, it revisits the theoretical basis of the HOSS prediction and explains, through the lens of Skill-Biased Technological Change (SBTC), why the prediction breaks down in economies such as Nigeria, South Africa, and Kenya. Second, it justifies, on econometric grounds, why a dynamic panel GMM estimator, rather than ordinary least squares (OLS) or static fixed/random effects, is the appropriate tool for testing trade theory when trade policy itself is endogenous to the outcome being explained. Third, it presents and interprets the empirical evidence, situating the Sub-Saharan African trade-inequality nexus within the wider comparative literature. The paper proceeds as follows: the next section develops the theoretical framework; the following section reviews the empirical literature; the subsequent sections set out the data and methodology, present the results, and discuss their implications; the final section concludes with policy recommendations.

## 2.0 Theoretical Framework: The HOSS Prediction and Its Discontents

The Heckscher-Ohlin model holds that countries export goods that intensively use their relatively abundant factor of production and import goods that intensively use their relatively scarce factor (Heckscher, 1919; Ohlin, 1933). Stolper and Samuelson extended this logic in 1941 to the distributional consequences of trade: when a country liberalizes trade, the relative price of the good that uses its abundant factor intensively rises, and the real return to that factor increases more than proportionately, while the real return to the scarce factor falls (Naanwaab, 2022). For labour-abundant developing economies, the theorem's central prediction is unambiguous; trade openness should raise the wages of unskilled workers relative to skilled workers and capital, thereby narrowing income inequality (Dorn et al., 2021)

This prediction, however, rests on restrictive assumptions that rarely hold in practice: perfect factor mobility between sectors, constant returns to scale, identical technology across trading partners, and critically, the absence of technological change. Where these assumptions fail, particularly the assumption of static technology, the theorem's distributional prediction can invert.

The Skill-Biased Technological Change (SBTC) hypothesis describes precisely this inversion. SBTC holds that new production technologies are frequently complementary to skill rather than neutral across skill levels: they require workers with more education, training, and cognitive capacity to operate, maintain, and adapt them (Autor et al., 2020). As firms adopt such technologies, demand for skilled labour rises while demand for unskilled labour stagnates or falls, and because the supply of skilled labour is comparatively inelastic in developing economies, the skill wage premium widens (Acemoglu & Autor, 2011; Berman et al., 1998). Task-based refinements of the model show that technological change does not merely raise the skilled wage but can actively displace routine and low-skill tasks, producing labour-market polarization rather than the broad-based wage gains HOSS anticipates (Acemoglu et al., 2020).

The mechanism connecting trade to SBTC is direct: trade liberalization is rarely limited to the exchange of finished consumer goods. It typically expands access to imported capital equipment, intermediate inputs, and technology embedded in machinery, and it is frequently accompanied by inflows of foreign direct investment that bring skill-biased production methods with them. Where a labour-abundant economy liberalizes trade under these conditions, the SBTC channel can dominate the classical Heckscher-Ohlin channel, and the net effect of trade openness on inequality becomes an empirical question rather than a theoretical certainty. This is the question this paper puts to Nigerian, South African, and Kenyan data: does the classical HOSS prediction hold, or does the SBTC channel dominate it?

**Literature Review: Mixed Evidence on Trade Openness and Inequality**

The empirical literature on trade openness and income inequality is long-standing and, notably, unresolved. Some studies find that greater trade openness increases inequality (Gourdon et al., 2008; Hanson & Harrison, 1999; Robertson, 2000, as cited in Naanwaab, 2022; Rojas-Vallejos & Turnovsky, 2017, as cited in Naanwaab, 2022), others find that deeper trade integration reduces it (Cicowiez et al., 2010; Reuveny & Li, 2003, as cited in Naanwaab, 2022), and a third strand finds no significant relationship at all (Dollar & Kraay, 2002; Edwards, 1997, as cited in Naanwaab, 2022; Ravallion, 2001). Much of this divergence reflects differences in country samples, time horizons, and how inequality itself is measured; wage inequality versus overall household income inequality (Naanwaab, 2022). Single-country, time-series studies of developing economies tend to find that trade openness worsens inequality, while broader cross-country panels tend to find smaller or more ambiguous effects, a pattern consistent with the idea that context, not trade openness per se determines the sign of the relationship.

Within SSA specifically, the weight of recent evidence leans toward a disequalizing effect. Xu et al. (2021) find that trade openness increases inequality across a panel of Sub-Saharan African countries, and Yameogo and Omojolaibi (2022) report a comparable result for West Africa. Dorn et al. (2021) document a positive trade–inequality relationship using a broad international panel, while regional studies reinforce the pattern within Africa: Chigwenembe and Zheng (2024) find that international trade has widened wage dispersion within the Southern African Development Community (SADC), and Wondim and Chang (2024) document rising manufacturing-sector wage inequality following trade liberalization in Ethiopia.

The composition of trade appears central to these outcomes. SSA economies typically export primary commodities and import capital- and technology-intensive manufactures. Gourdon et al. (2008) show that a country's factor endowments and export composition critically shape whether trade widens or narrows inequality, and Acheampong et al. (2023) argue that resource-

based export structures concentrate rents among a narrow political and economic elite rather than distributing gains broadly. This composition effect is consistent with, and reinforces, the SBTC channel described above: SSA's trade pattern imports the technology that raises the skill premium while exporting commodities whose rents rarely reach unskilled labour.

What remains comparatively underexplored is a dynamic panel estimate that isolates the net trade-openness effect, controlling for the broader globalization index, foreign direct investment, remittances, and institutional quality simultaneously, for the specific trio of Nigeria, South Africa, and Kenya, using an estimator capable of correcting for the endogeneity of trade policy itself. This is the gap this paper addresses.

## Data and Methodology

### Data

The analysis draws on an unbalanced annual country-year panel covering Nigeria, South Africa, and Kenya over 1990–2024, yielding 105 country-year observations. Income inequality, the dependent variable, is proxied by the Gini coefficient (scale 0–100), sourced from the World Bank's World Development Indicators (World Bank, 2024). Trade openness, the variable of central interest, is measured conventionally as the sum of exports and imports of goods and services expressed as a share of GDP (World Bank, 2024). The model also includes the KOF Economic Globalization Index, net FDI inflows (% of GDP), personal remittances received (% of GDP), an institutional quality index drawn from the Worldwide Governance Indicators (Kaufmann et al., 2010), real GDP per capita, annual CPI inflation, and a human capital proxy, all sourced from the World Bank and complementary databases.

### Descriptive Statistics

Table 1 summarizes the two variables of central interest: the Gini coefficient and trade openness separately for each country and for the pooled panel. The cross-country heterogeneity is striking. Nigeria's trade-to-GDP ratio averages 332.72% over the study period, more than six times the average recorded in South Africa (50.21%) or Kenya (50.38%), a pattern driven by the outsized weight of crude oil exports and imports relative to a comparatively small non-oil GDP base. South Africa, by contrast, records by far the highest average inequality (mean Gini = 62.22, ranging narrowly from 55.45 to 66.76), while Nigeria (mean Gini = 39.95) and Kenya (mean Gini = 44.70) exhibit both lower average inequality and substantially wider within-country variation.

**Table 1:** *Descriptive Statistics for Gini Coefficient and Trade Openness, by Country*

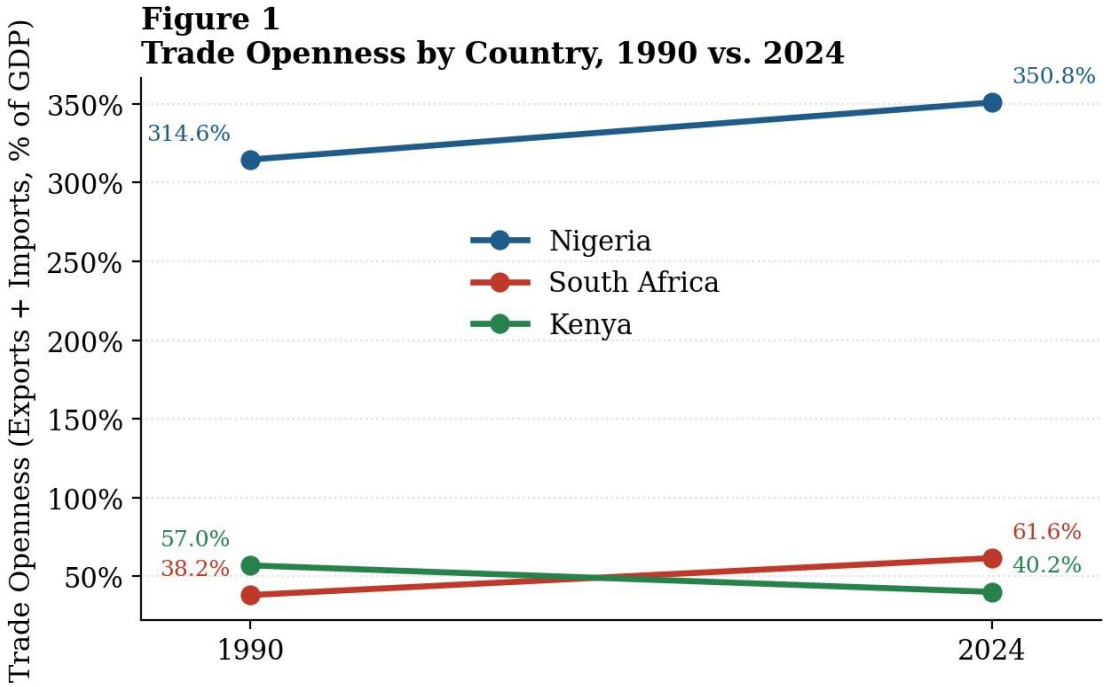
| Country | GINI Mean | GINI SD | GINI Min–Max | TRADE OPEN Mean | TRADE OPEN SD | TRADE OPEN Min–Max |
|---|---|---|---|---|---|---|
| Nigeria | 39.95 | 6.20 | 32.10–51.90 | 332.72 | 83.86 | 178.56–550.21 |
| Kenya | 44.70 | 5.97 | 34.63–57.40 | 50.38 | 11.09 | 30.40–72.86 |
| South Africa | 62.22 | 3.37 | 55.45–66.76 | 50.21 | 8.90 | 34.32–65.97 |
| **Pooled (N = 105)** | 48.96 | 10.98 | 32.10–66.76 | 144.44 | 142.34 | 30.40–550.21 |

Note. GINI_INDEX is scaled 0–100; TRADEOPEN is exports plus imports as a percentage of GDP. Aggregate figures pool all 105 country-year observations.

*Source: Author's computation from World Bank World Development Indicators.*

**Trends in Trade Openness and Income Inequality, 1990–2024**

Figure 1 traces trade openness in each country from the start to the end of the study period. Nigeria's trade-to-GDP ratio was already extraordinarily high in 1990 (314.58%) and climbed further to 350.83% by 2024, reflecting sustained oil-export dependence. South Africa's trade openness rose steadily over the same period, from 38.21% to 61.65%, consistent with its deepening integration into global manufacturing and financial markets. Kenya moved in the opposite direction, with trade openness softening from 57.02% in 1990 to 40.19% in 2024.

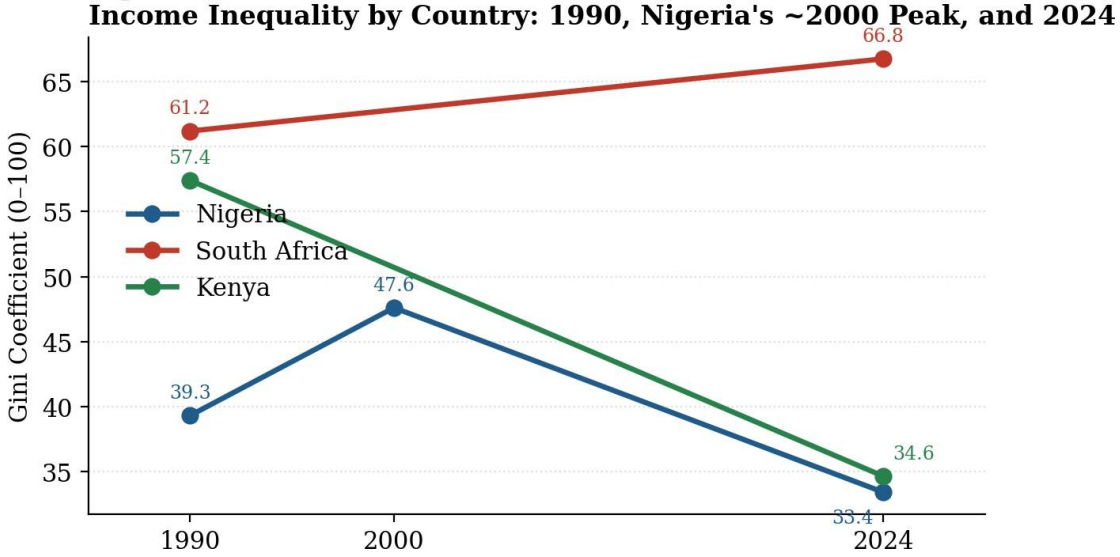



Note. Values are the country-specific start- and end-of-period trade openness ratios reported in the underlying study.

*Source: Author's computation from World Bank World Development Indicators*

Figure 2 traces the corresponding path of income inequality. Kenya recorded the most dramatic decline of the three countries, with its Gini coefficient falling from 57.40 in 1990 to 34.63 in 2024. Nigeria also ended the period lower than it started (39.30 in 1990 versus 33.40 in 2024), but not monotonically: inequality rose to an intermediate peak of approximately 47.60 around 2000 before declining. South Africa is the clear outlier, the only one of the three countries where inequality was higher at the end of the period (66.76) than at the beginning (61.20).

**Figure 2**
**Income Inequality by Country: 1990, Nigeria's ~2000 Peak, and 2024**




Note. Nigeria's intermediate point reflects the approximate peak ("around the year 2000") reported in the underlying study; South Africa and Kenya are shown at the reported start- and end-of-period values only.
*Source: Author's computation from World Bank World Development Indicators.*

Read on its own, this descriptive pattern looks like it vindicates the classical HOSS prediction rather than challenging it: the country with by far the highest and most persistent trade openness (Nigeria) has falling inequality, while the country with comparatively modest and only gradually rising trade openness (South Africa) has rising inequality. This impression is confirmed by the simple bivariate correlation between the two series across the pooled panel, which is negative and statistically significant ($r = -0.481$, $t = -5.562$). Taken at face value, higher trade openness is associated with lower, not higher, inequality.

This is precisely the inference the remainder of this paper argues is misleading. The raw cross-country pattern is confounded: Nigeria's high trade openness coincides with an oil-export structure, a country-specific institutional and geographic profile, and its own trajectory of inequality that has little to do with trade policy in any given year, while South Africa's rising inequality is widely attributed to the enduring structural legacy of apartheid-era exclusion rather than to its comparatively modest trade expansion (North, 1990). A raw two-country comparison cannot separate the effect of trade openness from these time-invariant, country-specific factors, nor can it account for the possibility that current trade policy and current inequality are jointly determined. Isolating trade openness's genuine partial effect, net of these confounds is exactly the task the system GMM estimator set out in the next section is designed to perform.

**Model Specification**

The baseline specification treats income inequality as dynamic and persistent, reflecting the structural, historically-rooted nature of inequality in the region (North, 1990). The Gini coefficient is modelled as a function of its own lag, a vector of globalization variables including trade openness, and a vector of macroeconomic controls:

$$GINI_{it} = \alpha GINI_{i,t-1} + GLOB_{it}'\beta + X_{it}'\gamma + \eta_i + \lambda_t + \varepsilon_{it}$$

where $GLOB_{it}$ comprises economic globalization, trade openness, FDI, and remittances; $X_{it}$ comprises institutional quality, GDP per capita, human capital, and inflation; $\eta_i$ captures unobserved, time-invariant country-specific effects; and $\lambda_t$ captures common time shocks.

**Why System GMM: The Endogeneity of Trade Policy**

Testing the HOSS prediction with a simple cross-sectional or static panel regression of inequality on trade openness would be econometrically naïve, because trade openness is not exogenous to the inequality outcome it is meant to explain. Three sources of endogeneity are especially relevant here. First, reverse causality is plausible: the degree of a country's trade openness is itself a political outcome, shaped by domestic distributional coalitions, where inequality is already high, entrenched elites who capture the gains from protection or from resource-export rents may resist or selectively design liberalization, meaning current inequality can influence current trade policy just as trade policy influences inequality. Second, omitted variable bias looms large: unobserved, time-invariant country characteristics: geographic access to seaports, the density and legacy of colonial-era trade infrastructure and routes, and endowments of natural resources jointly shape both a country's structural propensity to trade and its long-run inequality trajectory, without being captured by the observed regressors. Third, the model's own dynamic structure introduces mechanical endogeneity: because the lagged Gini coefficient is included to capture the persistence of inequality, it is by construction correlated with the country-specific effect $\eta_i$, which biases ordinary fixed-effects and random-effects estimators in this setting (Arellano & Bond, 1991).

The system GMM estimator, developed by Arellano and Bover (1995) and Blundell and Bond (1998), addresses all three problems simultaneously. The estimator first transforms the model into first differences, which mechanically eliminates the time-invariant country effect $\eta_i$, including the unobserved geographic and colonial-route advantages described above; because any variable that does not change over time within a country is differenced out. In the differenced equation, the lagged dependent variable and other endogenous regressors are instrumented using deeper lags of their own levels. Because first-differencing alone can produce weak instruments when a series is highly persistent, the differenced equation is then combined with an equation in levels, in which the lagged levels are instrumented by lagged first differences the defining "system" feature of the estimator. Trade openness itself is treated as predetermined rather than strictly exogenous, and is instrumented using its own one-period lag, reflecting the plausible but less severe endogeneity of policy responses to past, rather than contemporaneous, inequality outcomes. The two-step system GMM estimator is used throughout, with the Windmeijer (2005)

finite-sample correction applied to counter the downward bias the two-step covariance matrix would otherwise introduce into the standard errors. To guard against instrument proliferation, which can inflate the Hansen statistic and mask instrument invalidity, the instrument count is restricted and the collapse option is applied (Roodman, 2009). Model validity is assessed using the Arellano-Bond tests for first- and second-order serial correlation in the differenced residuals; a valid specification requires significant AR(1) but insignificant AR(2), and the Hansen test of overidentifying restrictions, where failure to reject the null supports the joint validity of the instrument set. For comparison, static Fixed Effects (FE) and Random Effects (RE) versions of the model are also estimated, though for the reasons set out above, they are not treated as the basis for causal inference.

## Results and Discussion

Table 2 presents the estimated coefficients for the Gini coefficient under three estimators: system GMM, Fixed Effects GMM, and Random Effects GMM. Consistent with the estimator's theoretical advantages in a dynamic, endogeneity-prone setting, the discussion below centres on the system GMM results (Model 1).

**Table 2:** *GMM Regression Results, Dependent Variable: Gini Coefficient*

| Variable | System GMM Coef. | p-value | FE GMM Coef. | p-value | RE GMM Coef. | p-value |
|---|---|---|---|---|---|---|
| GINI(-1) | 0.221487*** | 0.0015 | 0.035875*** | 0.0027 | 39.67152*** | 0.0000 |
| ECO_GLOB | 0.457756*** | 0.0000 | -0.082230* | 0.0763 | 0.046803 | 0.4937 |
| FDI | 5.02E-11 | 0.6646 | -4.15E-12 | 0.8959 | -3.91E-11 | 0.6801 |
| REMITTANCES | -4.91E-10*** | 0.0000 | -3.14E-11 | 0.7929 | -8.76E-10*** | 0.0000 |
| HUMCAP | 0.106341** | 0.0207 | -0.075707 | 0.1699 | -0.221178*** | 0.0002 |
| INFL | 0.149268*** | 0.0039 | 0.032377 | 0.1448 | 0.081921* | 0.0534 |
| INSTQ | 0.394629*** | 0.0000 | -0.055131 | 0.3207 | 0.229962*** | 0.0000 |
| **TRADEOPEN** | **0.040298*** ** | **0.0000** | -0.000429 | 0.9114 | -0.004269 | 0.5609 |
| GDPPC | 0.000344 | 0.1551 | -7.65E-05 | 0.8916 | 0.002332*** | 0.0000 |
| Observations | 105 | | 105 | | 105 | |
| Countries | 3 | | 3 | | 3 | |
| Instruments | 9 | | 8 | | 9 | |

Note. Robust standard errors correct for heteroskedasticity; the two-step estimator is adjusted using the Windmeijer (2005) correction. *$p < .10$. **$p < .05$. ***$p < .01$.

The central finding of this paper is the coefficient on Trade Openness (TRADEOPEN) in the system GMM model: 0.0403, significant at the 1% level (p = 0.0000). Substantively, this indicates that a one-unit increase in trade openness, measured as trade's share of GDP is associated with a 0.04-unit increase in the Gini coefficient, holding the broader globalization index, FDI, remittances, institutional quality, GDP per capita, human capital, and inflation constant. The sign is positive, not negative, and it directly contradicts the HOSS prediction that trade liberalization should compress inequality in a labour-abundant economy. On the strength of this evidence, the null hypothesis that trade openness has no significant effect on income inequality in these three economies is rejected.

This result stands in direct, and instructive, tension with the raw bivariate correlation reported earlier (r = −0.481). The sign reversal (negative) in the simple pairwise correlation, positive once the dynamic panel model nets out country-specific effects, common time shocks, and the endogeneity of trade policy is not a contradiction in the evidence but a demonstration of exactly why the raw descriptive pattern is unreliable for testing trade theory. The negative raw correlation is generated by cross-country differences that have nothing to do with the within-country effect of trade openness on inequality: Nigeria's persistently extreme trade-to-GDP ratio simply coexists with a declining Gini trend rooted in its own domestic dynamics, while South Africa's comparatively modest and gradually rising trade openness coexists with a rising Gini trend rooted in apartheid-era structural legacies. Once the system GMM estimator strips out these fixed, time-invariant country effects and isolates the component of trade openness that varies within a country over time, the estimated effect flips sign and becomes significantly positive; evidence that, net of confounding, greater trade openness does exert a disequalizing

pull in these economies, consistent with the SBTC channel rather than the classical HOSS prediction.

A methodologically important feature of the results is that this effect is detectable only once the endogeneity of trade policy is properly addressed. In the Fixed Effects GMM specification, the trade openness coefficient is small, negative, and statistically insignificant (−0.000429, p = 0.9114); in the Random Effects GMM specification it is likewise insignificant (−0.004269, p = 0.5609). Had the analysis relied on a static estimator alone, it would have concluded incorrectly that trade openness has no bearing on inequality in this sample. It is only the system GMM estimator, by exploiting internal instruments to correct for the endogeneity of trade policy and the mechanical bias introduced by the lagged dependent variable, that recovers a statistically robust and economically meaningful disequalizing effect. This is itself an argument for taking classical trade theory testing seriously as an econometric, and not merely a descriptive, exercise.

The direction of the effect is best explained by the Skill-Biased Technological Change channel rather than by any failure of the classical model's internal logic. Trade liberalization in Nigeria, South Africa, and Kenya has plausibly facilitated the importation of advanced capital goods, machinery, and embedded technology that complement skilled labour rather than substituting for it (Acemoglu & Autor, 2011; Berman et al., 1998). Where these countries' exports remain concentrated in primary commodities and their imports skew toward capital- and technology-intensive manufactures, the gains from trade accrue disproportionately to the segment of the workforce with the education and skills to operate alongside the new technology, while wages for unskilled labour stagnate (Gourdon et al., 2008). This pattern is consistent with regional evidence: Chigwenembe and Zheng (2024) attribute rising wage dispersion in the SADC region to trade-induced skill demand, and Wondim and Chang (2024) find a similar mechanism operating in Ethiopia's manufacturing sector following liberalization.

The finding also resonates with the broader literature on resource-dependent trade structures. Where exports are dominated by extractive commodities: oil in Nigeria, minerals in South Africa; the rents generated by trade tend to concentrate among a narrow set of politically connected elites and capital owners rather than circulating broadly through the labour market (Acheampong et al., 2023), reinforcing rather than offsetting the SBTC-driven widening of the skill premium. This stands in contrast to the more optimistic cross-country evidence of Dollar and Kraay (2002), who find that growth associated with openness tends to benefit the poor proportionally; the divergence is plausibly explained by the institutional fragility and narrow production base that characterize the SSA context, conditions under which the gains from trade are structurally less likely to be broadly shared.

Taken together, the results support a clear conclusion: the HOSS theorem's distributional prediction does not hold for Nigeria, South Africa, and Kenya over the period studied. Rather than narrowing inequality by raising the return to abundant unskilled labour, trade openness in these economies appears to have widened inequality by channelling the gains from liberalization toward skilled labour and capital, consistent with the SBTC hypothesis and the structural characteristics of SSA trade.

## Conclusion and Policy Implications

This paper set out to test, rather than assume, the classical trade-theory prediction that trade liberalization reduces income inequality in labour-abundant developing economies. Using a system GMM estimator applied to a dynamic panel of Nigeria, South Africa, and Kenya, it finds the opposite: trade openness has a positive, statistically significant, and economically meaningful disequalizing effect on the Gini coefficient, a result that survives once the endogeneity of trade policy arising from reverse causality, omitted geographic and institutional factors, and the dynamic structure of inequality itself is properly addressed. The Heckscher-Ohlin-Stolper-Samuelson theorem's central distributional prediction does not describe the SSA trade experience; the Skill-Biased Technological Change hypothesis does.

The policy implication is not that trade liberalization should be reversed, but that it cannot be treated as a self-executing instrument of inclusive growth. If the disequalizing effect documented here stems from the skill-biased nature of imported technology, then complementary domestic investment in technical and vocational education, skills-upgrading programmes, and active labour-market policy becomes a precondition, not an afterthought, for trade policy to deliver broadly shared gains. Similarly, where trade rents are concentrated in extractive export sectors, fiscal and redistributive mechanisms, resource-revenue transparency, progressive taxation of trade-related rents, and sectoral diversification away from raw commodity dependence are necessary to prevent the gains from trade accruing narrowly to capital owners and the already-skilled. Sequencing matters: liberalization pursued without parallel investment in human capital and redistributive capacity risks widening, rather than narrowing, the very inequality it is often assumed to reduce.

This paper's scope is necessarily limited: the three-country sample, while offering the advantage of institutional and regional comparability, restricts the generalizability of the findings to SSA as a whole, and the aggregate trade-openness measure does not distinguish between the direction of trade (North-South versus South-South) or the composition of traded goods, both of which the literature suggests matter for distributional outcomes (Gourdon et al., 2008). Future research disaggregating trade openness by trading partner and sector, and extending the country sample across SSA, would sharpen the policy relevance of these findings and test the robustness of the SBTC channel identified here.

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