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Effect of the Suspension from the African Growth and Opportunity Act Programme on Poverty in Sub-Saharan Africa

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Abstract

The African Growth and Opportunity Act (AGOA), a non-reciprocal trade preference offered by the United States to Sub-Saharan African countries, is set to expire on 30 September 2025. The present article examines the effect of the AGOA suspension on poverty in suspended countries. The analysis covers an unbalanced sample of 43 SSA countries, of which 15 SSA countries at least once from the benefits of the AGOA (the treatment group), and 28 SSA countries eligible to the benefits of the programme, but that never suspended from those benefits (control group). The empirical findings indicate that the AGOA suspension has raised poverty in suspended countries, with countries that export non-resource products being the most adversely affected. In addition, the AGOA suspension results in a higher poverty rate in the long-term than in the short-term. Finally, the analysis has revealed that the poverty situation of suspended countries has worsened relatively to countries that never benefited from the programme. This shows that the poverty situation of the suspended countries has deteriorated after the AGOA suspension compared to what their situation would have been if they did not benefit from the programme. The analysis sheds light on the poverty increases consequences of the AGOA suspension, and also points to the adverse consequences of the uncertainty surrounding non-reciprocal trade preferences for beneficiary countries.

Keywords: AGOA Suspension; Poverty; Sub-Saharan African countries. **JEL Classification:** F14; I30; O11.

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1. Introduction

The relationship between exports and poverty has been the subject of an important literature, which concludes that higher exports contribute to reducing poverty (e.g., Artuç et al., 2020; Erten and Leight 2019; McCaig and Pavcnik, 2018; Robertson et al., 2020; World Bank, 2020). For example, export of goods, including light manufactures leads to jobs creation, a higher productivity, higher wages, and a greater incentive for women to move out of informality into the formal sector in lowincome countries (e.g., Engel et al., 2021; McCaig and Pavcnik 2018; Porto, 2005; Van Biesebroeck, 2005; World Bank and WTO, 2018). A strand of this literature emphasizes that foreign policy, in particular non-reciprocal trade preferences offered by trading partners (especially wealthier ones) to promote developing countries' exports can affect poverty in beneficiary countries (e.g., Brambilla et al. 2012; Freres and Mold, 2002; Gnangnon, 2023; McCaig, 2011; Page and Hewitt, 2002). For example, McCaig (2011) observes that Vietnam's provinces that were more exposed to the United States' tariff cuts experienced faster poverty decreases. Workers with low education levels in these provinces enjoyed a rapid wage growth, while highly educated workers did not. Brambilla et al. (2012) have shown that the United States' imposition of anti-dumping duties on exports of Vietnamese catfish products results in a significant fall of income of households that were relatively specialized in producing aquaculture goods. In other words, lower tariffs on these Vietnamese catfish products would have improved households' incomes. Page and Hewitt (2002) note that while the European Union's provision of duty-free-quota-free market access for products originating from Least developed countries (LDCs) (under the Everything But Arms initiative) may have reduced poverty in LDCs, it can raise poverty in other poor countries, given its trade diversion effect from other poor countries to LDCs. Freres and Mold (2004) note that the European Union's Generalized System of Preferences (GSP) has not helped reduce poverty in Latin American countries for several reasons that can be found both in the recipient countries' side and the preference-granting countries' side (i.e., the European Union). On the preference-granting countries' side, problems associated with the weaknesses in the design and implementation of the GSP scheme explain the incapacity of these preferences to reduce poverty in beneficiary countries. These problems relate to the uncertainty associated with the preferences, the poor knowledge of the European market, the lack of strong support for strengthening the technological capacity of small-scale producers in recipient countries (Latin American countries), and the excessively stringent rules of origin of the preference scheme. On the recipient-countries' side (Latin American countries), factors relate to domestic social and economic conditions. Gnangnon (2023) has observed that the utilization of the non-reciprocal trade preferences

offered by the so-called QUAD countries (Canada, the European Union, Japan and the United States) has been instrumental in reducing poverty in beneficiary developing countries, especially in LDCs that enjoy the largest poverty reduction effect.

The present analysis aims to contribute to the few existing studies on the effect of nonreciprocal trade preferences on poverty in beneficiary (developing) countries. It investigates the effect of the suspension of the benefits derived from the African Growth and Opportunity Act (AGOA) on poverty in suspended countries.

The AGOA is a United States (US) Trade Act in the form of unilateral trade preference potentially available to 49 Sub-Saharan (SSA) countries. It was enacted on 18 May 2000, renewed on several occasions, including most recently in 2015, and is to be valid until 30 September 2025. The Act builds on the US GSP because to qualify for the AGOA benefits, a country should be eligible for the US GSP programme. The AGOA provides duty-free treatment for additional 1,835 products originating from SSA, and is in this regard, more generous than the US unilateral trade preference available to all other developing countries under the GSP programme.

The choice of beneficiary countries from the AGOA programme, and of countries that can be suspended from the benefits of the AGOA programme is ultimately at the discretion of the US President. Nevertheless, a number of criteria determine the eligibility to the benefits of the programme, and guide the choice of countries by the US President. These include for example, the establishment or continued progress towards a market-based economy, rule of law, the elimination of barriers to U.S. trade and investment, the implementation of economic policies to reduce poverty, a system to combat corruption and bribery, and the protection of worker rights (USITC, 2023: p16). However, two criteria stand out as the main common reasons for the loss of eligibility to the programme. These are concerns over the rule of law and political pluralism (USITC, 2023: p42-43). In addition to these two main criteria, the income criterion plays an important role in determining whether a country can continue benefiting from the AGOA programme, or being suspending from the benefits of the programme. This is merely because, as noted above, the AGOA programme builds on the US GSP programme, the latter having an income limit whereby a GSP beneficiary must graduate from the programme when it becomes a high-income country, according to the World Bank classification of countries.

At the 21st AGOA Forum² held on 24-26 July 2024 in Washington DC, the US President Joe Biden called on Congress to quickly reauthorize and modernize this landmark act³. This call resonates with the findings in the literature⁴ that the AGOA programme has helped expand SSA countries' goods exports, dominated by the export of natural resource products (petroleum and minerals) and agricultural products, as only a few countries have been capable of expanding into manufacturing and other industrial goods thanks to the AGOA programme (e.g., Coulibaly and Kassa, 2022; Fernandes et al., 2023; Frazer and Van Biesebroeck, 2010; Portugal-Perez, 2008). In the meantime, two other studies have revealed that the suspension of eligible SSA countries from the benefits of the AGOA programme has adverse consequences on goods exports (especially, manufactured exports) in suspended countries (Edjigu et al., 2023; Sorgho, 2024). Edjigu et al. (2023) obtain that the suspension of the AGOA act would lead to a decline of eligible SSA countries' exports (under AGOA) to the US markets by 39 percent, with a specific fall in apparel and textile exports by about 88 percent. Sorgho (2024) uncovers that the suspension of eligible SSA countries from the benefits of the AGOA program between 2004 and 2020, has resulted in a loss of an average 11.7 billion USD in the value of their exports to the US market (691 million USD on average per year). In the same spirit, Mevel et al. (2013) have strongly recommended that not renewing the AGOA program would result in a decline in African exports, lower economic diversification and employment for many AGOA-eligible countries.

In view of the established poverty reduction effect of exports in the relevant literature⁵, and given the export revenue (specially manufactured export revenue) losses associated with the suspension from the AGOA programme (Edjigu et al. 2023; Sorgho, 2024), we argue that the suspension from the benefits associated with the AGOA programme will increase poverty in suspended countries. In support for this argument, a few studies point to the positive effect of the AGOA programme on jobs creation, and wages increases. For example, Phelps et al. (2009) have emphasized that the export of apparel under AGOA contributes significantly to net job growth in Kenya, but this effect will be sustainable only if the government addresses the potential constraints

² This is an annual US-SSA Trade and Economic Cooperation Forum, a ministerial meeting that aims to promote closer economic ties between the United States and SSA.

³ The statement is available online at: <u>https://www.whitehouse.gov/briefing-room/statements-releases/2024/07/23/statement-from-president-joe-biden-on-the-african-growth-and-opportunity-act-agoa-forum-in-washington-dc/</u>

⁴ See the literature review by Tadesse (2024).

⁵ See for example, Artuç et al. (2020); Erten and Leight (2019); Engel et al. (2021); McCaig and Pavcnik (2018); Porto (2005); Robertson et al. (2020); Van Biesebroeck (2005); World Bank (2020); and World Bank and WTO (2018).

on industrial upgrading. Grogan (2023) has considered the case of Lesotho⁶ and observed that women employment in ready-made garment (RMG) factories in new industrial zones significantly has increased under AGOA. In the meantime, well-paid RMG work opportunities were reduced by the shocks to international demand for textile products (phase-out of the World Trade Organization's Multi-Fiber Agreement and 2008 financial crisis). Tadesse (2024) has concluded that while the AGOA programme might have spurred employment, particularly in sectors like apparel, its job creation effect in eligible countries is not broad-based⁷. On another note, one may expect a poverty reduction effect of the AGOA through its positive effect on economic growth⁸. For example, Cook and Jones (2020) have shown the existence of a dynamic effect of the AGOA programme on the economic growth in beneficiary countries. The programme does not exert an immediate impact on economic growth in beneficiary countries, but improves significantly economic growth rates in the future. Anecdotal evidence also confirms that the AGOA leads to job creation, increases in wages, and can in this regard, lead to poverty reduction in AGOA beneficiary countries (USITC, 2023). For example, industry representatives from several SSA countries emphasized the major role of the apparel sector in generating employment in the apparel industry, and higher wages in the apparel industry relatively to other industries in the economy (Otobe, 2015; USITC, 2023: p133). Madagascar is a case in point. The average salary for jobs in the apparel manufacturing industry that supports exports under AGOA in Madagascar was 103 dollars per month in 2018 against 56 dollars per month for Malagasy jobs that were not created thanks to the AGOA programme. Concurrently, the suspension from the AGOA program (i.e., the loss of AGOA benefits) has resulted in substantial job losses in Madagascar, given that an estimated 50,000-100,000 workers became unemployed during the five-year period Madagascar lost the benefits of the AGOA program (USITC, 2023: p134). All these empirical findings and anecdotal evidence show that the suspension of the benefits from the AGOA programme could adversely impact the suspended countries' economies, and specifically raise poverty in these countries.

Against this backdrop, we formulate the following hypotheses.

⁶ Lesotho is one of the SSA beneficiaries of AGOA that has taken greatly advantage of AGOA's tariff preferences and liberal rules of origin for apparel to significantly increase its apparel exports to the US under AGOA.

⁷ This is likely due to the dominance of natural resource (including energy) products (which are more capital intensive than labor intensive) in SSA countries' exports to the US under the AGOA program (see discussion above).

⁸ Several studies have uncovered that a higher economic growth rate can translate into poverty reduction (e.g., Bourguignon, 2004; Dollar and Kraay, 2002; Fosu, 2015, 2018).

Hypothesis 1: The suspension from the AGOA programme will lead to an increase in poverty rates in suspended countries.

Hypothesis 2: The poverty rise effect of the AGOA suspension is likely to be greater in nonresource rich countries than in resource-rich countries (hypothesis 2), in view of the significant negative effect of this suspension on manufactured exports relatively to non-manufactured exports (e.g., resource-based products).

The empirical analysis has tested these two hypotheses using an unbalanced panel dataset of 43 SSA countries, of which 15 SSA countries that were suspended at least once from the benefits of the AGOA programme (qualified as the treatment group), and 28 SSA countries eligible to the benefits of the programme, but never suspended from those benefits (control group). The analysis has used several econometric approaches, including the within fixed effects, the Least Squares Dummy Variables Corrected (LSDVC) estimator (Kiviet, 1995; Bruno, 2005) and the Method of Moments Quantile Regression (MMQR) with fixed effects approach of Machado and Santos Silva (2019). The outcomes indicate that, on average, the AGOA suspension has resulted in an increase in poverty rates in suspended countries (relatively to countries in the control group). However, the magnitude of this effect is smaller in resource-rich countries than in non-resource-rich countries. This may reflect the fact that the AGOA suspension has larger adverse effects on manufactured exports than on nonmanufactured exports (e.g., resource-based exports). Interestingly, the AGOA suspension has exerted a higher increase in poverty rates in the long-term relatively to the short-term. The analysis, additionally, shows that the poverty situation of the suspended countries from the AGOA programme has worsened relatively to countries that never benefited from the programme. This indicates that the suspended countries' poverty situation is even worse after the AGOA suspension compared to what their situation would have been if they did not benefit from the programme. These findings shed light on the poverty increases consequences of the AGOA suspension, and point to the fact that the nonrenewal of the AGOA programme by US authorities (by the expiration date of 30 September 2025) would significantly harm beneficiary countries, at least, by raising poverty in these countries.

The rest of the paper contains five sections. Section 2 presents the baseline model specification used to test empirically hypotheses 1 and 2 and discusses the econometric approaches to be used for the estimations. Section 3 interprets empirical outcomes, and section 4 goes further in the empirical analysis. Section 5 concludes.

2. Model specification and econometric approaches

As indicated above, the suspension from the benefits of the AGOA programme is not exogenous and depends on many criteria, the main ones being the income criterion, and the rule of law and political pluralism criteria (USITC, 2023: p42-43). This signifies that the exit from the AGOA programme does not occur in a random way. As a result, the conventional Difference-in-Difference (DiD) technique used to estimate the causal effects of a programme when treatment assignment is non-random is not appropriate. Therefore, we investigate empirically the effect of the suspension from the benefits of the AGOA programme (henceforth referred to as "AGOA suspension") on poverty in suspended SSA countries by using the entropy balancing (EB) approach. The latter is matching approach for impact analysis developed by Hainmueller (2012). It allows computing exact weights (for the control group) such that a set of desired pre-treatment characteristics of the control (untreated) group match those of the treatment group⁹. The EB approach is, in fact, a generalization of conventional matching methods (Hainmueller, 2012) that permits to create a balanced sample, where the control group is a perfect counterfactual for the treated group. The selection bias is overcome by controlling for a number of variables that may affect differently countries in both the treatment and control groups. The balancing requirement (i.e., a high degree of covariate balance using for example the same mean/variance of conditioning variables in the treatment group) is achieved by reweighing the observations in the control group (untreated units) so that the treated units and the untreated units are as similar as possible with respect to all pre-treatment characteristics of the units (Hainmueller, 2012). The method chooses a set of weights that achieves balance that minimally deviates from uniform weights.

In practice, the EB approach is implemented in two steps: the matching (in its first step) and the regression (in its second step). In the first step, we compute the weights that will be assigned to the control units, by relying on the observable pre-treatment characteristics of units (countries, here) under analysis. In particular, the balancing requirements are achieved here by using the mean (average) of covariates to ensure that the non-treated countries in the control group are as close as possible to treated countries (see also Apeti and Edoh, 2024; Gutmann et al. 2021; Gutmann et al. 2023; Neuenkirch and Neumeier, 2016 who proceed in the same way). The subsequent question is what are the variables (observable pre-treatment characteristics) used to compute the weights in the present analysis? To compute those weights, we need to identify the variables that determine whether a

⁹ The EB approach has been utilized in many empirical studies such as Basri et al. (2021); Gutmann et al. (2023); and Neuenkirch and Neumeier (2016).

country no longer meets the necessary pre-conditions to become eligible to AGOA benefits (or variables that determine the AGOA suspension). As indicated above, these variables relate to the income criterion, the criterion of political rights¹⁰ and the criterion of institutional quality. These three criteria are measured respectively by the real per capita income (in natural logarithm); an indicator of political rights, and an indicator of institutional quality indicator. Following previous studies that employ the EB approach, we use the one-year lag of each these three variables to compute the weights. Moreover, we draw from Rosenbaum and Rubin (1983) and report in Table 1 the outcomes of the sample "means" of the matching covariates after weighing. These outcomes compare the means and the standardized difference in means of countries in the treatment and control groups. They indicate that the reweighted means of covariates (column [4] of the Table) are almost identical to the target values of covariates (column [1] of the same Table). In addition, the standardized difference between the target value and the balanced value is essentially zero for all three variables (column [6] of the Table), and suggests, as expected, that a high degree of balance is achieved.

The second step of the EB approach involves performing a regression analysis (using the balanced panel dataset constructed in the first step) where the main regressor of interest is the dummy-variable "SUSP", which takes the value of 1 for the years during which a country was suspended from the benefits of the AGOA programme, and the value of 0 for the other years. Control variables included in the EB-based regression are the reweighted observable pre-treatment variables¹¹, as well as time dummies (to control for common shocks) and units' unobservable time invariant characteristics (countries' unobservable specific effects). In the EB-based regression, the coefficient of the dummy "SUSP" represents the average treatment effect of the AGOA suspension on poverty, that is, the average difference in the poverty rate between treated units (suspended countries from the AGOA programme) and the closest non-treated units (countries in the control group). The treatment group contains 15 SSA countries suspended at least once from the benefits of the AGOA programme, but were never suspended from the benefits of that programme.

[Insert Table 1, here]

¹⁰ Political rights capture the extent of free and fair elections, political pluralism and participation, and a functioning government (<u>https://freedomhouse.org/report/freedom-world</u>)

¹¹ The one-year lag of these variables is used.

The EB approach has several advantages over the simple "difference-in-difference method" and conventional matching approaches¹² (e.g., propensity scores matching; bias-corrected matching). For example, the EB method is instrumental in achieving a high degree of covariate balance between treated and non-treated units, including by allowing to create a synthetic control group that is virtually a perfect counterfactual of the treatment group. The balance procedure between treated and nontreated units is achieved by means of a more flexible reweighting scheme that keeps the weights as close as possible to the base weights to avoid a loss of information. This helps circumvent the limits of conventional matching methods (e.g., bias corrected matching; nearest neighbour matching) where control units are either ignored or matched. It has also the advantage of combining the matching approach to achieve the balancing requirements (in the first step) with the regression analysis (in the second step). As such, it does not require that the researcher specify an empirical model for the selection into the treatment. In fact, the EB approach does not impose a rigid functional form on the propensity weights, and is, in this regard, suitable for situations where the true functional form of the propensity score is unknown. Hence, the EB method provides a better pre-treatment balance than standard inverse propensity-score methods¹³. Overall, once the covariates distributions are adjusted, standard estimators can be readily applied to the re-weighted data (in the second step of the EB approach) to obtain consistent treatment effects. This helps avoid potential problems associated with misspecification, multicollinearity, or wrong choice of the functional form.

The baseline model specification estimated in the second step of the EB approach takes the following form:

$$POV_{it} = \theta_0 + \theta_1 \text{SUSP}_{it} + \delta X_{it-1} + \gamma_t + \mu_i + \varepsilon_{it}$$
(1)

where *i* and *t* are subscripts respectively for a country and a year in the unbalanced panel dataset constructed based on available data. The panel dataset contains 43 SSA countries, of which 15 countries in the treatment group ("TG"), and 28 countries in the control group ("CG1"). The data cover the annual period from 2001 to 2022, i.e., from the first year of the implementation of the AGOA programme to the last year for which data on variables are available.

¹² See Neuenkirch and Neumeier (2016) for the list of advantages associated with the EB approach compared to other matching methods.

¹³ See Hainmueller (2012), as well as the related discussion provided by Athey and Imbens (2017) and Athey, et al. (2018).

The analysis utilizes two different indicators of poverty. The first poverty indicator (and the main one) is the poverty headcount ratio at \$2.15 a day (2017 PPP) (in percentage of population). This indicator is denoted "PHC", and represents the percentage of the population living on less than \$2.15 a day at 2017 international prices. The second indicator (used for robustness check) is the poverty gap at \$2.15 a day (2017 PPP) (in percentage). It represents the mean shortfall in income or consumption from the poverty line \$2.15 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This indicator is denoted "PGAP"., and reflects the depth of poverty as well as its incidence. Higher values of the indices of poverty represent higher poverty rates. Data on these two poverty indicators are obtained from the World Bank database. To get a first insight into the difference between the poverty rates in the treatment and control groups, we present in Figure 1 the averages of each of these two poverty rates are higher in the treatment group (i.e., suspended countries from the AGOA programme) than in the control group, regardless of the poverty rates in suspended countries compared to non-suspended countries.

[Insert Figure 1, here]

 θ_0 and θ_1 are parameters to be estimated. Likewise, δ is a vector of parameters associated with each variable in X_{it} . As indicated above, the latter includes several variables, that is, the ones used to compute the EB-related weights, and additional control variables. The first of these indicators is the real per capita Gross Domestic Product (constant 2015 US\$) (denoted "GDPC") in natural logarithm (extracted from the World Development Indicators). The second indicator is the index of political rights (denoted "PRIGHT"), which captures the extent of free and fair elections, political pluralism and participation, and a functioning government¹⁴. The political rights index is extracted from the Political rights. The third indicator is the institutional and governance quality (denoted "INST"). The institutional quality indicator is computed by extracting the first principal component (based on factor analysis) of six indicators of governance, which are political stability and absence of violence/terrorism; regulatory quality; rule of law; government effectiveness; voice and accountability, and corruption (see Kaufmann and Kraay, 2023). All these three indicators (used to compute the EB-related weights) are introduced with a one-year lag in the regressions. We expect that an improvement

¹⁴ See details online at: <u>https://ourworldindata.org/grapher/political-rights-score-fh</u>

¹⁵ This database is accessible online at: <u>https://freedomhouse.org/report/freedom-world</u>

in the real per capita income, better political rights and an improvement in the institutional quality could result in poverty reduction. Additional control variables (introduced in model (1) to limit the reverse causality problem, and to reduce the omitted variable bias in the analysis) are drawn from the abundant literature¹⁶ on the macroeconomic determinants of poverty. They include an indicator of trade policy liberalization ("MATR¹⁷"); an indicator of human capital ("EDU"); an indicator of inflation rate¹⁸; and an indicator of financial development "FD"). We expect that trade policy liberalization, an improvement in the education level, a lower inflation rate, and a greater financial development (that improves access to credit) can lead to poverty reduction.

All variables are described in Appendix 1, and related descriptive statistics, included for the treatment and control groups, are provided in Appendices 2a and 2b. For each SSA country, the dates of eligibility for the AGOA programme, and the dates of suspension from the benefits of this programme (in the event the concerned country was suspended) are collected from AGOA.info (https://agoa.info/about-agoa/country-eligibility.html) which is an online information and exporter support portal on the AGOA. These dates are also available in USITC (2023: p271-274), especially in Table E.1 of Appendix E (titled "AGOA Eligibility"). The lists of the 15 SSA countries in the treatment group, and the 28 SSA countries in the control group are displayed in Appendix 2d.

 γ_t are time dummies that represent global shocks affecting simultaneously all countries' poverty rates paths. μ_i are countries' unobserved time-invariant specific effects, and ε_{it} is a well-behaving error term.

In applying the EB approach, we use, in the second step, three different econometric techniques to estimate model (1) and its variants described below. First, we use the within fixed effects estimator along with the Driscoll and Kraay (1998) technique (denoted "FEDK") that allows correcting estimates' standard errors of the heteroscedasticity, serial correlation, and contemporaneous cross-sectional dependence in the residuals (see Hoechle, 2007). Second, we employ the Method of Moments Quantile Regression (MMQR) with fixed effects approach (also referred to as "Quantile via Moments") of Machado and Santos Silva (2019) to uncover the effect of the AGOA

¹⁶ See for example, Beck et al. (2007); Castilho et al. (2012); Fajgelbaum and Khandelwal (2016); Fosu (2018); Gnangnon (2023); McCaig (2011); and Santos-Paulino et al. (2019).

¹⁷ As described in Appendix 1, the indicator MATR refers to the "Measure of Aggregate Trade Restrictions". It has been recently developed by the International Monetary Fund (IMF) (see Estefania-Flores et al. 2022), and includes several components: tariffs, non-tariff barriers, and restrictions on requiring, obtaining, and using foreign exchange for current transactions. Lower values of this index show a greater trade policy liberalization (Data is available online at: https://sites.google.com/view/m-atr/)

¹⁸ In view of the skewed distribution of the indicator of inflation rate, it has been transformed (see Appendix 1).

suspension across different quantiles of the distribution of poverty indicators. The MMQR approach allows handling heteroscedasticity and outliers problems (as do conventional quantile regressions - see Canay, 2011; Koenker, 2004), and has the additional advantage of considering countries' timeinvariant fixed effects as different across quantiles of the conditional distribution of the dependent variable. This is at odds with conventional panel quantile methods that treat countries' time-invariant fixed effects as location (i.e., intercept) shifters. We report the MMQR-based regressions for the 10th quantile (Q10th), Q25th, Q50th, Q75th and Q90th (i.e., the 90th quantile). Third, and finally, we employ the Least Squares Dummy Variables Corrected (LSDVC) estimator to estimate a dynamic specification of model (1), that is, model (1) that includes the one-period lag of the dependent variable as a regressor. The LSDVC estimator, proposed by Kiviet (1995), Bun and Kiviet (2003), and extended by Bruno (2005), allows obtaining the short and long-term treatment effects¹⁹ of the AGOA suspension on poverty in suspended countries. This estimator is appropriate for unbalanced dynamic panel datasets, and helps correct the bias introduced by the lag of the dependent variable as a right-hand side regressor in a regression with countries' fixed invariant specific effects. This bias (referred to as the Nickell bias - Nickell, 1981) arises from the correlation between the lagged dependent variable and the error term, and becomes large in panel datasets with a small-time dimension (T). The consistency and reliability of the estimates stemming from the use of the LSDVC estimator rest on the exogeneity of regressors in the model. We recognize here that while the EB approach helps handle the endogeneity concern associated with our variable "SUSP" (which can therefore, be considered as exogenous), the control variables cannot be treated as fully exogenous even though they are lagged. Therefore, the LSDVC technique permits to uncover the short-term and long-term effect of the AGOA suspension on poverty in suspended countries.

It is important to note that all estimations' outcomes are reported for both poverty indicators described above. Columns [1] and [2] of Table 2 report the outcomes arising from the estimation of model (1) by means of the FEDK estimator. These outcomes help test hypothesis 1. Columns [3] and [4] of the same Table contain outcomes that allow investigating the effect of the AGOA suspension on poverty in resource-rich countries versus non-resource rich countries (i.e., outcomes that help test hypothesis 2). These estimates are obtained by estimating (using the FEDK approach) a variant of model (1), that is, model (1) that contains the interaction between the variable "SUSP" and the dummy

¹⁹ In general, in a dynamic model $Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 X_{it} + \omega_{it}$, the coefficient β_2 measures the short-term effect of X on Y, and the long-term effect of X on Y is given by $\frac{\beta_2}{(1-\beta_1)}$.

variable "RES", which represents the resource-rich SSA countries suspended from the AGOA programme. There are four countries (essential metal-rich countries) in that category in the full sample: Congo Democratic Republic; Guinea; Mauritania and Niger. The dummy-variable takes the value of 0 for these four countries, and 0, otherwise. The list of resource-rich and non-resource rich SSA countries are drawn from World Bank (2024). Table 3 reports outcomes obtained from the use of the MMQR approach. Columns [1] and [2] of Table 4 contain estimates uncovered when using the LSDVC estimator to estimate model (1) (to test hypothesis 1) over the full sample. Columns [3] and [4] of the same Table report outcomes (obtained by means of the LSDVC estimator) that allow testing hypothesis 2, that is, the effect of the AGOA suspension on poverty in resource-rich versus non-resource rich SSA countries. To save space, we report only outcomes relating to the main variable ("SUSP") in Tables 3 and 4.

3. Interpretation of empirical outcomes

Outcomes in columns [1] and [2] of Table 2 show that the AGOA suspension leads to an increase in poverty rates in suspended countries. The AGOA suspension leads to an increase in headcount poverty rate and poverty gap respectively by 0.11 percentage point and 0.066 percentage point in suspended countries (relatively to non-suspended SSA countries) (see respectively columns [1] and [2] of Table 2). These findings confirm hypothesis 1. Meanwhile, we observe from columns [3] and [4] of the same Table that resource-rich suspended countries experience a lower effect of the AGOA suspension on poverty rates (both headcount poverty rates and poverty gap) than nonresource rich countries. The net average effects of the AGOA suspension on poverty headcount and poverty gap in resource-rich suspended countries amount respectively to -0.034 (= 0.128-0.162) and -0.0097 (= 0.0747-0.0844). Likewise, the net average effects of the AGOA suspension on poverty headcount and poverty gap in non-resource rich suspended countries amount respectively to +0.128 and +0.075. These outcomes show that, on average, the AGOA suspension has not resulted in an increase in poverty rates in resource-rich SSA suspended countries., but has instead, led to poverty reduction in these countries, although the magnitude of the effect remains small: the AGOA suspension leads to a fall in headcount poverty rate by 0.034 percentage point, and a fall in poverty gap rate by 0.0097 percentage point in resource-rich suspended countries. At the same time, the AGOA suspension has led, on average, to an increase in both headcount poverty rate and poverty gap in non-resource rich suspended countries: headcount poverty rate increases by 0.128 percentage point and poverty gap rate increases by 0.075 percentage point in these countries. In a nutshell, these

outcomes lend support to hypothesis 2. These differentiated effects of the AGOA suspension on poverty in suspended countries (i.e., the small-scale poverty reduction effect in resource-rich countries, and the poverty rise effect in non-resource rich countries) may be explained by the significant impact of the AGOA suspension on manufactured exports, including relatively to non-manufactured exports (e.g., metal products).

[Insert Table 2, here]

Estimates relating to the control variables in all columns of Table 2 suggest that an improvement in the real per capita income and better political rights (i.e., lower values of the index of political rights) are associated with poverty reduction. However, restrictive trade measures lead to an increase in poverty rates. The institutional quality, the education level, the inflation rate and financial development exert almost no significant effect on poverty in countries suspended from the benefits of the AGOA programme.

[Insert Table 3, here]

Outcomes in Table 3 show that both the location parameter and the scale parameter associated with the variable "SUSP" are positive and significant at the 1% level (see columns [1] and [2]). These findings suggest that the AGOA suspension has influenced positively and significantly (at the 1% level) poverty rates in suspended countries across all quantiles of the distributions of the poverty indicators, and the magnitude of this positive effect increases as we move from lower quantiles to higher quantiles. In particular, we note from the upper part of Table 3 that the magnitude of the impact of the AGOA suspension on poverty headcount rate moves from 0.055 for countries located in the 10th quantile (i.e., countries with the lowest poverty headcount ratios) to 0.192 for countries located in the highest quantile (90th quantile, i.e., countries with the highest poverty headcount ratios). The magnitude of the effect of the AGOA suspension on poverty headcount rate in countries situated in median of the distribution of poverty headcount ratio amounts to 0.105. The same findings are obtained for the effect of the AGOA suspension on poverty apply to the poverty gap indicator, although with different magnitudes of the impact (see the second part of Table 3).

Outcomes in columns [1] and [2] of Table 4 indicate that the AGOA suspension has exerted, over the full sample of suspended countries, both a short-term effect and a long-term effect on poverty. The short-term effects of the AGOA suspension on poverty headcount ratio and on poverty gap amount respectively to 0.13 and 0.08. Relatedly, the long-term effects of the AGOA suspension on poverty headcount ratio and poverty gap amount respectively to 0.182 [= 0.129/(1-0.291)], and

0.1635 [= 0.0803/(1-0.509)]. It appears that the AGOA suspension has induced for suspended countries a larger positive effect on poverty in the long-term than in the short term.

[Insert Table 4, here]

Outcomes in columns [3] and [4] of Table 4 show that in the short term, the AGOA suspension raises the poverty headcount ratio by 0.143 percentage point, and the poverty gap by 0.084percentage point in non-resource rich suspended countries. The long-term effect of the AGOA suspension on poverty headcount ratio and poverty gap in non-resource rich countries amounts respectively to +0.197 = 0.143/(1-0.2740) and +0.154 = 0.0839/(1-0.4560). These outcomes indicate that the AGOA suspension raises poverty rates in non-resource rich countries in both the short-term and long term, and the magnitude of the long-term effect is larger than that of the shortterm effect. For resource-rich countries, we obtain that in the short-term, the AGOA suspension leads to an increase in poverty headcount ratio by +0.006 percentage point (= 0.143-0.137) and increase in the poverty gap by +0.0197 percentage point (= 0.0839-0.0642). The long-term effects of the AGOA suspension on poverty headcount ratio and poverty gap are also positive and amount respectively to 0.0083 [= +0.006/(1-0.274)] and 0.0362 [= +0.0197/(1-0.456)]. These findings suggest that even though the short-term and long-term effects of the AGOA suspension are positive in resource-rich countries, they remain of small magnitudes, including compared to the impacts for non-resource rich countries. These findings (especially the sign of the effects) for resource-rich suspended countries are at odds with those obtained in columns [3] and [4] of Table 2 (i.e., a negative average effect of the AGOA suspension on poverty in resource-rich countries). This is not surprising since the average treatment effect can be different from the short-term and long-term effect of the treatment (i.e., here, the AGOA suspension) (Philipps and Moon, 1999).

Overall, outcomes in Table 2 to 4 indicate that the average effect of the AGOA suspension on poverty in the full sample of suspended countries is positive, reflecting a negative average effect (although of small magnitude) for resourcerich countries, and a positive average effect for non-resource rich countries. On the other side, the short-term and longterm effect of the AGOA suspension are different from the average effects obtained. The AGOA suspension has led to an increase in poverty rates in both the short-term and long-term, not only over the full sample of suspended countries, but also over the sub-samples of resource-rich countries and non-resource rich suspended countries. The magnitudes of these positive effects are larger in the long-term than in the short-term, and for both the full sample and the two subsamples, but of smaller magnitudes in resource-rich countries than in non-resource rich countries. These outcomes can reflect the fact that the AGOA suspension has resulted in a larger negative effect on manufactured exports than on other goods exports, including resource-based goods exports.

4. Robustness check analysis

We check the robustness of the findings obtained in Tables 2 to 4 by re-estimating the same variants of model (1) but over a new full sample that contains yet the 15 SSA countries in the treatment group, but another control group (CG2). This control group includes 31 non-SSA countries that are in the categories of low-income countries (LICs) and lower-middle income countries (LMICs), as defined by the World Bank. These countries are de facto non-beneficiaries of the AGOA programme. In using this set of countries as an alternative control group, we aim to investigate whether there is a real loss (in terms of increase in poverty rates) for the suspended countries from the AGOA benefits compared to countries with similar characteristics that never benefited from the programme. In other words, we explore here whether it was worth (for suspended countries) enrolling in this programme and then be eventually suspended (because of the failure of meeting some eligibility criteria). To address this question, the group of non-SSA LICs and LMICs that have never been eligible for the programme can serve an appropriate control group. The list of these 31 non-SSA LICs and LMICs is provided in Appendix 2e, and the descriptive statistics relating to variables in model (1) for this control group are presented in Appendix 2c.

[Insert Table 5, here]

Table 5 presents the results of the sample "means" of the matching covariates after data weighing. We notice that the reweighted means of covariates (see column [4]) are identical to the target values of the same covariates (column [1] of Table 5), and that the standardized difference between the target value and the balanced value is close to zero for all variables (column [5] of Table 5). The outcomes of the regressions based on the FEDK and LSDVC estimators are reported in Tables 6, and the outcomes of the MMQR-based regressions are provided in Table 7. It is worth recalling that in all regressions, we use the variable "PHC" (poverty headcount ratio) as our main poverty indicator, and the variable "PGAP" (poverty gap) as our alternative measure of poverty. In addition, to save space, we report in Tables 6 and 7 only outcomes relating to the main variable ("SUSP"), and the outcomes concerning the control variables can be obtained upon request.

[Insert Table 6, here]

We observe from columns [1] and [2] of Table 6 (FEDK-based outcomes) that the AGOA suspension has led to a significant increase in poverty rates in suspended countries relatively to non-SSA LICs and LMICs that were never benefited from the benefits of the programme. The magnitudes of the effect are larger than the ones reported in columns [1] and [2] of Table 2 where the control

group contains SSA beneficiaries of the AGOA that were never suspended from the benefits of the programme: the magnitude amounts to 0.23 for the effect on poverty headcount ratio, and 0.14 for the effect on poverty gap. Furthermore, resource-rich suspended countries and non-resource rich suspended countries experience a positive effect of the AGOA suspension on poverty, although the magnitude of the effect is smaller in resource-rich countries than in non-resource rich countries (see columns [3] and [4] of Table 6). The average effect of the AGOA suspension on poverty headcount ratio in resource-rich countries and non-resource rich countries amounts respectively to 0.245 and 0.104 (= 0.245-0.141). Likewise, the average effect of the AGOA suspension on poverty gap in resource-rich countries and non-resource rich countries amounts respectively to 0.148 and 0.079 (= 0.148-0.0693). These findings clearly show that the AGOA suspension has led to higher poverty rates in suspended countries compared to countries that never benefited from the programme. This signifies that the poverty situation of the suspended AGOA countries has worsened after the AGOA suspension compared to what the situation would have been if these countries were not at all eligible to benefit from the programme.

Incidentally, estimates reported in columns [5] and [6] of Table 6 indicate that the short-term effects of the AGOA suspension on poverty rates have similar magnitudes to the average effects of the programme on poverty obtained in columns [1] and [2] of the same Table. Likewise, estimates contained in columns [7] and [8] (that represent the short-term effect of the AGOA suspension on poverty in resource-rich and non-resource rich suspended countries) (relatively to non-SSA LICs and LMICs) are of similar magnitudes to those (average effects) in columns [3] and [4] of the same Table. The magnitudes of the short-term effect of the AGOA suspension on poverty headcount ratio are 0.248 for non-resource rich countries, and 0.137 (= 0.248 - 0.111) for resource-rich countries. The longterm effect of the AGOA suspension on poverty gap amounts to 0.135 for non-resource rich countries, and to 0.087 = 0.135 - 0.0485 for resource rich countries. In other words, the short-term effects of the AGOA suspension on poverty in the full sample, and the sub-samples of resource-rich and non-resource rich countries are similar to the average effects of the programme on poverty over these samples. We can compute the long-term effects of the AGOA suspension on poverty indicators over the full sample, and each of the two sub-samples. For example, over the full sample, the magnitude of this long-term effect on poverty headcount ratio and poverty gap amounts respectively to 0.33 [=0.241/(1-0.270)], and 0.26 [=0.132/(1-0.493)]. We conclude here as well that the AGOA suspension has induced an increase in poverty rates in suspended countries relatively to countries that never benefited from the programme. This reveals that the poverty situation of the suspended countries from the benefits of the AGOA

programme is worse after the AGOA suspension compared to what the situation would have been if these countries were not beneficiaries of the programme.

[Insert Table 7, here]

Outcomes in Table 7 confirm these findings, and align with those in Table 3. They indicate that suspended countries situated in the lower quantile (e.g., in the 10th quantile) experience a lower increase in poverty rates (poverty headcount ratio or poverty gap) further to the AGOA suspension than countries situated in a relatively higher quantile, especially those that have the highest poverty rates (i.e., those in the 90th quantile).

5. Conclusion

The AGOA programme has been implemented to promote SSA beneficiary countries' exports, and is set to expire by 30 September 2025. Many studies have revealed that the AGOA programme has boosted beneficiary countries' goods exports, most notably resource-based exports, but also to a limited extent, manufacture exports. In the meantime, two recent studies have pointed to the negative effect that the suspension of the programme on beneficiaries' goods exports, notably manufactured exports. The present analysis contributes to the literature on the poverty effect of trade preferences, and to the one pertaining to the macroeconomic effects of the AGOA programme by examining the effect of the suspension of the AGOA programme on poverty in suspended countries. The analysis covers an unbalanced sample of 43 SSA countries, of which 15 SSA countries that were suspended at least once from the benefits of the AGOA programme (the treatment group), and 28 SSA countries eligible to the benefits of the programme, but that were never suspended from those benefits (control group).

The empirical outcomes reveal that the AGOA suspension has generated an increase in poverty rates in suspended countries (relatively to countries that have never been suspended from the benefits of the programme the control group), although the magnitude of this effect is smaller in resource-rich countries than in non-resource-rich countries. These findings may reflect the fact that the AGOA suspension has exerted a larger negative effect on manufactured exports than on nonmanufactured exports (e.g., resource-based exports). Interestingly, the AGOA suspension has led to higher poverty rates in the long-term than in the short-term. The analysis has additionally revealed that the poverty situation of suspended countries from AGOA has worsened after the AGOA suspension compared to countries that never benefited from the programme. This shows that the poverty situation of the suspended countries worsened after the AGOA suspension compared to what their situation would have been if they were not beneficiaries of the programme. These findings shed light on the poverty increases consequences of the AGOA suspension, and point to the fact that the non-renewal of the AGOA programme by US authorities, including by its expiration date (30 September 2025) would significantly harm beneficiary countries, at least, by raising poverty in these countries. In the event of the AGOA suspension, AGOA beneficiaries may seek for alternative export markets (i.e., other markets than the US market) to offset the adverse effects of the suspension. However, penetrating new export markets or securing a higher market share in existing export markets may be hard, given the entry costs into new markets, and the fierce competition in the existing export markets. One way for SSA countries to reduce their dependence on the uncertainty surrounding nonreciprocal trade preferences is to diversify the destination of their export products, and upgrade the quality of their export products. This is a long journey given the high dependence of these countries on the export of primary commodities.

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FIGURES



Figure 1: Indicators of poverty rates (headcount ratio) in the suspended countries (treatment group), and in the control group CG1

Source: Author

Note: "PHC" and "PGAP" represent respectively the indicators of the poverty headcount ratio at \$2.15 a day, and the poverty gap at \$2.15 a day. The acronyms "TG" and "CG1" refer respectively to the Treatment group (suspended countries from the benefits of the AGOA program), and the control group (beneficiary SSA countries that were never suspended from the benefits of the AGOA programme). The average indicators were computed over the period 2001-2022.

TABLES and APPENDICES

Table 1: Covariates balance for variables over the full sample that contains countries in the treatment group and countries in the control group CG1 (i.e, beneficiaries of the AGOA programme that were never suspended from the programme)

	Target Value	Unbalanced		В	alanced
	(1)	(2)	(3)	(4)	(5)
		Value	Standardized	Value	Standardized
			difference		difference
Log(GDPC) _{t-1}	6.775342	7.130938	.3915848	6.775342	0
INST _{t-1}	-2.562432	-1.278292	.954554	-2.562432	0
PRIGHT _{t-1}	5.824324	4.012903	-1.034132	5.824324	5.07e-16

Table 2: Effect of the suspension from the benefits of the AGOA programme on poverty_Over the full sample that includes the treatment group and CG1 *Estimator.* FEDK (based on the Entropy-Balanced sample)

Variables	РНС	PGAP	РНС	PGAP
	(1)	(2)	(3)	(4)
SUSP	0.110***	0.0655***	0.128***	0.0747***
	(0.0380)	(0.0196)	(0.0383)	(0.0194)
SUSP*RES			-0.162***	-0.0844***
			(0.0437)	(0.0249)
Log(GDPC) _{t-1}	-0.108***	-0.0547***	-0.0938***	-0.0474***
	(0.0257)	(0.0144)	(0.0303)	(0.0161)
PRIGHT _{t-1}	0.0998***	0.0503***	0.0945***	0.0475***
	(0.0252)	(0.0138)	(0.0251)	(0.0133)
INST _{t-1}	-0.0114	0.0122	0.0180	0.0275
	(0.0668)	(0.0327)	(0.0664)	(0.0324)
MATR _{t-1}	0.0217*	0.00984	0.0300**	0.0142*
	(0.0120)	(0.00610)	(0.0135)	(0.00696)
$\mathrm{EDU}_{\mathrm{t-1}}$	0.0251	0.0196	0.0123	0.0129
	(0.0181)	(0.0126)	(0.0166)	(0.0109)
INFL _{t-1}	-0.0694	-0.00514	0.0442	0.0539
	(0.0763)	(0.0596)	(0.124)	(0.0782)
FD_{t-1}	-0.640	-0.498	-0.857	-0.610*
	(0.608)	(0.355)	(0.573)	(0.338)
Constant	0.0268***	0.0142***	0.0228***	0.0121***
	(0.00445)	(0.00235)	(0.00572)	(0.00297)
Observations Countries	736 43	726 42	726 42	726 42
$\frac{\text{Observations} - \text{Countries}}{\text{W}^2 + 1 - \text{P}^2}$	/ 30 - 43	/ 30 - 43	/ 30 - 43	/ 30 - 43
	0.//40	0.648/	0./993	0.6839
F-statistic (P-value)	281.74 (0.0000)	102.86 (0.0000)	4/2./0 (0.0000)	256.87 (0.0000)

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. The control group contains SSA countries that are beneficiaries of the AGOA programme, but were never suspended from the benefits of that programme. The dummy "RES" indicates the resource-rich SSA countries suspended from the AGOA program. These countries are Congo, Dem. Rep; Guinea; Mauritania and Niger. The dummy-variable takes the value of 0 for these four countries, and 0, otherwise.

Table 3: Effect of the suspension from the benefits of the AGOA programme on poverty_Over the full sample that includes the treatment group and CG1

Estimator.	Method	of M	loments	Quantile	Regression	(MMQR)	(based	on the	Entropy-	Balanced
sample)										

Variables	Location ^a	Scale ^b	Q10 th	Q25 th	$Q50^{th}$	Q75 th	Q90 th
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Dep	endent variable	e: PHC		
SUSP	0.105***	0.0403***	0.0552***	0.0724***	0.105***	0.158***	0.192***
	(0.0265)	(0.0134)	(0.0201)	(0.0215)	(0.0278)	(0.0401)	(0.0486)
Observations	736	736	736	736	736	736	736
			Depe	ndent variable	: PGAP		
SUSP	0.0627***	0.0148*	0.0427***	0.0505***	0.0621***	0.0814***	0.0942***
	(0.0149)	(0.00815)	(0.0117)	(0.0121)	(0.0151)	(0.0228)	(0.0284)
Observations	736	736	736	736	736	736	736

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. (a) indicates the location parameters, and (b) refers to the scale parameters. The control group contains SSA countries that are beneficiaries of the AGOA programme, but were never suspended from the benefits of that programme.

Table 4: Effect of the suspension from the benefits of the AGOA programme on poverty_Over the full sample that includes the treatment group and CG1 *Estimator.* LSDVC (based on the Entropy-Balanced sample)

Variables	PHC	PGAP	РНС	PGAP
	(1)	(2)	(3)	(4)
One-year lag of the dependent variable	0.291***	0.509***	0.274***	0.456***
-	(0.0237)	(0.0326)	(0.0220)	(0.0293)
SUSP	0.129***	0.0803***	0.143***	0.0839***
	(0.0187)	(0.00947)	(0.0178)	(0.00907)
SUSP*RES			-0.137***	-0.0642***
			(0.0271)	(0.0138)
Observations - Countries	703 - 43	703 - 43	703 - 43	703 - 43

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. The control group contains SSA countries that are beneficiaries of the AGOA programme, but were never suspended from the benefits of that programme. The dummy "RES" indicates the resource-rich SSA countries suspended from the AGOA program. These countries are Congo, Dem. Rep; Guinea; Mauritania and Niger. The dummy-variable takes the value of 0 for these four countries, and 0, otherwise.

Table 5: Covariates balance for variables over the full sample that contains countries in the treatment group and countries in the control group CG2 (i.e, non-SSA LICs and LMICs)

	Target Value	Unbalanced		В	alanced
	(1)	(2)	(3)	(4)	(5)
		Waluo	Standardized	Value	Standardized
		value	difference	value	difference
Log(GDPC) _{t-1}	6.775342	7.369673	0.768572	6.775342	3.48e-13
INST _{t-1}	-2.559666	-1.575752	0.7289157	-2.559666	3.29e-13
PRIGHT _{t-1}	5.824324	4.616945	-0.6756464	5.824324	-1.82e-13

Table 6: Effect of the suspension from the benefits of the AGOA programme on poverty_Over the full sample that includes the treatment group and CG2

	FEDK					LSI	OVC	
Variables	PHC	PGAP	PHC	PGAP	PHC	PGAP	PHC	PGAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SUSP	0.230***	0.140***	0.245***	0.148***	0.241***	0.132***	0.248***	0.135***
	(0.0565)	(0.0254)	(0.0519)	(0.0235)	(0.0223)	(0.0113)	(0.0217)	(0.0112)
SUSP*RES			-0.141***	-0.0693***			-0.111***	-0.0485***
			(0.0414)	(0.0239)			(0.0205)	(0.0104)
One-year lag of the					0 270***	0 493***	0 252***	0 445***
dependent variable					0.270	0.155	0.252	0.115
					(0.0215)	(0.0278)	(0.0203)	(0.0226)
Observations	818	818	818	818	780	780	780	780
Number of groups	46	46	46	46	46	46	46	46
Within R ²	0.8037	0.6974	0.8236	0.7227				
E statistic (D value)	198.56	195.94	246.33	364.38				
r-stausue (r-value)	(0.0000)	(0.0000)	(0.0000)	(0.0000)				

Estimators: FEDK and LSDVC (based on the Entropy-Balanced sample)

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. The control group contains non-SSA countries that are LICs and LMICs. The dummy "RES" indicates the resource-rich SSA countries suspended from the AGOA program. These countries are Congo, Dem. Rep; Guinea; Mauritania and Niger. The dummy-variable takes the value of 0 for these four countries, and 0, otherwise.

Table 7: Effect of the suspension from the benefits of the AGOA programme on poverty_Over the full sample that includes the treatment group and CG2

Variables	Location ^a	Scale ^b	Q10 th	Q25 th	$Q50^{th}$	$Q75^{th}$	Q90 th
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			De	tendent variable : I	РНС		
SUSP	0.239***	0.0413**	0.184***	0.204***	0.241***	0.288***	0.327***
	(0.0293)	(0.0169)	(0.0282)	(0.0266)	(0.0304)	(0.0429)	(0.0529)
Observations	818	818	818	818	818	818	818
			Deț	bendent variable : P	GAP		
SUSP	0.145***	0.0106	0.131***	0.136***	0.145***	0.157***	0.169***
	(0.0162)	(0.0101)	(0.0146)	(0.0137)	(0.0164)	(0.0250)	(0.0338)
Observations	818	818	818	818	818	818	818

Estimator. Method of Moments Quantile Regression (MMQR) (based on the Entropy-Balanced sample)

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. (a) indicates the location parameters, and (b) refers to the scale parameters. The control group contains non-SSA countries that are LICs and LMICs (and that are, therefore, not beneficiaries of the AGOA programme).

Appendix 1: Definition and source of variables

Variables	Definition	Source
	Poverty headcount ratio at \$2.15 a day (2017 PPP) (in	
РНС	percentage of population). It represents the percentage of the population living on less than \$2.15 a day at 2017 international prices	World Bank database.
PGAP	Poverty gap at \$2.15 a day (2017 PPP) (in percentage). It represents the the mean shortfall in income or consumption from the poverty line \$2.15 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.	World Bank database.
MATR	This is the Measure of Aggregate Trade Restrictions. It has been constructed using data from the International Monetary Fund (IMF)'s Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) and is well described in Estefania-Flores et al. (2022). Compared to other existing trade policy indicators, it covers a larger annual period from 1949 onwards, and additionally provides granular measures of different facets of trade protectionism, including tariffs, non-tariff barriers, and restrictions on requiring, obtaining, and using foreign exchange for current transactions.	Data is available online at: https://sites.google.com/view/m- atr/ (see Estefania-Flores et al., 2022).
GDPC	Real per capita Gross Domestic Product (constant 2015 US\$)	WDI
FD	This is the financial development index, which summarizes how developed financial institutions and financial markets are in terms of their depth (size and liquidity), access (ability of individuals and companies to access financial services), and efficiency (ability of institutions to provide financial services at low costs and with sustainable revenues, and the level of activity of capital markets).	Data extracted from the International Monetary Fund (IMF) Financial Development Index Database (see online at: <u>https://data.imf.org/?sk=F803</u> <u>2E80-B36C-43B1-AC26-</u> <u>493C5B1CD33B</u>) - See also Sahay et al. (2015).
EDU	This is the index of the mean years of schooling. It is one of the components of the human development index developed by the UNDP.	Data is available online at: https://hdr.undp.org/data- center/documentation-and- downloads
INFL	The variable "INFL" has been calculated as follows: INFL =sign(INFLATION) * log (1 + INFLATION) (2), where"INFLATION" represents the annual inflation rate (not expressed inpercentage), and INFLATION referring to the absolute value ofthe inflation rate.The annual inflation rate is based on consumer price index, withmissing values being replaced with values of the GDP Deflator.	Author's calculation based on data from the WDI.
PRIGHT	This is the index of political rights. It captures the extent of free and fair elections, political pluralism and participation, and a functioning government (<u>https://ourworldindata.org/grapher/political-rights-score-fh</u>). Its values range from 1 to 7, with lower scores indicating better conditions, i.e., better political rights.	Political Freedom Database accessible online at: <u>https://freedomhouse.org/rep</u> <u>ort/freedom-world</u>
11N51	in the beneficiary countries of GSP programs. It has been computed	"INST" variables has been

by extracting the first principal component (based on factor analysis)	extracted from Worldwide
of the following six indicators of governance. These indicators are	Governance Indicators (see
respectively: political stability and absence of violence/terrorism;	Kaufmann and Kraay, 2023). See
regulatory quality; rule of law; government effectiveness; voice and	online at:
accountability, and corruption.	https://info.worldbank.org/gover
Higher values of the index "INST" are associated with better	<u>nance/wgi/</u>
governance and institutional quality, while lower values reflect worse	
governance and institutional quality.	

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
PHC	252	0.420	0.235	0.005	0.818
PGAP	252	0.164	0.126	0.001	0.436
GDPC	252	1193.774	2439.172	255.100	19481.650
MATR	237	14.059	3.186	5	18
EDU	252	3.519	1.832	1.246	11.200
INFLATION	252	6.369	6.976	-3.100	44.357
FD	237	0.100	0.044	0.038	0.354
PRIGHT	252	5.107	1.366	2.000	7.000
INST	252	-2.167	0.985	-4.142	1.833

Appendix 2a: Descriptive statistics on variables over the treatment group of the 15 SSA countries suspended from the benefits of the AGOA program

Appendix 2b: Descriptive statistics on variables over the control group (CG1) of the 28 SSA countries (that were eligible for the AGOA program, but never suspended from the benefit of the program)

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
PHC	484	0.380	0.188	0.001	0.800
PGAP	484	0.143	0.093	0.000	0.411
GDPC	484	2022.250	2045.580	360.344	10956.950
MATR	456	12.713	3.589	3.000	18.000
EDU	484	5.360	2.364	0.977	11.607
INFLATION	484	7.256	7.576	-16.860	98.224
FD	456	0.160	0.121	0.026	0.593
PRIGHT	484	3.888	1.702	1.000	7.000
INST	484	-1.137	1.256	-3.786	2.104

Appendix 2c: Descriptive statistics on variables over the control group (CG2) of the 31 non-SSA countries that are LICs and LMICs (used as the alternative control group)

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
PHC	566	0.127	0.131	0.000	0.815
PGAP	566	0.038	0.053	0.000	0.379
GDPC	565	2234.478	1354.535	409.244	9037.086
MATR	537	12.209	4.741	3.000	20.000
EDU	566	6.726	2.528	1.596	11.961
INFLATION	564	9.453	20.203	-5.641	359.093
FD	537	0.197	0.106	0.046	0.539
PRIGHT	566	4.549	1.905	1.000	7.000
INST	565	-1.601	1.351	-4.898	1.743

Appendix 2d: List of the 15 SSA countries suspended from the AGOA program (treatment group), and the 28 SSA beneficiaries of AGOA that were never suspended from the benefits of that programme (control group - CG1)

Treatment group (Suspended SSA Countries from the AGOA program)	Control group (CG1)		
Burundi	Angola	Mauritius	
Cameroon	Benin	Mozambique	
Central African Republic	Botswana	Namibia	
Congo, Dem. Rep**	Burkina Faso	Nigeria	
Cote d'Ivoire	Cabo Verde	Rwanda	
Eswatini	Chad	Sao Tome and Principe	
Ethiopia	Comoros	Senegal	
Gambia, The	Congo, Rep.	Sierra Leone	
Guinea**	Djibouti	South Africa	
Guinea-Bissau	Gabon	Tanzania	
Madagascar	Ghana	Togo	
Mali	Kenya	Uganda	
Mauritania **	Lesotho	Zambia	
Niger**	Liberia		
Seychelles	Malawi		

Note: "**" refers to are resource-rich countries (essential metal-rich) among the suspended SSA Countries from the benefits of the AGOA program. The list of resource-rich and non-resource rich SSA countries are drawn from World Bank (2024).

Appendix 2e: List of the 31 non-SSA countries that are LICs and LMICs (and that are, therefore, not beneficiaries of the AGOA programme) (used as the alternative control group - CG2)

Alternative control group (CG2)				
Bangladesh	Nicaragua			
Bhutan	Pakistan			
Bolivia	Papua New Guinea			
Egypt, Arab Rep.	Philippines			
Haiti	Samoa			
Honduras	Solomon Islands			
India	Sri Lanka			
Jordan	Sudan			
Kiribati	Syrian Arab Republic			
Kyrgyz Republic	Tajikistan			
Lao PDR	Tunisia			
Lebanon	Uzbekistan			
Micronesia, Fed. Sts.	Vanuatu			
Morocco	Viet Nam			
Myanmar	Yemen, Rep.			
Nepal				