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**IMF Tariff Conditionality, Aid for Trade and Trade:
Evidence from Sub-Saharan Africa**

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Abstract

Recently, world tariff rates based on the Most Favoured Nation have declined with more significant drops observed in Sub-Saharan Africa (SSA) particularly on agricultural products. However, the IMF conditions tied to aid for aid-receiving countries during the economic crisis are criticised for biased decision-making and their ineffectiveness in trade reform policies in relation to the Sustainable Development Goals. The purpose of this study is to investigate how IMF-tariff conditions tied to aid for trade impact agricultural product trade in SSA through Structural Adjustment Programmes (SAPs). Precisely, it seeks to determine whether conditions linked to Aid for Trade (AfT) foster agricultural trade growth in SSA while reducing tariffs. I hypothesised that IMF tariff conditionality impacts SSA agricultural product trade through intricate channels encompassing trade systems, pricing and marketing policies, and tax reforms. The study uses panel data from 2011-2023, covering 26 SSA countries, at the disaggregated HS-6-digit product level, using 832 agricultural products. The panel data fixed effect model estimation results indicate that IMF conditionality and ODA-AfT had a negative association with agricultural product trade growth. This suggests that ODA AfT is potentially counterproductive in promoting agricultural trade growth of SSA countries. The study reveals that IMF tariff conditionality, IMF SAPs pricing and marketing policies, and the interactions between SAPs trade system reforms and ODA-AfT are negatively associated with tariff binding overhang. Conversely, there is a positive relationship between binding overhang and SAPs in tax and trade system reforms.

Keywords: IMF tariff conditionality, MFN tariff, SAPs trade reform, Sub-Saharan Africa.

JEL Classification: F02, F13.

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1. Introduction

International trade is recognised as a catalyst for fostering inclusive growth and alleviating poverty within the framework of the 2030 Agenda of Sustainable Development (ESCAP, 2017). Trade liberalisation has emerged as a pivotal policy for developing countries and has taken centre stage on the global trade agenda.

However, the WB open data² shows that the World tariff rate based on the Most Favoured Nation (MFN) declined from 9.7% in 1994 to 4.2% in 2017 and a more significant drop in Sub-Saharan Africa from 45.3% in 1995 to 7.8% in 2017. Despite reductions in average tariff rates by low- and middle-income countries, nontariff measures (NTMs) have become more prevalent, serving purposes such as protection purposes by the government, and public policy measures to secure product safety (Carrère & De Melo, 2011; Beverelli et al., 2019).

Simultaneously, aid conditionality, rooted in the efficiency of international trade, specifically the condition/policy attached to Aid for Trade (AfT), has been a subject of extensive debate in the realm of international development (Fentahun, 2023; Lee & Oh, 2022; Roy et al., 2021). This debate questions whether aid should be tied to policy changes and enhanced governance in recipient countries (Collier & Dollar, 2002). The policy attached to aid requirements is enforced to guarantee that trade reforms are implemented to foster trade liberalisation (Dreher, 2009), which entails the elimination or reduction of restrictions or impediments, like tariffs and quotas, on the free flow of goods between nations. While opponents claim that conditional aid violates sovereignty and ignores political realities, supporters contend that it drives necessary reforms and fosters accountability (Kanbur, 2000). However, the traditional approach of providing aid with conditions, often driven by the donor countries or international financial institutions, may not necessarily lead to the desired outcomes (Easterly, 2006).

Previous studies have explored various relevant factors in the literature on aid conditionality and trade liberalisation. For example, Annen and Kosempel (2009) and Basnet (2013), trade liberalisation, and development, aid, and IMF conditionality and policy (Kentikelenis et al., 2016), tariff commitment (Ruckteschler et al., 2022).

Though, recent literature suggests that the IMF tariff conditionalities tied to IMF programmes were criticised for biased decision making and support of dictatorships, prompting speculation about its ineffectiveness in trade liberalisation in relation to Sustainable Development Goals particularly in Sub-Saharan Africa (Bretton Woods Project, 2019). For example, the available studies show that IMF's Structural Adjustment Programmes (SAPs) effectively lowered tariffs without increasing the usage of NTMs, and programmes containing tariff conditionality decreased tariff rates (Busse & Vogel, 2023). This implies that IMF programmes focused narrowly on tariff rates with ought balanced attention to NTMS, and abrupt tariff cuts conflict with development needs like protecting infant industries or managing adjustment

² We used the tariff rate of the most favoured nation (MFN), the weighted mean of import all products (%) shares corresponding to each partner country. <https://data.worldbank.org/>.

costs. On the contrary, according to Kuenzel (2023) there is no correlation between applied tariff reduction and NTMs.

Though, this study aimed to analyse the effectiveness of IMF tariff conditionality tied to AFT in SSA agricultural product trade. I hypothesised that IMF tariff conditionality impacts SSA agricultural product trade through intricate channels encompassing trade systems, pricing and marketing policies, and tax reforms. I intend to study IMF tariff conditionality and SSA agricultural product trade, as this region is a focus of IMF interventions. As a result, understanding the effects of tariff conditionality on trade reform programmes and their effectiveness in the region is crucial.

Particularly, IMF introduced various forms of conditionality in its SAPs for aid-receiving countries during the economic crisis. Besides the main goal of the IMF programme, which is to restore the balance of payments viability and macroeconomic stability for sustained economic growth and poverty reduction in developing countries through SAPs, the IMF also provides financial aid with the condition that the recipient governments implement specific structural reforms. These programmes commonly contained trade reform condition consists of reducing tariffs rates or abolishing nontariff measures, dismantling import quotas, and eliminating other trade restrictions to encourage exports and attract foreign investment (Siddika & Ahmad, 2022).

As a lender of last resort, many arguments have been made regarding why the IMF attaches conditions to its programmes. Among these reasons are³: (a) To guarantee more openness of the conditions and decisions of individual countries, (b) Strengthen the financial sector of the countries involved (c) Increase preventive measures and response capability. In terms of preventive measures, it has been suggested that long-term capital flows (particularly FDI) should be liberalised before short-term flows; also, a new credit facility for preventive action has been developed (Acocella & Jones, 2005).

However, there are many critics regarding these conditionalities tied to IMF programmes in case of giving support for recipients. Among these reasons are: 1) The insufficiency of the financial aid offered by the IMF, restricting aggregate demand which leads to recession, unemployment, and financial difficulties and the liberalisation of international capital movements, which can negatively impact systemic stability (Acocella & Jones, 2005). 2) It reduces policy space. For example, a cross-country study by Stubbs et al. (2017) covering 16 West African countries from 1995 to 2014 reveals that IMF policy reforms reduce fiscal space for health investment. This leads to limitations in expanding medical staff, such as doctors and nurses, and poses budget execution challenges in health systems. Furthermore, IMF intervention in low and middle-income countries are associated with an increase in government revenue from goods and services taxes but a decrease in revenues from

³ <https://www.imf.org/> When a country takes out an IMF loan, the government agrees to change its economic policies to address the challenges that caused the need for financial assistance. These policy changes serve as requirements for IMF financing, with the goal of ensuring that the government implements strong and efficient policies.

trade taxes (Ruckteschler et al., 2022). Reducing a government's policy space might also lead to a loss of ownership of implemented reforms (Kentikelenis et al., 2016). However, the IMF exercises significant influence through its Structural Adjustment Programmes (SAPs), which are tied to financial aid. Typically, countries receiving this aid are in a weak situation because of a severe economic or financial crisis. As a result, this study intends to analyse the effectiveness of IMF SAPs in trade reform programmes, specifically in achieving the liberalisation of trade policies in SSA.

Previous studies have examined aspects of IMF conditionality, trade liberalisation, and their impacts. To the best of my knowledge, there has been no previous research on how IMF-imposed conditions affect agricultural products in international trade through IMF conditions and SAPs in SSA. Therefore, I am investigating whether the conditions tied to AfT encourage growth in trade of agricultural products in SSA, as well as reduce tariffs imposed by SSA countries and the use of NTMs.

This paper contributes to filling that gap by evaluating the trade reforms, in terms of trade growth, trade openness (i.e. evaluating IMF-tariff impact on import and export), the change in agricultural product tariff (i.e., evaluated in terms of binding overhang) that have resulted from IMF conditionality targeting trade reform policies in the region. It aims to provide an in-depth analysis of how IMF conditionality has influenced trade reform policies, and what are the potential channels applied by IMF in aid receipt SSA country.

The paper will be structured as follows: The first part will cover the basic tenets of the study along with the main research questions and objectives. The second and third parts will focus on the review of literature and research methodology, respectively. Finally, the fourth section of the paper will present a study that examines the IMF aid conditionality in trade reform in Sub-Saharan Africa.

2. Literature Review

According to WTO (2022), the projection of global real GDP growth at market exchange rates for 2023 indicates that the war in Ukraine, high energy prices, inflation, and monetary tightening will have an adverse impact on trade and output. The projected growth rate of 2.4% for 2023 is below the average of 2.6% and 2.7% for trade and output growth, respectively, over the past 12 years. To analyse the pattern of trade and the International Monetary Fund's (IMF) conditionality in its Structural Adjustment Programme (SAP) application in developing Sub-Saharan African countries, it is appropriate to begin by examining the estimations of the effects of IMF conditionality and SAPs in trade system on trade growth.

Thus far, I have reviewed four studies conducted on the impact of IMF conditionality on trade reform policies. The first study examined the effect of trade reform conditions on trade policy instruments in 115 developing countries from 1993 to 2009 (Busse & Vogel, 2023).

Busse and Vogel (2023) focused on applied favoured nation (MFN) tariffs, nontariff measures (NTMs), and trade to investigate IMF conditionality as an

external pressure influencing tariff dynamics. They used IMF conditionality as the external factor influencing trade liberalisation. However, their analysis of NTMs was limited to WTO member countries. Subsequently, their data may lack details on the IMF's conditional impact on trade policies in non-WTO Sub-Saharan African countries.

To analyse the trade policy substitution effect, the authors estimated changes in tariff rates due to variations in IMF tariff conditionality and control variables such as population, GDP, balance of payments, exchange rates, and inflation crises. They also estimated the probability of NTMs based on tariff conditionality dummies, structural adjustment programme dummies, and interaction terms for conditionality and tariff changes. Import pressure in the HS-6 sectors was controlled by including import trade shares, while protective export sectors were accounted for using export shares. They found that tariff conditionality in structural adjustment programmes led to a statistically significant reduction in tariff rates. Additionally, they discovered IMF programmes decreased tariff levels even without tariff conditionality requirements.

Erero and Bonga-Bonga (2018) study the effects of tariff reduction on employment, export performance, welfare, and productivity in the Democratic Republic of Congo (DRC) using CGE model. They used the General Equilibrium Model Package (GEMPACK) to perform a policy simulation. They argued that tariff reduction increases formal employment and output but it hurts informal producers, as output decreased in informal sectors such as livestock and clothing.

Ruckteschler et al. (2022) analyse the politics of trade protection in an autocracy in case of Morocco evidencing EU tariff liberalisation. They focus on 1993-2009 using a difference-in-differences regression framework to examine the impact of political connections on trade protection differences before signing a free trade agreement with the EU and after the agreement. The authors show that the sectors with royal ownership had higher median ad valorem equivalents (AVEs) of NTMs than non-royal sectors and they suggest that following EU trade agreement NTM applied to royal sectors provided greater trade protection, despite overall increase in NTMs favouring non-royal cronies.

Kuenzel (2023) used a product-level global panel of World Trade Organisation (WTO) members and the application of NTMs over the period of 1996-2019 to analyse the empirical link between various tariff measures and the imposition of NTMs. He finds that the sectoral tariff overhangs (i.e. WTO members' bound and imposed tariff rates) are a key margin to identify an NTM-tariff trade-off. Countries with small tariff overhangs will be more inclined to employ alternative tools to prevent imports from abroad if NTMs are largely utilised to replace tariff protection. The authors further claimed that a nation's tariff overhang serves as a barometer of that nation's flexibility in terms of its lawful trade policy. Using sanitary and phytosanitary (SPS) and technological trade barriers (TBT) NTM protection mechanism, WTO members with small tariff overhangs will be more inclined to employ alternative tools to prevent imports from overseas if NTMs are largely utilised to replace tariff protection. This paper aims at analysing the effectiveness of

IMF conditionality tied to aid through SAPs in achieving trade liberalisation in Sub-Saharan African countries.

The question here is does IMF aid conditionality influence SSA trade reform for the country i at year t with the presence of IMF conditionality? To what extent has IMF conditionality been effective in lowering applied tariff rates, influencing a usage of NTMs, and growth in trade particularly for agricultural product trade? Because the effectiveness of aid for trade determined by the growth in aid for trade (i.e., $g = g(\gamma)^4$).

2.1 IMF and Developing Countries

As a result of the Uruguay Round of trade negotiations, which aimed to reduce trade barriers and establish new trade rules, and involved developing countries as full participants, most developing countries reduced their trade barriers and adopted more market-oriented policies between 1985 and 1995 (Irwin, 2022).

During 1980s, Sub-Saharan Africans faced a severe economic challenge. The collapse of international lending, declining commodity prices, and overvalued currencies led to widespread debt crises. The World Bank, IMF, and WTO influenced the reforms in the region (Easterly, 2021).

In response to this crisis and aid for developing countries, IMF has introduced several aid conditions in times of crisis and resolve balance of payments problems.⁵ For example, IMF forms conditionality such as lowering tariff rates or abolishing NTMs in its SAP for countries when these programmes much-needed financial aid (Jafarey, 1992). However, the World Bank and IMF were criticised for biased decision making and support of dictatorships according to Bretton Woods Project (2019). For example, the IMF's support in 2010 for Greece's unpopular lending programme has been seen as a bailout of private debt holders, most notably Europe's finance institutions.

The problem of moral hazard, which has a negative impact on aid recipients' incentives to reformulate their system, is the major reason for the low levels of overall foreign aid performance. The conditionality of this issue could, in principle, be partially addressed by the altruistic donor (Svensson, 2000).

I assessed four relevant mechanisms that IMF impacts developing countries' trade policies. (1) reducing government's policy space. For instance, IMF effectively promotes tax revenue from consumption taxes instead of trade taxes (Crivelli & Gupta, 2016; Kentikelenis et al., 2016; Reinsberg et al., 2020); (2) applying the policy recommendations of the IMF such as decreasing tariffs, and NTMs, elimination of foreign exchange restrictions, controlling inflation or maintaining a specific exchange rate (Irwin, 2022). (3) The IMF provides financial support to developing countries for trade reform adjustments through the Trade Integration Mechanism (TIM). This intervention in the trade reform of developing countries is

⁴ Where gt_{it} is growth rate in trade as % of GDP,
 γ is percentage of share of aid for trade (AfT)

⁵ See, <https://www.imf.org/>

more effective for smaller trading economies (Hoekman & Shingal, 2021). (4) Another driver that we identify in the literature is economic activity. IMF conditionality drives recipient countries to liberalise trade policies by substituting policies, while developing countries meet macroeconomic targets by reducing trade barriers instead of implementing other reforms (Busse & Vogel, 2023). This demonstrates that IMF programmes indirectly encourage more open trade regimes by promoting domestic liberalisation as a condition. Furthermore, they argued that IMF's SAPs are effective in lowering tariffs without increasing the usage of NTMs.

Furthermore, examining the influence of the IMF, World Bank, and WTO on trade reforms in 111 developing countries between 1960 and 2000, a study (Irwin, 2022) utilised a difference-in-differences estimating technique. The findings suggest that the impact of IMF programmes on trade liberalisation surpassed that of World Bank adjustment loans or GATT/WTO membership. Countries completing IMF programmes, on average, reduced import duties by over 5% compared to non-programme nations. This highlights the heightened impact of the IMF through macroeconomic conditions linked to trade barriers. In contrary to this, IMF policy reforms reduce government policy space for investment in health by decreasing government spending and IMF policy reforms are selection biased (Stubbs et al., 2017). Additionally, IMF conditions of tariff reduction, while increasing formal employment and output, have adverse effects on informal producers by intensifying import competition without offering additional opportunities for the informal sectors access foreign export markets (Erero & Bonga-Bonga, 2018). This creates disparities in economic opportunities and outcomes create decline in domestic savings.

3. Trade Direction and Tariffs in SSA

My analysis consists of 41 Sub-Saharan African countries data spanning from 1995 to 2022⁶.

The SSA direction of trade has strong connection with the trade policies of MFN and NTMs. As per my analysis and related literature finding tariffs, as traditional trade barriers and NTMs, encompassing regulatory measures beyond tariffs significantly influence the flow and composition of trade, thereby shaping the direction of trade in SSA.

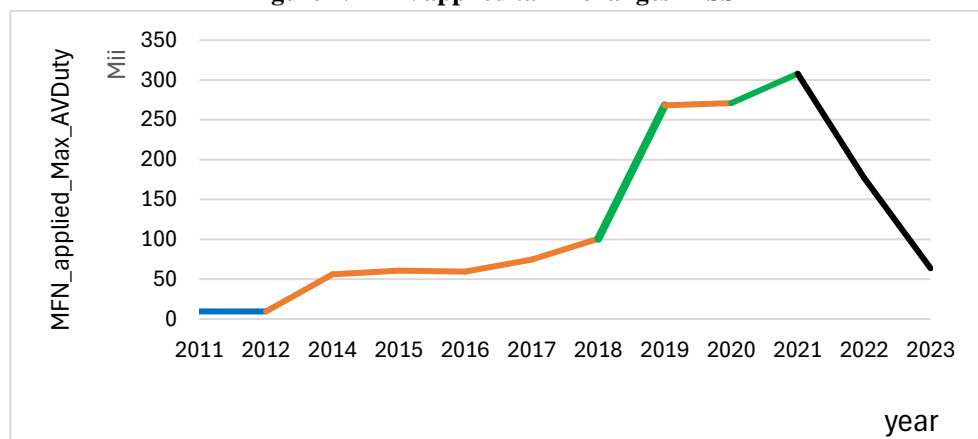
Between the period 2011-2023, annually, the average total SSA exports range from \$80-86billion. Odijie (2022)'s comparative study during the Yaoundé era affiliated and unaffiliated West African countries from 1960-1975 demonstrate that, those countries tied to EU trade agreements tended to experience a continuation of colonial economic patterns, while unaffiliated countries pursued economic change. In line with this argument, I begin to analyse the direction of trade (DOTs) of SSA illustrated in Appendix Figure A1.

⁶ I take 1995 as the base year because of UNCTAD began to collect and classify non-tariffs measures in 1994 and many countries of SSA have no data. <https://unctad.org/publication/guidelines-collection-data-official-non-tariff-measures>.

The above figures show that the trade directions of Sub-Saharan Africa are significantly influenced by the external economic conditions. Between 2011 and 2015 both the exports and imports of the region were averaging around \$60 billion. However, the figures have experienced a significant decline, falling to less than \$40 billion. This decline highlights the region's susceptibility to global disturbances. The onset of the COVID-19 pandemic in 2020 is a clear example of this, as it caused a sharp drop in the region's exports, which fell to just under \$60 billion. The volatility of trade direction in SSA emphasises the fragility of the region's economy, which is reliant on global trade patterns. Therefore, the region's economic growth is heavily influenced by the global economic atmosphere. The impact of the COVID-19 pandemic on the region's trade activities emphasises the need for Sub-Saharan Africa to focus on developing its internal economic structure.

However, the direction of trade (DOTs) of SSA is characterised by volatility cause of the tariffs, whether applied under MFN principles or preferential trade agreement, directly impact the cost of importing and exporting of goods, thereby influencing the attractiveness of trade relationships.

Figure 1. MFN applied tariff changes in SSA



Source: author's, UNCTAD comtrade, 2024.

Figure 1 above reflects that the Most-Favoured Nation (MFN) has registered a slight escalation from 2011 up to 2018. However, the MFN_applied_Max_AVDuty has undergone a significant transformation from 2018 to 2019. The considerable increase in the applied MFN tariff on agricultural products can be attributed to the SSA region's adoption of import substitution policies, which entail the imposition of elevated tariff barriers on agricultural imports. Notably, between 2019 and 2021, there was a marginal increase followed by a substantial decline. These might be due to the impact of COVID-19 pandemic (2019-2021) and may also be attributed to temporary tariff hikes implemented by governments to boost food security amid severe disruptions in global supply chains.

4. Data and Study Design

This study explains the variables and data sources selected from the literature reviews. The study employed panel data spanning from 2011 to 2023. Notably, some Sub-Saharan African (SSA) countries joined the International Monetary Fund (IMF) programme in early 1993. Besides, the United Nations Conference on Trade and Development (UNCTAD) began to collect and categorise nontariff measures in 1994, while the World Trade Organization (WTO), replacing the General Agreement on Tariffs and Trade (GATT), which had overseen world trade since 1948, was established in 1995. However, the availability of data for most of the countries in the sample are after 2011.

To investigate the impact of IMF conditionality on trade and tariffs, data was collected from the IMF database, specifically the Monitoring of Fund Arrangements (MONA) Database. This archive contains IMF conditionality data from 1993 to 2023. However, the study focused on data from 2011 to 2022. The study primarily concentrated on variables such as the country name, given that IMF Structural Adjustment Programmes (SAPs) which is implemented in country “i”. Subsequently, the study ascertained the effects of IMF conditionality, which target enhancing the international trade policy reforms of developing countries, such as prior criteria (PA). For instance, Ethiopia requested trade system policy reforms in 2004, which included the adoption of a plan for the reduction of trade protection, elimination of trade restrictions and administrative controls on wholesale foreign exchange, an increase in the top sales rate to 15%, and the simultaneous elimination of the 10% import duty surcharge as prior criteria. Structural benchmarks (SB) were utilised to attain these conditions.

Similarly, in 2003, Kenya requested trade system reforms via the elimination of significant import exemptions awarded to the public sector. Performance criteria (SPC) were also utilised. In 2002, the IMF requested Ghana to improve the trade system by eliminating the special import tax in the 2002 budget, effective immediately (3/31/2002).

Furthermore, I used MONA databases of a three-year period preceding the IMF programme and the four years that followed it can aid in the evaluation of the effects of IMF conditionality on the agricultural product trade growth of SSA. The extent of a country’s involvement in international trade can be measured by assessing the impact of IMF conditions on the trade growth, change in agricultural product tariff, and tariff overhang of a given country (i) at a specific time (t). The impact of trade openness over time can be determined by examining the data through the interaction of a year dummy variable with key explanatory variables.

To assess the impact of IMF SAPs programmes impact on trade and Non-Tariff Measures (NTMs)⁷, I used UNCTAD (2023) TRAINS database of World Bank WITs and product tariff level HS-6-digit lines import and export trade following countries impose tariffs using SPS and TBT protection mechanisms and exchange

⁷ The NTM is a policy instrument of a nontariff barriers such as traditional trade policy (quotas, price controls) and regulatory and technical measures (SPS, TBT).

rate data. Tariff⁸ data were collected from the World Trade Organisation's (WTO)⁹ Tariff Download Facility, a comprehensive database of information on Most-Favoured-Nation (MFN) applied and bound tariffs at the Harmonised System (HS) standard codes for WTO members. Moreover, this platform provides data at the HS subheading level on non-MFN applied tariff regimes that a country grants to its export partners.

To achieve the research objectives, only WTO member countries belonging to the Sub-Saharan region were selected. Furthermore, countries for the analysis were chosen based on the availability of MFN-tariff, both applied and bound MFN-tariffs¹⁰, membership in the WTO, and participation in at least one of the International Monetary Fund (IMF) programmes.

The WTO tariff download facility provides product information in Agricultural (AG), Non-Agricultural Manufacturing (NAMA), and all categories. However, the primary objective of this study is to examine the impact of IMF conditionality and Structural Adjustment Programmes (SAPs) on the trade of agricultural products in Sub-Saharan Africa (SSA). Therefore, only AG products of the HS-6-digit subheading line were included in the sample.

The countries belonging to SSA's are consisted in the country sample based on availability of MFN-tariff both applied and bound-tariff data and member of WTO. I considered the NTMs of countries' imposition of Sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT)¹¹. Finally Aid for trade (AFT) data was collected from OECD QWIDs¹².

5. Empirical Estimation

To examine the impact of IMF conditionality on trade growth rate, a panel data fixed effect estimation approach was utilised, incorporating IMF conditionality

⁸ Tariff data on Most-Favoured-Nation (MFN) applied & bounded at HS-6-digits will be collected from WTO WITS Database and classified as Bounded, applied, and preferential tariff. In this study, only bound and applied tariffs are considered.

Bound tariff: Maximum tariff rates that a country has committed to under international agreements such as those negotiated in WTO. Applied tariff: Are actual tariff rates that each country currently imposes on imported goods.

Preferential tariff: Are special reduced tariff rates granted to certain countries or regions as part of preferential trade agreements. (<http://tariffdata.wto.org/>)

⁹ <http://tariffdata.wto.org/>

¹⁰ MFN tariffs represent the commitments made by countries to levy tariffs on imports from fellow members of the WTO, unless they are involved in a preferential trade arrangement like a free trade area or customs union. In essence, MFN rates typically denote the highest tariffs that WTO members apply to each other (<https://wits.worldbank.org/WITS>).

¹¹ According to WTO's agreement, each country government favours their domestic industries subject to the regulations of WTO's.

¹² December 6th Ministerial Conference in Hong Kong, China, Article 57 stipulates that the Aid for Trade, as discussed among Financial and Development Ministers, including the Development Committee of the World Bank and the International Monetary Fund, aims to assist developing countries, particularly the least developed countries, in enhancing their supply-side capacity and trade-related infrastructure. The primary objective is to enable such nations to successfully implement and benefit from WTO agreements, as well as to broadly expand their trade.

dummy variables, SAPs dummy variables, and country income level and geographical location being in the landlocked region. In this research, key variables included trade growth rate, changes in tariff rates, tariff overhang, SAPs implementation, and IMF tariff conditionality. The objective was to investigate the effects on trade and tariffs at each product level in country *i* during the presence of an IMF programme. The analysis was conducted for country *i* across *k* products. Since the changes occurred at the product level, and SAPs programmes were implemented within country *i*, the focus was on understanding the dynamics of trade and tariffs in this context.

My analysis was split into two sections to investigate how the IMF's conditionality affected the trade reform policy of SSA countries. In the first case, I examined the agricultural product trade growth rate of country *i* with IMF conditionality. Secondly, I investigated the impact of IMF conditionality and SAPs programmes on tariffs overhang within country *i*. Disaggregated HS-6-digit product-level data was used, obtained from global trade and tariff databases covering multiple countries. This enabled us to conduct our study for *K* products at the country level, as SAPs took place at the country *i* level for each product *k*.

To examine the impact of IMF conditionality on the trade growth rate, I run multiple regression analyses with IMF conditionality dummy, year dummy, & SAPs dummy.

$$gt_{ikt} = \alpha + \beta_1 IMFcond_{it} + \beta_2 SAPs_{it} + \beta_3 appliedMFN_{ikt} + \mu \gamma_{it} + \omega IMFcond_{ikt} * \gamma_{it} + \sum \beta_j X_{ikt} + \sigma_{ik,t} + \delta_{it} + \varepsilon_{it} \quad (1)$$

where, α is the intercept, which is the average trade growth rate in the absence of IMF conditionality, and the coefficient on $IMFCond$ is the difference in the average percentage change in trade growth between trade growth rate in the presence of $IMFcon$ and without. In other word β_1 captures the impact of IMF conditionality on trade growth rate changes.

gt_{it} is growth rate in trade as % of GDP,

$IMFcond_{it}$ is coded as dummy variable 1= IMF condition

0 = no IMF condition for country *i* at time *t*

$SAPs_{it}$ is coded as dummy variable 1= if country is in the IMF SAPs programme

0 = if the country is not participated in the programme.

$appliedMFN$ is the average of all Ad valorem duties in the HS code. The number of Ad valorem equivalents for no-Av duties is included.

$\gamma = \frac{AFT}{GDP}$, and AFT is total Aid for trade.

γ_{it} is aid for trade (AFT) share of GDP, μ is the coefficient of AFT as % share of GDP.

X_{ikt} is a vector of time-varying country controls like GDP per capita, population, exchange rate, and inflation.

$\sigma_{ik,t}$ product fixed effects, δ_{it} are country fixed effects, and ε_{it} are error terms.

The second analysis is to assess the impact of IMFcon on the trade openness of a particular country (i) at a certain time (t).

Our final estimation is on the change in tariff rate and tariff binding overhang which shows the policy impact of IMF conditionality at HS-6-digit product level in country i.

$$\Delta\text{Tariff}_{ikt} = \alpha + \beta_1\text{IMFcond}_{it} + \beta_2\text{SAPs}_{it} + \mu\gamma_{it} + \omega\text{IMFcond}_{it} * \mu\gamma_{it} + \sum \beta_j X_{jit} + \sigma_{ikt} + \delta_{it} + \varepsilon_{it} \tag{2}$$

where, $\Delta\text{Tariff}_{ikt}$ is the change applied MFN tariff in the tariff imposing country I at the HS-6-digit product level k in in year t.

$\Delta\text{overhang}_{it}$ refers the change in tariff overhang = bound tariff_{ik,t-1} – applied tariff_{ik,t-1}

Indicates the difference between the MFN bound and applied tariffs at the HS-6-digit level in country i of k product at time t. low values of overhang tariffs indicates applied tariffs are almost approached to the upper limit standard of tariff rate set by WTO’s Multilateral Trade Negotiations (MTN).

Multilateral Trade Negotiations (MTN).

6. Results

Firstly, I would like to present the results of the estimations of the effects of the IMF tariff conditionality on agricultural product trade growth in SSA, as shown in Table 1. The estimated coefficients for the fixed-effect regressions in columns (1) and (2) are reported. The first equation presents the effect of IMF tariff conditionality in the presence of the Average of all Advalorem duties in the HS-6-digit code measured by Advalorem equivalents for non-Av duties (MFN_Applied_Avg_AV_Duties). The second equation Binding overhang¹³ (tariff overhang) replaces (MFN_Applied_Avg_AV_Duties measured by Average of all advalorem duties in the HS-6-digit code.

Table 1. Regression Results – growth in trade

Variables	(1)	(2)
	trade_growth FE	trade_growth FE
IMF_cond_dummy	-5.660***	-5.756***
	(0.171)	(0.171)
SAPs_tradesystem	19.036***	19.032***
	(0.349)	(0.348)
oda_aft	-1.161***	-1.163***
	(0.190)	(0.190)

¹³ Binding overhang (tariff overhang) is the difference between bound and applied MFN. Bound tariffs are the maximum tariff levels agreed upon by WTO members for specific goods. They represent commitments made during WTO accession or trade negotiations, specifying the highest allowable tariffs, although actual applied rates may be lower.

Variables	(1)	(2)
	trade_growth FE	trade_growth FE
IMF_cond_oda_aft	0.413***	0.414***
	(0.017)	(0.017)
MFN_Applied_Avg_AV_Duties	0.006***	
	(0.001)	
Pop	1.510	1.490
	(0.937)	(0.935)
averg_cpi	-0.017	-0.017
	(0.031)	(0.031)
ln_gdp	14.462**	14.539**
	(7.116)	(7.098)
tariff_overhang		-0.003***
		(0.000)
Constant	-16.675	-15.757
	(13.394)	(13.325)
Observations	2,380,118	2,375,935
R-squared	0.002	0.002
Number of countries	26	26
country FE	YES	YES
Year FE	YES	YES

Notes: product in country i, country, and year fixed effects are included.

Standard errors are in parentheses.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Source: author's own research.

Column (1) identified various significant variables that influence agricultural product trade growth in SSA. I found that stricter IMF tariff conditions, represented by IMF_cond_dummy, had a negative coefficient (-5.660) and were negatively associated with agricultural product trade growth¹⁴. The result is the same for agricultural product import as % of GDP at country level where imports as a percentage of GDP are negatively associated with IMF conditions and the Official Development Assistance (ODA) AfT (See Appendix, Table A1). Conversely, IMF SAPs in trade system reform, as represented by SAPs_tradesystem, had a positive coefficient (19.036) and experienced higher trade growth¹⁵. For example, Kenya's three-year IMF programme P1 launched in 2011 and ended in 2014 under SAPs of

¹⁴ I also estimated the relationship between import % GDP and export % GDP at the country level, and the results are consistent with IMF conditions constraining import values as a percentage of GDP. Trade growth and the import/export data are agricultural products that do not consist of the others. NOTE: My analysis focuses only agricultural products of the HS-6-digit-level are in the sample.

¹⁵ The regression results of effect of IMF SAPs in trade system on the values of import % GDP is consistent with IMF SAPs effect on trade growth in which SAPs trade system reform has positively related to import. IMF Structural Adjustment Programmes (SAPs) still encourage trade growth, as they are positively related to imports as a percentage of GDP. The results of the regression analysis show that the implementation of IMF SAPs in the trade system has a positive impact on the import %GDP values (See Appendix, Table A2).

international trade policy reform increases exports of goods and services from 536.39 NCU (billions) in T-3 (i.e., 3 years before IMF project) to 988.02 NCU (billions) in T+3 (i.e., 3 years after project). This indicates that countries participating in the IMF SAPs programmes for trade system reforms benefit from the programmes, as they encourage trade growth and increase the import and export of goods and services.

Another crucial factor was official development assistance (ODA) aid for trade¹⁶, as captured by *oda_aft*, which displayed a negative coefficient (-1.161) and was associated with decreased trade growth. The coefficient -1.161 implies that a 1% increase in ODA aid for trade is associated with a decrease in trade growth by approximately 1.161% which is almost similarly to column (2). It can infer that higher levels of ODA AfT are associated with lower trade growth rates. This suggests that the effectiveness of ODA AfT in promoting agricultural product trade growth of SSA country is potentially counterproductive.

The positive coefficient (0.413) shows that the interaction between IMF tariff conditionality and ODA-AfT has a mutually reinforcing impact on trade growth. When countries joined and engaged in IMF's SAPs trade system reforms in line with IMF conditions and simultaneously received AfT, the combined effect enhanced trade growth. This suggests a synergistic relationship between trade system policy reforms and external ODA's AfT financial support.

Moreover, the average applied ad-valorem duties under the Most Favoured Nation (MFN) principle, as represented by "*MFN_Applied_Avg_AV_Duties*", had a positive coefficient (0.006). This suggests that higher average duties were associated with greater trade growth. The size of the population, represented by "*pop*," demonstrated a positive coefficient (1.510), indicating that countries with larger populations experienced a higher trade growth, unfortunately, it is insignificant. However, the average consumer price index (CPI), denoted by "*averg_cpi*," exhibited a negative coefficient (-0.017), implying that a higher average CPI was associated with a lower trade growth in agricultural products of the SSA countries. For GDP per capita, I obtained consistent results in both regression results and statistically strong positive relation in enhancing trade growth in agricultural outputs of the SSA countries to the partners. Therefore, the natural logarithm of GDP, represented by "*ln_gdp*," had a positive coefficient (14.462), indicating that a higher GDP was associated with greater trade growth. The inclusion of country fixed effects (FE) and year fixed effects (FE) was controlled for unobserved country and year-specific factors.

Column (2) built upon column (1) by including an additional variable, binding overhang¹⁷ represented by *tariff_overhang*. It is a measure of the difference between the bound tariff rates (maximum MFN tariff commitments made by a country in

¹⁶ At the Sixth Ministerial Conference held in Hong Kong in 2005, the members of the World Trade Organization (WTO) introduced the Aid for Trade initiative to strengthen the trade capabilities of developing countries, especially the least developed ones, by enhancing infrastructure and expanding trade opportunities (UN, 2017) <https://financing.desa.un.org/>.

¹⁷ All countries who are a member of the WTO are committed to bound tariffs which is the maximum MFN tariff level for a given commodity line.

international agreements) and the applied MFN rate (actual tariffs imposed on imports). This variable exhibited a negative coefficient (-0.003), indicating that higher average binding overhang were associated with lower trade growth. Thus, as the gap between bound and applied tariff rates increases, trade growth tends to decline because a high binding overhang can act as a barrier to trade growth in the trade growth of SSA agricultural products. In addition to this, a large binding overhang makes a region’s trade policies less predictable.

Then next, I will discuss the estimates of the tariff binding overhang and evaluate the impact of IMF tariff conditionality on changes in agricultural product tariffs in SSA. In my previous estimation, I found that the binding overhang has a negative relationship with the trade growth of agricultural products in SSA. Therefore, I am sceptical whether this relationship is caused by IMF interference.

The estimates were utilised to analyse how IMF conditionality narrows the gap between the MFN applied tariffs and MFN bound tariff levels on agricultural products. According to recent research by Lorz and Thede (2024), affluent countries leverage development AfT to secure tariff concessions from developing countries. The compensation received by the poorer countries determines the extent of their applied tariff reduction below the bound tariff rate. In anticipation of this mechanism, countries can negotiate a bound tariff rate that optimises the applied tariff and aid outcomes.

Accordingly, in Table 2 below, in column (1) the coefficients of IMF conditions and ODA- AfT are negative, which implies that, both IMF interference and ODA-AfT in the aid-receiving countries of SSA’s are successfully reducing the gap between applied and bound tariffs.

When the applied tariffs are lower than the bound tariffs, it creates a situation where countries have room to increase tariffs without violating their international commitments. This difference, or overhang, represents untapped policy space in trade policy.

Table 2. Regression Results – tariff binding overhang

Variables	(1)	(2)	(3)
	overhang FE	overhang FE	overhang FE
IMF_cond_dummy	-2.261*** (0.208)	-2.210*** (0.198)	-2.379*** (0.201)
SAPs_tradesystem	6.427*** (0.604)	4.481*** (0.459)	5.544*** (0.518)
SAPs_Pricing_mrktng	-0.691* (0.390)		0.281 (0.452)
oda_aft	-0.027 (0.262)		
SAPs_tradesystem#c.oda_aft (1)	-0.085* (0.043)		
ln_pop	-32.477 (39.730)		

Variables	(1)	(2)	(3)
	overhang FE	overhang FE	overhang FE
ln_gdp	19.384		
	(17.208)		
averg_cpi	-0.015		
	(0.040)		
ln_trade	1.061		
	(3.211)		
SAPs_Tax_reform			1.241 ***
			(0.267)
Constant	85.301	49.709***	49.023***
	(65.698)	(0.393)	(0.440)
Observations	2,375,909	2,570,712	2,570,712
R-squared	0.011	0.018	0.018
Number of unique_ID	71	75	75
country FE	YES	YES	YES
Year FE	YES	YES	YES

Notes: product in country i, country, and year fixed effects are included.

Standard errors in parentheses.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Source: author's own research.

Consistently in both columns (2) and (3), IMF conditionalities exhibit significant negative coefficients. This suggests that the IMF tariff conditionality requirements have successfully nudged SSA countries towards honouring their tariff commitments as part of the international trading system. However, disaggregating the IMF SAPs impact on tariff binding overhang shows their differential effects. The large positive coefficient on SAPs trade system reform (SAPs_tradesystem) implies trade liberalisation reforms had the strongest influence on diminishing tariff overhang by lowering applied tariffs towards bound levels for agricultural product of SSA. This finding is consistent with the theoretical model presented by Lorz and Thede (2024), whereby trade liberalisation and aid dependence can interact to affect a country's tariff overhang in which countries receive more AfT have stronger incentives to set high bound tariffs despite the liberalisation of trade. This is to maintain bargaining power and flexibility for negotiating future aid and imports.

In other words, implementing SAPs for trade system reform in SSA can lead to growth in agricultural trade by raising MFN applied tariffs on agricultural products imported from other countries. It indicates a virtuous cycle where more open markets incentivised further tariff cuts. As an illustration, within the ambit of IMF's structural benchmark conditions (SB) for international trade policy reform under code 754, Benin has requested a diagnostic assessment of its primary trade barriers. This assessment will be based on the framework adopted for the notification phase of the WTO Trade Facilitation Agreement, as part of Benin's trade reform efforts between 2017 and 2020 and will have a significant impact on Benin's participation in international trade (see Appendix Figure A2).

The graph in Appendix Figure A2 illustrates that Benin's export-import trade has increased from 4.1% and 4.4% to 4.47% and 4.65%, respectively. This suggests that Benin's participation in the IMF SAPs for trade system reform has had a positive impact on its international trade.

Consistently, within the same period, the IMF SAPs prompted the government of Senegal to request a tax reform study on the impact of tax exemptions resulting from the relocation of Senegalese enterprises to the new integrated special economic zone. This study was to be completed before signing a contract with the zone's investor and based on a methodology agreed with the Fund staff. The macroeconomic impact of IMF conditions showed that Senegal's export of goods and services rose from 3.4% before the T-3 project (3 years before the IMF project) to 3.9% after the T+4 project (4 years after the IMF project), while import increased from 3.7% to 4.01%.

The outcome of the regression analysis indicates that the coefficient for SAPs pricing and marketing policies has a statistically significant negative impact on tariff binding overhang in column (1). However, this coefficient was found to be statistically insignificant in specifications (2) and (3). These results provide empirical evidence that pricing and marketing policies reform prescribed by the IMF through SAPs have effectively reduced tariff binding overhang situations over time in SSA countries.

For instance, under arrangement 760, which spanned from 26 June 2017 to 17 July 2019, the government of Cameroon was required to implement a three-year IMF structural benchmark condition. As part of this condition, the Cameroon government was mandated to reform the price control and marketing policies to simplify and revise the existing fuel price structure. This condition serves as an example of the effectiveness of SAPs in reducing tariff binding overhang situations in SSA countries.

The Appendix Figure A3 shows that there has been a notable increase in both import and export of goods and services. Specifically, the export figures have risen from 405,000 NCU in the T-3 period to 503,000 NCU in the T+4 period. It is worth noting that the increase in import is relatively lower than that of export during this time.

In column (1), the coefficient for ODA aid for trade (*oda_aft*) is not significant. This indicates that ODA alone may not have a substantial impact on tariff binding overhang. However, the interaction term between SAPs related to trade systems and *oda_aft* (*SAPs_tradesystem#c.oda_aft*) displays a significant negative coefficient. This suggests that when countries simultaneously implement trade system reforms and receive ODA_AfT, the combined effect leads to a reduction in tariff binding overhang. This finding underscores the potential synergies between trade policy reforms and external financial assistance in addressing tariff constraints.

In column (3) IMF, it appears that SAPs aimed at tax reforms can increase tariff binding overhang in the region. The statistically significant coefficients of 1.241 suggest a passive association between the two. The theoretical reasoning behind this is that tax reforms under SAPs may involve reducing tariffs and import

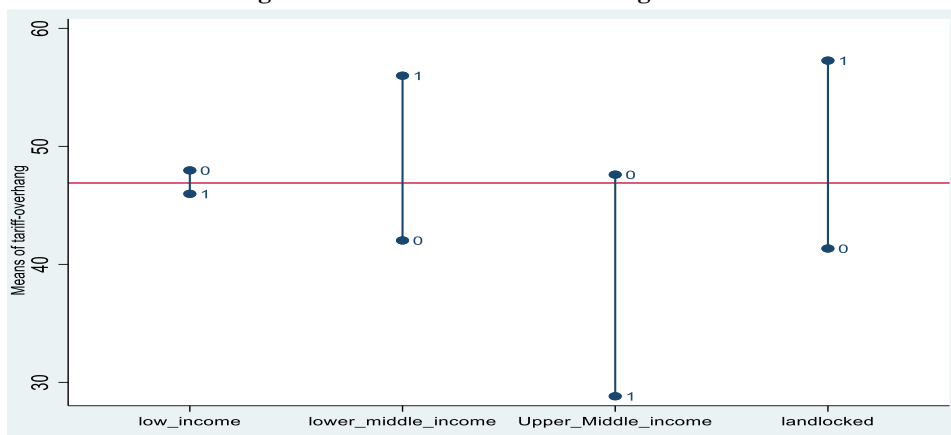
duties, leading governments to set higher bound tariff rates than their applied rates to maintain bargaining power in future trade negotiations.

In this analysis, I did not observe any significant impact of variables such as population size, GDP, inflation, and trade % GDP on the binding overhang. However, my argument is that IMF-led SAPs, especially those targeted at trade systems and tax reforms, have contributed to higher agricultural product tariff binding overhang in SSA countries.

To investigate the characteristics of tariff overhang, the countries in the SSA sample group were categorised based on their income level and geographical location. Specifically, the countries were classified into four groups, namely low income, lower middle income, upper middle income, and landlocked. Each group was represented by a binary dummy variable which assumed a value of 1 if the country belonged to that group and 0 if it did not. This approach allowed for a comprehensive analysis of the factors that potentially contribute to tariff overhang in SSA countries.

The data presented in Figure 2 indicates that countries with low-income have a mean value of tariff overhangs exceeding 48%, whereas lower middle-income countries have an average value of tariff overhangs that surpasses 55%. Conversely, upper middle-income countries have a mean value of tariff overhangs that falls below 30%. In addition, it is noteworthy that landlocked countries exhibit a significantly higher tariff overhangs' value than all other countries that do not belong to this group.

Figure 2. Features of tariff overhang in SSA



Source: author's, 2024.

Figure 2 above suggests that lower-income countries, especially those that are landlocked, tend to maintain higher tariff overhangs, which may indicate a trade policy that is less open to foreign investment. Although higher tariff overhangs can provide countries with more leverage in trade negotiations, they also introduce market unpredictability, which could have an impact on economic decision-making. The particularly high tariff overhangs in landlocked countries highlight the unique

challenges they face when attempting to access international markets, which prompts them to adopt more protective trade policies.

7. Extension

The above regression result provides evidence of binding overhang are inversely linked to the agricultural trade growth of SSA. Furthermore, IMF tariff conditionality, IMF SAPs pricing and marketing policies, and the interactions of SAPs trade system reforms & ODA_AfT are negatively associated with the tariff binding overhang. However, IMF SAPs in trade system and SAPs in tax reforms are positively linked with binding overhang.

The above result demonstrates an inverse link between the binding overhang and agricultural trade growth in SSA. Moreover, the study reveals that IMF tariff conditionality, IMF SAPs pricing and marketing policies, and the interactions between SAPs trade system reforms and ODA-AfT are negatively associated with the tariff binding overhang. Conversely, there is a positive relationship between binding overhang and SAPs in tax and trade system reforms. In this part, I analysed the relationships between the change in MFN applied tariffs and IMF SAPs policy reforms in the trade system, tax, exchange rate, and Pricing and marketing policies in SSA.

Table 3. Regression Results – tariff change

Variables	(1)
	tariff change FE
SAPs_tradesystem	-1.939*** (0.475)
SAPs_tax reform	-0.921*** (0.297)
SAPs_pricing & marketingsystem	-0.619 (0.436)
SAPs_exchange rate reform	-0.585 (0.446)
Constant	0.856*** (0.286)
Observations	2,562,681
Number of unique_ID	75
R-squared	0.016
country FE	YES
Year FE	YES

Notes: product in country *i*, country, and year fixed effects are included.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: author's own research.

Table 3 shows the impact of IMF SAPs policies reform in tariffs at the agricultural product HS-6-digit level, while considering the fixed effects of the country, product, and year. All SAPs policy variables have negative coefficients and are statistically significant, except for SAPs_pricing & marketing system, which has a negative but statistically insignificant coefficient. This suggests that overall, IMF SAPs programmes are associated with reductions in agricultural product tariffs of SSA. Specifically, SAPs_tradesystem is associated with a 1.939%-point larger reduction in tariffs compared to countries not implementing trade system reforms under SAPs. Similarly, SAPs_tax reform leads to a 0.921 %-point larger tariff cut relative to countries without tax reforms. Lastly, SAPs_exchange rate reform correlates with a 0.585 percentage point bigger tariff decrease.

In conclusion, the SAPs of IMF have effectively reduced tariff of HS-6-digit level agricultural product in SSA countries. The measures implemented to achieve this outcome include trade liberalisation and market-oriented reform policies that were attached to AFT. The policies related to the trade system, tax, and exchange rate within the SAPs programme have contributed independently to the reduction of agricultural product tariffs.

However, an important question arises as to whether the IMF's tariff conditionalities and SAPs programmes have been successful in reducing agricultural product tariffs, given that almost all SSA countries rely on agricultural products for trade. Therefore, it is necessary to ascertain if SSA can effectively compete with advanced economies, or if the IMF provides compensation for the reduction in tariffs through Aft financing for SSA trade.

8. Discussions

In this study, I have analysed the impact of IMF tariff conditionality on agricultural productivity in the case of Sub-Saharan African (SSA) countries. The study considers 26 SSA countries and 832 HS-6-digit level agricultural products, and more than 2.3 million observations are analysed. SSA countries are chosen for this study for two main reasons. Firstly, the region is one of the focus areas of the IMF as an international financial institution. Secondly, the SSA region is characterised by the vulnerability of international trade, in which agricultural products are the main dominance of SSA trade. Countries in the sample are selected based on the availability of data, being in at least the IMF SAPs programme, and being a member of the WTO. The data are mostly collected from MONA database, WITS tariff download facilities, UNCTAD comtrade, the OECD, and the WB.

The reviewed literature can be divided into three main points. Firstly, it concerns the effectiveness of IMF conditionality and its SAPs programmes towards tariff reduction and enhancement of developing countries' trade in the international trade. Secondly, aid conditionality rooted in the efficiency of international trade, particularly policy tied to Aft, has an extensive debate. At this point, there are arguments that support aid conditionality. For example, Collier and Dollar (2002) and Dreher (2009) have argued that the policy attached to aid requirements is enforced to guarantee that trade reforms are implemented to foster trade

liberalisation. The third concept concerns the continuous issue of foreign aid effectiveness in development economics. This concept can be seen in two ways: First, there are those who believe that official assistance is ineffective and has harmed poor countries over the years. This view is advocated by authors such as Rich (2014) and Moyo (2010), who argue that official aid creates dependency, fosters corruption, encourages currency overvaluation, and does not allow countries to take advantage of the opportunities provided by the global economy. However, scholars like Eyben (2010) and Stiglitz (2002) argue that the levels of aid have historically been too low and that a large increase in foreign aid could be greatly effective in helping to reduce poverty.

Furthermore, in the analysis of development aid as a possible explanation for tariff overhang, which refers to the gaps between negotiated tariff ceilings and actual tariff rates, some researchers argue that tariff overhangs can be viewed as collateral to induced aid payments from developed to developing countries. Lorz and Thede (2024) have put forth the argument that AfT is increasingly perceived as tool for opening markets, particularly with the WTO's placing greater emphasis on developing countries.

Concerning my focus areas of IMF conditionality, trade, and AfT there exists a range of literature offering different perspectives. Some criticise IMF conditionality tied to IMF programmes for biased decision-making and support of dictatorships, as mentioned in the Bretton Woods Project (2019) and IMF intervention can limit a government's policy space, reducing ownership of implemented reforms, in line with Kentikelenis et al. (2016). Additionally, IMF conditions push countries to liberalise trade by swapping policies, focusing on macro targets through trade barrier reductions rather than broader reforms, according to Busse and Vogel (2023).

In line with the review literature, stricter IMF tariff conditions namely prior actions (PA), performance criteria (SPC), and structural benchmarks (SB) are negatively associated with agricultural product trade growth, while IMF SAPs in trade system reform are positively associated with trade growth. Prior actions are measures taken by countries receiving aid before the IMF approves an arrangement, completes a review, or grants a waiver that is essential for programme implementation. On the other hand, performance criteria are specific and measurable objectives that the recipient must meet, and failure to comply with them may result in programme termination, although the IMF has the power to waive such noncompliance. Whereas conditionality taken in the form of structural benchmark does not lead to automatic termination, it will be assessed with the programme's overall performance¹⁸.

I have conducted a highlighting assessment of 15 countries, including non-World Trade Organization (WTO) members, to gain insight into how SSA countries react to declining tariffs. It has been observed that developing countries use NTMs as an alternative to MFN tariff reduction. This enables them to protect their infant agricultural products from the influence of advanced economies.

¹⁸ IMF Conditionality

NTMs encompass all policy interventions besides tariffs, which could potentially influence the quantities and prices of traded goods. As a result, SSA countries utilise NTMs strategically to regulate export-import policies and shape trade dynamics. The study exclusively focused on technical categories of NTMs, such as technical barriers (TB) and Sanitary and Phytosanitary (SPS) NTMs, which are primarily intended to fulfil public policy objectives, including the protection of human, plant, and animal life and health, as well as the environment. SSA countries predominantly employ SPS measures as alternative mechanisms to respond to tariff decline, with technical NTMs having a limited impact. This is owing to the presence of IMF tariff conditionality and SAPs programme. SPS measures are concentrated in this sector, as demonstrated in Appendix Figure A4.

The binding overhang has a negative correlation with the growth of agricultural product trade in SSA, signalling that countries in the landlocked and lower-middle-incomes are with maximum MFN tariff commitments that are higher than actual tariff commitments. As the gap between bound and applied tariff rates widens, trade growth tends to decline because a high binding overhang can act as a barrier to trade growth in the region's agricultural products. Furthermore, a large binding overhang renders a region's trade policies less predictable.

However, the results also indicate that the participation in comprehensive IMF structural reform efforts centred around trade policy liberalisation under SAPs can foster greater trade expansion. The positive and significant coefficient for the SAPs trade systems variable implies that trade opening measures successfully increase agricultural trade growth.

Interestingly, aid for trade alone does not achieve the same benefits, as the negative coefficient for ODA assistance in Table 1 implies. However, the interactive term between IMF conditionality and aid indicates financing support works best in a complementary reform environment of trade opening, pointing to potential synergies when approaches are aligned, as also emphasised by McKinnon (2012) in their policy discussion paper.

Examining tariff barriers more directly, the results clearly show that the tariff binding overhang acts as an impediment to agricultural trade growth, with a negative coefficient in Table 1 column 2. This corresponds with the theoretical work by Lorz and Thede (2024) demonstrating that uncertainty from the gap between bound and applied rates creates trade distortions. Moreover, the participation in IMF programmes through conditionality and coordinated aid appears to help reduce this overhang over time as evidenced by the negative coefficients on these variables in Table 2 column 1. This suggests that IMF engagements have aided SSA countries' progression towards more binding and predictable trade policies.

Disaggregating the effect of different SAPs in Table 2 further reveals that trade and tax reforms under IMF auspices are most effective at lowering the overhang. However, tax changes may inadvertently motivate setting higher bound rates to retain flexibility, as proposed by the theoretical model developed by Limao (2006). This helps explain the differing impacts. Finally, Table 3 shows that the IMF intervention has systematically contributed to lower applied tariffs across the board

for agricultural products through its various policy-based lending instruments focused on trade, fiscal, and exchange rate reforms.

In conclusion, while tariff liberalisation alone linked to IMF programmes may negatively impact certain sectors like agriculture, holistic reform packages combining trade opening, aid support, and policy adjustments yield net trade expansion. Moreover, sustainably reducing uncertainty in the trade regime through progressive bindings appears key to maximising gains from trade, where IMF conditionality and SAPs have played a constructive role. Careful policy sequencing and compensation will still be important to offset vulnerability.

9. Conclusion

This study examines the impact of the IMF conditions and SAPs on agricultural trade and tariffs in SSA countries. The research finds that IMF tariff conditions have a negative impact on trade growth, while SAPs have a positive impact. ODA aid for trade has a negative association with trade growth. However, when there is an interaction between IMF tariff conditionality and ODA-AfT, the combined effect enhances trade growth. The average applied ad-valorem duties under the MFN principle have a positive correlation with trade growth. The tariff binding overhang has a negative impact on trade growth. The coefficient for pricing and marketing policies prescribed by the IMF through SAPs has a statistically significant negative impact on the tariff binding overhang in SSA countries.

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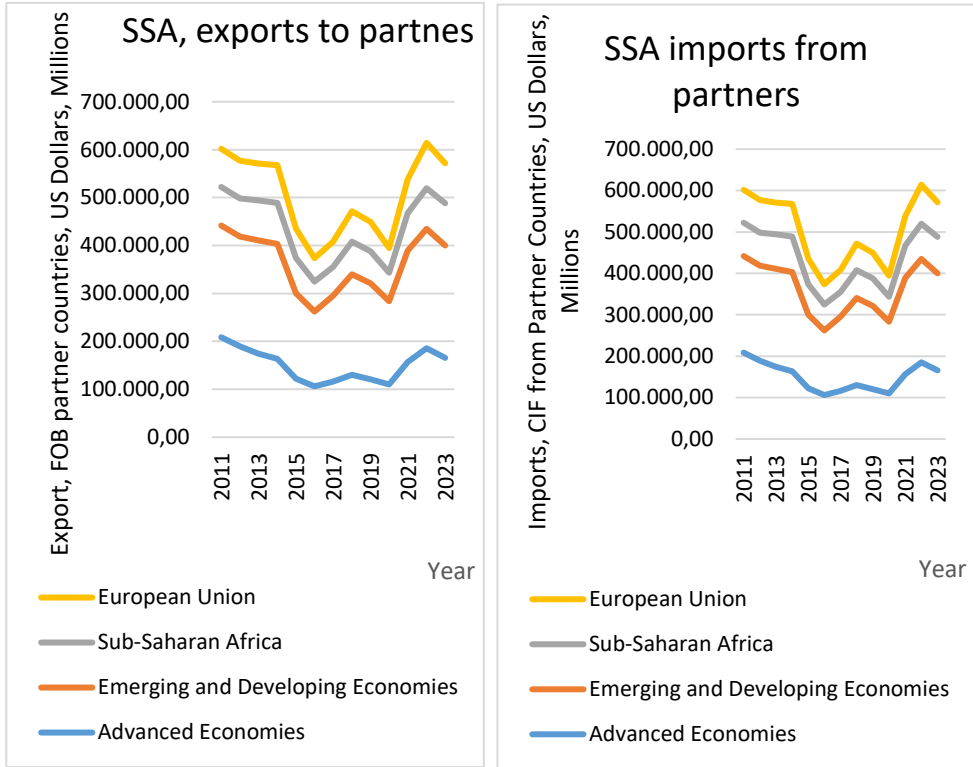
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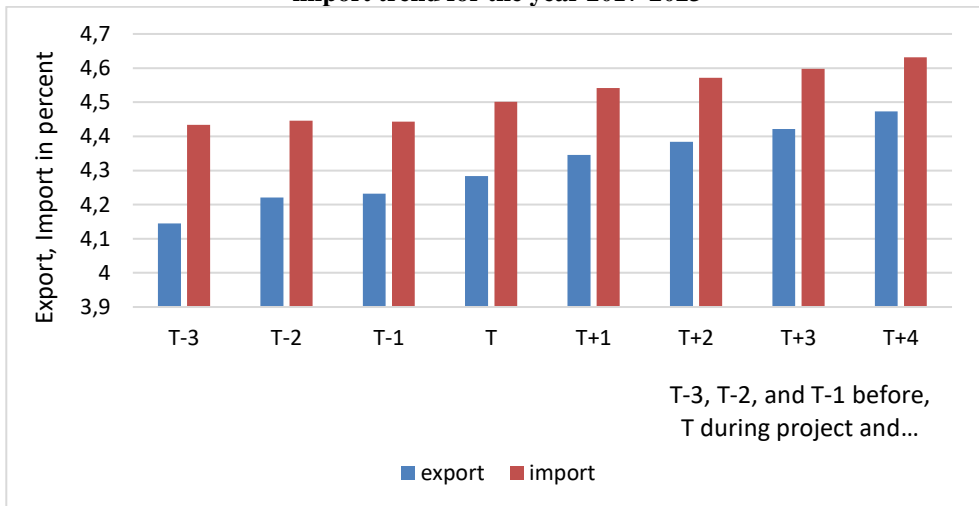
Appendix

Figure A1. SSA direction of trade



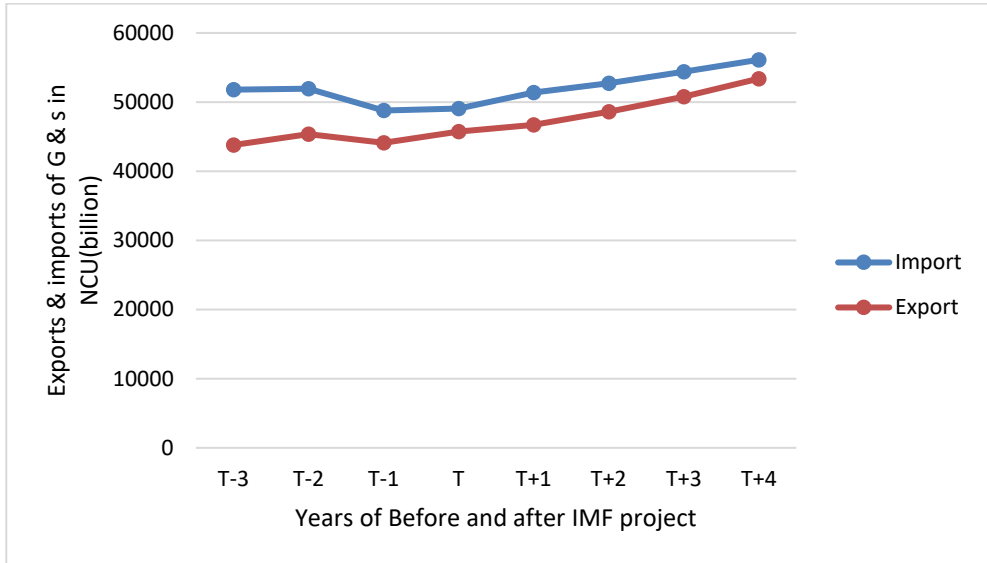
Source: author's, IMF DOTS, 2024.

Figure A2. IMF SAPs trade system reform and Benin export, import trend for the year 2017-2023



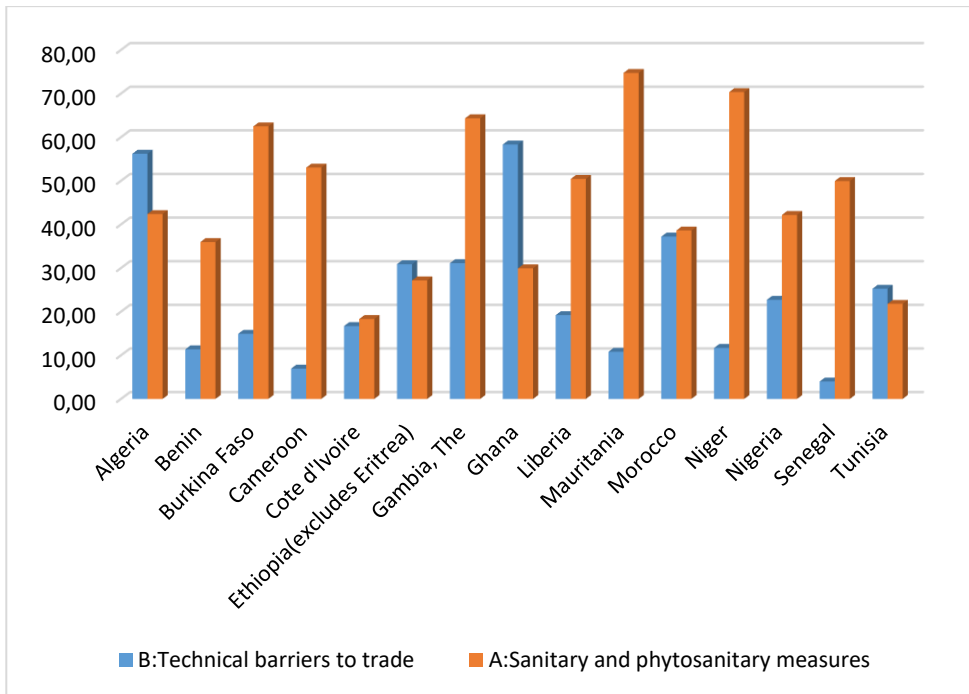
Source: author's construction, MONA data 2023.

Figure A3. IMF SAPs pricing and marketing reform and Cameroon export, import trend from 2017-2023



Source: author's, MONA data 2023.

Figure A4. Ad valorem equivalent of NTMs in SSA Countries



Source: author's, 2024.

Table A1. Regression result – Import as % of GDP

Variables	(1)
	Import %GDP FE
IMF_cond_dummy	-0.0003*
	(0.0001)
SAPs_tradesystem	0.0001
	(0.0003)
oda_aft	0.0088***
	(0.0001)
IMF_cond_oda_aft	-0.0001
	(0.0000)
MFN_Applied_Avg_AV_Duties	-0.0011
	(0.0000)
pop	-0.0001
	(0.0007)
averg_cpi	0.0018
	(0.0000)
ln_gdp	-0.0003
	(0.0055)
Constant	99.4201***
	(0.0104)
Observations	2,380,118
Number of countries	26
R-squared	0.0015
country FE	YES
Year FE	YES

Notes: product in country i, country, and year fixed effects are included Standard errors in parentheses.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Source: author's own research.

**Table A2. Summary statistics: Mean.
Group variable: country1 (Country)**

	MFN Applied Avg AV Duties	Bound Avg AV Duties	tariff overhang	oda aft	trade growth
Angola	19.892	52.733	32.723	1.296	129.543
Benin	15.772	61.402	45.250	.008	24.448
Burkina Faso	15.772	97.828	81.808	6.504	24.448
Burundi	20.874	94.334	74.076	0	102.421
Cameroon	22.09	76.464	54.158	.709	124.101
Central African Republic	22.09	35.02	12.746	.254	124.101
Chad	22.09	72.813	50.624	.251	124.101
Chile	6	26.895	20.909	1.702	102.421
Djibouti	14.313	52.771	46.072	.109	51.607
Egypt	65.322	97.306	28.823	6.688	-57.153
Ghana	15.772	91.67	75.547	1.471	24.448
Guinea	15.772	39.638	23.526	.057	24.448
Guinea-Bissau	15.772	45.369	29.294	16.387	24.448
Kenya	20.806	91.276	70.428	.034	102.421
Liberia	15.772	23.493	7.653	.997	24.448
Madagascar	14.666	43.135	28.236	1.831	124.101
Malawi	17.731	106.728	90.003	7.723	-89.116
Mali	15.772	55.161	39.126	1.618	24.448
Mauritania	11.105	42.989	36.178	.324	-171.396
Morocco	27.667	63.041	37.197	4.987	52.85
Mozambique	13.926	76.709	67.315	0	119.264
Niger	15.772	111.413	95.831	9.843	24.448
Nigeria	15.772	122.63	107.070	12.841	24.448
Rwanda	20.833	56.726	36.430	3.148	102.421
Senegal	15.772	24.492	9.455	32.33	24.448
Seychelles	4.968	25.701	20.536	.068	24.448

Source: author's own research.