ADDIS ABABA UNIVERSITY
SCHOOL OF ECONOMICS

Unilateral Trade Liberalization and Developing Countries' Trade Policies: The Case of AGOA Beneficiary SSA Countries

By

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God Bless Us All!!

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ACRONYMS

AGOA	Africa Growth and Opportunity Act
DDA	Doha Development Agenda
FDI	Foreign Direct Investment
GATT	General Agreement on Trade and Tariffs
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
LDC	Least Developing Countries
MFN	Most Favored Nation
MTL	Multilateral Trade Liberalization
OECD	Organization for Economic Cooperation and Development
PTA	Preferential Trading Arrangement
ROO	Rules-of-Origin
SDT	Special and Deferential Treatment
SSA	Sub-Saharan Africa
UR	Uruguay Round
USITC	United States International Trade Commission
WTO	World Trade Organization

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Abstract

Special and Deferential Treatment of developing countries by developed nations is at the heart of current development rounds. Devising instruments that provide preferential market access to big markets for some products from selected developing countries was required to implement the SDT of LDCs. AGOA was designed and implemented by the U.S. Congress in May 2000 to grant free access to the U.S. market for virtually all products from eligible SSA countries. But a host of literatures argue that such unilateral trade liberalization triggers restrictive trade policies and jeopardize negotiated multilateral trade liberalization efforts and its benefits in the preference recipient developing countries. This paper takes up this problem to test whether AGOA is favoring restrictive trade policy in the beneficiary SSA countries by adopting panel data analysis. The relationship between restrictive trade policy and AGOA in the region is not strong and even negative in some cases.

Chapter One
Introduction

1.1 Background

As Anderson et al (2006) argued Africa accounts for about one-third of the total people in the world living on less than $1 a day. The vast majority of those people are dependent on agriculture for their livelihood. Raising agricultural productivity and cuts to agricultural protection in developed countries via the WTO's Doha Development Agenda (DDA) could be the possible ways to alleviate people's poverty in SSA. It is generally accepted that a comprehensive multilateral trade reform should boost economic growth and thereby reduce poverty in general. However, Panagariya (2004) has questioned whether this applies to SSA countries in particular.

After showing that tariffs are very high in SSA by separating South Africa out, Anderson et al, (2006) concluded that full liberalization of merchandize trade over the 2005-10 period leads to global gains by 2015 of $287 million per year, according to the LINKAGE model. He then argued that though two-third of this gain accrues to the high income countries, developing countries would do somewhat better as a share of total income. It would be an average increase of 0.8 per cent for developing countries as compared to 0.6 per cent for high income countries. SSA would do even better than the developing country average, enjoying a 1.1 per cent income boost.

Ozden and Reinhardt (2005) agued that nonreciprocal preferences like GSP and AGOA (in our case) are dishonest provisions by donor countries which would dampen trade liberalization efforts by developing countries. Such preferences lie out side the binding GATT/WTO legal system, so they can be unilaterally modified or cancelled at any time. Donors of the preference frequently exercise this flexibility by withdrawing preferences just when recipients' exports actually increase. Based on this reality, Ozden and Reinhardt (2005) suggested that developing countries should abandon reliance on 'special and differential'

treatment and, instead, like their developed counterparts, swap trade concessions for more reliable reciprocal market access.

Shapouri et al (2003) concluded that most of the changes in exports of AGOA beneficiary SSA countries could be due to shifts in export destinations-trade diversion. Nevertheless, the region's level of domestic investment to respond to the incentive is low relative to other developing regions of the world. So far the increasing flow of FDI has helped several countries to increase their exports.

1.2 Statement of the problem

The Doha Round trade negotiation on the implementation of the UR agenda was taken to be the round in which developing countries have been considered in depth. The imbalances between developed and developing countries witnessed during the UR have been somewhat seem to balance at Doha, (Panagariya, 2002). This was manifested by the so called special and differential treatment (SDT) of developing countries offered by their developed counter parts which includes granting some products from developing countries free access to industrialized countries markets. However, though the Doha declaration makes ample mention of special and differential treatment of developing countries, much of it is of a cosmetic nature according to literatures (see Panagariya 2002). For example Hoekman et al, (2003) argue that the traditional approach to SDT has not been a success in promoting development. They pointed out that the approach is fundamentally flawed in that it helped create incentives for developing countries not to engage in the process of reciprocal liberalization of trade barriers and the rule making process.

Unilateral trade liberalizations by developed countries undermine the relationship between exports performance and trade policy in the recipient countries which affects their future of adopting appropriate policy instruments during the inevitable multilateral trade liberalization. For example, Hudec (1987) as cited in Ozden and Reinhardt (2005) stated that by de-linking foreign

market access from the recipients own trade policy, nonreciprocal preferences remove the major incentive that export industries have for opposing protectionist trade policies of their own government. Hence, GSP/AGOA shifts the political balance in the beneficiary country to the import competing sector. This effect is farther compounded by domestic politics in the donor country. Since significant increase in the export levels of the recipient country leads to the removal of the preference by the donor state, recipient of the preference has perverse incentive to implement even more protectionist policies to limit its exports, (Ozden and Reinhardt, 2005). However, this does not necessarily mean that trade liberalization is always desirable.

If increasing trade is a key to growth, then developing countries would better served by abandoning reliance on nonreciprocal preferences altogether, becoming members with full responsibilities and rights in the world trading system. The fact that increasing trade is a key to growth is substantiated by David et al (1999). This argument says that evidences obtained from countries engaged in bilateral trade in a given regional integration show that incomes converge upward with increased volume of trade after joining this more liberal bilateral trade agreements.

AGOA, which was enacted on May 18, 2000 as part of the Trade and Development Act by the US government, offers beneficiary SSA countries duty-free and quota-free nonreciprocal market access for essentially all products to the US market, (Hoekman and Ozden 2005). AGOA, as part of the US special and differential treatment granted to eligible SSA countries, is expected to have all the perversities of nonreciprocal trade preferences amply noted in the literatures.

Having seen the aforementioned limitations of preferential market access granted by developed countries to developing countries I return to the main question in focus. My focus in this research is that whether AGOA, an agreement that grants a preferential access for entire exports from eligible SSA

countries to the US market without reciprocal obligations, is evidently jeopardizing reciprocal liberalization efforts by the beneficiaries.

1.3 Objective of the study

The general objective of this paper is to show the implications of preferential treatments granted by developed countries to developing countries as a digression from improving their exports earnings. This will be investigated by representing SDT of developing countries by AGOA provision and analyzing the impact of this provision on trade liberalization variable in beneficiary SSA countries.

Specific objectives;

- To provide exhaustive review of literatures on AGOA and the impact of rules of origin on its success story.
- To provide a logical model by which the research problem at hand can be approached.
- To draw conclusions and policy recommendations from the implied results.

1.4 Data and Methodology

1.4.1 Data

The study utilizes secondary data to accomplish the task at hand. The data used for this study are obtained from World Bank's World Development Indicators database, WTO's Trade Statistics database, UN COMTRADE database, and IMF's DOTs CD-ROM 2008/09. The detail is presented under section 2.3.1 of this paper.

1.4.2 Methodology

The first set of econometric model concerns AGOA status as a dummy variable and appropriate estimation technique is applied after lagging the explanatory variables by a year as a first hand measure of addressing endogeneity problems, robust to heteroscedasticity and first-order autocorrelation. In this aspect, it is expected that the coefficient of the AGOA dummy to be positive

given trade policy proxy as a dependent variable. The second set of estimation addresses the potential endogeneity of AGOA since the granting and removal of AGOA eligibility could be a political decision. This time the variable AGOA is replaced by an appropriate instrument and then the IV estimation technique could be adopted in order to have greater confidence in the findings of the study if lagging the relevant regressors by one year makes sense for suspicion of the problem. The estimation technique, variables of interest and the variables functional form of relationships will be specified in the progress of the research process.

1.5 Significance of the study

This paper is significant in that it looks into the consequences of unilateral trade liberalizations from the opposite angle of the benefit it is believed to provide developing countries. Provided the hypothesis that AGOA provision induces trade protectionism would not be rejected, the study will suggest that SSA countries would better face reciprocal trade liberalization in the global trading regime. The research will then point out that the temporary gains from such provisions are misleading if there is any gain at all. Developing countries are expected to balance domestic political pressure from export sectors and import competing sectors lobby groups for trade policy adoption. Though the pressure from the export sector to force for more liberal trade policy is virtually absent due to the preferential access, the paper would suggest considering gradual trade liberalization exercises in designing trade policies.

Chapter Two

The Literature

2.1 Theoretical Review

Under this section I will try to present some relevant theoretical backgrounds to the research problem at hand. Interested readers may refer to the materials provided in the reference list from which I traced the relevant concepts for more exhaustive literature on the subject.

2.1.1 Preferential market access and MTL

Though preferential trade arrangements (PTAs) confer advantages to the beneficiary countries, a host of literatures question this argument by providing evidences to the contrary. For example, Elbehri and Wainio (2006) argued that continuing liberalization of trade regimes may erode benefits to the countries participating in them. According to them, this could be the reason why preferential exporters fear that multilateral trade liberalization (MTL) would likely displace some of their trade with consequences for the viability of their agricultural production. This raises the question of whether developing countries would gain more by holding on to the current preferences or by cross-the-board of multilateral liberalization.

The impact of preferential trade arrangements on MTL is not limited to preference receiving developing countries alone. It goes to the extent of jeopardizing liberalization incentives in the preference giving developed country like the U.S. as well. Limao (2008) stated that PTAs can affect MTL through various channels. They can divert scarce negotiation resources, alter the number of negotiating parties and their bargaining power, and affect a country's optimal multilateral tariffs in all or a subset of goods. According to Grossman and Helpman (1995), when producers form lobbies, the PTAs most likely to arise are those with partners that have relatively higher costs of production, thus causing trade diversion. This implies that these PTAs can reduce the incentive for multilateral free trade. This occurs because the export

rents they generate disappear when countries liberalize multilaterally, and so the producers that benefit from those rents oppose MTL.

Though the world in general would ultimately benefit from global free trade, the gain or loss to each and individual countries in the world depends on its systematic bargaining power in the global trading regime. Given this argument, preferential market access such as AGOA to eligible LDCs would affect effective bargaining power and create deliberate resistance to MTL by the beneficiary countries. Francois et al (2005) supported this view by arguing non-reciprocity has allowed many developing countries to self-marginalize themselves in GATT/WTO negotiations, as they received market access benefits with out having to actually engage in the process of negotiating concessions.

2.1.2 Administrative Burden and Preference Utilization

A key question when evaluating the benefits arising from trade preferences to the beneficiary countries is the costs of obtaining the preferences themselves. When traders request preferences they have to comply with administrative and technical requirements. The most important requirements are related to compliance with rules-of-origin (See Francois et al, 2005). These define the conditions that a product must satisfy to be originating from the exporting country that has been granted the preferential access. According to Francois et al (2005), the main justification for these rules-of-origin is to prevent trade deflection, whereby products from non-participating countries destined to the free trade area partner are redirected through the other free trade partners to avoid the payment of customs duties.

Compliances with the rules-of-origin and their administrative costs is the main constraint that limits the benefits from preferential market access like AGOA. For example, Heokman and Ozden (2005) stated that any such rules give rise to enforcement costs, but they may also be captured by import-competing lobbies seeking to make them prohibitively costly. They found that one-quarter of trade flows paid the applicable MFN duty rather than claim duty-free treatment.

Accordingly, the rules-of-origin were equivalent to an import tariff between 3 and 5 percent. Given that MFN tariffs have fallen over time, this further reduces the effective value of tariff preferences. Heokman and Ozden (2005) further noted that rules-of-origin also have indirect effects. They make it more difficult to achieve economies of scale, since input requirements may vary to destination markets of the final products. They also generate an incentive to import components and intermediate inputs from the preference granting country, potentially giving rise to economic inefficiency and additional trade diversion.

For these and other related reasons compliance costs to preferences take significant proportion of gains from them. For some developing African countries, Francois et al (2005) argued that the situation is even worse in the case of compliance costs due to information asymmetry, institutional inefficiency, and related problems.

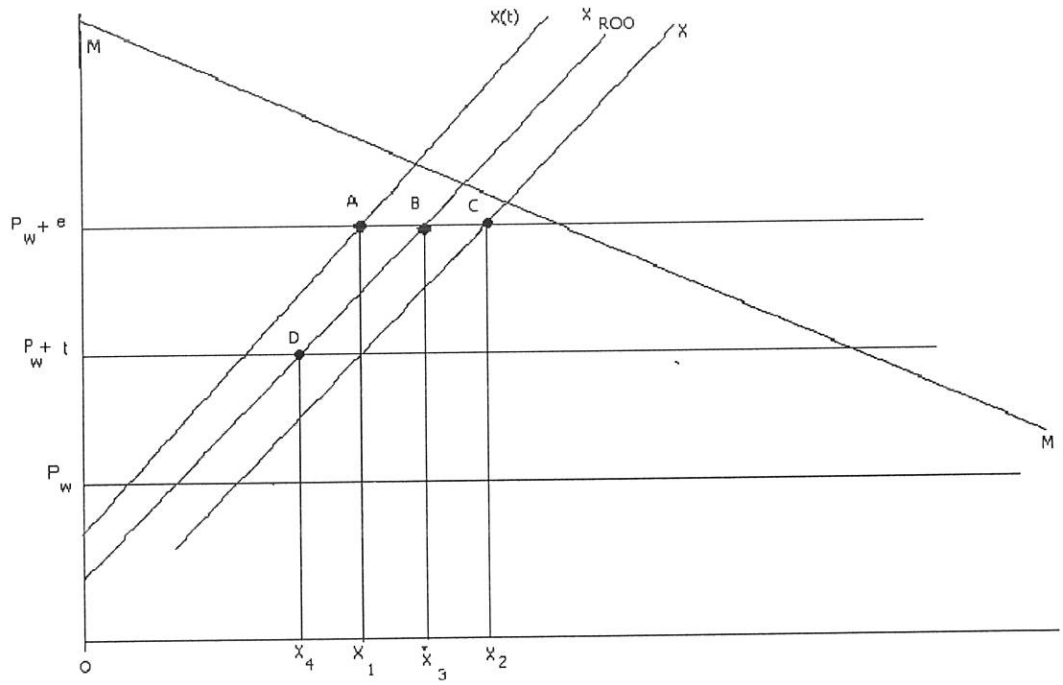
2.1.3 The Impact of ROO on AGOA Equilibrium

Apart from the theoretical argument that it triggers protectionism in developing countries, the benefit from the AGOA provisions is severely affected by the rules of origin as we mentioned in the previous sections. To substantiate this lets have a look at a simple partial equilibrium analysis that reveals the impact of ROO on AGOA equilibrium. Here we consider the case of a small African country; say Mauritius, with an export supply curve represented by the upward sloping schedule X. This curve reflects the optimal unconstrained choice of inputs made by exporters. The U.S. import demand for apparel products is represented in the demand curve MM. In the absence of tariffs and other restrictions, this small country faces an infinitely elastic demand curve at the going world price P_w. If the U.S. levies a tariff of t on all imports, the domestic price in the U.S. shifts to P_w+t. The small country (Mauritius's) export supply curve also shifts by an equal magnitude to X(t).

The pre-AGOA scenario is one where Mauritius's competitors face export quotas. This has the effect of raising the price in the U.S. above the tariff

inclusive price to P_w+e, where e is the domestic tariff equivalent (in the U.S.) of the quotas faced by other (large) suppliers to the U.S. Under this situation Mauritian exporters receive a price equal to the domestic price P_w+e minus the tariff that has to be paid. This equilibrium is denoted by point A in the following diagram. With the enactment of AGOA the effective supply curve of Mauritian exporters shifts down, while prices in the U.S. remain at P_w+e. How much the export supply curve shifts down will depend on the ROO. For the least developed country which faces no ROO until 2004, the export supply curve will be X as it can continue to inputs without constraints and the resulting equilibrium wil be at point C, with the increase in exports amounting to X_1X_2. For a developing beneficiary country like Mauritius which faces ROO, the ROO will increase the cost of exports and the new export supply curve will be X_{roo}, with the vertical distance between X and X_{roo} representing the additional cost imposed by the rules of origin.

Fig. 1 Partial Equilibrium under AGOA preference and the effect of ROO



Source: Mattoo et al, (2002)

The equilibrium will be at point B in the above figure, with the increase in exports equal to X_1X_3. The distance X_2X_3 can be thought of as the cost in forgone exports due to the rules of origin. Mattoo et al, (2002) stated that the same rule of origin will apply to both sets of African countries from 2005 onwards so that the export supply curve will be represented by X_{roo}. Consequently, the price in the U.S. market will decline to P_w+t and the new equilibrium will be at point D, where the rule-of-origin-inclusive export supply curve intersects the tariff inclusive curve P_w+t.

2.1.4 Preference Erosion

Another cornerstone for developing countries receiving tariff preferences to resist MTL is fear of market loss due to preference erosion. Preference erosion refers to declines in the competitive advantage that some exporters enjoy in foreign markets as a result of preferential treatment, (Alexandraki and Lankes, 2004). Alexandraki and Lankes (2004) noted that preference erosion can occur when export partners eliminate preferences, expand the number of preference beneficiaries, or lower their MFN tariffs with out lowering preferential tariffs proportionately. Francois et al (2005) also defined preference erosion as a situation involving the elimination of tariffs on the non-preferential suppliers. This means that elimination of the tariffs on remaining third-country suppliers, given the duty-free access already for preferential suppliers, implies that third-country exporters see their exports increase. Hence the preferential supplier sees a drop in demand for his/her exports which results in a partial loss of the benefits from the original preference scheme. Furthermore, Hoekman et al (2006) argued that any reductions in MFN tariffs lower the preference margins that eligible LDCs gain from granted preferences. The implication is that the global trend towards MTL threatens gains to preference recipient countries for which reason exporters from these LDCs certainly lobby against MTL giving rise to trade protectionism. On the other hand, Hoekman et al (2006) noted that unilateral preferences granted by OECD countries introduced an inevitable tension between 'more preferred' developing countries-typically beneficiaries

from pre-existing colonial regimes, and other developing countries with respect to the effects of MFN liberalization by preference granting countries. For instance, Francois et al (2005) estimated that full EU liberalization on an MFN basis would translate into real income loses of $460 million for African developing countries.

2.2 Empirical Review

Since empirical investigation on tariff preferences in general including GSP will be too much extensive, I will restrict myself to the case of AGOA provision by the U.S. to eligible SSA countries. Hence the empirical counterpart under the case of the performance of AGOA provision can be demonstrated by trade flows between SSA and the U.S. after the implementation of the Act in May 2000.

2.2.1 The U.S.-SSA Trade Profile

U.S.-SSA trade volume has been showing an increasing trend even before the enactment of AGOA in May 2000. According to Gerstenfeld and Njoroge (2004), the U.S. has been buying 75% of Angola's oil exports during which Angola has a daily production of approximately 1 million barrels of crude oil, 22% of the Democratic Republic of Congo's products such as copper, coffee, petroleum and diamond as well as crude oil from Congo Brazzaville, which is 15th largest U.S. supplier of crude oil. These authors further elaborated that the U.S. provides only 10% of Gabon's needs which include petroleum-related machinery and other heavy equipment, but purchases about two-thirds of its oils as well as minerals and timber. The U.S. also exports wheat to Nigeria, which is the 5th largest importer of U.S. wheat, while Nigeria was the 5th largest supplier of crude to the U.S. in 1998.

However, after AGOA, both exports and imports of the U.S. to and from SSA notably grew over the years since the Act is signed in to law. For example, USITC (2009) reports that U.S. total trade with SSA increased by 28.0% in 2008. U.S. exports increased by 29.2% to $18.5billion while its imports grew by 27.8% to $86.1billion during the same year. Here imports of crude oil by the

U.S. from this region accounts for 79.5% of total imports during the period under consideration, (USITC 2009). Among all products, exports of apparel showed the highest growth following the enactment of the Act, increasing from zero in 2000 (no program) to $337million in 2001 though the majority of this benefit has been limited to only seven countries (Kenya, Lesotho, Madagascar, Malawi, Mauritius, South Africa, and Swaziland) (Shapouri et al, 2003). Though the improvement in total exports volume for the region following the enactment of AGOA is appreciable, there has not been much progress in increasing their AGOA exports for other countries of the region. On this account, Tadesse and Fayissa (2008) attribute this problem to the fact that U.S.-Africa trade is dominated by imports from a few African countries.

Table 1: U.S. Trade with Sub-Saharan Africa ($ million)

	2005	2006	2007	2008
U.S. Exports	10,210.7	11,859.7	14,296.1	18,471.9
U.S. Imports	50,364.6	59,092.8	67,357.8	86,052.7

Source:- USITC, 2009

During the year 2008, U.S. imported 29.8% more than what was reported in the previous year which include duty free imports from AGOA-eligible countries under both the U.S. GSP and the expanded AGOA, plus textile and apparel items imported duty-free and quota-free under AGOA provision, (USITC, 2009). More importantly, imports of petroleum products by the U.S. under AGOA account for 92.3% share of overall imports. According to USITC (2009), with this feul products excluded, AGOA imports by the U.S. were $5.1billion, increasing by 51.2%.

2.2.2 The Political Economy of AGOA

Shapouri et al, (2003), by arguing that AGOA is essentially similar to other preferential market access programs, stated that it is a preferential access to the U.S. market for eligible products from designated SSA countries. The

provision also includes access to U.S. credit and technical expertise. AGOA therefore allows duty-free market access for virtually all products as long as they are produced in and/or imported from beneficiary SSA country. The commodities included extend to agricultural commodities, petroleum products, minerals and manufacturing, and apparel and footwear.

However, critics of policy changes in general and AGOA in particular question the potential benefits of unilateral policy initiatives by arguing that (i) African exports to U.S. are dominated by petroleum products that have relatively low value added and (ii) the existing U.S.-Africa trade is dominated by imports from a few African countries, (Tadesse and Fayissa, 2008). AGOA, as an SDT of eligible SSA countries by the U.S. government, has the aim of improving export earnings, integrating these countries to the global trading system, and foster their industrialization efforts. Hoekman and Ozden (2005) argued that if greater trade opportunities increase growth-something many believe is the case-the WTO process of gradual, negotiated liberalization supports development. However, the existence of such a link remains a strongly debated issue. These authors underlined that in specific circumstances there is a development rational for trade interventions. This argument can lead to the conclusion that many of the GATT/WTO provisions like the SDT allow developing countries wide leeway to retain protectionist trade policies. For example Hoekman et al, (2003) argue that the traditional approach to SDT has not been a success in promoting development. They pointed out that the approach is fundamentally flawed in that it helped create incentives for developing countries not to engage in the process of reciprocal liberalization of trade barriers and the rule making process.

Panagariya (2002) nicely summarized that the seemingly development assistance of developing countries was more pronounced at the Doha round of negotiations in order to assure active participation of developing country representatives during the summit. The Doha Round trade negotiation on the

implementation of the UR agenda was taken to be the round in which developing countries have been considered in depth. The imbalances in bargaining power between developed and developing countries witnessed during the UR have been somewhat seem to balance at Doha, (Panagariya, 2002). According to Panagariya (2002) this was manifested by the so called special and differential treatment (SDT) of developing countries by their developed counter parts which includes granting some products from developing countries free access to industrialized countries markets. However, though the Doha declaration makes ample mention of special and differential treatment of developing countries, much of it is of a cosmetic nature (Panagariya, 2002). For example, Hudec (1987) as cited in Ozden and Reinhardt (2005) stated that by de-linking foreign market access from the recipients own trade policy, nonreciprocal preferences remove the major incentive that export industries have for opposing protectionist trade policies at home. Hence, GSP/AGOA shifts the political balance in the beneficiary country to the import competing sector. This effect is further compounded by domestic politics in the donor country. Since significant increase in the export levels of the recipient country leads to the removal of the preference by the donor state, recipient of the preference has perverse incentive to implement even more protectionist policies to limit its exports, (Ozden and Reinhardt, 2005). Preferences in general are supposed to discourage liberalization with in the beneficiary countries themselves. Panagariya (2002) concluded that once exporters have achieved free access to the markets of major trading partners, their incentive for using internal liberalization as an instrument of encouraging the partner to open its markets disappears. Alternatively, if exporters fear losing preference status if exports cross a certain threshold, they may be more accommodating of protectionist policies at home.

2.2.3 AGOA and Its Rules-of-Origin

Tadesse and Fayissa (2008) asserted that the presence of AGOA provision has increased total imports volume of U.S. from SSA countries. On this account

Tadesse and Fayissa (2008), by considering what they call import initiation and import intensification effect on U.S. imports from SSA, concluded that AGOA has import initiation impact while its intensification impact is quite marginal. However, Mattoo et al, (2002) noted that it is important to consider not just the import coverage but the magnitude of current trade restrictions. For example, a large portion of the increased coverage under AGOA is accounted for by petroleum products, which faced average tariff of only 1.5 percent prior to AGOA. They argue that the really important incremental benefits provided by AGOA relate to the two non-petroleum categories whose benefit will hinge on rules of origin that African exporters will have to meet: apparel products and whole range of non-apparel products, including footwear, agricultural products, watches etc. Pre-AGOA average tariffs of these products range from 26 percent for beef and as high as 350 percent for tobacco, (Mattoo et al, 2002).

According to Mattoo et al, (2002), rules of origin (ROO) under GSP require that 35 percent value addition with in the customs territory claiming preference. For non-apparel products eligible for duty-free access under AGOA, the 35 percent value added content can be met also by counting production or materials from other beneficiary countries or the United States. The ROO also require the fulfillment of maintaining records validating facts like proof of production, value addition, shipping papers etc for a period of five years from the date of entry.

Brenton and Ozden (2006) stated that AGOA's provision on ROO for apparel require the apparel be assembled in eligible SSA countries and the yarn and fabric be made either in the U.S. or any African countries. However, apparel imports made with regional fabrics and yarn are subject to a cap of 1.5 percent of overall U.S. imports, growing to 3.5 percent of overall imports over an eight year period. This means that the ratio of tariff-free imports from this region to the U.S. as percent of U.S. total imports is considered for the Act to be viable. Unlawful shipment and the use of counterfeit documents are also unacceptable according to the ROO.

The challenging feature of ROO for preference recipients is multidimensional. It is related to sourcing inputs and designing production structures to ensure compatibility with the requirements stipulated by the ROO. For example, Brenton and Ozden (2006) stated that the costs in terms of documentation, maintenance of complex accounting systems and the expenses incurred in obtaining the relevant certificates, in proving conformity with the stated rules. More importantly, according to the authors, ROO are often designed to discourage imports of certain products and especially the use of inputs from the rest of the world. This implies that ROO become another trade policy tool that supports protectionist political and policy goals.

2.2.4 Arguments for AGOA and Its Provisions

As we will see in the next section, the success of AGOA in meeting its predesigned objectives for SSA is negligible. To the contrary, some literatures suggest that AGOA can arguably benefit the eligible countries of the region. According to Shapouri et al,(2003), one of the more important provisions is for the export of textiles and apparel, which face relatively high U.S. import tariffs. The Act grants duty free access for countries with per capita incomes below $1,500 that export apparel assembled in their countries with imported regional fabrics. The provisions for apparel and clothing are very important for the region because cotton is an important export for many of the countries; thus, the program could provide opportunities to increase value-added exports.

A host of literatures argue that movement towards freer global trade will benefit involved parties and the world at large at least in the long run (See Tadesse and Fayissa 2008). According to Tadesse and Fayissa (2008), free trade agreement be it unilateral or bilateral is expected to raise trade flows among the partners to the agreement, thereby contributing to enhanced long run economic growth of the parties involved. They noted that proponents of AGOA thus argue that by expanding preferential export access to the U.S. markets in more than 2000 different products, AGOA has the potential to increase trade flows between the

U.S. and SSA countries and thereby spur long term economic growth of the eligible countries. The authors in their analysis showed that U.S. trade with SSA countries after the implementation of AGOA seems to improve. For example, between 2004 and 2005 alone, there has been a 40% increase in the total volume of U.S. imports from this region. However, they noted that whether these changes are the result of the unilateral trade policy concession, or the inertia in the eligible SSA countries global trade pattern, or adjustments in other economic policies in the SSA countries, or a combination of these factors should be well investigated.

Some writers do not judge the success story of AGOA more than just an opportunity by arguing that it will provide opportunities to Africa. For example, Harris (2009) argued that non-oil exports could be raised by 8-11% even on conservative estimates about Africa's supply response. However, these benefits are undermined for the reason that these products are subject to rules of origin. Harris (2009) further noted that as of May 2008 U.S. exports to SSA was $14.4billion while imports increased from the 2001 total of $21billion to $67billion in 2007. 98% of U.S. imports from AGOA beneficiary countries entered the country duty free. Apparel imports accounted for almost 40% of this sector and was dominated by five countries among which Lesotho takes the lion's share.

2.2.5 Some Critics on AGOA and Its Provisions

Some literatures question that whether AGOA is a political instrument or really a trade agreement. For instance, Labor Resource and Research Institute (LaRRI) 2007 report noted that AGOA is not a trade agreement, but rather a unilateral trade preference program that offers SSA countries access to the U.S. market. Thus this characteristic makes it unreliable as it is not binding and then America can withdraw or change it at any moment. This implies that all the costs incurred in developing infrastructure would be a loss and a waste of public fund. Furthermore, Mattoo et al, (2002) argued that the rules of origin

are unilaterally determined by U.S. Congress and are outcomes of negotiations among conflicting U.S. interests. LaRRI (2007), after criticizing that AGOA does not target the agriculture sector on which 70% of the SSA population is engaged, also criticized the eligibility criteria to dampen its success. According to the report, the requirements of establishing market based economy and the elimination of barriers to U.S. trade and investment and the protection of intellectual property rights continue to be of great concern. The report argues that experience has shown that adopting market-based economies does not necessarily lead to reduced poverty or creation of jobs. Compliance costs to the rules of the game like rules-of-origin are another bottleneck to the success of the Act. For example, Francois et al (2005) estimated average total compliance costs for developing countries with the rules-of-origin to be 6.2 percent of the goods traded in 2001.

Moreover, the substantial increase in trade between U.S. and SSA is concentrated among very few oil-producing countries such as Nigeria, Chad, Angola and Gabon. The eligibility criteria and product category defined by the U.S. government is found to be a bottleneck to AGOA success story. For instance, Mushita (2001) noted that the eligibility criteria are not favorable to the interests of the majority of African countries. According to this writer, this is as a result of experiences most countries went through within the context of trade liberalization, which involved opening up their markets to global corporations, privatization of national institutions and reduction of government spending. He argued that these measures resulted in many governments foregoing programs that provided for social safety-nets or cutting basic social services and turning from domestic food production to export-oriented cash cropping.

One of the objectives of AGOA provision is that it is the best way to push Africa into globalization. However, Nyang'oro (2001) argue against this justification. Nyang'oro (2001) noted that Africa is already part of the global economy.

Accordingly, the complaints that many Africans have about their role in the global economy is that the region is still based on the old traditional dependency relationship which has characterized North-South relations for centuries. According to Nyang'oro (2001), AGOA is not about to change the substance of that relationship. Indeed, arguably, AGOA seeks to replicate a set of colonial ties with African countries though U.S. did not have such colonial relation with Africa.

According to Shapouri et al (2003), it is clear to observe that there is huge disparity in levels of incomes among the individual countries of the continent of Africa. Capacity to react to new market opportunities like AGOA is by large determined by infrastructure and increasing export production compatible with the requirements. However, this capacity is limited to a few relatively high income eligible countries for the Act. On this note, Shapouri et al, (2003) argued that start-up investment costs inhibit better exploitation of opportunities like AGOA. The reason is that low income countries have limited capacity to expand production in the short run which is the case for the majority of SSA countries.

2.3 Theoretical Approach of the Study

Approaching the research problem at hand requires proxing trade policy and identifying its major determinants. However, Dollar and Kraay (2001) argued that it is hard to come up with clear measures of trade policy. According to these authors, much of the cross-country variation in trade volumes reflects countries' geographical characteristics, such as their proximity to major markets, their size, or whether they are landlocked.

Thornton and Molyneux (1995) presented a theory that the real GDP-tariff relationship is negative and consistent with their finding which showed trade liberalization brought about real income growth. However, O'Rourke (2000) stated that economic theory is ambiguous as regards the relationship between trade policy and economic growth. For example, there was an empirical finding

that showed positive correlation between tariffs and growth in the 1930s, and negative correlation was evident for the twenty years between 1970 and 1990 while there were no such relationships in the 1950s and 1960s. According to O'Rourke (2000), individual countries could have benefited from protection in a situation when unemployment was high, and other countries were already adopting protection. Dash (2005) on the other hand argued that the coefficient of real GDP is expected to have a positive sign when imports are regressed on real GDP ceteris paribus. However, according to Dash (2005), if the rise in real income is due to an increase in the production of import substitute goods, imports may decline as income increases. These theories imply that the relationship between trade policy and income growth rate is more of an empirical question.

Raballand (2003), in his interesting work on the impact of landlockedness on trade flows argued that landlocked countries in Africa have burdens of more than 10 percent higher costs on their imports. This is the case for 13 out of 15 landlocked countries in Africa with seven of them exceeding 20 per cent. Raballand (2003) stated that difficult access to port facilities should not seriously impede trade and economic growth on developing countries. However, using a gravity approach, he found that there is a significant negative relationship between landlockedness and trade flows after controlling for other variables like GDP, infrastructure and institutions. According to the estimation with a dummy variable, Raballand (2003) found that being landlocked reduces trade flows by more than 80 per cent mainly due to transport costs. In our case, one should not expect that significant negative coefficient for this dummy variable since the tariff preference will at least partially offset the impact of landlockedness to significantly affect trade flows between SSA and the U.S. in the presence of AGOA.

Though one can proxy trade policy by changes in unweighted average tariffs as well as trade volumes, in many countries non-tariff barriers range from explicit quotas and licensing schemes to local content requirements and health and

safety standards. These constitute significant obstacles to trade that cannot be captured by average tariffs. Therefore, trade divided by GDP is preferred to average tariffs since this in part reflects these non-tariff barriers to trade, (See Dollar and Kraay, 2001; Ozden and Reinhardt, 2005). Based on this argument, the approach in this paper is to use both trade policy measures separately to evaluate the significance of the AGOA status on these trade policy proxies.

2.3.1 Methodology and Model Specification

2.3.1.1 Methodology

To do this the study uses secondary data obtained from different sources: the World Bank's World Development Indicators database, WTO's Trade Statistics database, UN COMTRADE database, and IMF's DOTs CD-ROM 2008/09. Panel data approach is adopted for its obvious advantages in a time of short time series data as well as variation across countries. The time series section of the data includes an 8 years observation for each cross-sectional (country) units from the years 2000 to 2007 for 27 beneficiary SSA countries which provide 216 data points in the panel for the variable $Closure_{it}$. For the other dependent variable $Tariff_{it}$, 29 countries with relatively complete data for the same time period are included in the analysis. Though related works use unweighted average tariffs to proxy trade policies directly, simple mean tariffs are used in this study due to availability of data. From the very nature of the data involved, heteroscedasticity and autocorrelation are the possible complications that need attention. To this end, OLS regressions that report Newey-West standard errors that will handle heteroscedasticity and autocorrelation shall be reported. The number of years and countries included in the sample depend on the extent of data availability on the variables of interest.

2.3.1.2 Model Specification

Among the variables that can theoretically influence protectionism in addition to tariff preferences like AGOA, this study assumes that factors mentioned under section 2.3 that are controlled for have significant impacts on trade policy decisions in beneficiary countries. Considering manageability and data

availability, I continue to explore if there is any logical economic variable to be included for the robustness of the result. To show the impact of AGOA preference in such a partial equilibrium analysis, an appropriate econometric model can help with the recognition of the weak and strong sides of such ceteris paribus assumptions. This study follows similar approach to that of Ozden and Reinhardt (2005) which analyses the impact of U.S. GSP program on 154 beneficiary developing countries' trade policies in the world. They found that preferential market access like GSP made preference recipient countries resistant to multilateral trade liberalizations by leading them to trade protectionism. Their research included beneficiary countries from Africa, Asia and Latin America where the surveyed countries' experiences, level of development and institutional set up and quality are obviously different. This research therefore adopts Ozden and Reinhardt (2005) model to see whether the AGOA provision, which is essentially similar to GSP, will have similar implications on trade policy in SSA. Having this in mind, the trade policy measure defined above is assumed to have the following functional form with the explanatory variables which provides us with the benchmark model to be estimated. This equation can be estimated using Fixed Effects or Random Effects regression based on Hausman test.

$$Y_{i,t}=\theta+\beta_1 AGOA_{i,t-1}+\beta_2 lnGDP_{i,t-1}+\beta_3 lnPCI_{i,t-1}+\beta_4 LLocked_i+\beta_5 Growth_{i,t-1}+u_{i,t}$$

Where: $Y_{i,t}$ represents either the variable $Closure_{i,t}$ or $Tariff_{it}$ accordingly

θ is the intercept term

$u_{i,t}$ is the stochastic error term fulfilling classical assumptions.

In all sets of regressions the coefficient of AGOA agoafraction, β_1, is expected to be positive so that tariff preference and trade protectionism are positively correlated. It would be constructive to lag all the explanatory variables by one year (except LLocked) as a first-cut method of addressing concerns about endogeneity.

Key Variables

AGOA Status

The dummy variable $AGOA_{i,t}$ is 1 if country$_i$ is a United States AGOA beneficiary in year t; 0 otherwise. This information was collected from www.agoa.org. The AGOA dummy simply tells us whether country i is AGOA eligible in year t or not. It does not tell us the magnitude of the eligible country exports supplied to the U.S. market. To capture this effect a variable $agoafraction_{it}$ is introduced which is obtained by dividing AGOA export to total export for country i in year t.

Trade Policy Measures

The basic question that this paper attempts to address is the impact that the presence of AGOA has on beneficiaries' trade policy measures. To address this question, it is necessary to proxy a trade policy measure by appropriate economic variable. Available data on aggregate national trade protection are notoriously imperfect. The most common method of measuring protectionism is to examine trade flows, not policy, in the form of trade volume divided by GDP, mainly because of data availability. Accordingly, I constract a variable as total imports as a percent of GDP in a particular year which can be designated by $Closure_{i,t}$. Hence, $Closure_{i,t}$ is a country *i's* total imports share of GDP in year t. Each value obtained in this manner can be subtracted from zero so that higher values represent greater import restrictiveness. According to Ozden and Reinhardt (2005), this variable has the virtue of capturing the effect of non-tariff as well as tariff barriers since the impact of all forms of trade restrictions is reflected in import volume changes. However, many authors like Dollar and Kraay, (2001) have argued that trade openness reflects not just policy but also geography and market size whose effect will be controlled subsequently. Among the measures which reflect policy more directly, tariffs play important roles, (Ozden and Reinhardt, 2005). Depending on data availability, I also want to include average tariffs as dependent variable in addition to import-GDP ratio and estimate OLS models using these two dependent variables separately.

Control Variables

Market Size

Countries with larger markets may be more diversified and thus have a smaller proportion of GDP involved in trade, (Dollar and Kraay, 2001). To take account for this important variable I introduce a control for country *i's* market size in year t as natural logarithm of real GDP at constant 2000 U.S. dollar, $lnGDP_{i,t}$ which should affect the dependent variable(s) in line with conventional expectations.

Per Capita Income

Wealthier countries tend to have lower trade barriers, (Ozden and Reinhardt, 2005). High income is also a statistically predictor of removal from AGOA eligibility. For example AGOA eligibility requires a per capita income of not more than $1500 for the beneficiary developing country, (Mattoo et al, 2002). In order to limit the potential for spurious inference about the effects of AGOA, it requires controlling for natural log of real per capita income, $lnPCI_{i,t}$.

Geography

It is quite obvious that a country's distance from important suppliers and markets affects transport costs and serves as a substitute for policy-created import barriers. To this end it would be logical to control for location where the landlockedness dummy $LLocked_i$ is 1 if country i is landlocked and 0 otherwise. This variable is taken to be time invariant.

Rate of Market Size Growth

The business cycle is often said to affect trade policy. According to Ozden and Reinhardt (2005), economic down turns are characterized by triggering greatest protectionist pressures on policy makers. For this reason, it is reasonable to control for GDP growth $(Growth_{i,t})$ in the estimation procedure.

Chapter Three

Data Analysis and Results

Under this section the data obtained from the sources described under section 2.3.1.1 of this paper shall be used to estimate the benchmark model specified under section 2.3.1.2 of the immediate previous chapter by fixed effects or random effects. The data are balanced panel for which limited missing values for $Tariff_{it}$ are imputed using AmeliaView package and average values are obtained instead of dropping all country units with missing observations to avoid sample selection bias. The Hausman test shall be conducted and reported for specification selection among fixed effects and random effects specifications pertinent to panel data estimation techniques. However, estimates obtained in both cases shall also be reported separately for comparison purposes.

3.1 Descriptive Statistics

Table 3.1 Statistical Summary of the data

Variable	Obs	Mean	Std. Dev.	Min	Max
closure	216	-42.60116	19.99431	-180.39	-19.66
gdp	216	1.21e+10	2.96e+10	1.99e+08	1.77e+11
lngdp	216	22.01425	1.471837	19.1106	25.89893
pci	216	1031.884	1669.391	81.01	7578.85
lnpci	216	6.122273	1.149531	4.394573	8.933117
growth	216	4.912083	5.672428	-31.3	33.63
agoafraction	216	.1348738	.1637698	0	.8471244
tariff	232	16.0569	6.46346	5	41

Table 3.1 above displays statistical summary of the data used in this research both at level and in their natural logarithm version for GDP and per capita incomes. As can be witnessed, the deviation from mean values for GDP and per capita incomes at level is very large as reflected by their large standard deviations while it is quite moderate for the remaining variables. Therefore,

GDP and per capita incomes are included in their natural logs to have fewer deviations in the data set while others are treated at levels since their deviations are very small.

3.2 The appropriateness of Estimation: Fixed Vs Random Effects

In principle, random effects estimator is more attractive because observed characteristics that remain constant for each individual are retained in the regression model. In fixed effects estimation, they have to be dropped. Also, with random effects estimation we do not lose n degrees of freedom, as is the case with fixed effects, Dougherty (2006). However, it is difficult to assume that countries included under this study are drawn at random from a pool of all countries in the world so that the unobserved effect be distributed independently of the control variables included in the model. Therefore, it requires conducting the Hausman test to see whether the fixed effects and random effects estimator are significantly different. An important reason why the two estimators would be different is the existence of correlation between the regressors (x_{it}) and individual fixed effects. When there exists no systematic difference between the two estimates, which is the null of the Hausman Test, the random effects GLS estimators are preferred since they are consistent and efficient as compared to their fixed effects counterparts. In case there is systematic difference between the two estimates, i.e, the null is rejected, the fixed effects estimators are appropriate though they are inefficient but consistent.

Under the null hypothesis the Hausman test statistic follows a chi-squared distribution. With 4 degrees of freedom the critical value of chi-squared at the 0.1 percent level is 23.97, so we concluded that we should be using fixed effects estimation. Notwithstanding this result, estimates obtained in both specifications will be put under appendix B for comparison purposes and the fixed effects regression is reported here according to the Hausman test result. Since fixed effects estimation drops the dummy for the variable landlockedness,

a regression result that will take care for this problem is presented in table 3.6 and 3.7 under the next section.

3.3 Estimation Results

Under this section results obtained using different alternatives are presented and further explanations are provided under section 3.4.

Table 3.2 Panel Regression for Trade Policy in SSA:

	Dependent Variable: $Closure_{it}$
Explanatory Variables	Fixed Effects
Cons	390.585 ***
	(1.81)
agoad	-3.979
	(1.03)
Lngdp	-45.019*
	(2.93)
Lnpci	92.008*
	(4.17)
LLockedd	(dropped)
Growth	-.371**
	(2.56)
R^2: overall	0.3044
D-Watson	1.34
No of obs.	216
No of Countries	27
Prob > F	0.0001

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

Table 3.2 shows the estimation results of policy variable on the specified explanatory variables. Though the coefficient of the variable of interest *agoad* is negative, it is statistically insignificant at any reasonable significance level. The random effects estimator also appears to be insignificant though it displays positive sign. In this regression AGOA is included as dummy variable. The AGOA dummy admittedly glosses over important distinctions between countries with widely varying amounts of actual AGOA benefits. In order to capture that

variation, it is important to construct the variable *agoafraction*$_{it}$, defined as country *i*'s AGOA exports to the U.S. as a percent of its total exports to the world in year t. The next set of regression is run by replacing the AGOA dummy by *agoafraction* for the same dependent variable and presented in table 3.3 below.

Table 3.3 Panel Regression for Trade Policy in SSA:

Dependent Variable: *Closure*$_{it}$	
Explanatory Variables	Fixed Effects
Cons	485.337**
	(2.36)
agoafraction	9.307
	(1.10)
Lngdp	-50.095*
	(3.41)
Lnpci	93.964*
	(4.31)
LLockedd	(dropped)
Growth	-.338**
	(2.31)
R^2: overall	0.3110
D-Watson	1.39
No of obs.	216
No of Countries	27
Prob > F	0.0001

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

Table 3.3 is another version of table 3.2 in that the variable *agoafraction* is substituted for the AGOA dummy and everything else the same. The difference between the two sets of regressions is observed in the *agoafraction* coefficient under both specifications. The coefficients appear with a positive sign in which case the coefficient for fixed effects is statistically insignificant at any tolerable level of significance while the random effects coefficient is marginally significant at 10 percent level of significance (See appendix B). GDP and per capita incomes are significant in explaining protectionism in the region with the

conventional sign as implied by the theory. Growth rate and landlockedness are marginally insignificant to explain trade policy. The opposite sign of AGOA in table 3.3 as compared to table 3.2 may indicate that as export earning increases the beneficiaries may build up their capacity to respond to the opportunity and then start to become protectionist as their exports increase.

The regression results presented in tables 3.2 and 3.3 considered trade policy proxied by import-GDP ratio which is indirect representation of the policy. The importance of this variable is that it is assumed to capture both tariff and non-tariff barriers to trade. However, researchers criticize that this variable seldom represents trade policy variable since it is indirect and complete data for imports may not be available for poor countries like in SSA. Among the economic variables that have direct relationships with trade policy are tariffs. This variable has also its own limitations in that non-tariff barriers can constitute significant share in trade protection measures. As an alternative approach tariffs as trade policy proxy are regressed on the same regressors for the current task suggesting the future research in this area to consider non-tariff barriers as well. The result for regression of policy variable *tariff* instead of *closure* on the same explanatory variables is presented in table 3.4 as follows.

As it was the case for the variable *closure,* AGOA is included as a dummy in the first case and then the AGOA dummy is replaced by the variable *agoafraction* in the second phase of the regression where *tariff* is included as a dependent variable in place of *closure.* The result is presented in table 3.4 and table 3.5 under the fixed effects and the random effects estimation is available in the appendix B section.

Table 3.4 Panel Regression for Trade Policy in SSA:

Dependent Variable: $Tariff_{it}$	
Explanatory Variables	Fixed Effects
Cons	162.419**
	(2.52)
agoad	-2.222**
	(2.13)
Lngdp	-7.582***
	(1.72)
Lnpci	3.829
	(0.60)
LLockedd	(dropped)
Growth	-.056
	(1.18)
R^2: overall	0.0615
D-Watson	1.09
No of obs.	232
No of Countries	29
Prob > F	0.0000

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

With its pros and cons mentioned earlier, this direct policy measure has consistently shown that the presence of AGOA provision doesn't trigger protectionism in the preference beneficiary countries in the region given the low overall R-squared. This is again contrary to the null of the study and in fact the data shows that the preference is contributing to liberalization efforts in the region. The intuitions why this is in fact the case is taken up under the conclusion section coming soon. As what was done under the case where AGOA dummy and *agoafraction* were substituted for robustness earlier, similar procedure is repeated and presented in table 3.5 by including *agoafraction* against AGOA dummy for the same dependent variable $tariff_{it}$.

Table 3.5 Panel Regression for Trade Policy in SSA:

Dependent Variable: $Tariff_{it}$	
Explanatory Variables	Fixed Effects
Cons	226.029*
	(3.69)
agoafraction	2.353
	(0.80)
Lngdp	-11.351*
	(2.70)
Lnpci	6.925
	(1.08)
LLockedd	(dropped)
Growth	-.047
	(0.96)
R^2: overall	0.0762
D-Watson	1.07
No of obs.	224
No of Countries	28
Prob > F	0.0003

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

In the case of *agoafraction* variable inclusion there is no meaningful relationship between average tariffs and preference granted substantiated by the data though the coefficients have seemingly positive sign. The overall R-squared statistic is also very low though it is not that important in panel data analysis. Swaziland is dropped from this regression due to lack of data on AGOA export variable. The overall specification of all models as evidenced by F-statistic is well justified except under the random effects specification provided in the appendix. In all the cases, fixed effects are better fitted than the random effects counterpart consistent with what is implied by the Hausman test.

The robustness of coefficients obtained through this analysis largely depends on sensitivity issues like heteroscedasticity and first-order autocorrelation given the nature of the data exploited in this research. Suspecting endogeneity of the AGOA variable is another area of interest that needs attention since the

granting and removal of AGOA is some times a political decision. We claim nothing about the direction of causality here. As far as endogeneity is concerned, we would be safe by lagging all the explanatory variables by one year except landlockedness to address the problem. The result shows that AGOA in the form of dummy variable is related negatively to tariffs as before at 5% significance level. In all the remaining cases, the coefficients are not statistically different from zero and hence endogeneity is not a big deal to influence the findings. The results are provided under appendix B section.

Turning back to heteroscedasticity and autocorrelation issues, close observation of the result tables provided above shows very low d-watson statistics in almost all cases. This is a clear warning to suspect positive autocorrelation in error terms of the regressions. Therefore, it is unquestionable that robustness of the coefficients of the relevant variables requires handling these complications. To this end the standard errors of regressions reported need to be heteroscedasticity and autocorrelation consistent (HAC). As an alternative approach HAC standard errors are reported in the next set of regressions which are known as Newey-West standard errors. Hence these regressions are OLS regressions reporting heteroscedasticity and autocorrelation corrected standard errors. HAC standard errors obtained by Newey-West regressions are larger in magnitude than their fixed effects counterparts. Heteroscedasticity and autocorrelation uncorrected fixed effects regressions may underestimate standard errors and hence overestimate t-statistics so that coefficients appear statistically significant, Verbeek (2004). Therefore the following Newey-West regressions are conducted to increase the confidence in the information provided by the coefficients of interest.

Table 3.6 Newey-West Regression for Trade Policy in SSA

	Dependent Variables	
Explanatory Variables	$Closure_{it}$	$Tariff_{it}$
Cons	-137.594*	25.186***
	(6.86)	(1.96)
agoad	-11.338***	-5.966**
	(1.68)	(2.61)
Lngdp	6.998*	-.716
	(5.04)	(0.91)
Lnpci	-7.791*	2.097***
	(3.45)	(1.78)
LLockedd	3.072	1.146
	(1.16)	(1.15)
Growth	-.393***	-.091
	(1.95)	(0.92)
No of obs.	216	224
Prob > F	0.0000	0.0255

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

The Newey-West regression of the trade policy variable *closure* whose result appears in table 3.6 produces the *agoad* variable coefficient to be consistently negative as what was presented in table 3.2. The difference between the two results is that the coefficient was statistically significant at 5 percent level of significance in table 3.2 under the fixed effects estimation. But with the Newey-West estimation, it is significant marginally at the 10 percent significance level which is probably due to the HAC standard errors reported in table 3.6.

Under the *tariff* case, the Newey-West regression result provided in table 3.6 does not produce something different from what was presented in table 3.4 of fixed effects estimation. The sign and level of significance are retained except under the random effects case where the 1 percent level of significance becomes 5 percent in table 3.6. Hence readers of this paper better give emphasis to the results obtained by Newey-West regressions since the standard errors are HAC. Next, table 3.7 shows the Newey-West regression result of the same version of table 3.6 except substituting the variable *agoafraction* for the dummy of the variable AGOA.

Table 3.7 Newey-West Regression for Trade Policy in SSA

	Dependent Variables	
Explanatory Variables	$Closure_{it}$	$Tariff_{it}$
Cons	-125.055*	42.521*
	(5.97)	(2.83)
agoafraction	7.626	8.219**
	(0.85)	(2.33)
Lngdp	6.069*	-1.781**
	(4.77)	(2.10)
Lnpci	-8.287*	2.164***
	(3.54)	(1.82)
LLockedd	1.330	.861
	(0.46)	(0.87)
Growth	-.365***	-.110
	(1.77)	(1.27)
No of obs.	216	224
Prob > F	0.0001	0.0333

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

In the previous result of regressing *closure* on *agoafraction* using fixed effects and random effects, none of the coefficients is statistically significant at any reasonable level of significance as shown in table 3.3. Similar information is conveyed in table 3.7 that *agoafraction* does not explain closure even if the standard errors are HAC. In the case of *tariff*, *agoafraction* does not also explain variations in *tariffs* in the region under both fixed effects and random effects cases which is displayed in table 3.5. But the Newey-West regression result for the same variables presented in table 3.7 seems significant at 5 percent significance. But the overall specification is quite poor as can be seen from the F-statistic that one lacks confidence in accepting this result for grant. Adding AGOA as a dummy yields consistent result under table 3.6 and hence performs well to serve the purpose than *agoafraction* though contrary to the hypothesis. Though *agoafraction* displays positive sign under table 3.7 for both *Closure* and *Tariffs* in support of the hypothesis, these coefficients are not statistically different from zero.

3.4 Conclusion and Recommendations

This study tries to investigate the likely impact that AGOA could have on trade restriction policy variables in the beneficiary countries due to the enactment of the Act in May 2000. The theoretical background that preferential market access for developing countries would possibly trigger protectionist policy in the preference recipient countries provided in the literature part is the basis to take up this research problem. Maximum effort is exerted to undertake the analysis and draw statistical inferences.

Given the difficulties of exploring good trade policy proxy and limited scope for rigorous techniques of analysis, the finding of this research ranges from lack of sensible relationship between the AGOA preference and restrictive trade policy variables to statistically significant negative relationships between them. Contrary to the null hypothesis, under the specifications that show negative relationships, the implication is that the preference is rather contributing to liberalization efforts in the region than jeopardizing them. However, trade restriction indicators like simple averages are far from perfection. Simple tariff averages underweight high tariff rates because the corresponding import levels tend to be low. Such averages are also poor proxies for overall trade restrictions when tariffs and non-tariff barriers are substitutes. This may make one reluctant to have confidence on the results implied by this study. But there was no short-cut and immediate alternative to the current problem and the attempt at least can indicate further areas of research in this regard by applying rigorous techniques of analyses. I would like to remind readers that this paper does not take the position that trade liberalization is absolutely desirable.

Having this in mind, sensible reasons can be forwarded for the negative combination between AGOA preference and restrictive trade policies in SSA. The trend of trade liberalization since 1980s in the world in general and in the region in particular is one of plausible explanations for AGOA not triggering trade protection. The positive relationship between import-GDP ratio and

agoafraction though not that significant may imply opportunities that foster export earnings in the region also intensify aggregate import demands as well. This could be justified in that responding to such opportunities and fulfilling the requirements may require capacity building which is in turn import dependent itself. On the other hand, the influence of political pressure from import competing sector lobby groups in the beneficiary countries may not be strong enough to force policy makers adopt protectionist policy. Or policy makers in the region may develop gradual understanding of the long-run benefits of negotiated MTL from local and global scholars and institutions that work to create awareness in this subject.

The positive outcomes of AGOA in improving market access for many SSA countries to the U.S. and the development of the textile and clothing industry in the region cannot be undermined. Though concentrated among few oil-producing countries of the beneficiaries, trade between U.S. and SSA countries has shown substantial increase following the enactment of the Act. Enjoying the maximum possible that AGOA can offer rests by large on the region's capacity to respond to the opportunity and the extent of bottlenecks put in place by the U.S. government itself. The jargon of rules-of-origin and its related administrative burden should be revised bilaterally to really benefit the target groups. Negotiated access to U.S. product and capital markets, more stable exchange rate regimes, and sound domestic macroeconomic policies in SSA countries can help to tap the envisaged benefits from the Act.

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Appendix A: Regression outputs from STATA-10

```
. xtreg closure agoad lngdp lnpci llockedd growth, fe

Fixed-effects (within) regression               Number of obs      =       216
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.1247                         Obs per group: min =         8
       between = 0.4068                                        avg =       8.0
       overall = 0.3044                                        max =         8

                                                F(4,185)           =      6.59
corr(u_i, Xb)  = -0.9937                        Prob > F           =    0.0001
```

closure	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoad	-3.979729	3.871534	-1.03	0.305	-11.61776	3.658304
lngdp	-45.01965	15.36358	-2.93	0.004	-75.33	-14.7093
lnpci	92.00869	22.04945	4.17	0.000	48.50799	135.5094
llockedd	(dropped)					
growth	-.3710589	.1451484	-2.56	0.011	-.6574179	-.0846999
_cons	390.5858	216.3264	1.81	0.073	-36.19808	817.3697
sigma_u	126.65225					
sigma_e	9.8091668					
rho	.99403733	(fraction of variance due to u_i)				

F test that all u_i=0: F(26, 185) = 14.93 Prob > F = 0.0000

```
. xtreg closure agoad lngdp lnpci llockedd growth, re

Random-effects GLS regression                   Number of obs      =       216
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.0119                         Obs per group: min =         8
       between = 0.4225                                        avg =       8.0
       overall = 0.3253                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     18.82
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0021
```

closure	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoad	-5.4336	3.716545	-1.46	0.144	-12.71789	1.850694
lngdp	7.288643	1.924742	3.79	0.000	3.516219	11.06107
lnpci	-5.497432	2.612627	-2.10	0.035	-10.61809	-.3767771
llockedd	4.204687	6.881071	0.61	0.541	-9.281964	17.69134
growth	-.1618086	.1423449	-1.14	0.256	-.4407994	.1171823
_cons	-164.7884	40.56726	-4.06	0.000	-244.2987	-85.27798
sigma_u	13.236119					
sigma_e	9.8091668					
rho	.64548794	(fraction of variance due to u_i)				

```
. newey closure agoad lngdp lnpci llockedd growth, lag(1) force

Regression with Newey-West standard errors          Number of obs   =       216
maximum lag: 1                                      F(  5,    210)  =      6.64
                                                    Prob > F        =    0.0000
```

closure	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoad	-11.33893	6.763513	-1.68	0.095	-24.67201	1.994153
lngdp	6.998749	1.38951	5.04	0.000	4.259574	9.737925
lnpci	-7.791887	2.256674	-3.45	0.001	-12.24053	-3.343249
llockedd	3.072222	2.645148	1.16	0.247	-2.142224	8.286668
growth	-.3938162	.2021365	-1.95	0.053	-.7922928	.0046604
_cons	-137.5948	20.06237	-6.86	0.000	-177.1443	-98.04537

```
. xtreg closure agoafraction lngdp lnpci llockedd growth, fe

Fixed-effects (within) regression               Number of obs      =       216
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.1254                         Obs per group: min =         8
       between = 0.4151                                        avg =       8.0
       overall = 0.3110                                        max =         8

                                                F(4,185)           =      6.63
corr(u_i, Xb)  = -0.9942                        Prob > F           =    0.0001
```

closure	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	9.307892	8.444138	1.10	0.272	-7.351295	25.96708
lngdp	-50.09538	14.70692	-3.41	0.001	-79.11022	-21.08054
lnpci	93.96488	21.77987	4.31	0.000	50.99603	136.9337
llockedd	(dropped)					
growth	-.3381148	.1465331	-2.31	0.022	-.6272055	-.049024
_cons	485.3378	205.2349	2.36	0.019	80.43591	890.2396
sigma_u	131.59188					
sigma_e	9.8049947					
rho	.99447882	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(26, 185) =    15.61                 Prob > F = 0.0000
```

```
. xtreg closure agoafraction lngdp lnpci llockedd growth, re

Random-effects GLS regression                   Number of obs      =       216
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.0184                         Obs per group: min =         8
       between = 0.4077                                        avg =       8.0
       overall = 0.3156                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     18.17
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0027
```

closure	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoafraction	13.38202	7.968606	1.68	0.093	-2.236161	29.0002
lngdp	6.295938	1.979889	3.18	0.001	2.415426	10.17645
lnpci	-6.054732	2.723925	-2.22	0.026	-11.39353	-.715937
llockedd	3.428574	7.145217	0.48	0.631	-10.57579	17.43294
growth	-.1439902	.1417711	-1.02	0.310	-.4218565	.1338761
_cons	-146.1193	41.99462	-3.48	0.001	-228.4272	-63.81132
sigma_u	13.96628					
sigma_e	9.8049947					
rho	.66985024	(fraction of variance due to u_i)				

```
. xtregar closure agoafraction lngdp lnpci llockedd growth, fe lbi
note: llockedd dropped because of collinearity

FE (within) regression with AR(1) disturbances  Number of obs      =       189
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.0562                         Obs per group: min =         7
       between = 0.3403                                        avg =       7.0
       overall = 0.2519                                        max =         7

                                                F(4,158)           =      2.35
corr(u_i, Xb)  = -0.9741                        Prob > F           =    0.0563
```

closure	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	19.434	10.3844	1.87	0.063	-1.076138	39.94414
lngdp	-15.17753	34.86718	-0.44	0.664	-84.04341	53.68835
lnpci	47.37519	46.54234	1.02	0.310	-44.55022	139.3006
growth	-.1686092	.1408266	-1.20	0.233	-.4467546	.1095362
_cons	-2.460874	231.7764	-0.01	0.992	-460.2406	455.3188
rho_ar	.53983877					
sigma_u	67.904828					
sigma_e	8.8459829					
rho_fov	.98331283	(fraction of variance because of u_i)				

```
F test that all u_i=0:     F(26,158) =     4.85                 Prob > F = 0.0000
modified Bhargava et al. Durbin-Watson =.9563325
Baltagi-Wu LBI = 1.3983338
```

```
. xtregar closure agoafraction lngdp lnpci llockedd growth, re lbi

RE GLS regression with AR(1) disturbances       Number of obs      =       216
Group variable: cnum                            Number of groups   =        27

R-sq:  within  = 0.0050                         Obs per group: min =         8
       between = 0.4269                                        avg =       8.0
       overall = 0.3270                                        max =         8

                                                Wald chi2(4)       =     22.00
corr(u_i, Xb)  = 0 (assumed)                    Prob > chi2        =    0.0012
```

closure	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoafraction	10.11284	8.538252	1.18	0.236	-6.621828	26.8475
lngdp	6.018583	1.795212	3.35	0.001	2.500032	9.537133
lnpci	-8.03494	2.464306	-3.26	0.001	-12.86489	-3.20499
llockedd	2.324247	6.384843	0.36	0.716	-10.18982	14.83831
growth	.0062912	.1199985	0.05	0.958	-.2289016	.2414841
_cons	-127.7969	38.65507	-3.31	0.001	-203.5595	-52.03436
rho_ar	.53983877	(estimated autocorrelation coefficient)				
sigma_u	11.795487					
sigma_e	9.0273976					
rho_fov	.63062656	(fraction of variance due to u_i)				
theta	.54070157					

```
modified Bhargava et al. Durbin-Watson = .9563325
Baltagi-Wu LBI = 1.3983338

. xtreg tariff agoad lngdp lnpci llockedd growth, fe

Fixed-effects (within) regression               Number of obs      =       232
Group variable: cnum                            Number of groups   =        29

R-sq:  within  = 0.1238                         Obs per group: min =         8
       between = 0.0691                                        avg =       8.0
       overall = 0.0615                                        max =         8

                                                F(4,199)           =      7.03
corr(u_i, Xb)  = -0.8081                        Prob > F           =    0.0000
```

tariff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoad	-2.222052	1.04351	-2.13	0.034	-4.279809	-.1642946
lngdp	-7.582902	4.401681	-1.72	0.086	-16.26282	1.097021
lnpci	3.829434	6.413911	0.60	0.551	-8.818519	16.47739
llockedd	(dropped)					
growth	-.0566261	.0478772	-1.18	0.238	-.1510378	.0377857
_cons	162.4199	64.42472	2.52	0.012	35.37718	289.4627
sigma_u	9.474751					
sigma_e	3.2336768					
rho	.89567077	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(28, 199) =    20.28                 Prob > F = 0.0000
```

```
. xtreg tariff agoad lngdp lnpci llockedd growth, re

Random-effects GLS regression                   Number of obs      =       232
Group variable: cnum                            Number of groups   =        29

R-sq:  within  = 0.1029                         Obs per group: min =         8
       between = 0.1124                                        avg =       8.0
       overall = 0.1087                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     25.89
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0001
```

tariff	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoad	-3.367387	.9535587	-3.53	0.000	-5.236328	-1.498447
lngdp	-1.271651	.9132357	-1.39	0.164	-3.06156	.5182583
lnpci	-.3909321	1.762097	-0.22	0.824	-3.844579	3.062715
llockedd	-.8026241	2.220974	-0.36	0.718	-5.155652	3.550404
growth	-.0774263	.0462287	-1.67	0.094	-.1680328	.0131802
_cons	49.55031	17.33658	2.86	0.004	15.57125	83.52938
sigma_u	5.4074096					
sigma_e	3.2336768					
rho	.73658632	(fraction of variance due to u_i)				

```
. xtreg tariff agoafraction lngdp lnpci llockedd growth, fe

Fixed-effects (within) regression               Number of obs      =       224
Group variable: cnum                            Number of groups   =        28

R-sq:  within  = 0.1051                         Obs per group: min =         8
       between = 0.0926                                        avg =       8.0
       overall = 0.0762                                        max =         8

                                                F(4,192)           =      5.64
corr(u_i, Xb)  = -0.8945                        Prob > F           =    0.0003
```

tariff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	2.353434	2.92745	0.80	0.422	-3.420658	8.127526
lngdp	-11.35118	4.197031	-2.70	0.007	-19.62939	-3.072966
lnpci	6.925915	6.40833	1.08	0.281	-5.713852	19.56568
llockedd	(dropped)					
growth	-.0475479	.049613	-0.96	0.339	-.1454044	.0503086
_cons	226.0298	61.29812	3.69	0.000	105.1256	346.934
sigma_u	12.384807					
sigma_e	3.3209707					
rho	.93291957	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(27, 192) =    20.72                 Prob > F = 0.0000
```

```
. xtreg tariff agoafraction lngdp lnpci llockedd growth, re

Random-effects GLS regression                   Number of obs      =       224
Group variable: cnum                            Number of groups   =        28

R-sq:  within  = 0.0752                         Obs per group: min =         8
       between = 0.0703                                        avg =       8.0
       overall = 0.0628                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     13.11
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0224
```

tariff	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoafraction	1.436253	2.776726	0.52	0.605	-4.006029	6.878535
lngdp	-2.437755	.9847178	-2.48	0.013	-4.367767	-.5077438
lnpci	.0534185	2.005565	0.03	0.979	-3.877417	3.984254
llockedd	-.510555	2.455736	-0.21	0.835	-5.323708	4.302598
growth	-.0736348	.0482994	-1.52	0.127	-.1682998	.0210303
_cons	69.70943	18.16516	3.84	0.000	34.10637	105.3125
sigma_u	5.6141581					
sigma_e	3.3209707					
rho	.74078815	(fraction of variance due to u_i)				

```
. xtregar tariff agoafraction lngdp lnpci llockedd growth, fe lbi
note: llockedd dropped because of collinearity

FE (within) regression with AR(1) disturbances  Number of obs      =       196
Group variable: cnum                            Number of groups   =        28

R-sq:  within  = 0.0262                         Obs per group: min =         7
       between = 0.1177                                        avg =       7.0
       overall = 0.0952                                        max =         7

                                                F(4,164)           =      1.10
corr(u_i, Xb)  = -0.9533                        Prob > F           =    0.3570
```

tariff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	-1.240873	2.96996	-0.42	0.677	-7.105161	4.623415
lngdp	-17.11555	10.93804	-1.56	0.120	-38.71308	4.48199
lnpci	15.48784	14.16831	1.09	0.276	-12.48797	43.46365
growth	.0117393	.0394562	0.30	0.766	-.0661683	.089647
_cons	304.9267	56.50253	5.40	0.000	193.3605	416.4929
rho_ar	.66144308					
sigma_u	18.040241					
sigma_e	2.4829809					
rho_fov	.98140861	(fraction of variance because of u_i)				

```
F test that all u_i=0:     F(27,164) =     3.39                 Prob > F = 0.0000
modified Bhargava et al. Durbin-Watson =.70639846
Baltagi-Wu LBI = 1.0745134
```

```
. xtregar tariff agoafraction lngdp lnpci llockedd growth, re lbi

RE GLS regression with AR(1) disturbances          Number of obs      =       224
Group variable: cnum                               Number of groups   =        28

R-sq:  within  = 0.0988                            Obs per group: min =         8
       between = 0.0890                                           avg =       8.0
       overall = 0.0745                                           max =         8

corr(u_i, Xb)  = 0 (assumed)                       Wald chi2(5)       =      6.60
                                                   Prob > chi2        =    0.3597
```

tariff	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
agoafraction	.3790395	2.767971	0.14	0.891	-5.046083	5.804162
lngdp	-2.023216	.8686983	-2.33	0.020	-3.725833	-.3205982
lnpci	1.101	1.859941	0.59	0.554	-2.544418	4.746418
llockedd	.1363341	2.153329	0.06	0.950	-4.084113	4.356782
growth	-.0215488	.035732	-0.60	0.546	-.0915822	.0484845
_cons	54.37195	16.63911	3.27	0.001	21.75989	86.98401
rho_ar	.66144308	(estimated autocorrelation coefficient)				
sigma_u	4.4715313					
sigma_e	2.7163656					
rho_fov	.73044317	(fraction of variance due to u_i)				
theta	.53865732					

```
modified Bhargava et al. Durbin-Watson = .70639846
Baltagi-Wu LBI = 1.0745134

. newey closure agoad lngdp lnpci llockedd growth, lag(1) force

Regression with Newey-West standard errors         Number of obs      =       216
maximum lag: 1                                     F(  5,    210)     =      6.64
                                                   Prob > F           =    0.0000
```

closure	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoad	-11.33893	6.763513	-1.68	0.095	-24.67201	1.994153
lngdp	6.998749	1.38951	5.04	0.000	4.259574	9.737925
lnpci	-7.791887	2.256674	-3.45	0.001	-12.24053	-3.343249
llockedd	3.072222	2.645148	1.16	0.247	-2.142224	8.286668
growth	-.3938162	.2021365	-1.95	0.053	-.7922928	.0046604
_cons	-137.5948	20.06237	-6.86	0.000	-177.1443	-98.04537

```
. newey closure agoafraction lngdp lnpci llockedd growth, lag(1) force

Regression with Newey-West standard errors         Number of obs      =       216
maximum lag: 1                                     F(  5,    210)     =      5.26
                                                   Prob > F           =    0.0001
```

closure	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	7.626449	8.987779	0.85	0.397	-10.09138	25.34428
lngdp	6.069479	1.273342	4.77	0.000	3.559308	8.579649
lnpci	-8.287682	2.341255	-3.54	0.000	-12.90306	-3.672308
llockedd	1.330303	2.872086	0.46	0.644	-4.331511	6.992117
growth	-.3653486	.2067586	-1.77	0.079	-.772937	.0422397
_cons	-125.0556	20.9391	-5.97	0.000	-166.3334	-83.77783

```
. newey tariff agoad lngdp lnpci llockedd growth, lag(1) force

Regression with Newey-West standard errors                Number of obs   =       224
maximum lag: 1                                            F(  5,   218)   =      2.61
                                                          Prob > F        =    0.0255
```

tariff	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoad	-5.966575	2.284708	-2.61	0.010	-10.46952	-1.463631
lngdp	-.716808	.7866343	-0.91	0.363	-2.26719	.8335739
lnpci	2.097734	1.178402	1.78	0.076	-.2247856	4.420253
llockedd	1.146056	.9961935	1.15	0.251	-.817347	3.10946
growth	-.0917042	.0993005	-0.92	0.357	-.2874161	.1040076
_cons	25.18667	12.87535	1.96	0.052	-.1894205	50.56277

```
. newey tariff agoafraction lngdp lnpci llockedd growth, lag(1) force

Regression with Newey-West standard errors                Number of obs   =       224
maximum lag: 1                                            F(  5,   218)   =      2.47
                                                          Prob > F        =    0.0333
```

tariff	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
agoafraction	8.219918	3.528422	2.33	0.021	1.265732	15.1741
lngdp	-1.781841	.8465687	-2.10	0.036	-3.450348	-.1133337
lnpci	2.164057	1.187683	1.82	0.070	-.1767538	4.504867
llockedd	.8610981	.9855421	0.87	0.383	-1.081312	2.803508
growth	-.1109174	.0875826	-1.27	0.207	-.2835345	.0616997
_cons	42.52172	15.02347	2.83	0.005	12.91188	72.13156

Appendix B: Regression Results of both Fixed Effects and random Effects

Note: (1) Absolute t-statistics are in parentheses. (2) * denotes significant at 1%: ** denotes significant at 5%: *** denotes significant at 10%

Table 3.2 Panel Regression for Trade Policy in SSA:

	Dependent Variable: $Closure_{it}$	
Explanatory Variables	Fixed Effects	Random Effects
Cons	390.585 ***	-164.788*
	(1.81)	(4.06)
agoad	-3.979	-5.4336
	(1.03)	(1.46)
Lngdp	-45.019*	7.288*
	(2.93)	(3.79)
Lnpci	92.008*	-5.497**
	(4.17)	(2.10)
LLockedd	(dropped)	4.204
		(0.61)
Growth	-.371**	-.161
	(2.56)	(1.14)
R^2: overall	0.3044	0.3253
D-Watson	1.34	1.34
No of obs.	216	216
No of Countries	27	27
Prob > F	0.0001	0.0021

Table 3.3 Panel Regression for Trade Policy in SSA:

	Dependent Variable: $Closure_{it}$	
Explanatory Variables	Fixed Effects	Random Effects
Cons	485.337**	-146.119*
	(2.36)	(3.48)
agoafraction	9.307	13.382***
	(1.10)	(1.68)
Lngdp	-50.095*	6.295*
	(3.41)	(3.18)
Lnpci	93.964*	-6.054**
	(4.31)	(2.22)
LLockedd	(dropped)	3.428
		(0.48)
Growth	-.338**	-.143
	(2.31)	(1.02)
R^2: overall	0.3110	0.3156
D-Watson	1.39	1.39
No of obs.	216	216
No of Countries	27	27
Prob > F	0.0001	0.0021

Table 3.4 Panel Regression for Trade Policy in SSA:

	Dependent Variable: $Tariff_{it}$	
Explanatory Variables	Fixed Effects	Random Effects
Cons	162.419**	49.550*
	(2.52)	(2.86)
agoad	-2.222**	-3.367*
	(2.13)	(3.53)
Lngdp	-7.582***	-1.271
	(1.72)	(1.39)
Lnpci	3.829	-.390
	(0.60)	(0.22)
LLockedd	(dropped)	-.802
		(0.36)
Growth	-.056	-.077***
	(1.18)	(1.67)
R^2: overall	0.0615	0.1087
D-Watson	1.09	1.09
No of obs.	232	232
No of Countries	29	29
Prob > F	0.0000	0.0001

Table 3.5 Panel Regression for Trade Policy in SSA:

	Dependent Variable: $Tariff_{it}$	
Explanatory Variables	Fixed Effects	Random Effects
Cons	226.029*	69.709*
	(3.69)	(3.84)
agoafraction	2.353	1.436
	(0.80)	(0.52)
Lngdp	-11.351*	-2.437**
	(2.70)	(2.48)
Lnpci	6.925	-.053
	(1.08)	(0.03)
LLockedd	(dropped)	-.510
		(0.21)
Growth	-.047	-.073
	(0.96)	(1.52)
R^2: overall	0.0762	0.0628
D-Watson	1.07	1.07
No of obs.	224	224
No of Countries	28	28
Prob > F	0.0003	0.0224

Table 3.6 Regression on lagged independent variables to correct endigeneity

	Dependent Variables	
Explanatory Variables	$Closure_{i,t}$	$Tariff_{i,t}$
Cons	-66.670	12.238
	(3.06)	(1.72)
$agoad_{i,t-1}$	5.357	-2.114**
	(1.37)	(2.12)
$Lngdp_{i,t-1}$	.764	-.262
	(0.75)	(0.70)
$Lnpci_{i,t-1}$	.388	2.125
	(0.33)	(2.96)
LLockedd	(dropped)	(dropped)
$Growth_{i,t-1}$	.026	-.092**
	(.18)	(2.07)
No of obs.	215	223
No of Countries	27	28
Prob > F	0.0000	0.0020

Table 3.7 Regression on lagged independent variables to correct endigeneity

	Dependent Variables	
Explanatory Variables	$Closure_{i,t}$	$Tariff_{i,t}$
Cons	-59.175*	14.360
	(2.64)	(1.95)
$agoafraction_{i,t-1}$	11.179	-.889
	(1.60)	(0.38)
$Lngdp_{i,t-1}$	.642	-.440
	(0.63)	(1.17)
$Lnpci_{i,t-1}$	.147	2.147*
	(0.12)	(2.95)
LLockedd	(dropped)	(dropped)
$Growth_{i,t-1}$	.022	-.091
	(.16)	(2.01)
No of obs.	215	223
No of Countries	27	28
Prob > F	0.0000	0.0000

Declaration

I, the undersigned, declare that this project paper is my original work and has not been presented, in part or whole, in any other university or college. All sources of the materials used for this project paper have been duly acknowledged.

Name FARIS EDRIS

Signature

Date 31 MAY, 2010