# Trade policy review

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# IMPLICATIONS OF PLANT BREEDERS' RIGHTS ON FOOD SECURITY OF DEVELOPING COUNTRIES: THE CASE OF ETHIOPIA

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## 1. INTRODUCTION

'Trade Related Intellectual Property Rights (TRIPS)', which entitle Intellectual Property (IP) to private innovators[1] cover protection in the area of patents, trademarks, industrial design, copyrights and related rights, geographical indications, trade secrets and confidential information, plant breeders right and layouts and integrated circuits. The benefits accruing to developing countries from the various categories of IP rights are debatable. This debate is largely due to the countries' stages of economic development which suggest that most of the economies in developing countries are factor/resource driven and lack innovative capacity[2]. Indeed, the relevance of IP protection for economies engaged in trade of primary products which involve very low innovative capacity is questionable. However, some aspects of IP are still important for such countries as well.

TRIPS have far reaching implications for health, food security, biological resources, traditional knowledge and environment which are concerns of developing countries. This paper critically examines plant breeders' rights, one aspect of TRIPS, and its implications on food security and biological diversities of developing countries with particular reference to Ethiopia. Plant breeders' rights pave the way for private enterprises investment in the agricultural sector. The question arises when such rights deprive farmers' access to important farm seeds and farm inputs (such as fertilizers and pesticide). The situation is even worse when private companies develop new varieties on products of export interest and food items of developing countries. The world wide trend also suggests such danger as six multinationals already control 96 per cent of global market for patented genetically modified crops, 70 per cent of global pesticide markets and 30 per cent of the global seed markets[3]. Given these challenges, developing countries have looked with some suspicion at plant breeders' rights.

This paper is structured as follows: In section 2 the methodological approach on how to conduct this study will be presented. Section 3 provides literature review and empirical evidence of TRIPS. Section 4 examines the impacts of plant breeders' rights on food security in Ethiopia. Sections 5 and 6 propose domestic policy and strategy, and also international negotiation positions respectively. In the final part, conclusions and recommendations are presented.

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1    See preamble of TRIPS agreement.

2     Michael E.Porter and Klaus Schwab(2008), the Global competitiveness report 2008-2009, World Economic  Forum, Switzerland, Geneva. Mic

3    Action Aid(?), Trade Related Intellectual Property rights, available at http://www.actionaid.org.uk/doc_lib/53_1_trips.pdf visited on April 2, 2009.

## 2. METHODOLOGY

Secondary data such as Ethiopian plant breeders' Act, TRIPS agreement, UN comtrade, WTO and International trade centre database are used. Different authors and institutions' publications on TRIPS and food security are also consulted. Analysis of international trade policy, trade law and micro economics are used. In general, simple statistics and graphs are used in both descriptive and analytical methods.

## 3. LITERATURE REVIEW AND EMPIRICAL EVIDENCE OF THE STATE OF TRIPS

Much has been written about TRIPS in recent years by many scholars and international organisations. Most of these studies share common views as they agree on the side effects of TRIPS for developing countries. Stigliz and Charlton (2005), Trebilcock and Howse (2005), Matisushita, J.Schoenbamu and Mavroidis (2006), Hoekman and Kostecki (2001), Fink and E. Maskus (2005) and Action Aid (?) emphasised the *need to address the health issues and biodiversity* concerns in developing countries. Further the implementation and enforcement problems facing developing countries are huge. As it stands, TRIPS lacks protection for traditional knowledge and biodiversities of developing countries. The transition period of 2016 under Doha for access to essential medicines is also not enough to address the health challenges facing developing countries currently.

The importance of IP protection for non-innovative economies are generally questioned. Particularly, developing countries have comparative disadvantage in technological innovation. Hence, the *protection of intellectual property rights requires weighting between innovation and imitation*[4]. For example, the economic growth of Japan in the 1960s and 1970s was largely attributable to technology imitation and adaptation[5]. Thus, technology adaptation and imitation at early stages of economic growth are unavoidable.

For some scholars, IP is not a pure private property. Governments have to finance or support the innovation of new knowledge. Intellectual property is considered here as *a public good* in which its protection constitutes only a part and not the most important part of what we may call our knowledge and research system[6]. Others even argue that, *requiring all countries to adopt intellectual property protection rights might not result in pareto- efficiency.* The marginal increased returns, from poorer developing countries, to the holder of patent is not adequate to promote further innovation while the losses incurred by these countries as a result of restrictions on imitation would probably be very high[7].

According to Philippe Cullet (2003), plant breeders' rights have far reaching implications on food security, environment, human rights and biodiversity of developing countries. Others also argue that "the impact of TRIPS on farming and food security are equally comparable to the threats it poses on health with multinationals controlling 70 per cent of the patentable food staples"[8].

Adoption of stronger IP regime has not resulted in similar outcome for all countries. While South Korea, Taiwan and China registered an increase in patenting after their IP regimes had been strengthened, *no such effect was observable in Mexico and Chile which are characterised by a very low level of inventive activity*[9].

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4   See Trebilcock and Howse(2005), the regulation of international trade , Routledge Taylor and France Group/Landon and Newyork.

5   See M.Borrus and J.Niosi respectively cited in Trebilcock and Howse(2005), the regulation of international trade , Routledge Taylor and France Group/Landon and New York.

6   See Stigliz and Charlton (2005), Fair Trade for All, how trade can promote development, Oxford University Press.

7    See Allan Deardorff , cited in Trebilcock and Howse (2005), the regulation of international trade , Routledge Taylor and France Group/Landon and New York.

8    Action Aid(?), Trade Related Intellectual Property rights, available at http://www.actionaid.org.uk/doc_lib/53_1_trips.pdf visited on April 2, 2009.

9    See Aaditya Mattoo and Robert M.Stern(2003), India and The WTO, a co publication of the World Bank and Oxford University Press

Thus, strengthening IP regimes in the LDCS might not result in any increase of innovative capacity. The implementation and enforcement costs of IP rights are very high. For example, the cost of upgrading intellectual property laws and enforcement cost Mexico over US$ 30 million[10], and the World Bank's estimation of total losses arising from implementing TRIPS would be as high as 10.1 per cent of South Korea's GDP, 1.4 per cent of China's GDP and 0.6 per cent of India's GDP[11].

*China, Kyrgyzstan, Cambodia and Nepal faced a big challenge, during their accession period, as they were requested to adopt* International Union for the Protection of New Varieties of Plants (UPOV) Convention *(TRIPS plus)[12]*. In other words, these countries were requested to adopt a stricter plant breeders rights than the one stipulated in TRIPS.

The experiences of India suggest the tough works expected from developing countries. For the last eight years, India identified local traditional varieties and excluded over 200,000 plants and animals from the list of patentability[13]. Hence bold and imaginative leadership is crucial to overcome the danger of biodiversity loss in the future.

## 4. IMPLICATIONS OF PLANT BREEDERS' RIGHTS ON FOOD SECURITY OF ETHIOPIA

The world leaders in their 2000 summit set eight goals to alleviate the problem of poverty in the world. One of the Millennium Development Goals (MDGs) is "eradication of extreme poverty and hunger". Such objectives cannot be achieved without ensuring food security worldwide. The plant breeder's right, which is part of TRIPS, limits farmers' access to seeds and other important farm inputs. Thus, it contradicts with MDGs. This part of the paper discusses, within the context of TRIPS, plant breeder's rights and attendant implications for food security, competition and investment.

### 4.1 Food Security and Plant Breeders' Rights

There are about 1.1 billion people who live on less than one US dollar a day of which 430 million are in South Asia, 325 million in Sub-Saharan Africa, 260 million in East Asia and the Pacific and 55 million in Latin America[14]. The majority of these people depend on agriculture for their livelihood. For example in Ethiopia, agriculture constitutes 50 per cent of GDP and over 80 per cent of both employment and export earnings. The majority of the poor in Ethiopia live in rural areas and are affected by recurrent drought and famine. For example, in 2002/2003, as a result of drought, agricultural GDP declined by 11.4 per cent resulting in overall GDP growth of -3.3 per cent.

Ethiopia has many biological diversities to protect and benefit from. The country is endowed with estimated plant varieties of more than 6500 species out of which 14 per cent are used as medicinal plants and 10-12 per cent are endemic plants[15]. These plant varieties include various *vegetations*, *cereals* (barley, wheat, sorghum, teff, finger millet, oats and rice), *oil crops* (gomenzer, noog, linseed, sesame, sunflower and crambe), *pulses* (faba bean, field pea, chick pea, enset, anchote, etc), stimulus industrial crops (coffee, chat, cotton, vernonia, castor bean and kenaf), spices, aromatic and perfume plants and forage species[16].

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10   Finger, J.M. (World Bank) and Schuler, P. (University Of Maryland), (1999), Implementation of Uruguay Road Commitments: The Development Challenge, paper for WTO/World Bank Conference on 'Developing Countries In A Millennium Round', Geneva, September, cited in Action Aid(?),Trade Related Intellectual Property rights, available at http://www.actionaid.org.uk/doc_lib/53_1_trips.pdf visited on April 2, 2009.11   World Bank (2002), Global Economic Prospects and Developing Countries, quoted in http://www.cepr.net/relative_impact_of_trade_liberal.htm, cited in Action Aid(?),Trade Related Intellectual Property rights, available at http://www.actionaid.org.uk/doc_lib/53_1_trips.pdf visited on April 2, 2009.

12   Policy Brief(2003), UPOV: Faulty Agreement and Coercive Practices.

13   Science and Development Network, available at http://www.scidev.net/en/science-and-innovation-policy/intellectual-property/news/india-protects-traditional-medicines-from-patents.html,visited on April 1, 2009.

14   see Joachim von Braun,M. S. Swaminathan,and Mark W. Rosegrant(?),Agriculture, Food Security, Nutrition and the Millennium Development Goals.

15   See Institute of Biodiversity of Ethiopia, available at http://www.ibc-et.org/biodiversity/fgbs/medicinal-plants-field-genebank, visited on March 26,2009

16   Leipzig(1996), Country Report to the FAO International Technical Conference on Plant Genetic Resource, Plant Genetic Resources Center, Addis Ababa, Ethiopia, April 1995.

These plant varieties are the main source of income and food to the Ethiopian people. They are also the main sources of medicine as 80 per cent of human population and 90 per cent of livestock in Ethiopia rely on traditional medicine[17]. Hence, they are used to keep a healthy labour force in the rural areas and constitute income generating means for the rural society. These varieties are also the main inputs for the agro-processing industries in the country.

Among the exportable items, the important commodities for Ethiopia include coffee, tea, mate and spices (HS 09), oil seeds, oleagic fruits, grain, seed, fruits, etc, nes (HS 12) and vegetable plaiting materials, vegetable products (HS 14). For example, these products account for 41 per cent, 16.6 per cent and 8.2 per cent of total export of the country with Bela Balasa revealed comparative advantage of 227.6, 62.3 and 1778.7 in 2006 respectively[18]. Amongst these leading export items, except product code HS 12, the country has a convincing comparative advantage in the real world in HS code 09 and HS 14. In other words, these plants are the source of comparative advantage of the country in its external trade.

The agricultural sector in Ethiopia is mainly dominated by small households. They are mainly engaged in the cultivation of cereals, pulses, stimulus plants, oil crops and vegetables. Among cereals barley, wheat, maize, sorghum and teff are the most important food items. Particularly, teff is endemic to the country. It is almost part of the staple food for the people and the bi-product is useful for animal fodder. It is highly related to the culture of the people and specific to the soil. Geographic considerations are vital factors in protecting Ethiopian teff and other related endemic products of the country from piracy. The country already faces the threat of bio-piracy in this important plant. The other important food product, particularly to southern Ethiopia is Enset. It is the culture of the society to ferment the root plant (false banana) for up to 10 to 15 days and make their own food. It contributes to food security of the people and needs to be protected. But, there is no immediate danger as to bio-piracy in the area of Enset. Nonetheless, it would be important to create awareness on the possibility of bio-piracy and private sector interventions in this important plant.
The genes of some of the Ethiopian plants are used for further scientific research. For example, Ethiopia is considered to be the home of barley diversity and it is used as a source of genes for barley yellow dwarf virus resistance, high lysine, drought resistance and also resistance to diseases such as powdery mildew, leaf rust, spot blotch, septoria, loose smut and barley stripe mosaic virus[19].

Protecting these varieties from patentability should be a crucial goal of Ethiopian authorities. The accrual of benefits to multinationals at the expense of Ethiopian farmers was evident from the Starbucks/Ethiopian organic coffee case. Trademarks and geographical indicators can be used positively to increase the value of Ethiopian products in the international market. Particularly, as Ethiopian coffee is organic with its own flavour, trademarks significantly improve the price of the product. It is the mark, symbol, logo etc that distinguish Ethiopia's coffee from the rest of other coffee varities produced in different parts of the world. Geographical indicators can also possibly be used as Ethiopian coffee varieties are specific to the soil and other natural factors. For example, one cannot find the taste of Harar coffee elsewhere. Thus, trade mark and geographic indicators can possibly be used to protect Ethiopian coffee and other agricultural produce of the country.

According to Art.27 (3b) of TRIPS, plant varieties are protected either through patents or by an effective Sui Generis System or by a combination of the two. The economic and legal implications of TRIPS in relation to plant breeder's rights depending on the two types of protection will be explored in the following section.

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17    See Institute of Biodiversity of Ethiopia, available at http://www.ibc-et.org/biodiversity/fgbs/medicinal-plants-field-genebank, visited on March 26,2009

18    International Trade Center (2006), available at http://www.intracen.org/mat/Default.aspx visited on April 2 2009.

19    Leipzig(1996), Country Report to The FAO International Technical Conference on Plant Genetic Resource, Plant Genetic Resources Center, Addis Ababa, Ethiopia, April 1995.

### a) *Economic implications if plant varieties are patented*

The first economic implication of TRIPS is on the price of the patentable plant variety. If based on Art.27 (3b) patents are given to multinational companies, the price of new varieties will go up. This could emerge from two sources;
(i) there are technologies embodied in the new varieties implying higher wages and cost of capital,
(ii) due to the fact that they are patented.

These two can affect farmers' easy access to important farm inputs such as seeds, fertilizers, pesticides etc. Particularly, if a farmers' income does not increase proportionally with the increase in the price of these inputs, the purchasing power of farmers will decline. This has a negative impact on the economic activities of other sectors.

Secondly, it limits farmers' freedom of choice. Farmers' right to save seeds from their production and use for the next farming can be limited. Third, and similar to the first argument, TRIPS creates a monopoly power over plant varieties. Obviously, the monopolist charges prices above the marginal cost and supplies the market with limited farm inputs. The deadweight losses to the farmers are higher which brings in the issue of competition which will be discussed later on in this paper.

Fourth, TRIPS creates farmers' dependency on new varieties produced by seed companies. The possibilities of losing the traditional seed varieties are higher as TRIPS forces farmers to buy seeds from the owners of the new variety every planting season. Fifth, TRIPS retards the export earning capacity of LDCs when patents are acquired by multinational companies on products of export interest to such countries.

### b) *Economic implications if plant varieties are protected by Sui Generis*

Sui Generis provides members with flexibilities. Here members can use measures which they consider appropriate. This could take the following forms[20]:
   (i)    members can protect both the rights of farmers and plant breeders,
   (ii)   acknowledge and reward the role of farmers as the fundamental basis for modern agriculture and plant breeding technology,
   (iii)  develop a system where farmers and breeders have recognition and rights accruing from their respective contribution to the creation of new varieties and
   (iv)   recognition of the right of local communities to control their biological and traditional resources, etc.

This type of protection has the following positive economic implications:
(i)    It regulates the monopoly power,
(ii)   It reduces farmers' dependency on seed companies,
(iii)  Farmers get a relatively cheaper access to new seed varieties,
(iv)   It increases freedom of the farmers,
(iv)   It creates a more harmonious agricultural system as it balances the rights of farmers and breeders and
(vi)   It constitutes an incentive to conserve the environment

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20  Policy brief(2003), UPOV: Faulty Agreement and Coercive Practices.

Ethopia has these types of plant breeders' rights. It balances the rights of both farmers and breeders. However;
  (i)   the definition of new plant variety lacks the durability criteria;
  (ii)  the words and verbs used to protect farmers' rights are not strong. For example, Art.6 of the act says the following may be exempted from plant breeders' rights. The verb 'may' is loose and not enough to protect farmers' rights,
  (iii) the farmers right in part five lacks substantive elements such as joint ownership of IP rights, criteria for royalty sharing, the rules of origin requirement and the like.

### c)  Legal implications of plant breeders' rights

Developing countries are not forced to adopt stricter rules and regulations on trade related Intellectual Property rights. So members may:
  (i)    adopt own sound legal systems and practice, (Art.1 (1)),
  (iv)   protect and enforce IP rights in a manner conducive to their social and economic welfare, (Art.7),
  (v)    adopt measures necessary to protect public health and nutrition,
  (vi)   (iv) promote public interest in sectors of vital importance to their socio-economic and technological development,(Art 8(1)),
  (vii)  adopt unique and effective Sui Generis in protecting plant varieties,(Art. 27, 3b) and
  (viii) put limited exceptions on the exclusive rights conferred by patent,(Art.30).

Hence while adopting plant breeders' rights, developing countries are free to develop their own legal system, which is compatible with their socio-economic development, and technology transfer and adaptation. However, the interpretation of some of the provisions creates loopholes to these flexibilities. For example, it is not clear what constitutes *sound legal system and effective Sui Generis.*

The other legal implications of TRIPS in terms of plant breeders' rights emanate from the difficulties of enacting and enforcing the patent rights or Sui Generis. TRIPS require the law, administrative and institutional measures to be in place. As already stated, Ethiopia has adopted plant breeders rightS in its proclamation number 481/2006. However, implementation capacity gaps abound. The administrative forum for complaince and the enforcement mechanisms are lacking. The judicial order which includes the compensatory mechanisms, measures to stop infringements and criminal penalties are also at their rudimentary stages. Moreover, knowledge about patent rights and other IP categories are also missing to undertake thorough investigations and successful prosecution.

### d)  Other implications of plant breeders' rights

It is not clear how the environment will react to the new plant varieties. The effects of the new varieties on human beings, soil and the already existing plants are also not clear. When multinational companies develop new plant varieties, there are associated spillover benefits and costs. Among the benefits include that the new technologies can possibly be used by other firms, improved seed varieties and new innovations in farm inputs. The costs, on other hand, include environmental degradation, health problems and loss of traditional plant varieties among others. While the extent of the costs to the society may not clear, the benefits to the plant breeders are obvious. So TRIPS does not address the social costs borne by societies and no regulatory mechanism was introduced in TRIPS to compensate the social costs of new seed varieties (for example, the environmental side effects of the new varieties).

So any plant breeders' rights Act adopted by developing countries should take into account the environmental, health and indigenous biodiversity loss resulting from the new plant varieties. For example, the loss of traditional plant varieties and replacement with new varieties contributes towards environmental imbalance. Thus, there should be regulatory mechanisms to  overcome such challenges.

## 4.2 Plant Breeders Rights and Competition

The issue of competition arises in TRIPS because it empowers the right of property to private owners. In essence, TRIPS encourages monopolies all over the world. In particular, Article 28 restricts the use of IP without the consent of the owner. Hence, the central issue becomes *how to foster competition policy on an individual's resource?*

Such monopoly power is created particularly if there is either a single or just a few producers of new innovative technologies. For example, the major share of markets for GMO (96 per cent), pesticides (70 per cent) and seeds (30 per cent) are controlled by six multinationals[21]. Monopolies generally lead to deadweight loss as they set prices above marginal costs and supply the market with lower level of outputs than what would be found in a perfectly competitive market. The following diagram illustrates the price setting mechanism of the monopolist in the new plant varieties which indicates a sub-optimal outcome than what would have been achieved under perfectly competitive conditions.
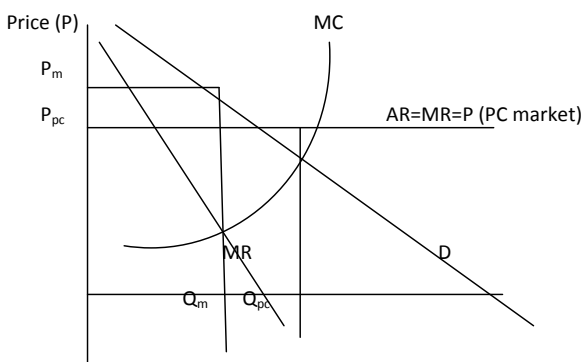


Contrary to competitive markets, the monopolist has a downward sloping demand curve. This enables the multinationals to charge different prices for the different levels of new plant varieties they produce. Hence, the Marginal Revenue (MR) is lower than the demand curve. Any profit maximising firm sets its MR equal to Marginal Cost (MC). Thus, the multinational companies with monopoly power supply the market with output ($Q_m$) at price of $P_m$. The price is well above Mc and the perfectly competitive price ($P_{pc}$). The output is also by far lower than what would prevail under a competitive environment.

To address this imbalance, TRIPS is faced with dual objectives: (i) ensuring private property rights and (ii) regulating monopoly rights emanating from IP.

TRIPS regulates monopolies from IP rights in three ways: (i) when the right holder does not sufficiently supply the market through compulsory acquisition,(Art 31 TRIPS), (ii) to avoid free riders by regulating unfair commercial practices[22], and (iii) regulation of the conduct of IP holder.

For LDCs the use of compulsory acquisition to break monopoly is difficult. It requires the capacity to produce through a third party. There are no such strong third parties in LDCs that are capable of producing the patented products. The human resource capacity and the machineries required to manufacture the product are also lacking.

As part of its limitations, TRIPS fails to regulate the monopolies created as a result of plant breeders rights. Here we talk about the power between the seed companies and the poor farmers. TRIPS have forgotten the billions of poor people in the developing world that are far from the negotiation arena. Big companies in the developed world threaten to introduce genetic use restriction technologies (GURTs), which are technologies to be used in seeds so that seeds convert to weeds the following year.

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21    Aventis, Dow, Dupout, Mitsui, Monsanto and Syngenta are the biggest multinational companies in these sectors.
22    Unfair commercial practices includes, mislabeling, false indication of origin, false packaging, misspelling, use of marks closely resembling one another etc.

## 4.3 Plant Breeders' Rights and Investment

The relationship between TRIPS and investment arises when you question the benefit of awarding patent right. What is the benefit of giving patent right within a given domestic territory? For any Intellectual Property a country imports, it means an employment in the country of an IP holder. So, why not oblige the patent holder to come and invest in the patent granting country?

Investment is one of the means through which technology can transfer from developed countries to developing countries. TRIPS allows the use of compulsory licensing for the production of the patented product in the patent granting countries. It involves giving the right to locally produce an item through a third party. However, it is difficult for LDCs to use such regulatory measures as strong third parties capable of producing thepatented  item are non-existent.This is largely because of lack of the necessary human capital and capital goods in such economies.

The local working of patent, which is part of the Paris convention, is not part of TRIPS. This is a measure that obliges the patent holder to invest in the patent granting country. Hence, TRIPS is not compatible with the economies of developing countries. This is because to measures that encourage access to the patented product and investments in the sector are not easily used in the context of developing countries.

## 5. DOMESTIC POLICY STRATEGY

Intellectual Property should be part and parcel of development strategy to increase the value of the country's products in the international market. Plant varieties which make up the Ethiopian biodiversity need to be protected and farmers' access and rights over them also need to be preserved. The domestic policy strategy should start from giving due consideration to what the country has. Ethiopia's adoption of plant breeders rights is a good step but farmers rights need to be further integrated into such a system. This can be achieved through introduction of legal provisions relating to joint Intellectual Property rights ownership especially those derived from plant species originating from Ethiopia, prior informed consent of the local communities and rules of origin requirement for the propagating material.

Secondly, we need to address factors reducing the quality and quantity of plant varieties of the country. Challenges to plant conservation in Ethiopia, among other things, constitutes low level of income, deforestation, lack of knowledge/awareness, weeds and soil erosion, etc. For example, deforestation is estimated to range between 150,000 and 200,000 ha per year[23]which erodes the various plant species of the country. To address these  and related problems, there should be: (i) improved forest and soil conservation methods, (ii) encourage and stimulate alternative non-agricultural income generating activities in the rural areas so that farmers do not destroy forests, (iii) increased farmers' access to financing by introducing micro finance schemes, (iii) enhance awareness or capacity building activities on the importance of plant and forest conservation, (iv)  introduce alternative energy sources in rural areas, (v) use animal dungs as composite to improve soil fertility and (vi)  increase farmers involvement in the preparation of plant breeders rights, adoption of policies and legislations.

Thirdly, overlap in the areas of conservation and development of agricultural genetic resources should be sorted out and streamlined. There should be strong coordination between different ministries, institutions, civil society, private sector and the Ethiopian Intellectual Property Office.
Fourthly, there is need to strengthen the agricultural research institutes in the country. Research centres on plant breeding such as Adami Tulu and Debreziet Agricultural Research Centres have to be provided with technical assistance and capacity building programmes.

Fifth, currently the country has the Wendo Genet and Bale Goba gene banks. Such initiatives are of great significance to the country in preserving the precious plant species varieties the country has and the government needs to strengthen such activities and monitor counterfeits in the sector. Six, to introduce stricter customs regulations at ports and borders to effectively control plant smuggling. Such measures would help the country protect its plant varieties from bio-piracy.

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23    See Institute of Biodiversity of Ethiopia, available at  http://www.ibc-et.org/biodiversity/fgbs/medicinal-plants-field-genebank, visited on March 26,2009.

## 6. INTERNATIONAL NEGOTIATION POSITION

Ethiopia is in the process of accession to the WTO. Any country joining the WTO is required to present its IP regimes consistent with TRIPS. In light of the discussion presented in this paper, Ethiopia's negotiation position should focus on areas of its export interests and TRIPS flexibilities and limitations based on biological diversities. The country should design ways in which to optimally use the flexibilities in TRIPS for the benefit of the poor and to negotiate on the possibilities of amending TRIPS to accommodate legal provisions which ensure the right of farmers and the sovereign right of developing countries over biological diversity.

### 6.1 Position to be taken as far as TRIPS Flexibilities are Concerned

1.  The main TRIPS flexibility relating to the plant breeders rights is the protection of such rights by Sui Generis. Ethiopia already has a plant breeders rights Act of 2006, which is more or less a Sui Generis type. As this Act incorporates the rights of both the farmers and the breeders, the country has to stick to it. However, in that Act the country has to clearly state the rights of farmers. For example, substantive provisions on joint ownership of IP rights derived from the country's bio-diversity, criteria for sharing royalties, prior consent of the local community, etc should be included in the Act.

2.  The country should not accept the protection of plant breeders' rights through patent. As mentioned earlier in this paper, the protection of plant breeders rights through patent deprives the right of farmers to save, sow, exchange or sell the seed varieties acquired from seed companies. Patents only protect new inventions involving innovative steps and having the characteristic of industrial application. Hence, it does not provide an avenue for the farmers' rights to be protected.

3.  Art.1 (1), Art.7 and Art. 8 give more freedom to developing countries to adopt plant breeders' rights compatible to their socio-economic development levels. So, Ethiopia needs to maximise the benefits of adopting Intellectual Property rights that is compatible with her socio-economic development and technology transfer.

### 6.2 Positions to be taken as far as TRIPS Limitations are concerned

1.  To resist any agreements insisted on by developed countries such as TRIPS plus. The accession process of NEPAL is a typical example in which case USA tried to force NEPAL into UPOV. As per TRIPS there is no obligation to accept new conditionalities. The Nepalese government, aided by a robust civil society, successfully resisted UPOV. Likewise, Ethiopia should resist if a similar case is presented during its accession process.

2.  TRIPS Art. 27 provides for the exclusion of patentability based on public health, moral considerations etc. For countries such as Ethiopia, it is impossible to isolate food security from the public sphere. Above all, there is no way to separate food security from health concerns. Thus, exclusion of patentability based on food security concerns should be introduced into TRIPS.

3.  There is need to negotiate ways to introduce joint ownership of IP and the criteria for sharing royalties emanating from plant varieties originating from local communities in Ethiopia. In this regard, Ethiopia should borrow from other developing countries how bio-diversity has effectively been used for the development of their economies, and

(4) In TRIPS there are no special and differential treatments and the technical assistance is limited to implementation and enforcement issues. So, the country may seek aid for trade to develop its capacity in the field of Intellectual Property.

**6.3 Positions relating to Ethiopia's Export Interest and Food Items**

(i) To acquire geographical indications and trade marks for its major export items such as coffee

(ii) To acquire geographical indications for important products peculiar to the culture and soil of the country having clear boundary of production. Examples are teff and Enset. Since some of the products, such as Enset, are not under imminent danger, there is need for a cost-benefit-analysis before seeking geographical indications. However, awareness creation on the threat of loss of such products is very necessary.

(iii) To work closely with other developing countries to protect plant varieties of export interest from patentability.

## 7. CONLUSIONS AND RECOMMENDATIONS

A clear insight into the workings of TRIPS and its relationship with investment and competition policy has been gained. TRIPS is faced with a dual objective of protecting private IP ownership and regulating the monopoly power ensuing from such ownership. Plant breeders rights which is an aspect of TRIPS, and their implication on food security and the relationship with investment and competition were assessed. Protecting plant breeders' rights through patents limits farmers' access to important seed varieties. As farmers' lives are dependent on seed inputs, restrictions on use create food security problems. Currently there are about 1.1 billion people living below one dollar a day the majority of which are dependent on agriculture for their livelihood. Hence, plant breeders' rights constitute a food security issue for billions of the poor in the developing world.

As far as Plant breeders' rights and the rest of IP categories are concerned, TRIPS lack regulatory measures through which a patent granting country can force the patent holder to invest in its economy. Although compulsory licensing can be used to regulate monopolies, it is difficult for LDCs to execute them. Farmers are under continued threat from multinational seed companies due to the latter's capacity to introduce GURTs. This technology allows the multinationals to control the market and reduce the supply of new varieties.

The legal applicability of TRIPS is limited to its members. However, countries in the accession process such as Ethiopia are under immense pressure to bring their domestic regulations in conformity with WTO rules and regulations. The evidence from Nepal, China and Colombia reveal the challenges ahead in the international negotiation arena as far as plant breeder's rights are concerned. To overcome the multidimensional problem relating to plant breeders rights, a systematic approach to TRIPS based on the domestic policy strategy and international negotiation positions illustrated in this paper are recommended.

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# TRADE AND AID IN AFRICA'S GROWTH PERFORMANCE: AN ANALYTICAL INVESTIGATION

By Dipo T. Busari[24][*]

## 1. INTRODUCTION

That countries use trade to achieve rapid economic growth and reduce poverty is not new in development literature and was made popular by the Scottish economist, Adam Smith, in his 1776 classic work.[25] The experiences of some South East Asian countries since the 1970s have demonstrated that countries can use trade to climb out of low income status. Of course, production is the base for trade; an economy that intends to participate in the global trading system needs to have a sound production base. Thus, if the issue of trade for growth has been around for the past four centuries or so one might ask, "what is the big deal?" Why do we need further discussion on the issue of trade and aid?

Since the late 1970s, Africa, particularly sub Saharan African (SSA) countries, have been net receivers of financial aid from the West. There are several reasons for the huge volume of financial aid directed to African countries in the 1970s and 1980s. First, the late 1970s marked the beginning of the collapse of market prices for major primary commodities traded by African countries. With worsening terms of trade, many African countries require financial support.

Second was the effect of the "cold-war". The West and the East pumped money into Africa to gain alliances and allegiances. Many African dictators capitalised on this. Third was the blatant mismanagement of the various economies by ruthless political elites which saw the erosion of the production base of many countries. Many of the African leaders acted in economically irrational ways and there was limited domestic capacity for capital accumulation and utilisation. Of course, we should not forget the external debt issue. With mounting foreign debt and limited servicing capacity due to poor export performance, many African countries relied on external aid for survival. For many primary commodity exporting countries, the so called "Dutch disease" was already entrenched. With the end of the cold war, emergence of new and attractive markets, and rapid financial globalisation, Africa was faced with a new reality—the drying up of aid inflows. To attract further financial assistance from donor countries, agencies, and multilateral lending institutions, African countries were compelled to "structurally adjust". The adjustment process and financial assistance came with some very stringent conditions attached to it; the so-called "conditionalities".

After more than two decades of adjusting, many countries have observed that the social cost, and in some cases the political cost, of adjustment is high. The much expected export boost seems to be a mirage while international commodity prices continued their downward trend. Aid flow to Africa is also on the decline (compared to other parts of the developing world). The continent is now faced with deteriorating trade balance and declining aid inflow—a double calamity. This has led to the debate about what Africa needs to do to restore growth and get out of the low income status. In general, many analysts are of the opinion that given recent experiences, trade (and not aid) is the answer while some are of the opinion that aid is important in jump-starting economies of SSA countries. In fact the debate has turned to a kind of "trade versus aid" argument. Analysts are of the opinion that external aid had grown significantly, at least in absolute terms, but paradoxically, sub-Saharan Africa countries have become poorer over time instead of being better off. This is in sharp contrast to the experience of other parts of the world, particularly South East Asian countries, which have succeeded to create vibrant economies and have become high income economies without the kind of aid SSA countries received. Obviously, the question that readily comes to the minds of observers is what has SSA countries achieved with aid and has aid positively (or even negatively) impacted on economic growth in SSA countries? Asian countries have been able to create economic systems which are largely export-driven. This model is being suggested for African countries.

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25 Smith, Adam. An Inquiry into the Nature and Causes of the Wealth of Nations, London: Methuen and Co., Ltd., ed. Edwin Cannan, 1904. Fifth edition.

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However, the aid-versus-trade debate model of development for SSA countries can be contextualised from the new focus on the MDGs (Millennium Development Goals) which require the rich economies to provide increasing aid to the poorer countries coupled with the inability of countries to agree on a new global trading system that might have benefited many developing economies in the Doha round of World Trade Organisation talks. Thus, this paper sets out to examine the roles played by trade and aid in the growth process of SSA countries with the aim of making informed contribution to the theoretical and empirical debates. The paper does not set out to discriminate against any of the two strategies, but rather to provide empirical support in terms of the relative impact of both variables to economic growth in SSA countries. The subsequent sections of the paper are as follows. First I discuss the basic theoretical relationship between aid and trade on the one hand and growth on the other. I then present some stylised facts on aid, trade, and growth in SSA countries. Subsequently, the empirical framework for analysis is presented after which the results are presented and discussed. The study is then concluded.

**1.1 Theoretical Considerations**

*1.1.2    The Aid-Growth Relationship*

Generally speaking, development literature is not clear about how aid is supposed to affect economic growth. However, researchers have justified the aid-growth relationship by resorting to the famous "two-gap" model of Chenery and Strout (1966) which itself is an extension of the famous Harrod-Domar model of growth.[26] The model develops from a simple national income identity as follows:

$$Y = C+I+X-M$$
(1)

Y is the GDP (Gross Domestic Product). Here, government expenditure, G, is included in consumption, C, (private and government) and investment, I, (private and government). X and M are, respectively, export and import of goods and services. The gist here is that to reach the desired GDP growth rate (g), I and net exports (X-M) must reach certain levels. Domestic savings, S, is required to finance I, and M is required to make certain imported capital goods available to produce and export. Thus, with a little rearrangement of equation (1) we have:

$$Y-C-I = X-M$$
(2)

If we let S=Y-C, then we can write equation (2) as;

$$(S-I) = (X-M)$$
(3)

Here comes the savings (S-I) and external (M-X) gaps. Note that these gaps are not additive. In other words, the government should do its best to cover the largest of the two gaps (whether the domestic or foreign gap), once the largest gap is covered, the other will not present a problem. If the government successfully determines the larger of the two gaps and the required amounts to cover it, then the means to finance must be found. The most commonly used are foreign borrowing and Foreign Direct Investment (FDI).

Over the years, African countries, particularly SSA countries, have relied on foreign borrowing to cover the gap. FDI flow to Africa in general has been very poor. The flow is mainly to the mineral extractiion sub-sector. With mounting debt burden, poor export performance, and poor FDI flow, the only way to finance an external gap is through foreign aid.

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26    It is important to state that the famous Economist Walt Rostow in his 1960 book also described how aid can be imperative in mobilizing savings to generate sufficient investment for growth, thus reducing domestic capital constraint (Newark 1995: 228).

## 1.1.2    The Trade-Growth Relationship

The trade-growth relationship is anchored on the general Ricardian framework/model of international trade. This model suggests that, given technology and preferences, under perfect competition, trade will lead to growth and improved welfare based on comparative advantage. Comparative advantage can come from different sources such as productivity, technology, cost, factor endowment, and so on. I will not pursue this issue further here.[27] What is to be noted is that the pure theory of trade suggests that, under certain conditions, trade is growth inducing and welfare enhancing.

It is a well known fact that SSA countries' capacity to export has not improved significantly in the past 30 years since 1970. Coupled with this is the collapse of international commodity prices. Hence, SSA countries are faced with worsening terms of trade. This implies that, over the years, many SSA countries could not finance their external gap (X-M) through export, thus, the increasing reliance on external debt and foreign aid to finance the gap.

## 1.1.3 Some Empirical Views

a) Aid to Growth

Several empirical studies have been carried out to examine the impact of aid on growth. Due to severe data limitations, most of the studies done in the 1960s, 1970s, and 1980s were very inconclusive. There was also the problem of specifying correctly the mechanism through which aid impacts on growth. An extensive review of the literature can be found in Hansen and Tarp (2000) and Clemens et al. (2004). It should be emphasised that recent interest in the subject was sparked by the work of Boone (1996) which observed that aid finances consumption rather than investment suggesting that aid is not effective in stimulating growth. The paper introduces some political variables as determinants of aid thus avoiding the issue of reverse causation. Burnside and Dollar (2000) study examine some of the skepticism observed in Boone (1996) and also attempt to forge a consensus. Researchers who have shown interest in this subject include Hansen and Tarp (2001), Dalgaard and Hansen (2001), Guillamont and Chauvet (2001), Collier and Dehn (2001), Lensink and White (2001), Collier and Dollar (2002), and Easterly (2003).  Essentially, the studies were some kind of variant of the Burnside and Dollar (2000) by introducing additional variables such as the square of aid, terms of trade shocks, variability of agricultural output and exports and such other variables as interactive term combining aid with terms of trade shocks.

It should be observed that some of the studies confirm the position of Burnside and Dollar that aid is effective only under a good policy environment, while other studies observed that when some other variables are introduced into the model, the co-efficient on the interaction between aid and some policy variables approaches zero and in many cases becomes statistically insignificant. However, Easterly (2003:26) points out that "This literature has limitations: how to choose the appropriate specification without guidance from theory, which often means there are more plausible right-hand side variables than there are data points in the sample." In a recent study, Rajan and Subramanian (2007) found little robust evidence of a positive (or negative) relationship between aid inflows into a country and economic growth. The paper also found no evidence that aid works better in better policy or geographical environments, or that certain forms of aid work better than others. The study concludes by suggesting that for aid to be effective in the future, the aid apparatus will have to be rethought. In sum, recent studies are also inconclusive about the impact of aid on growth.

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27   Interested reader is referred to any standard text on international trade.

b) Trade to Growth

Literature on trade and growth is enormous and I will not attempt to review all of it here. However, there are some influential papers on the subject whose major findings I would like to discuss. First, it should be pointed out that, though related, there is a clear distinction between trade policy (openness/liberalisation) and trade itself. However, in many studies, this distinction is blurred. I would like to maintain the distinction in this paper. A good survey of the literature on openness and growth through the late 1980s can be found in Edwards (1993) which argues that much of the studies have been plagued by empirical and conceptual problems. Furthermore, the paper argues that the issues of endogeneity and measurement errors are not well dealt with in most of the studies making the results very fragile, unconvincing, and inconclusive. Berg and Krueger (2003) provide a more recent survey of the literature. The paper poses two important questions—is trade openness an important determinant of growth and is the growth that is associated with trade liberalisation particularly pro- or anti-poor? Rodríguez and Rodrik (2000) argue that a large body of literature provides an affirmative answer to the first question. Berg and Krueger (2003) also demonstrate that increases in openness to trade are an important contributor to growth. Other influential contributions to the subject include Dollar (1992), Sachs and Warner (1995), Edwards (1998), Frankel and Romer (1999), Lee (1993), Harrison (1996), and Wacziarg (1998).

In general, many of the studies examining the differences across countries in the level of output per capita point out that openness is systematically related to growth even when the issue of endogeneity is taken into consideration.  Most of these studies are based on cross-country and panel regressions. Some other influential ones with the same submission include Barro (1997), Alcala and Ciccone (2001), Barro and Lee (1994), Easterly and Levine (2001), Dollars and Kraay (2001), Dollar and Kraay (2002), Irwin and Tervio (2000), Islam (1995), Sala-i-Martin (1997), Hall and Jones (1997), Frankel and Rose (2000), and Greenaway et al. (1998).

In terms of trade per se (as against openness), some influential studies include Frankel and Romer (1996, 1999) and Levine and Renelt (1992) who have found modest positive correlations between growth in per capita income and trade share and interpreted the correlation as causation. Barrows (2004) argues that the simultaneity bias issue is a major drawback of many of these studies which can make OLS estimations to overstate the effect of trade on growth of per capita income.  The Frankel and Romer (1999) study instrument for trade using geographic characteristics of a country. However, Barrows (2004) argues that omitted variable problem could still exist if growth is determined by these geographical factors.

Due to the inconclusiveness of the literature and the barrage of criticism trailing many of the adopted methodologies and manner of measuring the various variables, there seems to be a qualification of the findings of the openness/trade and growth relationship. The submission now is that, generally, more exposure to international trade <u>may</u> cause faster economic growth, <u>but does not always and necessarily do so</u>, and the determinants of whether trade is good or bad for growth are institutions and other economic policies.

The qualification suggests that if a country is getting other manners of (socio-political and) economic policies basically right, and has reasonably well-functioning government and institutions, then we should expect trade (liberalisation) to enhance growth and development thus raising the quality of life for many more people than it harms. However, if a country only liberalises trade and does not get things right in terms of other policies, increased trade liberalisation by itself could make many more people worse off than it makes better off. This line of argument can now be found in more recent literature such as Wacziarg and Welch (2003), Baldwin (2003), Bolaky and Freund (2004), Chang et al. (2005) and Balat and Porto (2005) among several others. There submission is that trade liberalisation in itself cannot ensure growth unless some other complementary policies are up and running well.

## 2.   AID, TRADE AND GROWTH IN SUB-SAHARAN COUNTRIES: SOME STYLYSED FACTS

In this section, I make a brief presentation on the trend in major aid, trade, and growth indicators in sub-Saharan African countries. I attempt to match the behaviour of the indicators with major findings in the empirical literature.

Figure 1 shows the trends in major aid indicators in sub-Saharan Africa from 1970 to 2006. The data includes figures for Nigeria and South Africa. It can be observed that since the late 1970s when the international prices of primary commodity exports collapsed, through the structural adjustment programme (SAP) era and up to the late 1990s, all the major aid indicators suggest massive aid flows to SSA. Of interest is the fact that aid per capita has continued to rise since 2000 while other indicators seem to have stabilised. Though aid as a percentage of Gross National Income (GNI) has not been too high, the figure has approached about 8 per cent since the mid-1980s. Aid as A percentage of import of goods and services has averaged about 17 per cent since the mid-1980s, while aid as a percentage of gross capital formation has averaged about 28 per cent since the mid-1980s. A tentative conclusion here is that since the late 1970s, on the average, aid flow to SSA countries has risen significantly.

**Figure 1: Major Aid Indicators in sub-Saharan African Countries**
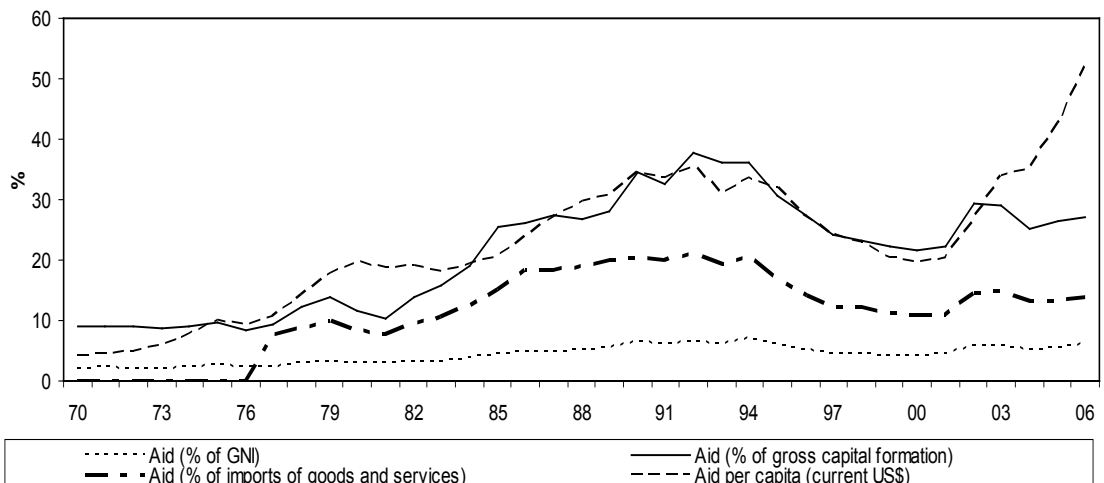


Source: World Development Indicators CD ROM (2008)

**Figure 2: Major Trade and Growth Indicators in sub-Saharan African Countries.**
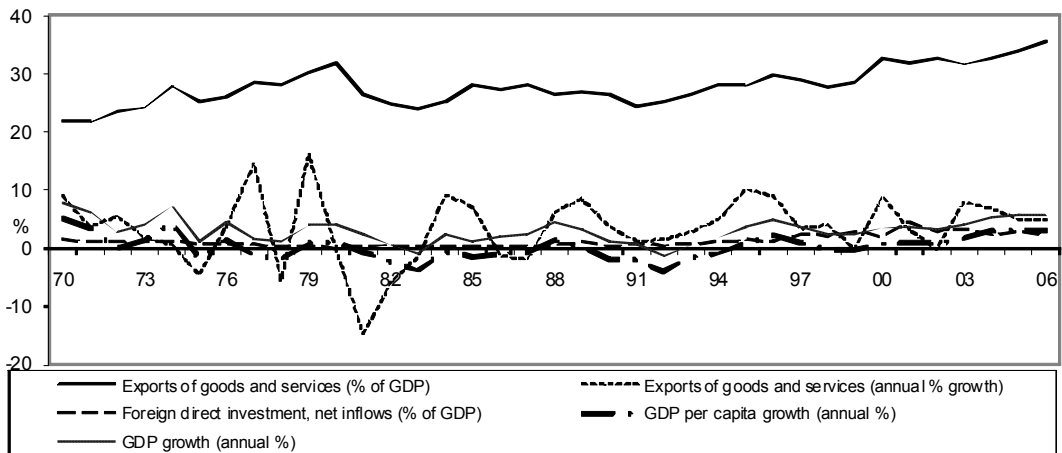


Source: World Development Indicators CD ROM (2008)

Figure 2 presents trends in major trade and growth indicators in sub-Saharan Africa. It can be observed that export of goods and services as a percentage of Gross Domestic Product (GDP) has been relatively stable since the 1970s. A major reason for this is that the structure of production and export has not changed significantly in these countries. SSA countries have continued to produce and export those (primary) commodities they have been exporting since independence in the 1960s. Figure 2 shows further that the growth of export of goods and services has been very volatile over time and on the average it has been close to the X-axis (meaning close to zero growth rates). A similar pattern can be found for GDP growth and GDP per capita growth. FDI as a percentage of GDP shows a trend that is similar to the others.

Essentially, what Figure 2 is showing is that over time output growth, output per capita growth, export growth, and FDI share in output have all been very low in SSA countries. This implies that external gap in SSA countries can only be largely covered by borrowing or aid flows, as export performance has been very poor and erratic. Despite the massive aid flow since the late 1970s, GDP per capita growth and GDP growth have remained poor. Trade itself has not improved significantly.

## 3. FRAMEWORK FOR ANALYSING GROWTH

### 3.1 The Model

In examining the relative impact of aid and trade in Africa's growth process, the study adopts some extensions of the basic Solow-Swan neo-classical growth model. A popular approach is the one developed in Barro (1997) in which economic growth is modelled as a function of two sets of variables—set of initial variables and set of control or environmental variables. In this study, the variant by Yanikkaya (2003), which is just a further decomposition of the Barro approach, is adopted. Following Yanikkaya (2003), one specifies a growth model in its general form as follows:

$$g_{yi,t} = F(\eta_{i,t}, k_{i,t}, h_{i,t}; Z_{(i,t)}) \tag{4}$$

where $g_{yi,t}$ is the growth rate of real output per worker (or per capita) gross domestic product, gdp; $\eta_{i,t}$ is some measure of initial conditions; $k_{i,t}$ and $h_{i,t}$ are, respectively, some measures of (quality and/or quantity of) physical and human capital (per worker), all at time period $t$ for country $i$. $Z_{(i,t)}$ represents a vector of some control or environmental variables. There are various ways in which researchers have attempted to operationalise equation (4) depending on how the vector $Z$ is specified and/or measured and the specific production function adopted. In the sense of the Solow (1956) growth accounting framework, vector $Z$ is regarded as TFP (total factor productivity) growth—growth not due to accumulation of primary factor inputs. It is not uncommon in growth models to assume that TFP is driven (linearly) by a set of unobserved country-specific (fixed effect) characteristics that are time invariant, $\mu_{0i}$, a vector of observed non-input fundamentals, $X_{it}$, a set of time varying factors, represented by $\theta_{it} t + \nu_{it}$, where $\nu_{it}$ is a time varying residual and $t$ is a time trend common to all countries. Hence, TFP growth is modelled as:

$$Z_{(i,t)} = \mu_{0i} + \theta_{it} t + X_{it} + \nu_{it} \tag{5}$$

It is suggested in the literature that one can think of three different hypotheses: the TFP growth is the consequence of (i) good macroeconomic policies, (ii) just plain good luck, or (iii) a good institutional stance (Jadresic and Zahler, 2000). This implies that the vector $X$ is composed of macroeconomic, external (including aid and trade) and institutional factors. Macroeconomic factors include variables that capture the different macro policy decisions.

### 3.2      Determinants of Growth Considered

In examining the determinants of long-term growth, growth rate of real output per worker (or per capita) gross domestic product, gdp, is usually used as the dependent variable. Thus, the following variables are suggested by the literature as some of the determinants of growth.[28]

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[28]    It should be observed that the determinants of growth as suggested by the vast literature on economic growth are numerous. Levine and Renelt (1992) identified over 50 of such variables.

*3.1.1 Initial Conditions*

This is usually proxied by (log of) some level of income at a given past period (the beginning of the period over which growth is measured). Generally, initial level of real output per worker (or per capita) gdp is a common variable (see Harn and Kim, 2000)[29]. Based on the convergence hypothesis, this variable is expected to be negatively related to growth. Variables such as initial life expectancy rate at birth have also been used in the literature to proxy for initial state of heath of the labour force (see for example O' Connel and Ndulu, 2000 and Yanikkaya 2003). Another measure of initial (human capital) condition is the use of (log of) adult literacy rate which is defined as the fraction of population over the age of 15 that is able to read and write at the beginning of the sample period (Temple, 1998; Kourtellos, 2002). Enrolments in secondary or tertiary schools have also been used to proxy for initial level of human capital in terms of educational attainment.

Factor inputs

According to the Solow growth model, factor inputs are important in the growth process. These are measured as logs of $s_{k,i}$, $s_{h,i}$ which are, respectively, the savings rate for physical and human capital accumulation out of real output (having positive impact on growth), and the log of $(n_i + \rho + \delta)$, where $n_i$ is the population growth rate of country $i$ while $\rho$ and $\delta$ represent common rates of technical change and depreciation of human and physical capital stocks, respectively. A common practice in the empirical literature is to assume that $(\rho + \delta) = 0.05$ (see for example, Kourtellos, 2002). Hence the variable $(n_i + \rho + \delta)$ can be measured as logarithm of average growth rate of the population plus 0.05 for depreciation. The neoclassical (Solow) growth model predicts a negative impact of this variable on growth.

The measurement of human capital has always been quite problematic in growth regressions (see Lin, 2006). Hoeffler (1999) argues that educational attainment—defined as average year of schooling achieved by the population aged 15 or older—is more appropriate than school enrollment rates in the measurement of human capital. Some authors, like O'Connel and Ndulu (2000), prefer to use 25 years and above. It is agreed that, in general, the human capital variable is also to include measures of health and nutrition of the labour force. Though this is somewhat difficult to incorporate and hence ignored by most studies. A typical implementation of the Hoeffler (1999) measure, as expressed in Lin (2006), is to define human capital as the average number of years of formal education per person among employed people [i.e., the average number of years of formal education per person = [(primary stock × 6 + junior stock × 9 + senior stock × 12 + college stock × 16) / total employed people]. Data on this measure is generally absent for most SSA countries. It should be noted that some authors have used cost based measures of education to measure human capital (see Judson 2002). The cost based approach is particularly difficult to implement in our case due to severe data limitations. Virtually all the sampled countries do not report public expenditure per level of education. Also, the absence of private cost on education makes the approach unattractive in this case. In this study, primary and secondary school enrolment rates are used to proxy for human capital. The study excludes tertiary enrolment rates due to dearth of data.

In terms of physical capital stock, a popular approach is to adopt the perpetual inventory approach following the work by Nehru and Dhareshwar (1994). This study simply uses an investment rate measured by average proportion of real gross domestic investment (including government) to real GDP (Gross domestic investment, percentage of GDP).

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29    Barro (1997) argues that for certain values of education and health, an increased initial level of GDP per capita could be inter preted to mean a greater stock of physical capital per person (or a larger quantity of natural resources).

The Z vector

As argued by Levine and Renelt (1992), there are well over 50 potential variables that can be included in a typical growth regression.[30] In practical terms, it is difficult to include all such variables due to data and sample size limitations. Hence, it is the practice to include the traditional variables and some others judged to be more relevant. As discussed earlier, the *Z* vector will be made up of policy and institutional factors as well as some elements of good luck. Due to dearth of long time series on many variables for many SSA countries, particularly institutional and socio-demographic variables, the study relies largely on macroeconomic aggregates. The variables used in the analyses are as follows:

*Role of the Public Sector*
- General government final consumption expenditure (percentage of GDP). This variable is expected to indicate if government consumption expenditure impacts on growth. When the economy is close to full employment, a negative relationship is expected as it would crowd-out private investment. However, at low level unemployment equilibrium, the impact can be positive.
- Gross investment, public (percentage of GDP). Investment in infrastructure, R&D, and other productive public activities can enhance growth particularly when the economy is experiencing low level employment. Data on public expenditure on R&D for SSA countries is generally absent. Thus, this study relies on the use of public investment while recognsing that not all public investment expenditure would be productive (this variable and gross domestic investment do not enter an equation at the same time).
- Taxes on domestic goods and services as share of total revenue excluding grants (%). The fiscal stance of the government in terms of taxation can be used to stimulate investment and savings if it is on the low side. On the other hand, high taxation would discourage investment and savings thus impacting negatively on growth.
- Fiscal deficit (percentage of GDP). This is a measure of the impact of the fiscal balance of the central government on economic activities. The impact of fiscal deficit on growth can be positive when there is low level equilibrium or fall in aggregate demand. However, when the money market is highly interest-inelastic, the impact can be inflationary and thus impact on growth negatively.

*International Trade Restrictions/Openness*
- Taxes on international trade as share of total revenue excluding grant (%). The growth literature suggests that openness is conducive to growth. Thus, high international trade taxes can discourage trade, which in turn, reduces growth. Trade liberalisation is expected to impact positively on growth.
- Openness—(export plus import)/GDP (percentage of GDP). This is another crude measure of the degree of economic openness. This measure suffers several drawbacks, however, this study intends to use it. Data on international capital restrictions are also generally absent for SSA countries.
- Export growth (annual growth percentage). A high rate of growth of export is expected to be growth inducing. Rapidly growing export implies expanding output which could translate to employment and growth. The experience of the South East Asian countries supports this proposition.

*Aid Variables*
- Aid per capita (current US$). Development aid is supposed to create long-term sustainable economic growth. Thus it is expected to be growth inducing. Due to data constraints, this study would not distinguish between the various types of development aid—official development assistance, official aid, and other official flows.
- Aid to GDP (percentage of GDP). The above argument holds for this variable too.
- Aid to Import (percentage of imports of goods and services). Theoretically, as aid increases we expect that the capacity of the recipient economy to import capital goods would increase. This is expected to contribute to capital accumulation and thus growth.
- Aid (percentage of central government Expenditure)

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30  A list of commonly used variables in cross-country growth models as contained in the World Bank data set and the Penn World Table data can be found in Ciccone and Jarocinski (2008).

*External Debt Burden*
- Debt service to export ratio, (ex-post percentage). This ratio is a measure of external resource commitment of a country, thus measuring the relative amount of resource available for development financing. High values would impact negatively on growth as it would lead to resource transfer leaving little for development.
- Total External Debt to GDP (percentage of GDP). The impact of this variable on growth is not linear. With well utilised debt, a ratio up to a point can be growth enhancing while after that point, debt service would be high and growth would be affected.
- Concessional debt to export ratio (percentage of exports). Concessional debt, by definition, has low interest and longer repayment period. They are particularly helpful to low income countries. They are development financing instruments, thus expected to be growth enhancing, again up to a point.
- Concessional debt to GDP (percentage of GDP). The same argument above holds for this variable.

*Financial and Banking system Development*
- Domestic credit to private sector (percentage of GDP). This variable measures the extent to which the private sector have access to credit thus it is a proxy for the extent of financial development in a country. In a market where the government is a major competitor for credit in the system, it would stifle credit to the private sector thus reducing investment and growth.
- Money and quasi money (M2) (percentage of GDP). This is also a proxy for measuring the level of financial intermediation in the economy. The higher this ratio, the higher is the level of financial intermediation, and this is expected to be growth enhancing. Due to paucity of data, a variable such as market capitalisation of listed firms (percentage of GDP) could not be included.

*Macroeconomic Factors*
- Final consumption expenditure plus discrepancy (percentage of GDP). This variable measures the combined impact of public and household final consumption on economic growth. With low level of economic activity, the impact is expected to be employment generating and thus growth stimulating.
- Gross domestic savings (percentage of GDP). This variable measures the capacity of the economy to mobilise resources for investment and development financing. High savings rate (up to a point) is expected to be growth stimulating as it provides the required resources for investment. In general, in SSA countries, savings and growth are expected to be positively related.
- Foreign Direct Investment (percentage of GDP). According to the endogenous growth model, FDI is a source of knowledge diffusion and technological transfer which are both growth enhancing. Thus, the study expects a positive relationship between FDI and economic growth in SSA countries.
- Terms of trade index (year 2000=100). Defined as the relative prices of a country's export to import, they are sometimes used as a proxy for the relative social welfare of a country.[31] In general, an improvement in a country's terms of trade (the increase of the ratio) is good for that country in the sense that it has to pay less for the products it imports, that is, it has to give up fewer exports for the imports it receives. Thus a positive relationship with growth is expected. This measure also indirectly measures the impact of resource rich SSA countries in driving growth in sub Saharan Africa.
- Current account balance (excluding net official capital grant) (percentage of GDP). A surplus in the current account is an indication of a healthy economy which could suggest improved export earnings. It would provide the required foreign exchange for financing growth and development. Thus a persistent negative balance could slow growth.
- Real interest rate (percentage). This is a macroeconomic indicator of the kind of liquidity market investors are facing. High real interest rate would discourage investment which in turn could translate to low growth. On the other hand, low real interest would encourage investment and thus enhance growth.

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31  It should be observed that this heuristic measure has been questioned in the literature on technical grounds and so it should be used with extreme caution in this context.

- Real effective exchange rate index (2000 = 100) (percentage). A fall in the real effective exchange rate (either due to depreciation of the local currency or increase in foreign prices) is expected to make domestic goods more competitive internationally, export is expected to rise, thus growth will increase. On the other hand a rise in the real effective exchange rate would reduce the international competitiveness of local goods.
- Inflation (CPI, percentage Change). Low inflation can be growth inducing while high inflation could be growth depressing. Hence, the relationship between inflation and growth is ambiguous. However, in economies with low level unemployment equilibrium, it is possible that moderate inflation would be growth inducing.

*Macroeconomic Uncertainty*
- Inflation, terms of trade, official nominal exchange rate (local currency unit per US$) variability. The volatilities of these variables are used to capture the level of macroeconomic uncertainty. Macroeconomic uncertainty is expected to be growth depressing as it increases investment risk and can lead to capital flight. In this study, volatilities in the variables are measured by the standard deviation of the variables over the relevant five-year period. It should be noted that there are several approaches to deriving volatility, however for analytical convenience this study uses the standard deviation approach.

*Political Instability*
- War Period Dummy—value zero for years of war and unity otherwise.[32] This variable attempts to examine if countries with stable political structure enjoy higher growth. It should be observed that this dummy does not capture the entire political instability space (which includes coups, election violence, revolutions, etc.), but rather, only the space that has generated civil conflicts and wars.

*Geography and Oil*
- Landlocked dummy—value zero for landlocked countries and unity otherwise. The variable captures the impact of absence of access to seaport on economic growth. Lack of such access increases transaction costs thus discouraging investment and growth. Thus countries that are not landlocked are expected, on the average, to have higher growth rates. Due to severe data constraints, the study could not capture other geographical variables such as absolute values of latitude, distances from the equator, proportion of land within 100km of the coast, average temperatures and average rainfall, soil quality, disease and ecology, and so on.
- Oil Dummy. A dummy variable is included to capture the growth pattern of major oil exporters in SSA. The dummy takes the value of 1 from the year the countries started commercial exportation of oil.

*Socio-Demography*
- Fertility rate (total births per woman), Population growth rate (percentage), and Life expectancy at birth (total years). These socio-demographic variables are very relevant in the context of the MDGs. High fertility rate increases number of children per household which reduces the chances of the mothers contributing to economic activity. High population growth rates reduce income per head. However, high life expectancy at birth would impact positively on growth. Some of these demographic factors are actually used as part of the variables of the initial conditions. Thus, the initial socio-demographic characteristics of a country could define its growth path into the near (and even distant) future. Thus, in this study, many of the initial condition variables are interpreted in the context of the MDGs.
- Age dependency ratio (dependents to working age population). This variable measures the impact of average national "family burden" on the work force. The higher this ratio, the higher would be the burden on the work force, and thus the lower is the growth going to be.

Currently, due to absence of sufficiently long time series, this study could not include variables that measure quality of governance, institutions, property rights, rule of law, corruption, and other related institutional and environmental factors.

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32 Data represent update of Collier and Hoeffler (2004).

## 3.3 Sample, Data, and Scope of Analysis

There are 48 countries categorised in the World Bank data set as being in sub-Saharan Africa. However, Eritrea was excluded from the sample as the country's data formed part of that of Ethiopia before independence in 1993. The study period covers 1970 to year 2007. The data points are made up of averages over five-year periods—1970-74, 1975-79, and so on. The final data points are averages of three years—2005-2007. The averaging process is done in order to exploit the temporal dimension of the data and to analyse the long-term relation between the determinants and economic growth. Where complete data points are not found for a particular five-year period, the average over the available data points is used. Thus, there are eight observations per country. Most of the data is derived from the World Bank World Development Indicators (2008) and World Bank African Development Indicators (2007). In few cases, the study resort to specific country reports and profiles to source some data.

### 3.3.1 Estimation Technique

Thus, based on equations (4) and (5), the estimating growth equation adopted in this study is as follows:

$$y_{it} = \alpha_{it} + x'_{it}\beta + \varepsilon_{it} \qquad (6)$$

where $i$ =1, 2,…,$N$ represent the country and $t$ =1,2,…,$T$, the time period. $Y_{it}$ is growth of real per capita GDP, $X_{it}$ is the vector of both the initial and controlled variables, $\alpha_{it}$ is the individual/time effect, $\beta$ is a vector of parametres, while $\varepsilon_{it}$ is the error term. There are various approaches that have been adopted in the literature to address the issue of cross-country growth disparities. Studies such as Easterly (2000), Kraay and Monokroussos (1999) applied Pooled OLS analyses on panel data, Fischer (1993) and Barro (2003) used three–stage least squares, Levine and Schmukler (2003), Claessens, Klingebiel, Schmukler (2003) used FGLS (feasible generalized least squares).[33]

This study reports results from the use of Pooled Least Squares (PLS) and FGLS (for the random effect models) as econometric techniques in the analysis of growth in sub-Saharan Africa. The reason for using the FGLS is to take into consideration the existence of variable variances in the residuals between countries, which can give rise to cross-section heteroskedasticity. Thus, to allow variances within a cross-section to differ across time, the study uses White heteroskedasticity co-variance, which estimate co-variances that are robust to general heteroskedasticity. A common test of variable variances of the residuals is the Bartlett, Levene, and Brown-Forsythe tests. This is adopted in the study.

In general, model types as expressed in equation (3) are normally estimated using either fixed or random effect techniques. Both techniques are designed to deal with some observed regular tendency of individual specific components to be higher for some entities than for others. Specifically, the random effect estimator is appropriate if the individual specific component is assumed to be random with respect to the explanatory variables, while the fixed effects estimator is appropriate if the individual specific component is not independent with respect to the explanatory variables. It should be observed that the fixed effect model is a special case of the random effect model rather than the opposite—if the random effect is assumed constant over time, the result is the fixed effects. A common test employed to discriminate amongst the two estimators is the Hausman specification test. The Hausman test tests the null hypothesis that the co-efficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. Statistically, fixed effects are always admissible with panel data (they always give consistent results) but they may not be the most efficient model to estimate. To be able to use as much data as possibl, due to the fact that there are some observations missing for some countries at some time periods, the study uses unbalanced data in Eviews 6.0.

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33    It is sometimes the case that results from several estimation techniques are reported together.

## 4. ANALYSIS AND RESULTS

A usual starting point in modern analysis of longitudinal data is to examine the properties of the data. However, due to the fact that the sample size is small (eight per country per variable in principle) and the fact that the study is adopting the use of unbalanced sample due to missing data problem, it will be inefficient to carry out such tests.

Results from three estimators are reported where feasible. These are pooled least squares (PLS), fixed effects (FE) and random (RE) effects estimators. The 10 per cent significance level is used in interpreting the various results. Table 1 presents the results when only core neoclassical variables are included in the equations. These are variables described as initial conditions and factor inputs. The three estimators indicate that domestic investment (as a percentage of GDP) is positively and significantly related to growth in SSA countries. However, the FE estimator indicates that initial level of GDP per capita and life expectancy are negatively and significantly related to growth in SSA countries. The negative sign of initial level of real GDP per capita is usually interpreted to suggest evidence of conditional convergence in the neoclassical sense.

To this basic neoclassical model, I add trade and aid variables. The results are presented in Table 2. It can be observed that the growth of export is consistently positive and significant while aid as a percentage of GDP is significant in the PLS and RE estimations. However, the variable has negative signs in all the three estimations. Also, openness was observed to be insignificant in the three estimations but surprisingly negative. Aid per capita, though insignificant, changed sign from one estimation to another. A tentative submission here is that export growth is consistently and positively co-related with economic growth in SSA countries. It should be observed that the FE redundancy and the Hausman tests suggest that the FE estimator is more efficient. However, in this estimation, no aid variable is significant and aid as a percentage of GDP is actually negatively signed.

To investigate how trade and aid variables behave as one control for other factors, I systematically introduce other variable to Table 2 to see how both sets of variables will behave.

**Table 1: Regression Results of Core Neo-Classical Variables.**

| Dependent Variable $\Rightarrow$ growth of real per capita gdp (percentage) | | | | |
|---|---|---|---|---|
| | | Estimator | | |
| Independent Variables $\Downarrow$ | | PLS | PLS-FE | PLS-RE | |
| Core Neoclassical Variables | Constant | -3.843487 (-2.573)*** | 2.717109 (1.152) | -3.533923 (-2.312)*** | |
| | Initial gdp | 0.000111 (0.467) | -0.002447 (-4.892)*** | -4.53E-05 (-0.184) | |
| | Life expectancy | -0.011429 (-0.344) | -0.125457 (-2.403)*** | -0.025531 (-0.741) | |
| | Primary School | -0.001455 (-0.160) | 0.011451 (0.884) | 0.001106 (0.115) | |
| | Secondary School | -0.008687 (-0.519) | 0.008121 (0.398) | -0.002967 (-0.177) | |
| | Population growth | 0.151619 (0.645) | 0.574218 (2.192)*** | 0.254599 (1.129) | |
| | Domestic Investment to gdp ratio | 0.263211 (11.174)*** | 0.178489 (6.092)*** | 0.259242 (11.114)*** | |
| Cross sections (pool unbalanced Observations) | | 45 (282) | 45 (282) | 45 (282) | |
| $R^2$ ($R^2$-adjsuted) | | 0.36 (0.35) | 0.58 (0.49) | 0.31 (0.30) | |
| Standard Error of Regression | | 3.35 | 2.98 | 3.17 | |
| F (prob.) | | 26.08 (0.000) | 6.31 (0.000) | 21.23 (0.000) | |
| Redundant FE test | | | F =2.67 (0.00) $\chi^2$ =115.85 (0.00) | | |
| Hausman Test | | | | $\chi^2$ = 40.00 (0.000) | |

White cross-sectional heteroscedastic consistent *t*-statistics in parentheses.

***(**)* significance at 1%(5%)10%. FE implies fixed-effects while RE implies random-effects.

In Table 3, two sets of variables introduced are first variables capturing the impact of public sector activity and impact of external debt on growth profile of SSA countries. None of the debt variable was found significant and they are not consistently signed. Government consumption was observed to be negatively related to growth but insignificant. Only domestic taxes as a ratio of tax revenue was observed to be significant in the PLS and RE estimations but found to be consistently positively signed.

The addition of these two sets of variables produced some interesting results in terms of aid and trade. First, in terms of the trade variables, only growth of export was observed to be (consistently) significant and positively related to growth. Other trade variables were not significant. In respect of the aid variables, it can be observed that aid as a percentage of GDP was observed to be consistently negatively signed but significant on the FE and RE estimations. However, aid as a percentage of import was observed to be positively signed and significant. But tests suggest that the FE estimation is less efficient than the RE estimation. Again, a tentative submission here is that growth of export is significantly and positively related to growth. Though the FE and the more efficient RE estimation shows that aid as a percentage of GDP is negatively and significantly related to GDP, it is not significant in the PLS estimation.

In Table 4, I add some other sets of variables representing financial development, political stability, geography and demography to the variable in Table 3. It could be observed that none of the aid variables is significant in these estimations. However, the results still indicate some interesting contradictions. It should be observed that results from Table 4 suggest that aid per capita and aid as a percentage of import are positively related to growth. However, aid as a percentage of GDP is negatively related to growth. Again, the growth of export is observed to be consistently positive and significantly related to growth. Other observations are that government consumption (as a percentage of GDP) is negatively related to GDP, domestic credit to the private sector (as a percentage of GDP) is positively related to GDP, the oil dummy indicates that on average, the major oil exporters are growing faster. Also, there is some evidence that fertility rate is negatively related to growth.

In Table 5, the third column reports the result when other variables—macroeconomic environment and volatility—are included in the regression estimates using PLS. Column 3 indicates that growth of export is positively and significantly related to economic growth and there is some evidence that international trade taxes as a ratio of tax revenue is also positively and significantly related to economic growth. However, it can be observed that aid as a percentage of GDP is now positively and significantly correlated with GDP. Aid per capita is positive but not significant while aid as a percentage of import is also insignificant but now negative.

**Table 2: Regression When Trade and Aid Variables are added To the Core model.**

| Dependent Variable ? growth of real per capita gdp (percentage) | | | | | |
|---|---|---|---|---|---|
| | | Estimator | | | |
| Independent Variables ? | | PLS | PLS-FE | PLS-RE | |
| Neoclassical Variables | Constant | 2.209645 (0.921) | 4.581944 (0.899) | 2.61873 (1.089) | |
| | Initial gdp | 0.000221 (0.594) | -0.001048 (-0.334) | 0.000249 (0.672) | |
| | Life expectancy | -0.127296 (-2.504)*** | -0.214023 (-2.327)*** | -0.138206 (-2.730)*** | |
| | Primary School | 0.000736 (0.068) | 0.020674 (1.047) | 0.002092 (0.190) | |
| | Secondary School | -0.010747 (-0.422) | 0.01933 (0.413) | -0.010376 (-0.412) | |
| | Population growth | 0.244216 (0.965) | 0.405606 (1.362) | 0.230907 (0.964) | |
| | Domestic Investment to gdp ratio (%) | 0.215148 (4.723)*** | 0.121702 (1.933)* | 0.211346 (4.806)*** | |
| Trade Variables | International taxes as a ratio of tax revenue (%) | -0.004106 (-0.254) | 0.009868 (0.320) | -0.003939 (-0.239) | |
| | Openness (%) | -0.002711 (-0.313) | 0.012337 (0.457) | -0.001413 (-0.158) | |
| | Export Growth (%) | 0.212869 (6.796)*** | 0.145911 (3.554)*** | 0.212648 (7.089)*** | |
| Aid Variables | Aid per capita ($) | 0.007678 (1.096) | -0.004802 (-0.220) | 0.007702 (1.094) | |
| | Aid to GDP (%) | -0.110774 (-3.168)*** | -0.064565 (-0.880) | -0.111771 (-3.188)*** | |
| | Aid To Import (%) | 0.013415 (1.140) | 0.035631 (1.253) | 0.014783 (1.227) | |
| Cross sections (pool unbalanced Observations) | | 34 (118) | 34 (118) | 34 (118) | |
| $R^2$ ($R^2$-adjsuted) | | 0.59 (0.54) | 0.76 (0.60) | 0.58 (0.53) | |
| Standard Error of Regression | | 2.44 | 2.26 | 2.38 | |
| F (prob.) | | 12.42 (0.000) | 4.99 (0.000) | 12.10 (0.000) | |

| | | | | |
|---|---|---|---|---|
| Redundant FE test | | F =1.53 (0.067) $\chi^2$ =62..74 (0.001) | | |
| Hausman | | | $\chi^2 = 22.71$ (0.030) | |

For the PLS-FE and PLS-RE, White cross-sectional heteroscedastic consistent *t*-statistics in parentheses.

***(**)* significance at 1%(5%)10%. FE implies fixed-effects while RE implies random-effects. Aid as a percentage of central government expenditure is omitted as it reduces the number of cross-sections and observations significantly due to problem of missing data points.

**Table 3: Regression Controlling for Public Sector and External Debt.**

| Dependent Variable ? growth of real per capita gdp (percentage) | | | | | |
|---|---|---|---|---|---|
| | | Estimator | | | |
| Independent Variables ? | | PLS | PLS-FE | PLS-RE | |
| Neoclassical Variables | Constant | -0.308378 (-0.101) | 7.140306 (0.856) | -0.308378 (-0.073) | |
| | Initial gdp | -0.000432 (-1.030) | -0.004533 (-1.078) | -0.000432 (-1.607) | |
| | Life expectancy | -0.096931 (-1.808)* | -0.3288 (-2.525)** | -0.096931 (-1.377) | |
| | Primary School | 0.002448 (0.211) | 0.033352 (1.317) | 0.002448 (0.208) | |
| | Secondary School | 0.027486 (0.986) | 0.042206 (0.711) | 0.027486 (1.671)* | |
| | Population growth | 0.480699 (1.809)* | 0.688389 (1.989)* | 0.480699 (1.898)* | |
| | Domestic Investment to gdp ratio (%) | 0.166374 (3.165)*** | 0.242533 (2.883)*** | 0.166374 (3.399)*** | |
| Trade Variables | International taxes as a ratio of tax revenue (%) | 0.004589 (0.208) | -0.021284 (-0.407) | 0.004589 (0.266) | |
| | Openness (%) | 0.005994 (0.638) | 0.046477 (1.074619 | 0.005994 (0.550) | |
| | Export Growth (%) | 0.163495 (4.588)*** | 0.107677 (1.920)* | 0.163495 (5.027)*** | |
| Aid Variables | Aid per capita ($) | 0.008415 (1.130) | 0.003273 (0.128) | 0.008415 (1.516) | |
| | Aid to GDP (%) | -0.081569 (-1.354) | -0.241429 (-1.898)* | -0.081569 (-2.410)** | |
| | Aid To Import (%) | 0.013095 (1.007) | 0.092284 (2.206)** | 0.013095 (1.129) | |
| Public \Sector | Government Consumption to GDP (%) | -0.083338 (-1.175) | -0.168341 (-1.181) | -0.083338 (-1.157) | |
| | Domestic taxes as a ratio of tax revenue (%) | 0.048792 (2.266)*** | 0.036693 (0.941) | 0.048792 (2.427)** | |
| | Overall Budget balance to GDP (%) | 0.015993 (0.410) | -0.036389 (-0.684) | 0.015993 (0.296) | |
| External Debt | External debt to GDP (%) | -0.007509 (-0.915) | 0.014114 (0.638) | -0.007509 (-0.960) | |

| | | | | | |
|---|---|---|---|---|---|
| | Concessional Debt to Export (%) | -0.00063 (-0.519) | 0.000353 (0.163) | -0.00063 (-0.646) | |
| | Concessional debt to GDP (%) | 0.006812 (0.558) | -0.012549 (-0.501) | 0.006812 (0.729) | |
| Cross sections (pool unbalanced Observations) | | 32 (93) | 32 (93) | 32 (93) | |
| $R^2$ ($R^2$-adjsuted) | | 0.52 (0.40) | 0.71 (0.39) | 0.52 (0.40) | |
| Standard Error of Regression | | 2.25 | 2.27 | 2.25 | |
| F (prob.) | | 4.39 (0.000) | 2.18 (0.005) | 4.39 (0.000) | |
| Redundant FE test | | | F = 0.95 (0.550) $\chi^2 = 48.61$ (0.023) | | |
| Hausman Test | | | | $\chi^2 = 0.00$ (1.00) | |

White cross-sectional heteroscedastic consistent *t*-statistics in parentheses.
***(**)* significance at 1%(5%)10%. FE implies fixed-effects while RE implies random-effects.
External debt service as a percentage of export is omitted as it reduces the number of cross-sections and observations significantly due to problem of missing data points.

In column 4 of Table 5, the results of PLS estimation while retaining only significant variables are presented. It should be observed that the result presented in column 4 is not just by simply deleting insignificant variables in column 3, but by a systematic process of model reduction. The results presented in column 4 suggest that the three trade variables are positively and significantly correlated with growth while aid as a percentage of GDP is also positively and significantly related to growth. The model is again re-estimated with the assumption of valid fixed-effects. The results are presented in column 5. The three aid variables are observed to still be significant and positive while aid as a percentage of GDP is observed not to be significant. The Model is again re-estimated under the RE assumption. Openness and growth of exports are positive and significantly related to growth while aid as a percentage of GDP is also significantly related to growth. However, it should be noted that the FE redundancy test indicates that the FE assumption is valid.

**Table 4: Regression Controlling for Finance, Geography and Demography**

| Independent Variables | | | PLS | PLS-RE |
|---|---|---|---|---|
| Neoclassical Variables | | Constant | 4.388026 (0.799) | 4.388026 (0.472) |
| | | Initial gdp | -0.001019 (-1.835)* | -0.001019 (-3.314)*** |
| | | Life expectancy | -0.068658 (-1.041) | -0.068658 (-0.747) |
| | | Primary School | 0.003431 (0.231) | 0.003431 (0.309) |
| | | Secondary School | 0.009991 (0.280) | 0.009991 (0.269) |
| | | Population growth | 0.709911 (2.324)** | 0.709911 (6.775)*** |
| | | Domestic Investment to gdp ratio (%) | 0.108962 (1.762)* | 0.108962 (2.374)** |
| Trade Variables | | International taxes as a ratio of tax revenue (%) | 0.010302 (0.435) | 0.010302 (0.498) |
| | | Openness (%) | 0.009376 (0.931) | 0.009376 (0.783) |
| | | Export Growth (%) | 0.116828 (2.936)** | 0.116828 (5.445)*** |
| Aid Variables | | Aid per capita ($) | 0.010457 (1.195) | 0.010457 (1.539) |
| | | Aid to GDP (%) | -0.016535 (-0.245) | -0.016535 (-0.262) |
| | | Aid To Import (%) | 0.002925 (0.212) | 0.002925 (0.406) |
| Public Sector | | Government Consumption to GDP (%) | -0.125138 (-1.696)* | -0.125138 (-1.675)* |
| | | Domestic taxes as a ratio of tax revenue (%) | 0.046066 (1.553) | 0.046066 (1.634) |
| | | Overall Budget balance to GDP (%) | 0.019748 (0.489) | 0.019748 (0.355) |
| External Debt | | External debt to GDP (%) | -0.013698 (-1.367) | -0.013698 (-1.323) |
| | | Concessional Debt to Export (%) | -0.000458 (-0.352) | -0.000458 (-0.427) |
| | | Concessional debt to GDP (%) | 0.010301 (0.742) | 0.010301 (0.818) |
| Financial Development | | Domestic Credit to Private sector to gdp ratio (%) | 0.022856 (1.197) | 0.022856 (1.859)* |
| | | Broad Money to gdp ratio (%) | -0.03901 (-1.045) | -0.03901 (-1.608) |

| Political Stability | War (Dummy) | 1.162482 (1.017) | 1.162482 (1.627) |
|---|---|---|---|
| Geography | Landlocked (Dummy) | -0.997736 (-1.185) | -0.997736 (-1.216) |
| | Oil (Dummy) | 2.513331 (1.595) | 2.513331 (2.333)** |
| Demography | Fertility | -0.941796 (-1.329) | -0.941796 (-1.761)* |
| | Age Dependency | 0.776784 (0.129) | 0.776784 (0.183) |
| Cross sections (pool unbalanced Observations) | | 31 (89) | 31 (89) |
| $R^2$ ($R^2$-adjsuted) | | 0.58 (0.41) | 0.58 (0.41) |
| Standard Error of Regression | | 2.14 | 2.14 |
| F (prob.) | | 3.47 (0.000) | 3.47 (0.000) |
| Redundant FE test | | | |
| Hausman Test | | | $\chi^2 = 0.00$ (1.00) |

White cross-sectional heteroscedastic consistent *t*-statistics in parentheses.

***(**)* significance at 1%(5%)10%. FE could not be undertaken due to the inclusion of some dummy variables.

**Table 5: Full Variable Regression.**

| Dependent Variable | growth of real per capita gdp (percentage) | | | | |
|---|---|---|---|---|---|
| | | Estimator | | | |
| Independent Variables | | PLS | PLS (Only Significant Variables) | PLS-FE | PLS-RE |
| Neoclassical Variables | Constant | 10640.73 (1.423) | 2.326779 (1.324) | 0.905524 (1.033) | 1.975788 (0.996) |
| | Initial gdp | -0.000519 (-0.732) | | | |
| | Life expectancy | 0.025679 (0.323) | | | |
| | Primary School | 0.013263 (0.860) | -0.011335 (-1.864)* | 0.028726 (1.543) | -0.00769 (-1.040) |
| | Secondary School | -0.026177 (-0.619) | -0.02804 (-2.299)** | -0.027461 (-0.746) | -0.02522 (-1.827)* |
| | Population growth | 0.441201 (4.237)*** | 0.305678 (3.0313)*** | 0.402549 (2.229)** | 0.362275 (3.325)** |
| | Domestic Investment to gdp ratio (%) | -0.017455 (-0.299) | | | |
| Trade Variables | International taxes as a ratio of tax revenue (%) | 0.025698 (1.908)* | 0.026718 (1.927)* | 0.039702 (2.070)** | 0.023315 (1.577) |
| | Openness (%) | 0.00644 (0.464) | 0.014619 | 0.030109 | 0.014787 |

| | | | | | |
|---|---|---|---|---|---|
| | | | (2.007)** | (2.591)** | (1.745)* |
| | Export Growth (%) | 0.133372 (4.038)*** | 0.163106 (6.152)*** | 0.088608 (3.054)*** | 0.14881 (5.325)*** |
| Aid Variables | Aid per capita ($) | 0.003274 (0.395) | | | |
| | Aid to GDP (%) | 0.132678 (2.245)** | 0.142895 (6.428)*** | 0.048999 (0.729) | 0.13805 (5.372)*** |
| | Aid To Import (%) | -0.019596 (-1.566) | | | |
| Sector | Government Consumption to GDP (%) | -0.046669 (-0.618) | -0.094239 (-1.929)* | -0.066072 (-0.745) | -0.10653 (-1.932)* |
| | Domestic taxes as a ratio of tax revenue (%) | 0.025147 (0.907) | | | |
| | Overall Budget balance to GDP (%) | 0.091926 (1.752)* | | | |
| External Debt | External debt to GDP (%) | -0.014752 (-2.667)** | -0.018956 (-3.671)*** | 0.001875 (0.219) | -0.01713 (-2.988)*** |
| | Concessional Debt to Export (%) | 0.002053 (3.270)*** | | | |
| | Concessional debt to GDP (%) | 0.007167 (0.517) | | | |
| Financial Development | Domestic Credit to Private sector to gdp ratio (%) | 0.062228 (3.890)*** | 0.025238 (3.001)*** | 0.074746 (3.422)*** | 0.025854 (2.536)** |
| | Broad Money to gdp ratio (%) | -0.115634 (-3.727)*** | -0.042582 (-2.616)** | -0.14125 (-3.348)*** | -0.04394 (-2.230)** |
| Political Stability | War (Dummy) | 1.829696 (1.908)* | 1.791093 (1.746)* | 2.308327 (2.592)** | 1.84863 (1.714)* |
| Geography | Landlocked (Dummy) | -0.896361 (-0.825) | | | |
| | Oil (Dummy) | 3.106563 (2.661)** | | | |
| Demography | Fertility | -1.597141 (-1.891)* | -0.962016 (-5.254)*** | -1.35436 (-7.055)*** | -0.944037 (-4.464)*** |
| | Age Dependency | 9.453224 (1.365) | | | |
| Environment | Final Consumption Expenditure to GDP (%) | -106.4752 (-1.423) | | | |
| | Domestic savings to GDP (%) | -106.4411 (-1.422) | 0.053387 (8.905)*** | 0.000939 (0.018) | 0.048206 (5.673)*** |
| | Foreign Direct | 0.446234 | 0.398409 | 0.229604 | 0.413745 |

| | | | | | |
|---|---|---|---|---|---|
| | Investment to GDP (%) | (2.227)** | (8.202)*** | (3.833)*** | (8.333)*** |
| | Terms-of-Trade | 0.037077 (3.242)*** | 0.016148 (2.091)** | 0.017094 (3.334)*** | 0.01602 (1.991)** |
| | Current Account balance to GDP (%) | 0.006362 (0.143) | 0.058634 (2.429)** | 0.057233 (3.452)*** | 0.058595 (2.352)** |
| | Consumer Price index (% Change) | -0.018664 (-2.240)** | -0.009545 (-2.029)** | -0.022235 (-2.297)** | -0.010476 (-2.519)** |
| Volatility | Inflation | 0.039156 (0.721) | 0.005883 (1.926)* | 0.013847 (2.228)** | 0.00646 (2.391)** |
| | Terms of Trade | -0.106698 (-2.252)** | | | |
| | Nominal Exchange Rate | 0.00042 (0.594) | | | |
| Cross sections (pool unbalanced Observations) | | 27 (75) | 32 (114) | 32 (114) | 32 (114) |
| $R^2$ ($R^2$-adjsuted) | | 0.76 (0.56) | 0.77 (0.72) | 0.89 (0.80) | 0.75 (0.70) |
| Standard Error of Regression | | 1.85 | 2.06 | 1.73 | 1.97 |
| F (prob.) | | 3.72 (0.000) | 16.16 (0.000) | 10.10 (0.000) | 15.12 (0.000) |
| Redundant FE test | | | | F = 2.26 (0.003) $\chi^2 = 85.30$ (0.000) | |
| Hausman Test | | | | | $\chi^2 = 0.00$ (1.00) |

White cross-sectional heteroscedastic consistent *t*-statistics in parentheses. ***(**)* significance at 1%(5%)10%. Real Interest rate and real effective exchange rate are omitted as they reduce the number of cross-sections and observations significantly due to the problem of missing data points.

**4.1. Implications of Findings**

This study sets out to examine the relative roles of trade and trade related variables on the one hand and aid on the other on the growth profile of SSA countries. Three trade variables were used—international trade taxes as a percentage of total tax revenue, degree of openness and growth of exports. Also, three aid variables were used—amount of aid per capita, aid as a percentage of GDP, and aid as a percentage of imports of the respective economies. A core neoclassical growth model was first estimated which was then augmented with trade and aid variables. Subsequently, the responses of these variables were observed relative to the inclusion of other control and environmental factors. The following could be observed from the results:

- When the trade variables were added to the core model (see Table 2), taxes on international trade and openness were both insignificant and changed signs over different estimators. However, growth of export was consistently positive and significant over different estimators. Also, in these results, aid per capita and aid as a percentage of imports were both insignificant but the latter did not change sign. Aid as a percentage of GDP is observed to be negative over different estimators but significant in the PLS and RE estimates and also did not change sign. However, the FE redundancy and Hausman tests indicate that the FE estimate is more efficient, which is the estimate in which the aid as percentage of GDP is not significant.

- In Table 3, where public sector and external debt variables are included, it could be observed that of the three export variables, only growth of exports remained positive and significant. In these estimates, openness is positive but insignificant over the various estimators. International trade tax change sign over estimators. Also, aid per capita and aid as a percentage of imports are consistently positive while the latter is significant in the FE estimate. Aid as a percentage of GDP remains negative over all estimators adopted and significant in the FE and RE estimates. However, the FE redundancy test could not be rejected.

- Furthermore, in Table 4, where variables capturing financial development, political stability, geography and demography are added to the model in Table 3, all the trade variables are positive while only growth of exports is observed to be significant over the various estimators. In these estimates, all aid variables were observed to be insignificant over all estimators, while aid as a percentage of GDP continues to be negative. Other aid variables are observed to be positive.

- In Table 5, when all hypothesised variables are included, all trade variables are positive while all aid variables except aid as a percentage of import are observed to be positive. Except in the FE estimate, aid as a percentage of GDP is observed to be significant. Growth of exports continues to be significant and positive. Openness was insignificant in the full-variable PLS estimate but positive and significant in other estimates. It should be noted that aid as a percentage of GDP has become positive while aid as a percentage of import has become positive. International taxes as a percentage of total taxes is consistently positive but insignificant in the RE model.

- Thus, only growth of exports could be described as a robust determinant of growth in the sampled SSA countries over the study period. Irrespective of what variables are controlled for and sample size, the variable remains positive and significant. Aid as a percentage of GDP is sensitive to what variables are controlled for and changes sizes under different estimators given the same controlled variables. Thus it may not be regarded as a robust determinant of growth. In fact, its direction of impact on growth can best be described as inconclusive.

- Aid as a percentage of GDP could be observed to be positive (and significant) when the study includes variables capturing macro-economic environment. This is a subtle evidence in support of the proposition that sound macro-economic environment is a prerequisite for aid effectiveness.

- These results also could be interpreted to imply that the debate should not be about aid versus trade, but rather, both are required (at least in the short-term) in SSA countries' growth process.

# 5 CONCLUDING REMARKS

The amount of aid given to SSA countries has grown over time, yet economic performance has not improved significantly. This phenomenon has made observers to question the relevance of aid in jump-starting the economies of SSA countries and many analysts are of the opinion that the focus should be on trade rather than aid. This study provides empirical evidence to support the positive and significant role of export in the growth process of SSA countries. The significance of a variable like terms-of-trade further demonstrates that, with fair prices for primary commodities that SSA countries export, these countries would be able to climb out of the low-income status. This does not suggest that SSA countries should continue to be primary commodity dependent, rather, value-addition to export could be a viable way of improving terms-of-trade of these countries. There is some convincing evidence in the study that, given a sound macro-economic environment, aid can contribute significantly to growth in SSA countries. Thus, SSA countries may need to improve on the macro-economic environment to ensure that they reap optimal results from aid. The study does not find a robust evidence to support openness as a way of stimulating growth. Though the proxy for openness used could not be described as a perfect one, nonetheless, the evidence is not robust. The ultimate source of growth would come from significant growth in exports rather than aid. The findings could be interpreted to indicate some support for the view that aid can be given to enhance the capacity of SSA countries to trade.

Currently, this study does not claim to have addressed the simultaneity/endogeneity issue in growth regressions as well as the issue of multicollinearity. In fact, it assumes that all the fundamentals are exogenous, which is not always the case. Also, it can be observed that there are more plausible hypotheses than data points, particularly when more qualitative, fixed, and region-specific variables are considered. These are issues that this study considers to be of significant interest for further interrogation. Thus, this current study would provide a platform for comparative analysis of estimates and results when these issues are pursued further. Finally, it should be observed that there are more aid and trade variables that are used in this study. The availability of data is what constrains the use of the current variables.

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## TRADE, WTO AND THE FATE OF SELECTED AFRICAN COUNTRIES

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### 1. INTRODUCTION

The impact of cross border trade has generated intensive debate among commentators (academics and professionals). But it is its impact on developing countries, especially in Africa, that has helped to fuel the contention. While one school of thought has advocated for trade liberalisation as a prerequisite for economic growth (Edwards, 1997; David and Scott, 2005), Stiglitz (2002) has cautioned against drastic openness. Along these disparities in perceptions, the African commodities oriented countries are somewhat in dilemma as World Trade Organisation's (WTO) tariff-reduction crusade makes the continent a consumer market and large-scale importer of finished products from the West without significant improvement in exports.

From a cursory observation, almost all Africa countries have instituted strategic visions aiming at 2020 as the developmental hallmark. However, the intrinsic mistake is to anchor a developmental strategy on the expansion of export of primary products. This assumption rests on the precept that the price of primary products at the international market is always affected by unfavourable terms of trade. Also, natural forces have a significant bearing on the volume and quality of agricultural produce. Moreover, the crucial aspect in the international trade is the masqueraded protectionism adopted by the developed world against African manufactured products -- low standard. While WTO claimed to promote international trade in the formulation and implementation of its policies, the body has not done much with respect to cautioning the developed countries in their tacit policies of protectionism.

The current tariff reduction issue is a strategic means of polishing the poverty of Africans and to make the unending economic failure a home-bred disappointment. This economic failure has been, among other factors, the ingredient fuelling political unrest among African nations. The failure should be understood as a system error; that economic development is both interrelated and interactive. The exceptional advantage accorded the developed countries within the WTO creates an element of hierarchy within the system. Hence, instead of comparative advantage, the system stimulates complementary trade-off.

The WTO's crusade for tariff removal seems to be replacing the poverty eradication dictum that was embellished in the Millennium Developmental Goals (MDGs). While some African countries have worked hard to roll back poverty, the perception error cascaded to Africans has not changed. The error was initiated by the mistaken belief that Western countries have the therapeutic dose for Africa's economic problems. Hence, prescriptive interventions have led to economic and political vulnerability in the continent over the years. Further, the policies and conditionalities dictated by International bodies at the international scene have not manifestly changed the economic fortunes of African countries.

From observation, the playing field for international trade and the composition of WTO membership are not leveled as to enable Africa to reap the promise of international trade. On the membership composition argument, the lopsided nature of WTO in terms of staffing arrangement is obvious. For example, USA and France have up to 45 members of staff each while some African countries such as Nigeria and Ghana have 1 and 2 members, respectively (Aremu, 2005). Some other African member states have no single member. This partly explains why WTO policies are not particularly tailored for equitable implementation since the articulations are Western-oriented and not a product of delegates' collective participation. Hence, the promise of world trade benefits for Africa remains unfulfilled. For instance, in 2007 Africa accounted for a measly 3 per cent of trade for services compared to Asia's 24 per cent (WTO, 2008).

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In articulating this, it is not this paper's intention to promote protectionism or cement anti-WTO sentiments among African countries, rather the paper seeks to expand participation autonomy and allow equitable economic development among all WTO members. Africa's preoccupation and advocacy should be on trade-democracy and not trade-dependency. From this, WTO empowers each participating member state to gain from economic interdependency to grow national economies. Thus, a new perspective for reinterpreting trade to economic growth emerges instead of the traditional concept that limits and restricts the economic effort of the nations classified as living below a certain income threshold.

In light of this, the paper examines the WTO's issue and the fate of five selected African countries namely: Democratic Republic of Congo-DRC (Central Africa), Egypt (North Africa), Kenya (East Africa), Nigeria (West Africa) and Zambia (Southern Africa). The countries were selected on three criteria; real per capita GDP below US$1,000; member of WTO; and relatively large size (UNCTAD, 2006; UNSTAT, 2008; WTO, 2008). This paper is structured into the following sections; introduction, theoretical and literature review, empirical model development, presentation of econometric results and analyses, and conclusion.

## 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

From the era of Marco Polo till present, cross-border trade has been increasing as capitalists uncover trade routes, improved production system, transportation, and the technological support mechanisms that drive trade. Nevertheless, the 1990s saw the emergence of a general conviction that liberisation of cross-countries trade is an imperative for economic growth. The validity of this conclusion was fostered by empirical and theoretical studies (Helpman and Krugman, 1985; Dollar, 1992; Sachs and Warner 1995; Edwards, 1997; David and Scott, 2005). Also, Grossman and Helpman (1995) presume that world integration has an influence on the entrepreneurs who directly impact the social fabrics of nations' economic systems. Hence, it is conventionally accepted that trade openness is a vital component of economic growth (Winters, 2002; Mackay and Winters, 2004).

Trade liberalisation to economic growth is a multi-dimensional issue comprising of a number of complex aspects, e.g., tax, foreign direct investment, export, real gross domestic production, and poverty, which sometimes are difficult to evaluate. In particular, economic growth is influenced by a combination of factors, technology (Schumpeter, 1911; 1942), human capital and capital (Solow, 1957), production efficiency (Smith, 1776) and institutional framework (Powell and DiMaggio, 1991) characteristics. These studies offer insights into the relationship between examined categorical factor and economic growth. However, the studies also complement each other.

The notion that trade liberalisation and economic growth are positively correlated is credited to Solow (1956) and has significantly influenced the empirical literature. The thrust of Solow's argument was that market-centred trade liberalisation will accelerate the dynamics of economic growth. With respect to individual productivity pay-off, the aggregate market interactions were to trigger growth (Bhagwati, 1988; Evans, 1989) which is in accordance with the neoclassic theory of trade and growth. However, the distinction between unknown probability and the known African countries' experiences --their propensity to actively participate in world trade -- needs adjustment despite the promise of economic growth.

The progress in trade is becoming even more important in the analysis of economic growth. Thus, it is necessary to examine theoretical and empirical evidences towards substantiating the claims of WTO that the removal of tariff influences economic growth. Some economic commentators give intellectual reasons for trade liberalisation, and its propensity to promote economic growth. Among these scholars are Winters (2002); Stern (2001); Berg and Krueger (2003) and Mackay and Winters (2004). These cross-countries empirical studies conclude that the liberalisation of world trade has impacted significantly the economic growth of countries.

From Mackay and Winters (2004) documentation, non-interruption in the importation of capital goods and technological goods creates knowledge spillover which increases international competition. Through the competition, trade enhances growth and concomitantly leads to a variety of goods availability at cheaper prices. The modern trade theory developed by Helpman and Krugman (1985) and the new growth theory by Grossman and Helpman (1991) illustrate that the benefits from trade is fundamental for free trade which makes it instrumental for economic growth. Although these studies were Western-based, some economists believe that the argument for freer trade provides significant incentives for developing countries. This view is common in the studies of Krueger (1999), Srinivasan (2000), Stiglitz (2002), Tangermann and Josling (1999), and Huff (2000).

In a similar manner, some empirical studies have associated trade liberalisation with wealth accumulation (e.g. Levine and Renelt, 1992 and Taylor, 1998) and that a stronger economic growth exists over a short period. Advancing the same view, Tilat (2002) concludes that trade openness has no significant association with long-term economic growth and suggests that short-run effects out-weigh the perceived benefits of trade liberalisation. However, the studies of Winters (2002) and Mackay and Winters (2004) found that in the short run, trade liberalisation harms poor actors in the economy and that even in the long run, successful open states may create a return to below the poverty line, which means an escalation in poverty density and a punctured economic growth.

Most economics literature supports the argument that a country's development requires economic growth to alleviate poverty and greater participation in world markets. However, some of the literature did not interrogate the possibility of "Goliath-David trade" to plummet economic growth. Unfortunately for most Africa countries, none of the promised benefits is secured; hence it is not difficult to link trade openness with a nation's less economic performance along e.g. primary extraction/commodities. This possibility was extensively examined by Rodriguez and Rodrik, (2001). The traditional theory of trade as illustrated by Stolper-Samulson reveals that an increase in the relative price of a commodity results in a corresponding increase in the real-return to factors utilised in producing that commodity (Dixit and Norman, 1980).

To investigate the relationships between trade openness through tariff removal to economic growth within Africa, the effects on total factor productivity is imperative. Studies show that reduction in trade barriers were followed by significant increases in total factor productivity (TFP) Winters (2004). This resulted from the increase in import competition according to Ferriera and Rossi (2001) with the study in Brazil, Jonsson and Subramanian (2001) in South Africa and Karry (1997) obtained inconclusive results for China, while Aw, Chung, and Roberts (1999) discovered little evidence for Latin America and Asia. However, the significance of these studies resonates well with the debate about whether agricultural commodities and primary extractions export for poor countries in Africa are the option for tariff removal.

Freer trade by definition involves greater interdependence among nations, and Tilat (2002) linked it to the phenomenon of globalisation. Although reforms have been uneven, there is clear evidence that protection of import substitutes with tariff and non-tariff barriers within sub-Saharan Africa has declined significantly (Nash, 1993). However, Africa's share in global exports fell from 4.5 per cent in 1977 to 2 per cent in 1997, and also, Africa's share of total developing country exports dropped from 15.5 per cent in 1981 to 9.2 per cent in 1997 after many countries implemented the Structural Adjustment Programmes. In addition, Africa's share of FDI flows to developing countries fell from 23 per cent in 1970 to 4.7 per cent in 1997 according to the African Development Bank (2000).

Nevertheless, the study of Agama (2001) in Africa which utilised a database to investigate the connection between trade openness and economic growth for forty countries in Africa is subjective. Agama argues that between 1980 and 1999, the more open countries in Africa experienced higher economic growth rates than those that remained closed. Hence, Agama (2001) concludes that although trade liberalisation and economic

integration increases economic growth for African countries, increases in government consumption expenditure retards the growth. However, Agama's observation is too superficial because it does not consider the contextual impact of wars, imposition of International Monetary Fund conditionalities, and premature connection with globalisation. Also, the study formulated and followed the findings of Western empirical cross-country studies: Dollar (1992), Ben-David (1993), Sachs and Warner (1995), and Frankel and Romer (1999) that connect trade openness with economic growth.

The debate about a positive empirical association between trade openness and economic growth especially within the African context remains far from settled. In spite of the recent movement towards trade reforms for most African countries, there remains some major controversies regarding certain aspects of trade and the message of WTO. The effects of trade tariff removal and economic growth appear to be direct and imperative for some selected African countries. To satisfy academic curiosity, this paper examines the relationship between trade, WTO stance and citizens' welfare over a time-slice among selected African countries towards crafting policies for African leaders.

## 3. MODEL SPECIFICATION AND ESTIMATION TECHNIQUE

The model for this study assumes a relationship between citizens' welfare (measured by real per capita gross domestic products-*RPGDP*) and some economic as well as WTO variables that can exert influence on the welfare level of some selected African countries. Real per capita income would be a best-fit proxy for the welfare level of the countries. This is because it shows the amount of wealth that can be accrued to each citizen. Other explanatory variables that were included in the empirical model are the level of trade openness in the countries (*OPEN*), domestic investment *(INVD)*, and a measure of their technological advancement in their economic activities (*TECH)*. This can be represented by the functional relationship below:

$$RPGDP_{it} = f(WTO_{it}, OPEN_{it}, INVD_{it}, TECH_{it}, U_{it}) \text{-------------------------------------------} 1$$

The above equation can be expressed in explicit form as:

$$rpgdp_{it} = \alpha_0 + \alpha_1 wto_{it} + \alpha_2 open_{it} + \alpha_3 invd_{it} + \alpha_4 tech_{it} + e_{it} \; ----------2$$

Where:

*rpgdp:* is the real per capita income measuring the welfare level in the countries.

*wto:* captures the influence of WTO agreements/activities especially with respect to tariff and trade in the countries. A dummy for WTO membership is used to measure this variable, in which case, the years since the countries became members were represented as 1 and 0, otherwise. This variable captures the influence of WTO multilateral trade agreements on the African countries understudied.

*open:* this measures the level of trade openness in the countries. This is crucial in the increasingly globalising world where trade liberalisation and openness have been the *in-thing*. It is captured by the ratio of total trade to GDP i.e.{(export+import)/GDP}.

*invd:* this measures level of domestic investment in the countries. It shows the extent to which investment in the countries is able to influence their citizens' welfare. It is proxied by gross fixed capital formation.

*tech:* this measures the value added by transport, storage and communication sector in their economic activities. The reason is that a more technologically advanced economy would have -- ceteris paribus -- a better transport, storage and communication system, and vice versa.

$e_{it}$*:* are the error terms that capture other factors influencing *rpgdp* that are not included in the model. They are assumed to be identically and independently distributed (iid) with zero mean and constant variance $N(0, \sigma^2)$.

*.it:* are the units (countries) and time dimension of the series.

$\alpha_i \, (i = 0, ---4)$ : the parameters to be estimated, which show the constant and the rate of change in the dependent variable induced (or otherwise) by the respective chosen explanatory variables. Their *apriori* expectation is such that $\alpha_i \, (i = 0, ---4)$ > 0.

To estimate the formulated equation above, the study used a vector auto-regression (VAR) method i.e. autoregressive-distributed lag (ARDL) econometric analysis. The ARDL approach has some advantages including its application regardless of the stationary properties of the variables in the sample. In addition, the ARDL method takes an adequate number of lags to show data generating process in a general-to-specific structure (Pesaran, Shin and Smith, 2000). Also, a dynamic Error Correction Model (ECM) can be obtained from ARDL through a simple linear transformation, which allows for inferences on long-run estimates (Banerjee et al, 1993; Frimpong and Oteng-Abayie, 2008). This is not usually possible under alternative co-integration procedures like Engle and Granger (Toda and Phillips, 1993).

More so, the ARDL method has an advantage of producing consistent values (estimates) of the long-run parameters that are asymptotically normal regardless of the order of integration i.e. whether variables are I(0), I(1) or mutually integrated. This is due to the fact that the need for stationarity pre-testing is not always essential. However, it is still helpful to complement the estimation process with the stationarity test to ensure that none of the variables are integrated of higher order like two i.e. I(2) (Luintel and Khan,1999). Also the stationarity tests can yield different conclusions as a result of difference in power and lag length selected in each test. Thus, the appropriate lags in the ARDL are corrected for both residual correlation and endogeneity. But once the ARDL model is free of residual correlation, endogeneity does not present a problem (Pesaran, Shin and Smith, 2000).

Furthermore, ARDL has an advantage over the single equation co-integration analysis such as Engle and Granger (1987) due to the fact that the latter suffers from the problems of endogeneity. The ARDL method can distinguish between dependent and explanatory variables. Thus, when using ARDL approach, it is possible to estimate even when the explanatory variables are endogenous (Alam and Quazi, 2003). This means that the ARDL approach produces robust results in small sample size such as less than 80 observations (Narayan, 2004).

From the above information, equation 2 can be reformulated using a vector error correction type of ARDL approach as follows:

$$\Delta rpgdp_{it} = \beta_0 + \beta_1 rpgdp_{i(t-1)} + \beta_2 wto_{i(t-1)} + \beta_3 open_{i(t-1)} + \beta_4 invd_{i(t-1)} + \beta_5 tech_{i(t-1)}$$

$$\sum_{i=1}^{m} \beta_6 \Delta rpgdp_{t-i\ i} + \sum_{i=0}^{m} \beta_7 \Delta wto_{t-i} + \sum_{i=0}^{m} \beta_8 \Delta open_{t-i} + \sum_{i=0}^{m} \beta_9 \Delta invd_{t-i} + \sum_{i=0}^{m} \beta_{10} \Delta tech_{t-i} + e_t \text{--------}3$$

The first component of equation 3 above indicates the long-run dynamics of the model while the second aspect shows the short-run relationship between them. The sign -- $\Delta$ -- implies the first difference operator, and $e_t$ is a white noise disturbance term earlier defined. Equation 3 also points out that the level of per capita income in a country can to be influenced by its past values.

In carrying out ARDL approach, two stages for the estimation of the long-run relationship are usually involved. The first is the examination of the existence of long-run relationship among the series, while the other is the estimation of the long-run and the short-run coefficients of the equation. However, the second stage is essential only when a long-run relationship in the first stage has been established (Pesaran, Shin and Smith, 2000; Narayan, 2004).

To test the existence of long-run relationship, equation 3 was conducted by placing some measures of restrictions on estimated long-run coefficients of the variables as follows:

Ho: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$    ( No long-run relationship i.e. no co-integration).

$H_1$ : $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$   (Existence of long-run relationship i.e.co-integration).

The co-integration test has a non-standard distribution that depend on whether the series are I(0) or I(1), the number of regressors and whether the model contains an intercept and/or a trend. This study used the Johansen and Juselius method to test for the existence (or otherwise) of cointegration among the series before the error correction aspect. When using the test, if the calculated trace and maximum Eigen-values are larger than the critical values, then the null hypothesis of no co-integration is rejected in favour of the alternative.

If there is evidence of co-integration among the series, the following long-run models are estimated:

$$\text{rpgdp(P)} = \beta_1 + \sum_{i=1}^{p} \beta_2 (\text{rpgdp(P)})_{t-1} + \sum_{i=0}^{p} \beta_3 wto_{t-1} + \sum_{i=0}^{p} \beta_4 open_{t-1} + \sum_{i=0}^{p} \beta_5 invd_{t-1} + \sum_{i=0}^{p} \beta_6 \text{tech}_{t-1} + e_t \quad \text{---4}$$

When co-integration among the series has been confirmed, one can select the lag length for the series. The ARDL approach estimates $(p+1)^k$ number of regressions in order to obtain optimal lag length for each variable, where *p* stands for the maximum number of lag to be used while *k* is the number of variables in the equation. The optimal lag length can be selected using either or both the model selection criteria like Akaike's Information Criteria (AIC) and Schwartz-Bayesian Criteria (SBC). The SBC is usually referred to as the parsimonious model due to the fact that it selects the smallest possible lag length. While the AIC selects the maximum relevant lag length.

## 4. PRESENTATION OF EMPIRICAL RESULTS AND ANALYSES

Data used in the study's estimation were sourced from United Nations Statistical Division (UNSTAT, 2008). The major advantage of the UNSTAT is that the per capita GDP are already computed and the variables are presented in both the countries' national currencies and US dollars. This removes possible approximation error that would have been inherent. In addition, both current values and real values measured at 1990 constant prices are reported. Using the real values helps to remove the possible effects of world price fluctuations. Thus, this study employs the real values for the period 1970-2007 for five African countries selected from the five regions in the continent with implicit assurance of data reliability and validity. The selected countries are: Democratic Republic of Congo-DRC (Central Africa), Egypt (North Africa), Kenya (East Africa), Nigeria (West Africa) and Zambia (Southern Africa).

The parameters for countries selected were anchored on: low-income grouping with per capita GDP below US$ 1,000; a member of WTO; and relatively large population size in the region (UNCTAD, 2006; UNSTAT, 2008; WTO, 2008). As at 2008, Nigeria had the largest population in both West African region and the continent. DRC is the 4th in the continent and 1st in the Central African region while Kenya is the 8th in the continent and 2nd in the Eastern African region after Ethiopia. With regards to Egypt and Zambia, the former is the 3rd in the continent and 1st in the North African region though it started having per capita GDP above US$ 1,000 from 1994. The latter is the 24th in the continent and a member of both WTO and Southern African Development Community (SADC). The five selected countries combined have above 35 per cent of the entire Africa's population, which reflects a good representation.

The respective variables were estimated in their log-linear form, except dummy for WTO. This is because it has been noted in most empirical studies that log- functions help to reduce the problem of heteroscedasticity and it is equally useful in showing rates of changes and thus, makes variables more comparable (Rehamn, 2007; Osabuohien and Egwakhe, 2008). In addition, it is usually relevant to carry out unit root test of variables. This is to know the order of integration of the variables and obtain more reliable results.

**Table 1.0 Unit Root Test of Variables in the Countries Using PP Approach**

| | DRC | | | EGYPT | | |
| | Intercept no Trend | Intercept & trend | Remarks | Intercept no Trend | Intercept & trend | Remarks |
|---|---|---|---|---|---|---|
| **SERIES** | | | | | | |
| Lnrpgdp | -2.7898 | -2.8389 | | -1.0447 | -2.7322 | |
| Dlnrpgdp | -6.2195 | -6.1409 | I(1) | -7.4891 | -7.4497 | I(1) |
| Lnopen | -3.3714 | -3.4640 | | -1.2276 | -1.0264 | |
| Dlnopen | -10.1457 | -10.8006 | I(1) | -4.4552 | -4.4522 | I(1) |
| Lninvd | -2.7662 | -2.8545 | | -1.7654 | -2.0671 | |
| Dlninvd | -7.9446 | -7.8038 | I(1) | -4.8753 | -4.9271 | I(1) |
| Lntech | -1.1840 | -0.9230 | | -2.2633 | -1.3081 | |
| Dlntech | -5.1516 | -5.3821 | I(1) | -2.8400 | -3.0813 | I(1) |
| **KENYA** | | | | **NIGERIA** | | |
| Lnrpgdp | -1.8390 | -2.1347 | | -1.6070 | -1.6047 | |
| Dlnrpgdp | -4.4066 | -4.3113 | I(1) | -3.5509 | -3.4851 | I(1) |
| Lnopen | -1.5281 | -1.3341 | | -2.3988 | -2.3327 | |
| Dlnopen | -6.4600 | -7.3676 | I(1) | -6.4872 | -6.4039 | I(1) |
| Lninvd | 0.7748 | -0.8981 | | -2.0083 | -1.9513 | |
| Dlninvd | -4.1487 | -4.5415 | I(1) | -5.2039 | -5.1805 | I(1) |
| Lntech | 0.3209 | -1.7042 | | 0.1694 | -0.7680 | |
| Dlntech | -4.8242 | -4.8044 | I(1) | -4.2659 | -4.2955 | I(1) |
| **ZAMBIA** | | | | **Critical values (C.V) @ 5%** | | |
| Lnrpgdp | -1.5288 | -1.2863 | | **Level** | -2.9422 | -3.5348 |
| Dlnrpgdp | -4.0106 | -3.9962 | I(1) | **1st Diff** | -2.9446 | -3.5386 |
| Lnopen | -1.5664 | -0.9329 | | | | |
| Dlnopen | -6.3350 | -7.0143 | I(1) | | | |
| Lninvd | -0.7276 | 0.5243 | | | | |
| Dlninvd | -5.6386 | -7.1985 | I(1) | | | |
| Lntech | 3.9991 | 1.8979 | | | | |
| Dlntech | -4.5371 | -5.0997 | I(1) | | | |

Notes: A variable is said to be stationary if the PP values (absolute) exceed that of the CV at a given level. LN and D before the variables are logarithm and difference operators, respectively.

In this regard, this study carried out unit root test of the variables employing Philip-Perron (PP) method, which is similar to the Augmented Dickey Fuller (ADF) method. The major edge of PP over ADF is that it takes accounts of the variable's possibility of structural change (Abdulai, and Jaquet, 2002; Osabuohien, 2007). The results from the unit root test using PP procedure are reported in Table 1.0.

From Table 1.0, it could be observed that none of the variables was stationary at levels for the countries i.e. none was I(0). This made testing at first difference essential. And at first difference, all the variables became stationary across the countries i.e. they were all I(1) series. The implication of the above is that all the variables (viz: *lnRPGDP, lnOPEN, lnINVD and lnTECH*) need to be differenced once to yield meaningful results[36].

Having ascertained the order of integration and given the fact that all the variables are I(1), it thus becomes necessary to carry out co-integration test among the series. This was done in Johansen technique. The major purpose of performing co-integration test is to examine if there exist a long-run relationship between the variables. In other words, it helps in determining whether or not the variables are compatible (with respect to co-movement) in the long-run.

36    WTO was not subjected to unit root test due to the fact that it is a dummy variable.

In addition, one of the main benefits of the Johansen's approach is that it not only helps answering the above question but it also presents the estimates of the long-run equilibrium values in the co-integrating equation(s). The results for the co-integration test are reported in Table 2.0 for the respective countries.

The co-integration test in Table 2.0 reveals that for DRC, Nigeria and Zambia there is one co-integrating equation at both 5 per cent and 1 per cent level of significance. This is because the likelihood ratio is greater than the critical values at those levels. For Egypt and Kenya there is one co-integrating equation at 1 per cent and two co-integrating equations at 5 per cent.  Thus using only 1 per cent significant level, it can be concluded that for each of the countries, there is the existence of a long-run relationship between the real per capita GDP, level of domestic investment, degree of openness and level of technological development in the selected countries. This implies that there is a long-run relationship between welfare in the countries and the respective chosen explanatory variables aforementioned. In other words, when there is distortion between the variables in the short-run, there is the possibility of moving together in the long-run.

**Table 2.0 Test of Cointegration among Variables in the Countries using Johansen Technique**

| Series: LNRPGDP, WTO, LNOPEN, LNINVD, and LNTECH | | | | |
|---|---|---|---|---|
| Eigenvalue | Likelihood Ratio | 5% C.V. | 1% C.V | Ho: No. of CE(s) |
| | | **DRC** | | |
| 0.808562 | 118.6388 | 87.31 | 96.58 | None ** |
| 0.559121 | 62.43036 | 62.99 | 70.05 | At most 1 |
| 0.35911 | 34.58489 | 42.44 | 48.45 | At most 2 |
| 0.294906 | 19.45838 | 25.32 | 30.45 | At most 3 |
| 0.199791 | 7.577982 | 12.25 | 16.26 | At most 4 |
| | | **EGYPT** | | |
| 0.717552 | 107.8770 | 87.31 | 96.58 | None ** |
| 0.580327 | 63.62786 | 62.99 | 70.05 | At most 1 * |
| 0.390935 | 33.23809 | 42.44 | 48.45 | At most 2 |
| 0.233051 | 15.88400 | 25.32 | 30.45 | At most 3 |
| 0.171795 | 6.597296 | 12.25 | 16.26 | At most 4 |
| | | **KENYA** | | |
| 0.595549 | 104.8519 | 87.31 | 96.58 | None ** |
| 0.539086 | 67.16904 | 62.99 | 70.05 | At most 1* |
| 0.514515 | 46.06004 | 42.44 | 48.45 | At most 2 |
| 0.323620 | 20.76877 | 25.32 | 30.45 | At most 3 |
| 0.183226 | 7.083764 | 12.25 | 16.26 | At most 4 |
| | | **NIGERIA** | | |
| 0.691399 | 83.22423 | 68.52 | 76.07 | None ** |
| 0.459078 | 42.07453 | 47.21 | 54.46 | At most 1 |
| 0.315467 | 20.56770 | 29.68 | 35.65 | At most 2 |
| 0.186716 | 7.302078 | 15.41 | 20.04 | At most 3 |
| 0.001954 | 0.068456 | 3.76 | 6.65 | At most 4 |
| | | **ZAMBIA** | | |
| 0.705514 | 96.63117 | 87.31 | 96.58 | None ** |
| 0.489830 | 53.84280 | 62.99 | 70.05 | At most 1 |
| 0.334719 | 30.28741 | 42.44 | 48.45 | At most 2 |
| 0.251162 | 16.02331 | 25.32 | 30.45 | At most 3 |
| 0.155133 | 5.900155 | 12.25 | 16.26 | At most 4 |

Notes:  ** and *: Reject Ho at 1 per cent and 5 per cent significant level respectively. Test assumption: Linear and deterministic trend in the data.  The optimum lag length of two were used as determined by Akaike Information Criteria-AIC and Schwarz Selection Criteria-SSC from a number lags tested.

Furthermore, when there is the existence of long-run relationship between variables, it is needful to examine the degree to which the variables adjust from the short-run to long-run. This is usually done employing vector error correction (VEC) technique. Thus, the VEC tells us the speed of adjustment from short-run dynamics to long-run equilibrium values. This study carried out the VEC techniques and reports them along with the co-integrating equations across the countries in Table 3.0. (Only the error correction terms are reported for the countries, since the long-run estimates from the co-integrating equations are presented[34]).

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34    The full VEC results was not reported here for brevity sake. Also the standard diagnostics tests were carried out and it was found that normality and error terms assumptions  were not violated, this was not equally reported for same reason.

**Table 3.0 Normalised Co-integrating Equation and VEC Term for the Countries**

| LNOPEN | LNINVD | LNTECH | WTO | Constant |
|---|---|---|---|---|
| DRC | | | | |
| 2.34893 | 0.533018 | 2.07373 | 2.52257 | 0.135512 |
| (5.2497)* | (1.3041) | (3.9534)* | (4.4866)* | (6.1401) |
| EGYPT | | | | |
| 0.20161 | 0.401851 | 0.62405 | 0.50252 | 0.01632 |
| (0.9440) | (4.6121)* | (4.6748)* | (5.5805)* | (1.3866) |
| KENYA | | | | |
| 1.824228 | 2.16732 | 1.760811 | 0.387406 | -0.06289 |
| (9.2577) * | (7.0488) * | (4.7537)* | (3.0507)* | (3.0844) |
| NIGERIA | | | | |
| 3.156668 | -2.43944 | -1.59607 | 0.087018 | 2.48027 |
| (1.4243) | (2.2876)* | (2.7907)* | (0.1905) | (2.9001) |
| ZAMBIA | | | | |
| 0.404841 | -5.70019 | 0.409988 | 0.163107 | 0.108885 |
| (1.3825) | (4.8673)* | (2.2580)* | (1.0434) | (4.4864) |

| VEC Term | | | | |
|---|---|---|---|---|
| DRC | Egypt | Kenya | Nigeria | Zambia |
| -0.19354 | -0.5942 | -0.604354 | -0.3451 | -0.1903 |
| (-1.9560)** | (-3.0591)* | (-2.7565)* | (-2.559)* | (-1.9966)** |
| Adj R$^2$:  0.6083 | 0.5895 | 0.6863 | 0.5610 | 0.6791 |

Notes: The dependent: LnRPGDP (-1). t-values are in parentheses. * and **: significant at 1% and 5%,respectively

The VEC term in the lower segment of Table 3.0 indicates that there is convergence between the variables from the short-run to long-run across the countries. This is seen from the expected negative signs of the VEC terms, which was significant at 5 per cent for DRC and Zambia but at 1 per cent for the rest. Examining the speed of adjustments, the VEC term coefficients reveal that there is low speed of adjustment for Zambia (19.0 per cent), DRC (19.4 per cent) and Nigeria (34.5 per cent); while for Egypt and Kenya it is moderate (59.4 per cent and 60.4 per cent, respectively). In addition, the adjusted coefficient of determination (Adj. R$^2$) implied that the explanatory variables jointly explain about 61 per cent, 59 per cent, 69 per cent, 56 per cent and 65 per cent changes in DRC, Egypt, Kenya, Nigeria and Zambia, respectively. The values equally denote that the model had good fit. This supports the VEC terms that were significant for the respective countries.

In Table 3.0, one can deduce that the degree of trade openness as well as membership of WTO are positive for all the countries denoting possibility of trade and WTO agreements impacting positively on their citizen's welfare. However, in terms of significance, the level of trade openness was not significant for Egypt, Nigeria and Zambia at 5 per cent level. But for DRC and Kenya it was. This may mean that though the level of trade openness has the potential of positively influencing real per capita income (welfare) in three of the countries -- Egypt, Nigeria and Zambia, such impact has not been significantly felt for the period studied. Similarly, WTO membership was significant for DRC, Kenya, and Egypt at 5 per cent but it was not for Nigeria and Zambia. This may be due to the fact that the nature of their exports remain primary products while they import consumer goods against industrial goods. However, for Kenya and DRC, there is positive and significant relationship. This may be due to their emerging tourism sector, which other African countries can get a clue from.

The level of technology effects on real per capita income has a significant and positive influence for all the selected countries. This means that improvement of technology in the respective countries would have significant impact on their citizens' welfare. With respect to the influence, it is highest in DRC followed by Egypt, Kenya, Zambia and Nigeria. Though the governments of most African countries have appreciated this fact, their commitment to it is not fully observed.

## 5. CONCLUSION

The debate over the welfare of Africans in relation to World Trade Organisation membership, openness, and the promise of economic growth has not stopped. This study examined the fate of selected African countries from the crusade of WTO to economic growth using data over the period 1970-2007. The reviewed literature identified significant effect of WTO's membership and trade openness to economic growth, with a large number of dissenting opinions. However, this study found that, at aggregate level, WTO's membership and trade openness do have a positive effect on country's welfare -- real per capita income, although not across the selected countries. Despite this, technological effects on real per capita if adopted through trade can improve the economy and the people's welfare.

The implications from the empirical result of the study favoured largely the need for economic interdependency and global participation for African countries. The study observed that the degree of a nation's openness through global trade interconnectivity has implications on citizens' welfare. However, the study cautioned against generalisation, since some of the countries did not significantly feel the impact over the period covered by the study. The encouraging aspect of the study for the African countires is that technological diffusion resulting from world trade could improve their citizen's economic welfare provided WTO participation encourages technological adoption by Africans.

The empirical evidence also suggests that African countries should consider deeply the policy of WTO and selectively adopt technological and cutting-edge equipment that can ensure national productivity through which their participation in WTO could have meaningful impact on welfare.  In the future, more research in the same area, but with more countries sampled, may suggest more policy options to maximise participatory benefits from WTO.

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# TRADE AND GROWTH IMPACTS ON AIR POLLUTION IN THE AGGREGATED SUB-SAHARAN AFRICA AND SELECTED AFRICAN COUNTRIES

Bédia F., Aka[37]

**Abstract**

This paper examines the impacts of trade intensity as measured by the share of exports plus imports in gross domestic product (*GDP*) and economic growth proxies by the *GDP* per capita on air pollution as measured by carbon dioxide ($CO_2$) emissions. We focus first on Sub-Saharan Africa as a whole during the period 1961-2003 to see how trade intensity and *GDP* per capita growth have impacted $CO_2$ emissions in that zone, and secondly on each individual country of the SSA zone. We use an Autoregressive distributed lag (ARDL) model to analyse both the short and long-run impacts of these variables on the environment. Our results indicate that for the aggregate SSA in the short run a 1 per cent increase in economic growth leads to 1.04 per cent increase in $CO_2$ emission thus a degradation of air quality, while a 1 per cent increase in trade intensity accounts for 0.15 per cent decrease in pollution. Most importantly in the long run, a 1 per cent increase in *GDP* per capita contributes to 1.8 per cent increase in air pollution while a 1 per cent increase in trade intensity leads to 0.57 per cent decrease in $CO_2$ emission thus beneficial to the environment. For individual countries, the results allow to classify them into three groups. For the first group composed of the Democratic Republic of Congo, the Republic of Congo, Nigeria and South Africa, in the long run economic expansion does have a negative impact on the environment, whereas trade is beneficial to the environment. For the second group of countries, including the Central African Republic, Gabon, Ghana, Niger, Senegal and Togo, in the long run economic expansion does have a positive impact on the environment, while trade is not beneficial to the environment. Concerning the third group of countries, including Benin, Burkina Faso, Burundi, Cote d'Ivoire, Kenya, Madagascar, Malawi, Mauritania, Rwanda and Zambia, in the long run economic expansion does have a negative impact on the environment, and trade is not beneficial to the environment.

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# 1 INTRODUCTION

Environmental questions have regained interest and more attention in recent years due to climatic problems associated with the increased accumulation of pollution and the deterioration in the quality of the environment due to human activity. The study of the relationship between pollution and income has mainly focused on investigating the environmental Kuznets curve (EKC) (see Stern, 2004). The so-called environmental Kuznets curve originated from Kuznets (1955), who hypothesised in 1954 that income inequality first rises in early years of economic growth and then falls in the course of economic development[38]. Grossman and Krueger (1991) set up the actual EKC concept. They point out that the level of environmental degradation and per capita income follows the same inverted U-shaped relationship, as does income inequality and per capita income in the original Kuznets curve. This inverted U-shape curve shows that pollution intensity rises with per capita income at the early stages of economic development and falls as per capita income rises beyond some threshold level that could be determined. In effect from the estimated coefficients of the following equation[39]

$$\ln E_t = \alpha + \beta_1 \ln Y_t + \beta_2 \ln Y_t^2 + \zeta_t$$ , the threshold point could be computed as the exponential of the ratio

$\beta_1$ over $2 \cdot \beta_2$. A negative value for the coefficient $\beta_2$ confirms the inverted U-shape of the curve.

Empirically, the growth-pollution literature studying the relationship between per capita income and pollution per capita (see List, Millimet and Stengos, 2003 and Azomahou, Lasney and Van 2006) for individual countries and groups of countries has found that: (i) at the early stages of economic development pollution intensity rises with per capita income; (ii) but pollution intensity falls as per capita income rises beyond some threshold level (see Grossman and Krueger, 1995 and List and Gallet, 1999, among others).

Methodologically, previous studies of the relationship between pollution and income have used cross-sectional or panel data for a sample of developing and developed countries, or single countries. In contrast, in this paper we use an Autoregressive distributed lag (ARDL) model to analyse both the short and long-run relationships between the variables for Sub-Saharan Africa as a whole, as it is well known that issues related to the environment are of global concern, considering that pollution in one country can affect its neighbouring atmosphere and even beyond.

Although several pollutants have been considered in the study of the EKC (see Managi, 2006), in this paper we use $CO_2$ as in Douglas and Selden (1992). In effect, the debate concerning the reduction of $CO_2$ emissions is still active both in developed countries and developing countries. In Sub-Saharan African countries where environmental quality is not yet a major preoccupation, several capital cities are polluted by the emissions of this gas from imported used vehicles and polluting industries. It is forecast that these emissions will increase in the future, as these countries industrialise and receive foreign direct investment particularly in labour-intensive industries.

Our empirical findings indicate that for the aggregated Sub-Saharan African area, in the short run a 1 per cent increase in economic growth leads to 1.04 per cent increase in $CO_2$ emission, while a 1 per cent increase in trade intensity accounts for 0.15 per cent decrease in pollution. Most importantly in the long run, which should be of crucial interest, a 1 per cent increase in the income per capita contributes to 1.8 per cent increase in pollution, while a 1 per cent increase in trade intensity leads to 0.57 per cent decrease in $CO_2$ emission and thus favourable to air quality.

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[38] Simon Kuznets delivered the presidential address; entitled "Economic Growth and Income Inequality" at the sixty-seventh annual meeting of the American Economic Association in December 1954". He suggested that as per capita income increases, income inequality also increases at first but then, after a turning point, starts declining. Kuznets believed that the distribution of income becomes more unequal at early stages of income growth but that the distribution eventually moves back toward greater equality as economic growth continues.

[39] Where E, denotes per capita pollution, Y, denotes per capita income, Y2 indicates square income per capita, $\zeta_t$ , is an error term.

Considering the selected individual countries, it is possible to classify them into three groups. For the first group composed of the Democratic Republic of Congo, the Republic of Congo, Nigeria and South Africa, in the long run economic expansion does have a negative impact on environment, whereas trade is beneficial to the environment. For the second group of countries, including the Central African Republic, Gabon, Ghana, Niger, Senegal and Togo, in the long run economic expansion does have a positive impact on the environment, whereas trade is not beneficial to the environment. Concerning the third group of countries, including Benin, Burkina Faso, Burundi, Cote d'Ivoire, Kenya, Madagascar, Malawi, Mauritania, Rwanda and Zambia, in the long run economic expansion does have a negative impact on the environment, and trade is not beneficial to the environment.

The remaining part of the paper is organised as follows. Section 2 presents the model and the econometric methodology. Section 3 presents estimation results and final remarks are provided in Section 4.

## 2. The Model Specification

We adopt a simple model aiming to estimate the following relationship[40]:

$$E_t = F(Y_t, T_t) + \zeta_t$$

(1)

where $E$, denotes per capita emissions of $CO_2$, $Y$, denotes per capita $GDP$, $T$ indicates trade intensity as measured by the share of exports and imports in $GDP$, $\zeta_t$, is a stochastic error term, and $t$ is a year index. Expressing Eq. 1 in a natural logarithm form we have the following long-run equation:

$$\ln E_t = \alpha + \gamma_1 \ln Y_t + \gamma_2 \ln T_t + \zeta_t$$

(2)

The assumptions underlying the preceding Eq. 2 are that while the $GDP$ per capita is supposed to positively impact on the emissions of $CO_2$ i.e. negatively for the environment, the trade intensity variable will negatively impact pollution, thus positively for the environment.

The estimations will be performed for each individual country and for the aggregated SSA using an unrestricted general to specific Hendry-type error correction model (ECM), where the long-run relationship is embedded within the dynamic specification, including the lagged dependent and independent variables as follows:

$$\Delta \ln E_t = \alpha + \gamma_1 \Delta \ln Y_t + \gamma_2 \Delta \ln T_t + \gamma_3 (\ln E_{t-1} - \alpha_1 \ln Y_{t-1} - \alpha_2 \ln T_{t-1}) + u_t$$

(3)

This model is re-parameterised in the estimable form:

$$\Delta \ln E_t = \alpha + \gamma_1 \Delta \ln Y_t + \gamma_2 \Delta T_t + \gamma_3 \ln E_{t-1} + \gamma_4 \ln Y_{t-1} + \gamma_5 \ln T_{t-1} + u_t$$

(4)

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40     This equation is disaggregated for individual countries as follows :     $E_{i,t} = F(Y_{i,t}, T_{i,t}) + \zeta_{i,t}$

## 3. Data and Results

We estimate the model using data from World Development Indicators (WDI 2006) and covering the period 1960-2005. Figure 1 shows the series for the aggregate Sub-Saharan Africa in natural logarithm (Top panel) and in first difference (Bottom panel). Figures for the 20 selected individual countries are reported in appendix 1 (Countries have been selected on the basis of the availability of data).

The variable *LCO2_SSA* indicates pollution measured as $CO_2$ emission (metric ton per capita), *LGDPpc_SSA* indicates GDP per capita and *LTradIntens_SSA* indicates trade intensity as measured by the share of exports plus imports in GDP.

Figure 1: Evolution of Pollution, Trade and Growth (Aggregated SSA)



From Figure 1 we could distinguish four sub-periods in the relationships between the three variables. The first one spans 1960 to 1970 when trade intensity and GDPPC are above the pollution level. From 1970 to 1980 pollution overcomes trade but not GDPPC. Finally from 1980 to 1995, pollution ($CO_2$ emissions) overcomes both GDP per capita and trade. Finally since 1996, trade and income per capita are above the pollution level. This indicates that the SSA data could replicate the EK curve.

Figure 3 depicts the [environment] Kuznets curve expressing the relationship between income growth and the deterioration of the environment for Sub-Saharan Africa. Curves for individual countries are reported in appendix 2.

Figure 3: Environmental Kuznets Curve (Sub-Saharan Africa)
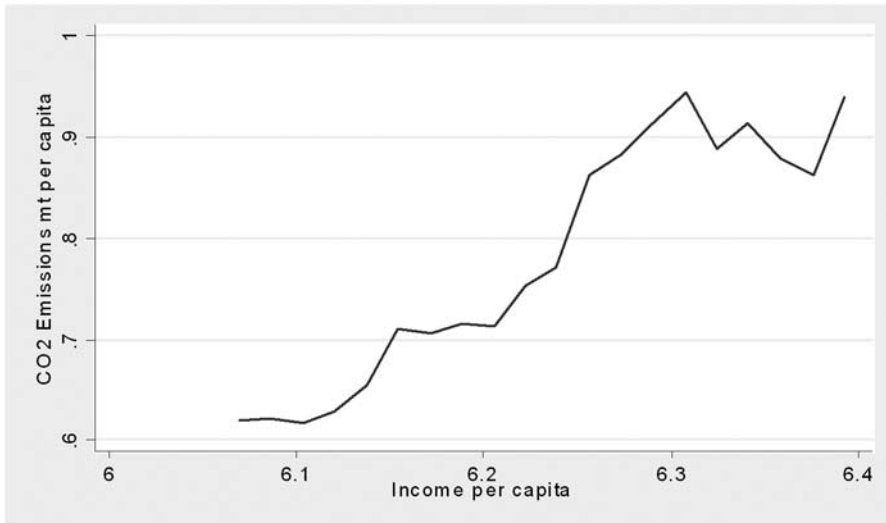


The curve for Sub-Saharan Africa seems to mimic the first stage of an inverted U-shape curve, consistent with the assumption of the theory showing that pollution intensity rises with per capita income at the early stages of economic development, in which these countries are, and falls as per capita income rises beyond some threshold level that could be determined. For individual countries the curves are diversified and show various patterns of the EKC (see Appendix 2).

In effect, for the aggregate Sub-Saharan Africa, from the estimated coefficients of the following Eq. 5:

$$\ln E_t = -69.10 + 20.6134 \ln Y_t - 1.5348 \ln Y_t^2$$

(5)

we computed the ratio $\left.\dfrac{\beta_1}{2\beta_2}\right)$. The negative value of $\beta_2$ = -1.53 confirms here the inverted

U-shape of the EK curve. Therefore the predicted turning point of the curve in the aggregated Sub-

Saharan Africa mean income level could be approximated by $\kappa = \exp\left(-\left(\dfrac{\beta_1}{2\beta_2}\right)\right) = 824.93$ . Most of the

selected Sub-Saharan African countries are below this mean income per capita value and therefore at the first stage of the EKC.

Five individual countries (see Table 1), namely Benin, the Central African Republic, Madagascar, Malawi, and Rwanda have a positive value of $\beta_2$, meaning that these countries don't follow the inverted U-shape of the EK curve. All remaining 50countries do have a negative value of $\beta_2$, confirming the inverted U-shape of their EK curve.

The final estimated dynamic ECM Eq. 4 (for individual countries and the SSA) is reported in Table 2 along with the diagnostic tests and the long-run elasticity of the variables and their t-ratio which express that all variables are significant. Figure 3 depicts the estimates and residuals. The dynamic ECM equation is reported as follows:

$$\Delta \ln E_t = -2.547 + 1.043\,\Delta \ln Y_t - 0.1552\,\Delta \ln T_t$$
$$- 0.2179\,\ln E_{t-1} + 0.3889\,\ln Y_{t-1} - 0.1279\,\ln T_{t-1} \tag{6}$$

This equation indicates that in the short run, a 1 per cent increase in the *GDP* per capita enhances $CO_2$ emissions by 1.043 per cent, while a 1 per cent increase in the trade intensity leads to 0.15 per cent decrease in pollution. The coefficient (-0.2179) in Eq. 6 indicates the speed of the adjustment of the system to the long run. The long-run equation derived from the dynamic ECM is the following:

$$\ln E_t = 1.8 \ln Y_t - 0.57 \ln T_t \tag{7}$$

In this long-run equation, the *GDP* per capita has a positive sign expressing the fact that economic expansion does have a negative impact on the environment; whereas the *trade intensity* has a negative sign indicating that trade is beneficial to the environment in the aggregated Sub-Saharan African area. For individual countries, the relationships between growth, trade and pollution are diversified.

Table 1: Turning Point of the Inverted U-shape of the EK Curve

| | Country | Estimated EKC Equation | Turning Point |
|---|---|---|---|
| 1 | Benin | $\ln E_t = 566.4 - 204.9 \ln Y_t + 18.44 \ln Y_t^2$ | 258,75 |
| 2 | Burkina Faso | $\ln E_t = -247.3 + 88.4 \ln Y_t - 7.974 \ln Y_t^2$ | 255,45 |
| 3 | Burundi | $\ln E_t = -36.77 + 12.75 \ln Y_t - 1.22 \ln Y_t^2$ | 185,94 |
| 4 | Central African Rep. | $\ln E_t = 12.49 - 5.098 \ln Y_t + 0.4253 \ln Y_t^2$ | 400,78 |
| 5 | Congo, Dem. Rep. | $\ln E_t = -21.14 + 6.3 \ln Y_t - 0.5164 \ln Y_t^2$ | 445,82 |
| 6 | Congo, Rep. | $\ln E_t = -36.35 + 9.513 \ln Y_t - 0.6325 \ln Y_t^2$ | 1844,86 |
| 7 | Cote d'Ivoire | $\ln E_t = -48.54 + 13.2 \ln Y_t - 0.9055 \ln Y_t^2$ | 1463,80 |
| 8 | Gabon | $\ln E_t = -147.7 + 33.42 \ln Y_t - 1.862 \ln Y_t^2$ | 7896,87 |
| 9 | Ghana | $\ln E_t = -65.49 + 23.46 \ln Y_t - 2.145 \ln Y_t^2$ | 237,11 |
| 10 | Kenya | $\ln E_t = -34.57 + 11.56 \ln Y_t - 1.002 \ln Y_t^2$ | 320,05 |
| 11 | Madagascar | $\ln E_t = 65.34 - 23.95 \ln Y_t + 2.119 \ln Y_t^2$ | 284,65 |
| 12 | Malawi | $\ln E_t = 209.8 - 86.63 \ln Y_t + 8.834 \ln Y_t^2$ | 134,72 |
| 13 | Mauritania | $\ln E_t = -953.2 + 318.6 \ln Y_t - 26.64 \ln Y_t^2$ | 395,33 |
| 14 | Niger | $\ln E_t = -93.82 + 35.59 \ln Y_t - 3.455 \ln Y_t^2$ | 172,52 |
| 15 | Nigeria | $\ln E_t = -24.35 + 4.998 \ln Y_t - 0.1716 \ln Y_t^2$ | 2111558,93* |
| 16 | Rwanda | $\ln E_t = 199.2 - 77.5 \ln Y_t + 7.398 \ln Y_t^2$ | 188,27 |
| 17 | Senegal | $\ln E_t = -1.266e + 004 + 4119 \ln Y_t - 334.9 \ln Y_t^2$ | 468,53 |
| 18 | South Africa | $\ln E_t = -75.03 + 18.47 \ln Y_t - 1.105 \ln Y_t^2$ | 4261,88 |
| 19 | Togo | $\ln E_t = -195 + 68.68 \ln Y_t - 6.102 \ln Y_t^2$ | 278,01 |
| 20 | Zambia | $\ln E_t = -58.9 + 16.45 \ln Y_t - 1.127 \ln Y_t^2$ | 1477,54 |
| | Aggregate SS Africa | $\ln E_t = -69.10 + 20.6134 \ln Y_t - 1.5348 \ln Y_t^2$ | 824.93 |

Note: The value for turning point of Nigeria seems outlier.

Table 2: Model Estimation, OLS 1961 to 2003 (Dependent variable: DLCO2_SSA)[39]

|  | Coefficients | Std. Error | t-value |
|---|---|---|---|
| Constant | -2.54730 | 1.123 | -2.27 |
| DLGDPpc | 1.04251 | 0.2705 | 3.85 |
| DLTradIntens_SSA | -0.155187 | 0.1323 | -1.17 |
| LCO2_SSA_1 | -0.217913 | 0.1072 | -2.03 |
| LGDPpc_SSA_1 | 0.388865 | 0.1706 | 2.28 |
| LTradIntens_SSA_1 | -0.127946 | 0.08877 | -1.44 |
| DUM89 | -0.0749316 | 0.0329 | -2.28 |
| sigma | 0.030251 | RSS | 0.0329444211 |
| R^2 | 0.475991 | F(6,36) = | 5.45 [0.000]** |
| log-likelihood | 93.2295 | DW | 2.01 |
| no. of observations | 43 | no. of parameters | 7 |

**Note:** LGDPpc_SSA_1 indicates the log of GDPpc_SSA one period lag. DUM89 is a dummy variable.

Figure 5: Estimates and Residuals
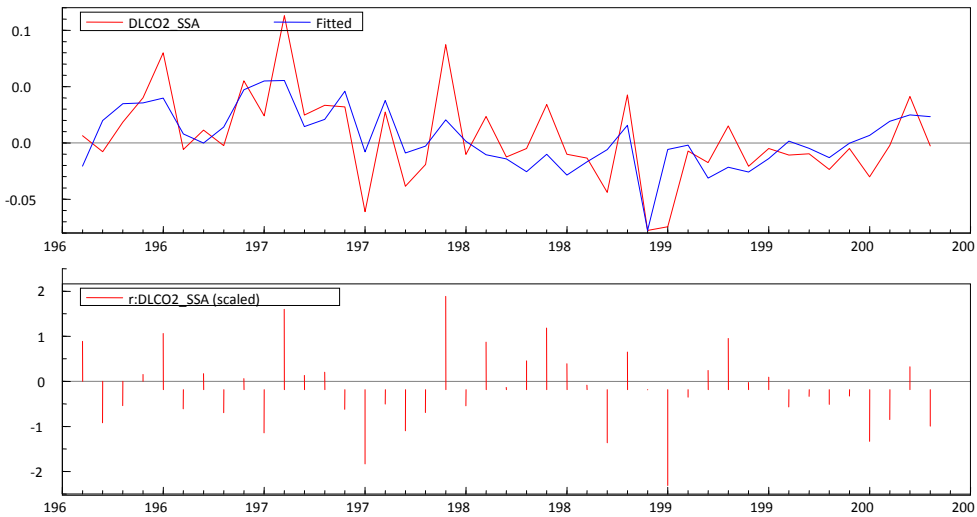
Table 3: Estimated Dynamic and Long-run Equations

| | **Country** | **Estimated Dynamic** ECM **Equations** | **Long-run Equations** |
|---|---|---|---|
| 1 | Benin | $\Delta \ln E_t = -3.6 + 0.47 \Delta \ln Y_t + 0.53 \Delta \ln T_t$ $-0.11 \ln E_{t-1} + 0.51 \ln Y_{t-1} + 0.14 \ln T_{t-1}$ | $\ln E_t = 4.54 \ln Y_t + 1.27 \ln T_t$ |
| 2 | Burkina Faso | $\Delta \ln E_t = -4.69 - 0.79 \Delta \ln Y_t - 0.14 \Delta \ln T_t$ $-0.28 \ln E_{t-1} + 0.58 \ln Y_{t-1} + 0.24 \ln T_{t-1}$ | $\ln E_t = 2,07 \ln Y_t + 0.86 \ln T_t$ |
| 3 | Burundi | $\Delta \ln E_t = -1.61 - 0.65 \Delta \ln Y_t - 0.11 \Delta \ln T_t$ $-0.16 \ln E_{t-1} + 0.22 \ln Y_{t-1} + 0.001 \ln T_{t-1}$ | $\ln E_t = 1.31 \ln Y_t + 0.007 \ln T_t$ |
| 4 | Central African Rep. | $\Delta \ln E_t = 0.51 - 0.08 \Delta \ln Y_t - 0.06 \Delta \ln T_t$ $-0.29 \ln E_{t-1} - 0.30 \ln Y_{t-1} + 0.10 \ln T_{t-1}$ | $\ln E_t = -1.01 \ln Y_t + 0.33 \ln T_t$ |
| 5 | Congo, Dem. Rep. | $\Delta \ln E_t = -4.36 + 0.32 \Delta \ln Y_t - 0.03 \Delta \ln T_t$ $-0.57 \ln E_{t-1} + 0.59 \ln Y_{t-1} - 0.05 \ln T_{t-1}$ | $\ln E_t = 1.02 \ln Y_t - 0.09 \ln T_t$ |
| 6 | Congo, Rep. | $\Delta \ln E_t = -1.46 + 1.83 \Delta \ln Y_t + 0.24 \Delta \ln T_t$ $-0.38 \ln E_{t-1} + 0.53 \ln Y_{t-1} - 0.54 \ln T_{t-1}$ | $\ln E_t = 1.4 \ln Y_t - 1.44 \ln T_t$ |
| 7 | Cote d'Ivoire | $\Delta \ln E_t = -4.77 - 0.43 \Delta \ln Y_t + 0.16 \Delta \ln T_t$ $-0.43 \ln E_{t-1} + 0.52 \ln Y_{t-1} + 0.24 \ln T_{t-1}$ | $\ln E_t = 1.8 \ln Y_t + 0.53 \ln T_t$ |
| 8 | Gabon | $\Delta \ln E_t = -3.7 + 0.07 \Delta \ln Y_t + 0.37 \Delta \ln T_t$ $-0.14 \ln E_{t-1} - 0.13 \ln Y_{t-1} + 1.1 \ln T_{t-1}$ | $\ln E_t = -0.9 \ln Y_t + 7.86 \ln T_t$ |
| 9 | Ghana | $\Delta \ln E_t = -0.2 + 0.24 \Delta \ln Y_t - 0.01 \Delta \ln T_t$ $-0.25 \ln E_{t-1} - 0.1 \ln Y_{t-1} + 0.04 \ln T_{t-1}$ | $\ln E_t = -0.22 \ln Y_t + 0.17 \ln T_t$ |
| 10 | Kenya | $\Delta \ln E_t = -1.4 + 1.04 \Delta \ln Y_t + 0.25 \Delta \ln T_t$ $-0.23 \ln E_{t-1} + 0.1 \ln Y_{t-1} + 0.2 \ln T_{t-1}$ | $\ln E_t = 0.21 \ln Y_t + 0.86 \ln T_t$ |
| 11 | Madagascar | $\Delta \ln E_t = -4.39 + 0.41 \Delta \ln Y_t + 0.38 \Delta \ln T_t$ $-0.37 \ln E_{t-1} + 0.34 \ln Y_{t-1} + 0.44 \ln T_{t-1}$ | $\ln E_t = 0.93 \ln Y_t + 1.21 \ln T_t$ |
| 12 | Malawi | $\Delta \ln E_t = -2.04 + 1.1 \Delta \ln Y_t + 0.43 \Delta \ln T_t$ $-0.13 \ln E_{t-1} + 0.25 \ln Y_{t-1} + 0.12 \ln T_{t-1}$ | $\ln E_t = 1.88 \ln Y_t + 0.89 \ln T_t$ |
| 13 | Mauritania | $\Delta \ln E_t = -0.75 + 0.27 \Delta \ln Y_t - 0.4 \Delta \ln T_t$ $-0.16 \ln E_{t-1} + 0.01 \ln Y_{t-1} + 0.15 \ln T_{t-1}$ | $\ln E_t = 0.05 \ln Y_t + 0.93 \ln T_t$ |
| 14 | Niger | $\Delta \ln E_t = -0.5 - 0.7 \Delta \ln Y_t + 0.1 \Delta \ln T_t$ $-0.25 \ln E_{t-1} - 0.14 \ln Y_{t-1} + 0.18 \ln T_{t-1}$ | $\ln E_t = -0.56 \ln Y_t + 0.70 \ln T_t$ |
| 15 | Nigeria | $\Delta \ln E_t = -4.16 + 1.6 \Delta \ln Y_t - 0.13 \Delta \ln T_t$ $-0.16 \ln E_{t-1} + 0.8 \ln Y_{t-1} - 0.18 \ln T_{t-1}$ | $\ln E_t = 5.01 \ln Y_t - 1.1 \ln T_t$ |

Table 3: Estimated Dynamic and Long-run Equations (Contd.)

| | Country | Estimated Dynamic ECM Equations | Long-run Equations |
|---|---|---|---|
| 16 | Rwanda | $\Delta \ln E_t = -6.18 + 0.34\Delta \ln Y_t + 0.07\Delta \ln T_t$ $- 0.15\ln E_{t-1} + 0.8\ln Y_{t-1} + 0.5\ln T_{t-1}$ | $\ln E_t = 5.1\ln Y_t + 3.01\ln T_t$ |
| 17 | Senegal | $\Delta \ln E_t = -392.6 + 40.54\Delta \ln Y_t - 16.51\Delta \ln T_t$ $+ 1.44\ln E_{t-1} + 73.02\ln Y_{t-1} - 14.75\ln T_{t-1}$ | $\ln E_t = -50.6\ln Y_t + 10.21\ln T_t$ |
| 18 | South Africa | $\Delta \ln E_t = -0.95 + 0.48\Delta \ln Y_t - 0.02\ln T_t$ $- 0.14\ln E_{t-1} + 0.16\ln Y_{t-1} - 0.007\ln T_{t-1}$ | $\ln E_t = 1.13\ln Y_t - 0.05\ln T_t$ |
| 19 | Togo | $\Delta \ln E_t = -0.13 - 1.5\Delta \ln Y_t + 0.22\Delta \ln T_t$ $- 0.31\ln E_{t-1} - 0.40\ln Y_{t-1} + 0.41\ln T_{t-1}$ | $\ln E_t = -1.27\ln Y_t + 1.34\ln T_t$ |
| 20 | Zambia | $\Delta \ln E_t = -4.41 + 0.05\Delta \ln Y_t - 0.16\Delta \ln T_t$ $- 0.25\ln E_{t-1} + 0.63\ln Y_{t-1} + 0.09\ln T_{t-1}$ | $\ln E_t = 2.53\ln Y_t + 0.38\ln T_t$ |
| | Aggregate SS Africa | $\Delta \ln E_t = -2.55 + 1.04\Delta \ln Y_t - 0.16\Delta \ln T_t$ $- 0.22\ln E_{t-1} + 0.40\ln Y_{t-1} - 0.13\ln T_{t-1}$ | $\ln E_t = 1.8\ln Y_t - 0.57\ln T_t$ |

Note: *E* indicates metric tons per capita $CO_2$ Emissions; *Y* indicates GDP per capita; and *T* indicates Trade intensity

In effect considering individual countries, it is possible to classify them into three groups. For the first group composed of the Democratic Republic of Congo, the Republic of Congo, Nigeria and South Africa, in the long-run equation the *GDP* per capita has a positive sign expressing the fact that economic expansion does have a negative impact on the environment; whereas the *trade intensity* has a negative sign indicating that trade is beneficial to the environment in these countries.

For the second group of countries, including Central African Republic, Gabon, Ghana, Niger, Senegal and Togo, in the long-run equation the *GDP* per capita has a negative sign expressing the fact that economic expansion does have a positive impact on the environment; whereas the *trade intensity* has a positive sign indicating that trade is not beneficial to the environment in these countries.

Concerning the third group of countries, including Benin, Burkina Faso, Burundi, Côte d'Ivoire, Kenya, Madagascar, Malawi, Mauritania, Rwanda and Zambia, in the long-run equation the *GDP* per capita has a positive sign expressing the fact that economic expansion does have a negative impact on the environment; and the *trade intensity* has also a positive sign indicating that trade is not beneficial to the environment in these countries.

## 4 Final Remarks

This paper has examined the impact of economic expansion as measured by the GDP per capita growth and the trade intensity proxies by the share of imports plus exports in the GDP on pollution as measured by $CO_2$ emissions in SSA as a whole and selected individual African countries over the period 1961-2003. These relationships were analysed using an autoregressive distributed lag ECM approach. We found diverse impacts of economic expansion and trade intensity on pollution. In the short run an increase in GDP per capita enhanced $CO_2$ emissions while trade intensity negatively impacted on pollution. For SSA as a whole, in the long run the effect of economic expansion on pollution is positive. On the other hand the impact of trade intensity on $CO_2$ emissions is negative. Concerning individual countries the results are much diversified.

These findings suggest that economic expansion in Sub-Saharan Africa does have a significant and negative impact on the environment as predicted by the theory of the environmental Kuznets curve. But more importantly, the intensity of trade, which is an aspect of the increasing globalisation phenomenon of Sub-Saharan Africa economies, does have a significant and beneficial impact on the environment in this zone. While international trade favours, the growth of GDP per capita degrades environment. These results should be considered country-by-country as each country depicts its own curve.

The beneficial aspects of the trade intensity on the reduction of pollution should be considered by policymakers concerned with new growth strategies in Sub-Saharan Africa, as trade appears to be a clean source of economic growth. At the same time, the economic expansion by other sources of generating pollutants should be regulated so as to limit atmospheric emissions, as their impacts on the environment in this zone are negative. Further investigations should be extended to individual Sub-Saharan African countries not covered in this paper, and use an alternative multivariate VAR approach, under which it would be possible to analyse the interactions among the three variables, as pollution and trade could have an impact on the growth process and reciprocally.

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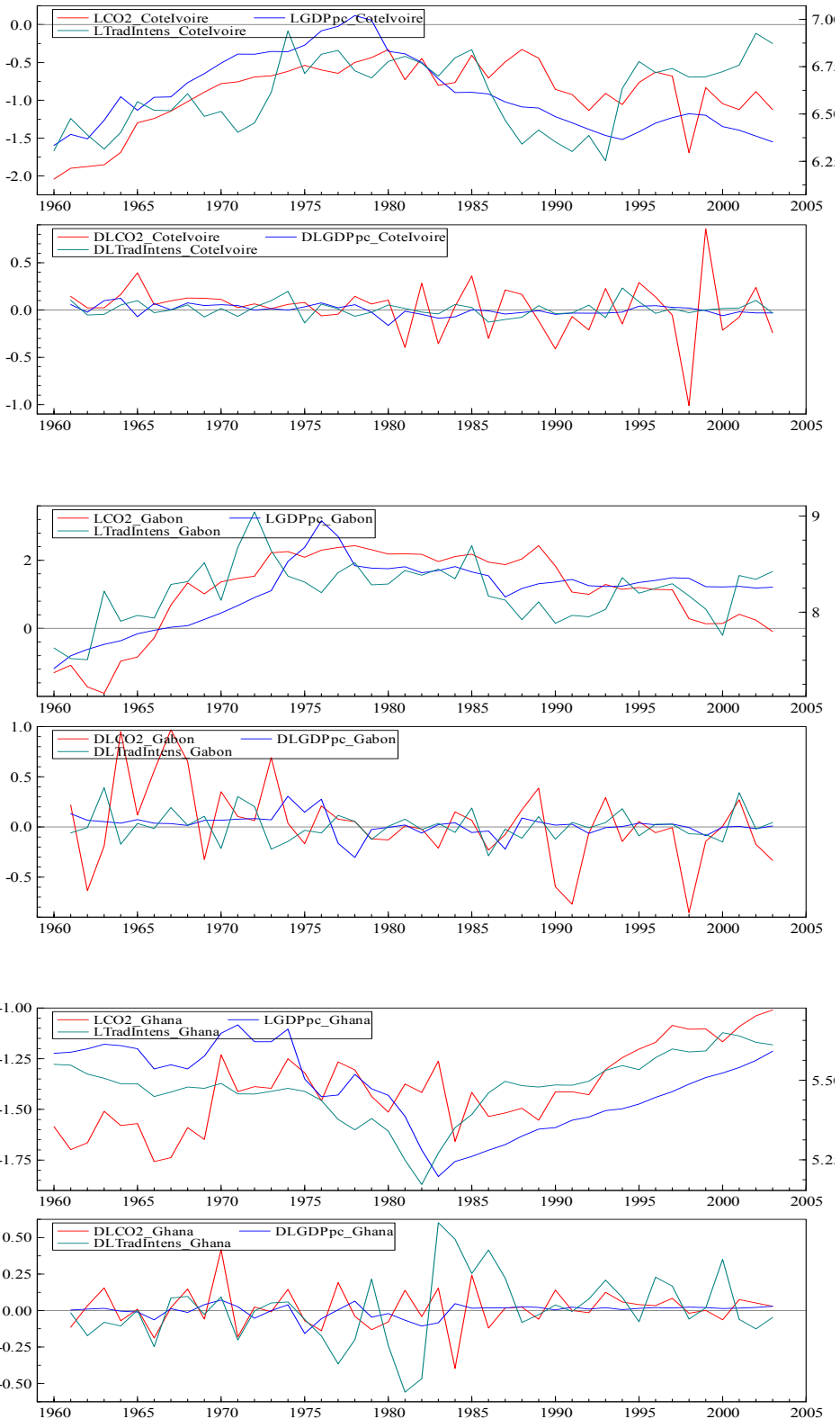
Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries)
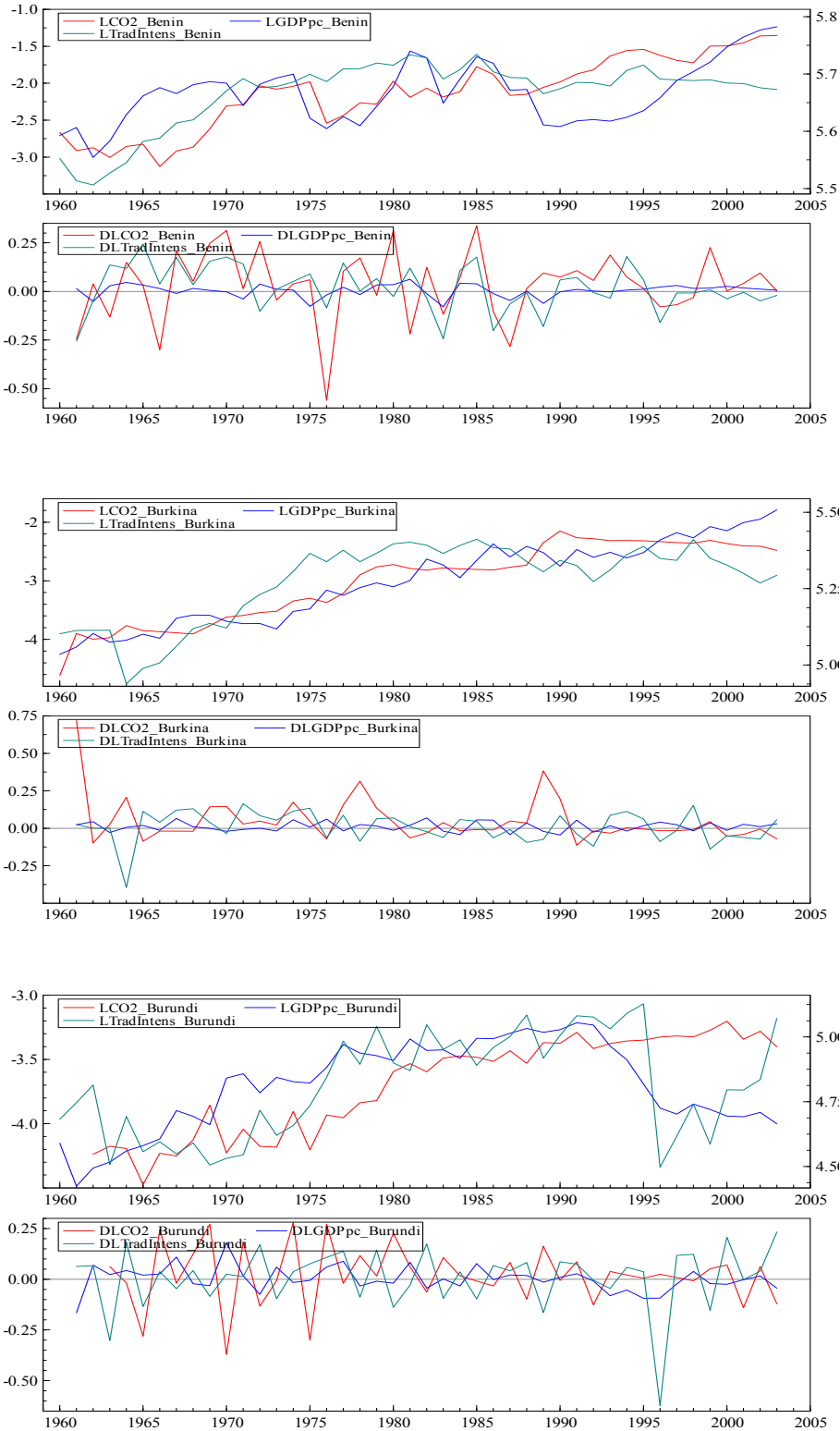
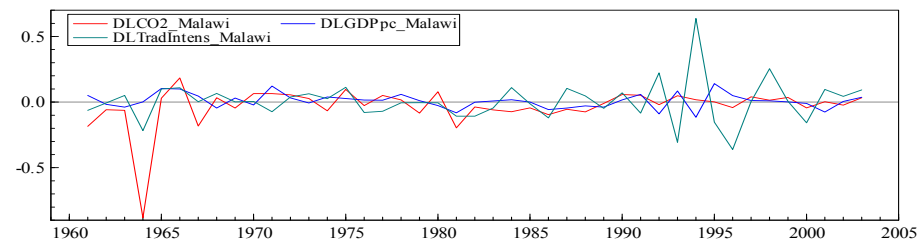## Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries) (Contd.)
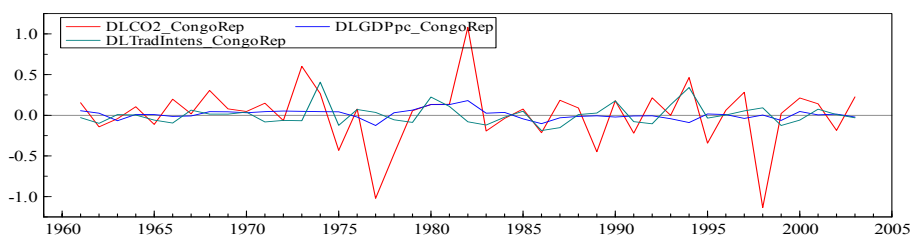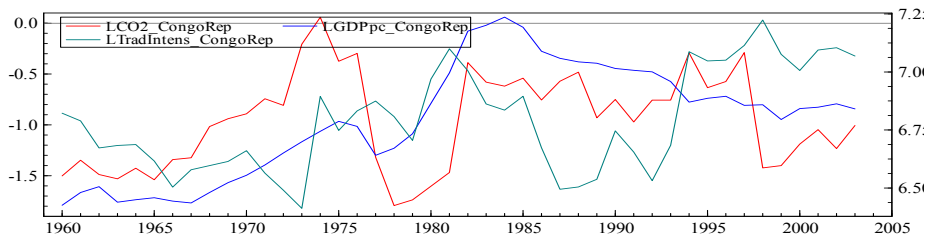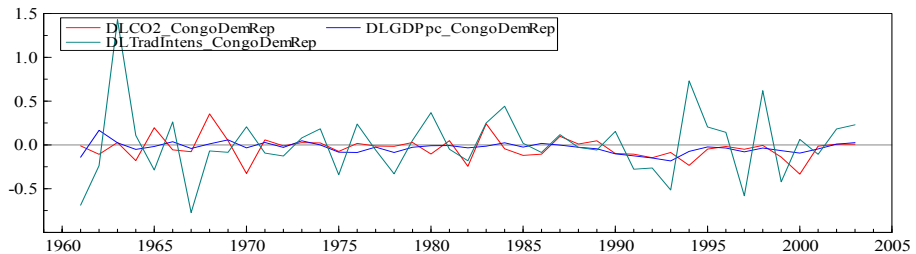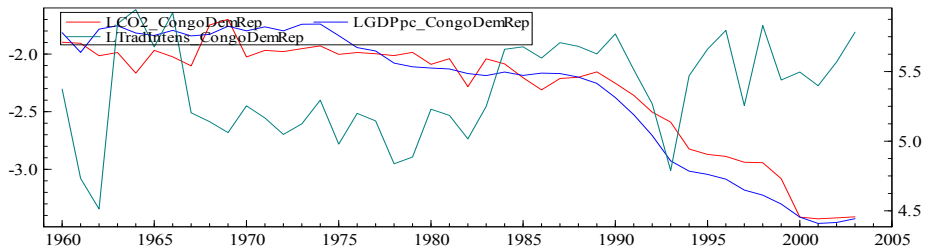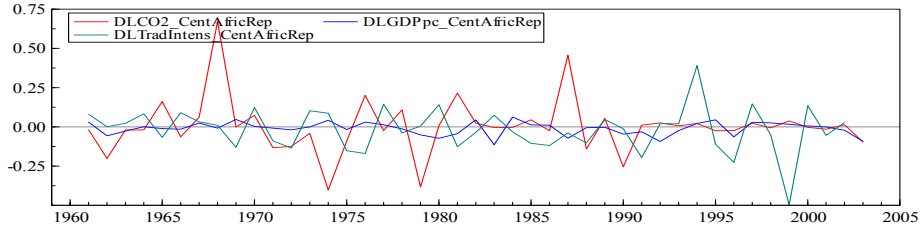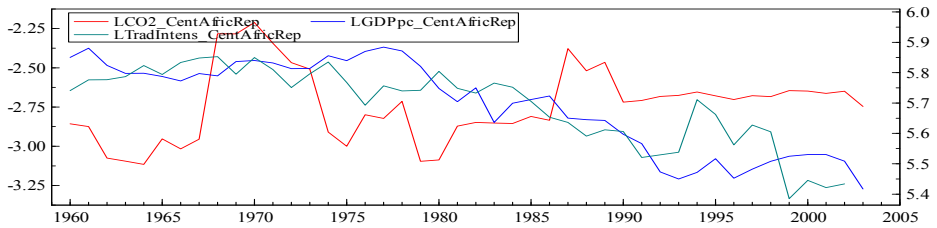
## Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries) (Contd.)

## Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries) (Contd.)
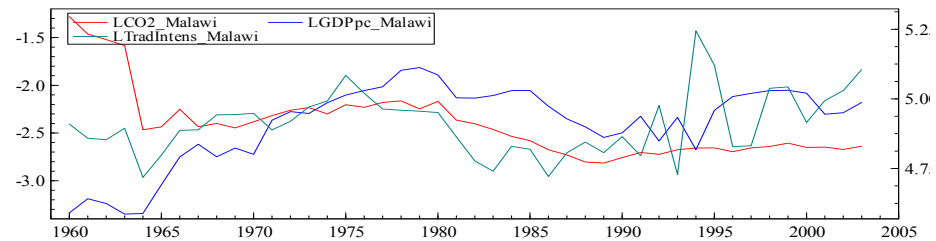
Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries)
(Contd.)

## Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries) (Contd.)

## Appendix 1a: Evolution of Pollution, Trade and Growth (Individual Countries) (Contd.)

## Appendix 1b: Joint Evolution of the Pollution (Log Level)
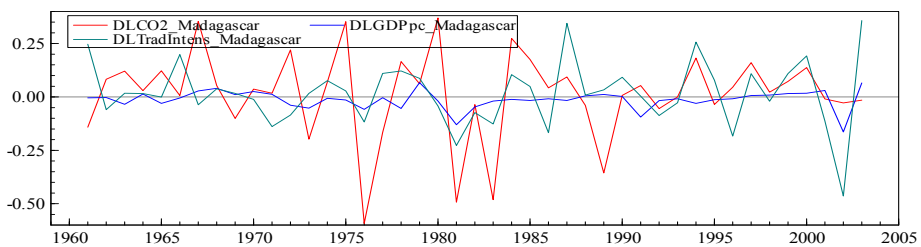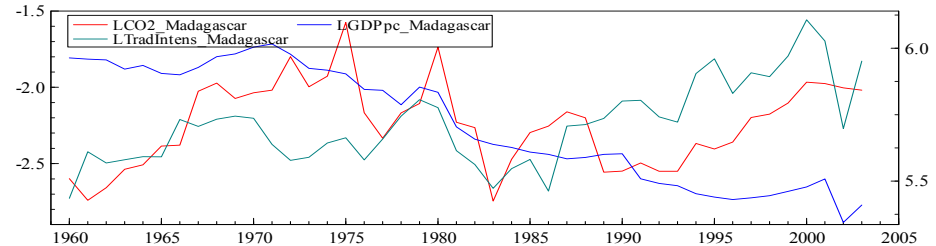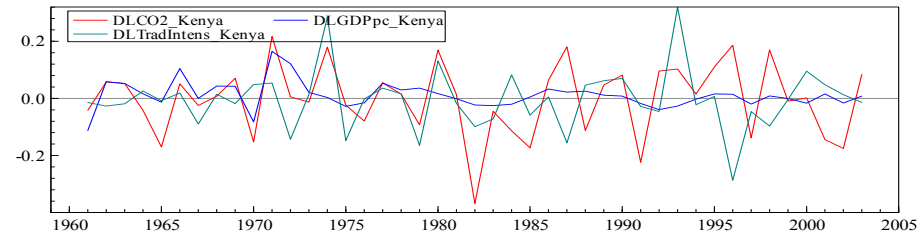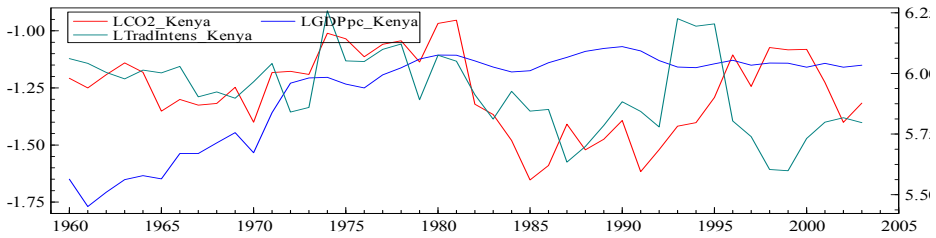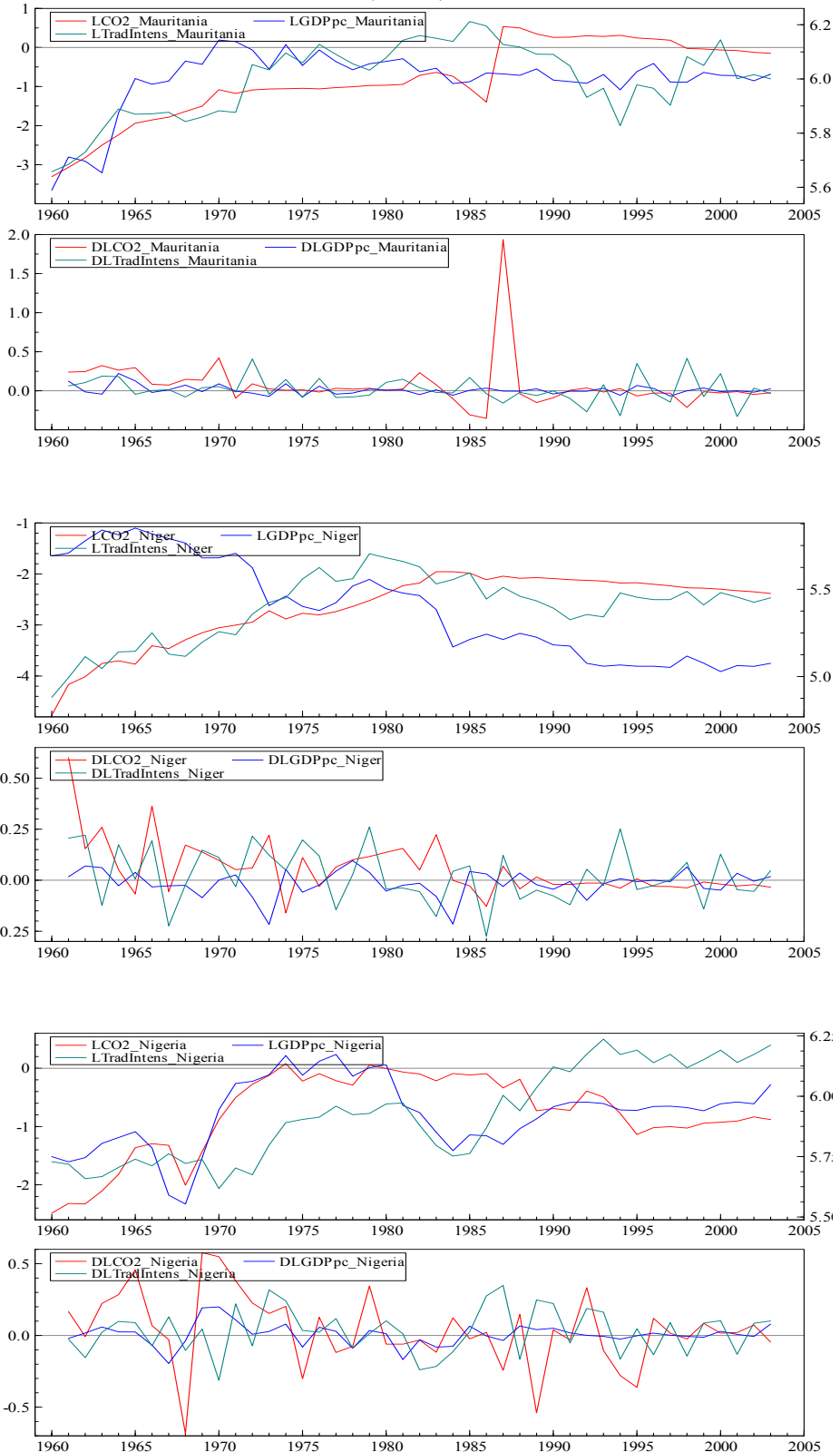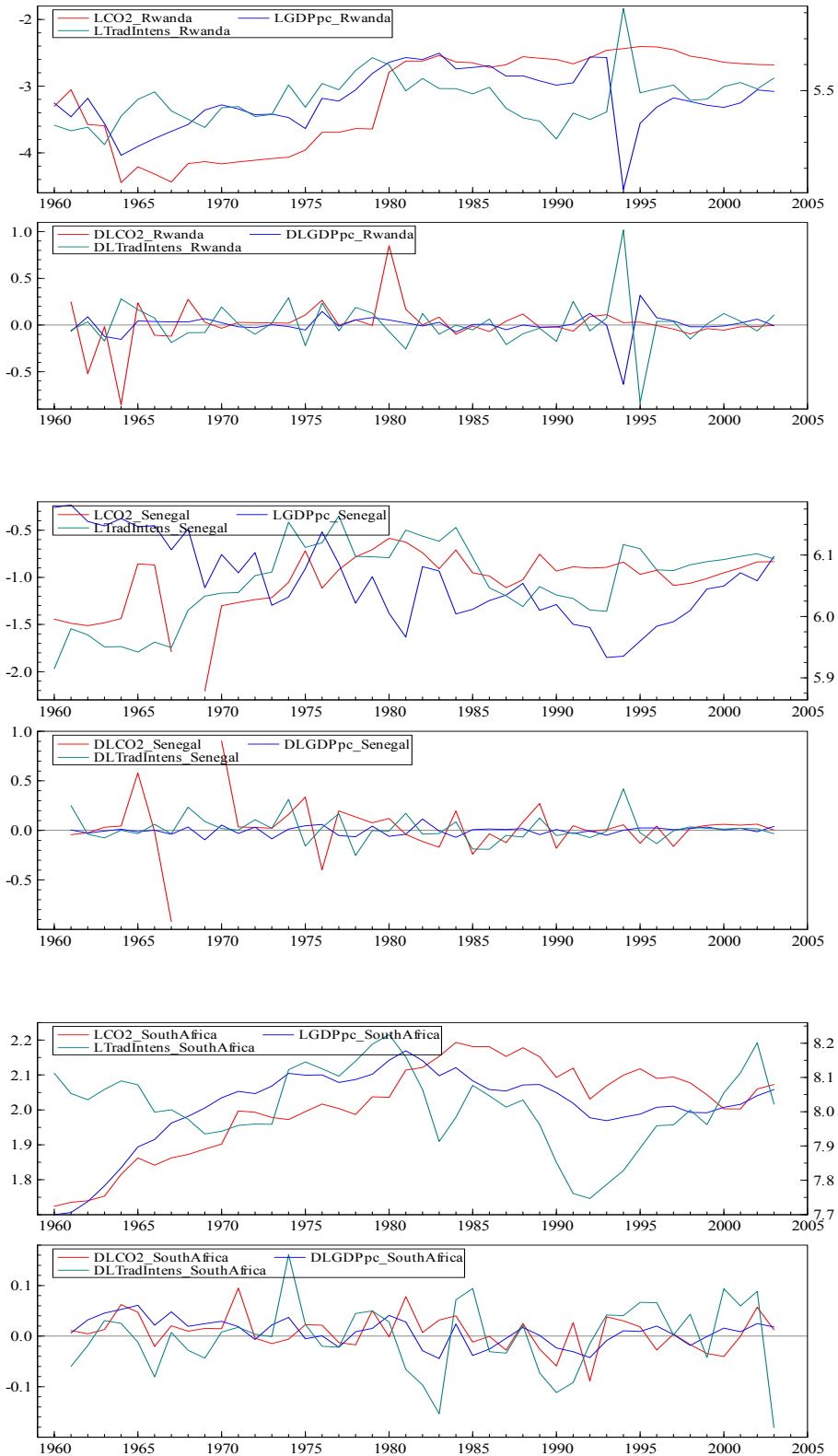


| | |
|---|---|
| LCO2_Benin | LCO2_Burkina |
| LCO2_Burundi | LCO2_CentAfricRep |
| LCO2_CongoDemRep | LCO2_CongoRep |
| LCO2_CoteIvoire | LCO2_Gabon |
| LCO2_Ghana | LCO2_Kenya |
| LCO2_Madagascar | LCO2_Malawi |
| LCO2_Mauritania | LCO2_Niger |
| LCO2_Nigeria | LCO2_Rwanda |
| LCO2_Senegal | LCO2_SouthAfrica |
| LCO2_Togo | LCO2_Zambia |



| | |
|---|---|
| LGDPpc_Benin | LGDPpc_Burkina |
| LGDPpc_Burundi | LGDPpc_CentAfricRep |
| LGDPpc_CongoDemRep | LGDPpc_CongoRep |
| LGDPpc_CoteIvoire | LGDPpc_Gabon |
| LGDPpc_Ghana | LGDPpc_Kenya |
| LGDPpc_Madagascar | LGDPpc_Malawi |
| LGDPpc_Mauritania | LGDPpc_Niger |
| LGDPpc_Nigeria | LGDPpc_Rwanda |
| LGDPpc_Senegal | LGDPpc_SouthAfrica |
| LGDPpc_Togo | LGDPpc_Zambia |



| | |
|---|---|
| LTradIntens_Benin | LTradIntens_Burkina |
| LTradIntens_Burundi | LTradIntens_CentAfricRep |
| LTradIntens_CongoDemRep | LTradIntens_CongoRep |
| LTradIntens_CoteIvoire | LTradIntens_Gabon |
| LTradIntens_Ghana | LTradIntens_Kenya |
| LTradIntens_Madagascar | LTradIntens_Malawi |
| LTradIntens_Mauritania | LTradIntens_Niger |
| LTradIntens_Nigeria | LTradIntens_Rwanda |
| LTradIntens_Senegal | LTradIntens_SouthAfrica |
| LTradIntens_Togo | LTradIntens_Zambia |

# Appendix 1c: Joint Evolution of the Pollution (Growth Rate)



| DLCO2_Benin | DLCO2_Burkina |
| --- | --- |
| DLCO2_Burundi | DLCO2_CentAfricRep |
| DLCO2_CongoDemRep | DLCO2_CongoRep |
| DLCO2_CoteIvoire | DLCO2_Gabon |
| DLCO2_Ghana | DLCO2_Kenya |
| DLCO2_Madagascar | DLCO2_Malawi |
| DLCO2_Mauritania | DLCO2_Niger |
| DLCO2_Nigeria | DLCO2_Rwanda |
| DLCO2_Senegal | DLCO2_SouthAfrica |
| DLCO2_Togo | DLCO2_Zambia |



| DLGDPpc_Benin | DLGDPpc_Burkina |
| --- | --- |
| DLGDPpc_Burundi | DLGDPpc_CentAfricRep |
| DLGDPpc_CongoDemRep | DLGDPpc_CongoRep |
| DLGDPpc_CoteIvoire | DLGDPpc_Gabon |
| DLGDPpc_Ghana | DLGDPpc_Kenya |
| DLGDPpc_Madagascar | DLGDPpc_Malawi |
| DLGDPpc_Mauritania | DLGDPpc_Niger |
| DLGDPpc_Nigeria | DLGDPpc_Rwanda |
| DLGDPpc_Senegal | DLGDPpc_SouthAfrica |
| DLGDPpc_Togo | DLGDPpc_Zambia |



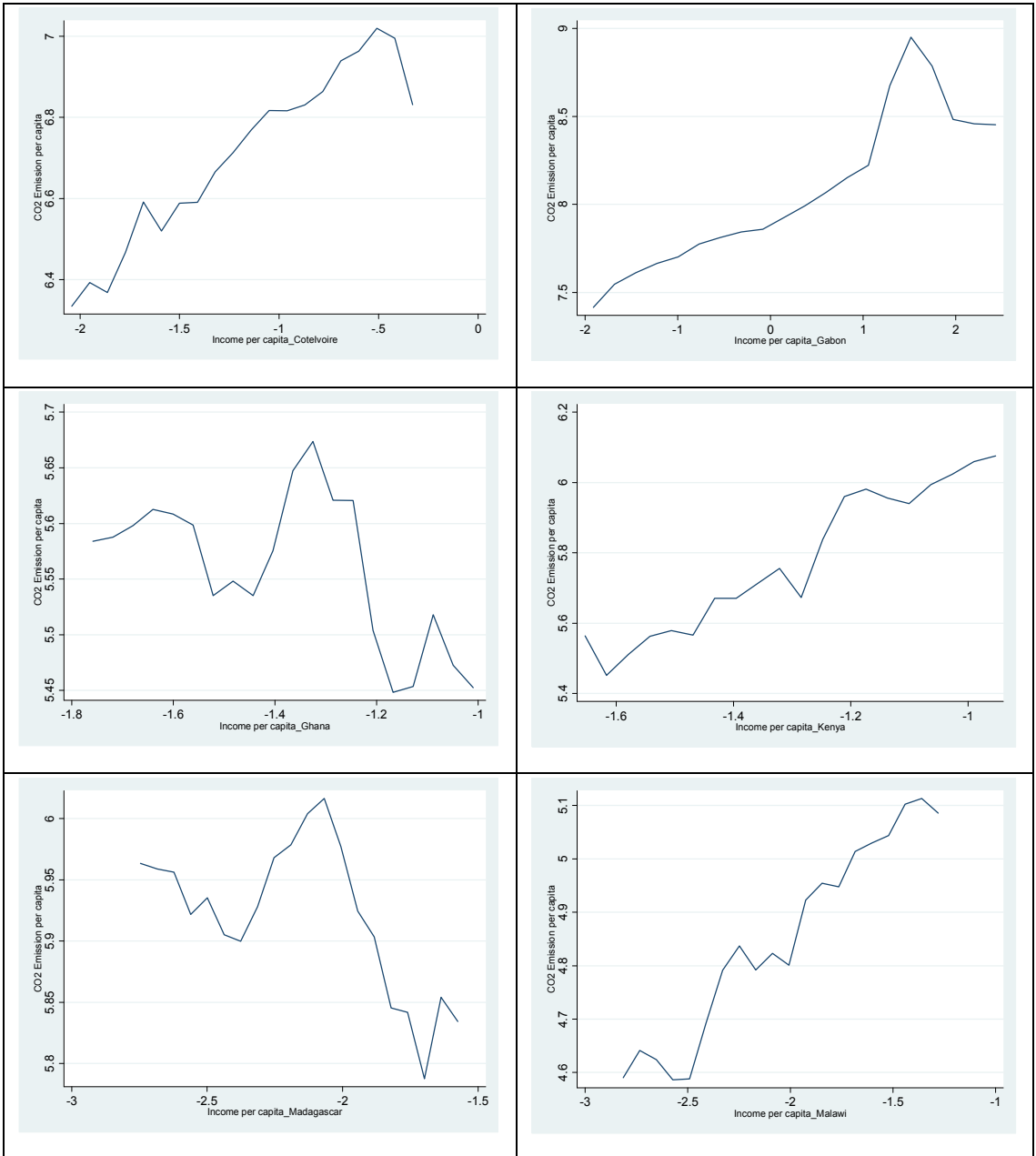| DLTradIntens_Benin | DLTradIntens_Burkina |
| --- | --- |
| DLTradIntens_Burundi | DLTradIntens_CentAfricRep |
| DLTradIntens_CongoDemRep | DLTradIntens_CongoRep |
| DLTradIntens_CoteIvoire | DLTradIntens_Gabon |
| DLTradIntens_Ghana | DLTradIntens_Kenya |
| DLTradIntens_Madagascar | DLTradIntens_Malawi |
| DLTradIntens_Mauritania | DLTradIntens_Niger |
| DLTradIntens_Nigeria | DLTradIntens_Rwanda |
| DLTradIntens_Senegal | DLTradIntens_SouthAfrica |
| DLTradIntens_Togo | DLTradIntens_Zambia |

## Appendix 2: Environmental Kuznets Curve (Selected Sub-Saharan Africa Countries)
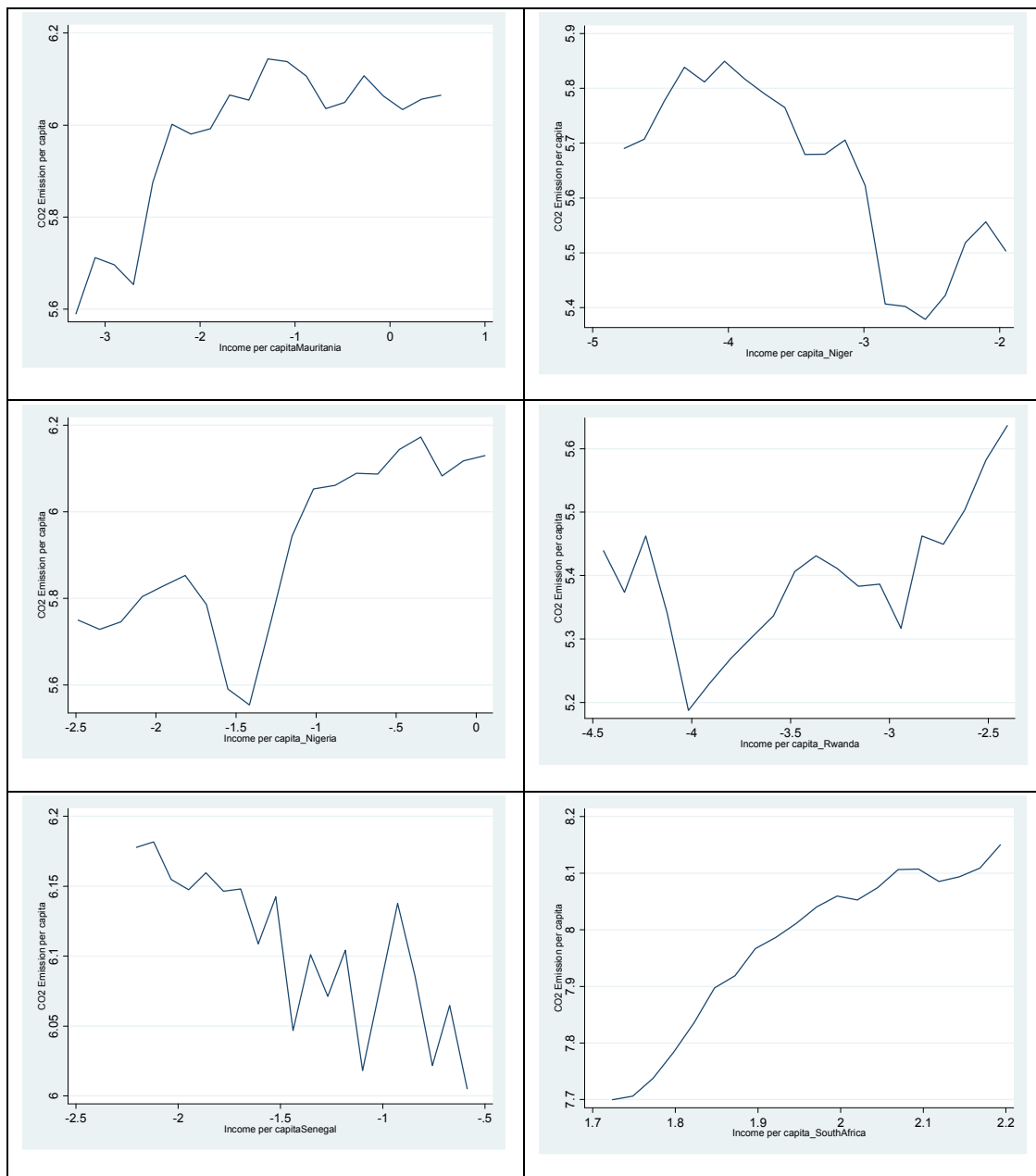
Appendix 2: Environmental Kuznets Curve (Selected Sub-Saharan Africa Countries)
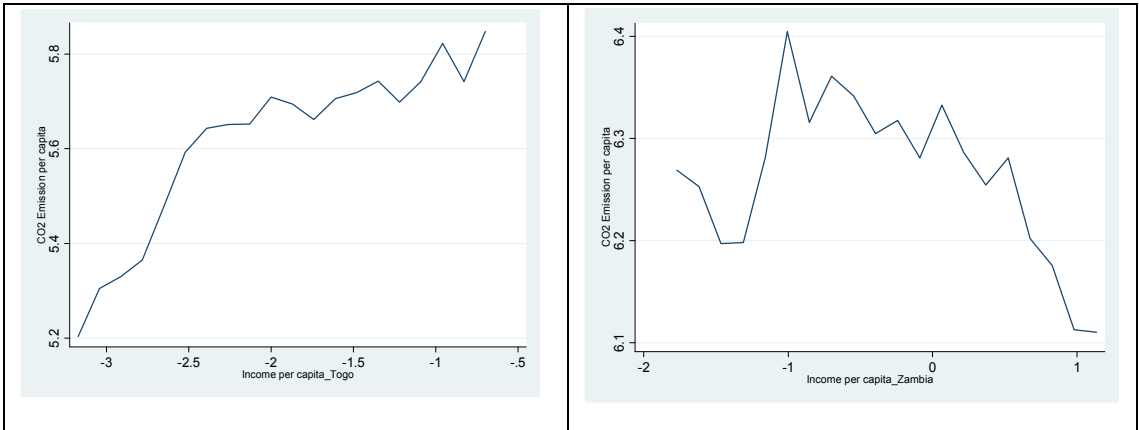
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Appendix 2: Environmental Kuznets Curve (Selected Sub-Saharan Africa Countries) (Contd.)

Appendix 2: Environmental Kuznets Curve (Selected Sub-Saharan Africa Countries) (Contd.)

# THE GLOBAL FOOD CRISIS: WHERE IS AFRICA'S VOICE IN THE INTERNATIONAL LEGAL REGIME FOR FOOD AID?

By Hilton E. Zunckel & Ferdinand Meyer (Trade Law Chambers, Cape Town, South Africa)

## I. INTRODUCTION

The issue of food aid has been controversial in recent years, particularly with regard to its impact on local food crop production and trade in relief food recipient countries. The food crisis that hit the developing world in 2008 reflected a breakdown in the global food system that threatens to worsen poverty, hunger and insecurity. This has brought the question of whether the international food aid regime should be reformed to form part of the critical international agenda.

In a world prone to natural and human disasters, where more than 800 million people are suffering from acute and chronic hunger, food aid can be life saving. However food aid has been challenged as not always being the most appropriate response to food insecurity, whether chronic or emergency. One top consideration is timeliness; ensuring the quickest response to emergencies. Other considerations include market impact, and particularly whether the food aid serves as an incentive or disincentive to local or regional food production and commerce in recipient countries. The efficiency of food aid delivery and distribution to the end user has also been questioned with the argument that shipment from donor countries is extremely costly, and the people who are the most food insecure are not effectively reached. New challenges laid down by climate change as well as increased commodity prices (whereas food aid quanta are countercyclical with respect to prices) will also impact on the food aid regime.

Specialists, researchers and civil society activists, have called for a reform of the international food aid system, and some donor countries have been considering it. However, because of the links between food aid and the WTO Doha agriculture negotiations, the food aid reform process has been protracted. The question of whether the WTO should impose discipline on food aid is a key point of disagreement between the US and the EU in the current Doha round of trade talks. The outcome of the WTO dispute over trade in genetically modified organisms (GMOs) may also affect food aid policies, as many countries have in recent years rejected GM food aid from the US on the grounds, in particular, that it would harm their export markets in Europe. Current debates about food aid are therefore linked to a much larger discussion about international trade and agricultural subsidies.

Since 2002, Southern Africa has been severely hit by natural disasters such as droughts, floods and cyclones, which all affected the production of food crops. The situation has been aggravated by several structural, chronic and political challenges such as high prevalence of HIV/AIDS, lack of public financial resources, low purchasing power of the population, poor management of strategic grain reserves, land degradation, and land reform activities. As many as 12 million people were estimated to be threatened by severe food shortages across the region in 2005/2006. At least 40 per cent of the region's population is said to be suffering from chronic food insecurity. As a result, food aid has started flowing into countries hit by food shortages in the region, and hence started interacting with local food production and trading systems. The SADC food situation has also been influenced negatively by the recent global food price crisis. Agriculture is a key sector in the economy of the Southern African region in terms of both share of GDP, employment and trade. It is the primary source of livelihood for the majority of poor people who reside in the rural areas.

It is a major source of government revenue for most countries. The agricultural sector is thus critical to the region as it plays a significant role in food security, job creation, poverty reduction, export revenue and rural development. It is therefore important to put in place measures to prevent food aid from weakening the agricultural sector.

On the other hand, opportunities to make food aid a tool that contributes to unlocking the agricultural potential of the region to produce enough food for its people, enhance its commercialisation capacities as well as create jobs for the rural poor should be explored and promoted. It would then allow for truly building sustainable food security and reducing poverty. The majority of farmers in Southern Africa are ill-equipped to address the issues relating to food aid despite the existence of a body of knowledge and information on the subject. This lack of knowledge and awareness prevents them from participating in the on-going discussions and to adopt positions that ensure them maximum benefit from the global reforms. Thus it is imperative that farmers in Southern Africa are first brought up to speed on these issues and secondly develop positions with respect to a food aid mechanism addressing food needs without compromising local food production systems and trade in the region, and, on the contrary, promoting them. This paper aims to make a modest contribution in pursuing that end.

## II. THE LEGAL BASIS FOR INTERNATIONAL FOOD AID

"It is therefore important to have commitment by cooperating partners in the context of the Food Aid Convention to make food aid available at all times." (Africa Group Submission to the WTO 2006).

### II.1. The concept of Food Aid Internationally

Food Aid can be described as having originated in the agricultural surplus disposal programmes of the Organisation for Economic Cooperation and Development (OECD) countries in the post second world war period. It is described as the transfer of commodities (mainly grain) or payments close in nature, to developing countries as a form of development assistance for the provision of food. Three broad categories of food aid can be distinguished under this description:

1. Emergency Food Aid: This is food aid used for humanitarian purposes in the wake of crises caused primarily by natural disasters or conflict.
2. Project Food Aid: This food aid is linked to specific development projects and is most often disbursed through NGOs. It may support initiatives like school feeding programmes or food provision in return for work schemes (food for work projects).

3. Programme Food Aid: This form of food aid is provided by donor governments to other recipient governments who then sell it on local markets or to NGO's and use the proceeds for funding development projects. This procedure is also known as monetised food aid and is often provided long term.

It is noteworthy that very broad less focused definitions of food aid are also used. For instance, the FAO has offered that as none of the international treaties dealing with food aid contain an explicit definition of food aid, it may also be defined simply as agreed list of international transactions in food that are considered to constitute food aid. This paper adopts the former definition for purposes of clarity. In the broader context, food aid is related to the wider concept of "food security". Food security has traditionally served as a sustained argument for the exclusion of elements of agricultural trade from the application of some of the primary legal rules of the global trading system. Food security was defined by the 1996 World Food Summit of the FAO, which couched the term as follows in the World Food Summit Plan of Action: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

The World Food Summit Plan of Action also indicates that inadequate access to land, water, inputs, improved seeds and plants, appropriate technologies and farm credit; wars, natural disasters, and climate among other considerations can adversely affect food security. It recognises that while food aid may be provided to ease these circumstances, this tool is not a long term solution to the underlying causes of food insecurity. This having been said, it is recognised that it is important to maintain an adequate capacity in the international arena to provide food aid when it is required in response to emergency situations[6]. The question then arises as to what will constitute long term assurances of food security? The Plan suggests that increased production efficiently combined with "food imports, reserves, and international trade" are appropriate tools to strengthen the food security position of a country. It is thus evident that food aid is just one of several instruments which can help to promote food security, and food aid is a temporary stop-gap

response which should not crowd out more sustainably focused long-vision tools in the quest to foster food security. In this quest to foster food security, there are some key international regulatory mechanisms that address themselves to the topic of food aid. The discussion in this chapter will hence proceed to describe these regulatory mechanisms and later assess whether these food aid mechanisms are efficient.

## II.2. The International Food Aid Convention

### II.2.1. Rationale and origin

The Food Aid Convention (FAC) is arguably the most significant source of international food aid regulation in the global context. The importance of the FAC is that it is the only instrument under international law whereby donor countries have undertaken firm obligations to provide food aid. The FAC forms part of the International Grains Agreement (IGA) of 1995. The sister convention to the FAC is the Grains Trade Convention (GTC). The relationship is important because the existence of the FAC is tied to the existence of the IGA. The treaties are administered by the International Grains Council (IGC) secretariat based in London. The current FAC has its roots back in 1967 and its current incarnation is the 1999 version which has been renewed up to date.

The GTA has a longer history dating back to the formation of the Bretton Woods institutions and the GATT in the late 1940's. The International Grains Agreement of 1967 was intimately linked to the trading regime and was concluded in the context of the GATT's Kennedy Round. At that time, several international commodity agreements were concluded with a view to managing international commodity trade. In the grain sector, there was a tightening of grain market supply and thus with stocks available for use as food aid being low, an incentive for food aid donors to share their aid supply loads with other donor countries emerged. This explains the present day linkage between the IGC and the WTO and the sequencing of negotiations in the FAC to follow in tandem but subsequent to those of the Doha Development Agenda, as elaborated in paragraph 2.2.5

Historically, the FAC took its lead from the GATT, and today this remains the position with the FAC now taking its lead from the WTO. Related to the FAC, the GTC covers trade in wheat, maize, barley, sorghum and more recently oil seeds and rice. The GTC aims to foster international cooperation in the grain trade; to promote expansion, openness and fairness in the grains sector; to contribute to grain market stability and to enhance world food security. These aims are operationalised through market transparency, information collation, discussion and analysis as regards the international grain markets. All this is enabled by the IGC's status as an intergovernmental forum. Note that like the WTO, the IGC is not a United Nations (UN) body and operates independently of the UN system.

### II.2.2. Objectives

The objectives of this FAC are essentially two-fold. Firstly to contribute to global food security and secondly to improve the ability of the international community to respond to food emergencies and other food needs of developing countries. In particular these two objectives will be fostered by: Making appropriate levels of food aid available on a predictable basis using the FAC; Encouragement in ensuring that the food aid is targeted at the alleviation of hunger (and poverty) of the most vulnerable groups; Providing food aid consistent with agricultural development in recipient countries; Maximising the impact, the effectiveness and quality of food aid granted so as to be a tool in support of food security; Providing a platform for coordination and information sharing on food aid matters; and, the pursuit of improved coherence between food aid and other policy instruments.

### II.2.3. Commitments

In practice, donors pledge to provide a minimum amount of food aid to developing countries in the form of grains and other eligible products each year. The members of the FAC are Argentina, Australia, Canada, European Community (EC), Japan, Norway, Switzerland and the United States (US). Given the area of impact of the undertakings under the FAC, African countries are glaringly absent in their participation under the Convention. The text of the convention itself defines what these quantities of donated food should be, and determines that all products provided must meet international quality standards, and be consistent with the dietary habits and nutritional needs of recipients.

The pledges under the FAC are as follows:

| *FAC Member Annual Aid Tonnes* | *percentage* |
|---|---|
| Argentina 35,000 | 1% |
| Australia 250,000 | 5% |
| Canada 420,000 | 9% |
| European Community 1,320,000 | 27% |
| Japan 300,000 | 6% |
| Norway 30,000 | 1% |
| Switzerland 40,000 | 1% |
| USA 2,500,000 | 51% |
| Total 4,895,000 | 100% |

*Food Aid Convention Commitments*
*(Source: Fac Article III (e))*

These are minimum tonnages, and they are usually exceeded. The overall aim is to provide double this amount. The Fac's preamble and Article I stipulate that the objective is actually to commit at least 10 million tonnes of food aid annually. This is mainly in the form of grain but also includes other accepted food products suitable for human consumption, like rice, oil or sugar. An increasing proportion of Fac food aid is purchased locally within the recipient country or in neighbouring developing countries, supporting the agricultural sector and local food markets. These triangular transactions help to boost regional agricultural trade, while the rise in local purchases has greatly reduced the food aid component in international trade flows, according to the IGC. It should be noted that countries not listed in the above table can still provide food aid; they simply do not have a treaty obligation to do so. The advantage of this formalised treaty is that Fac members make food aid available to developing countries with the greatest needs on a predictable basis, and theoretically this is not related to fluctuations in world food prices and supplies.

*II.2.4. The Food Aid Committee (Fac)*

To achieve greater efficiency in food aid operations, there is an emphasis on the monitoring and evaluation of the impact and effectiveness of food aid operations. Rules 9 and 10 of Fac require each member to report on each of its food aid operations which form part of its treaty contributions including those channeled through international organisations or NGOs. The Fac is operationalised through a food aid committee (Fac) which consists of all parties (signatories) to the Fac. It is these donor members, distinct from observers, who operate the tactical side of the business, mainly by exchanging information on food aid needs and operations. The Fac monitors the performance of its members' undertakings under the Convention, on the basis of records maintained by the IGC Secretariat. Information supplied under Rule 9 is detailed in a 12 point reporting list and ranges from information on price to details of third country purchases done using cash donations. It shares information on policy developments affecting food aid and discusses the world food situation and prospects in developing countries. It also considers ways in which donors' aid efforts may best achieve their objectives, with emphasis on the evaluation of world food needs and on the effectiveness and impact of food aid operations on those receiving the food aid.

The Fac holds two meetings a year in June and December. The Fac sessions may also be attended by invited observers from international organisations concerned with food aid. These include the UN Food and Agriculture Organization (FAO), the World Food Programme (WFP), the World Trade Organisation (WTO), the Organisation for Economic Cooperation and Development (OECD) and the UN Conference on Trade and Development (UNCTAD). Countries party to the IGC can also request observer status at these meetings. Notable in recent times is the participation at Fac meetings of government observers from some new potential members. South Africa has been the only African country to show an interest in this regard, and has been admitted as an observer to the proceedings on several occasions since July 2004. The secretariat has been encouraged by this "new" interest.

*2.2.5. Latest Developments, Debates and Discussions*

The most recent meeting of the Food Aid Committee was in December 2008. It dealt with the ongoing business under the Convention but was preceded by two days of informal meetings for Fac members to share ideas on the objectives and form of a new Convention on food aid. At this informal discussion, it was confirmed that Fac would take its cue from the WTO and that any formal negotiations would have to take into account the outcome of the ongoing WTO agriculture negotiations. It was agreed that there is indeed space to improve the operation of the Fac under the existing Fac, notably as regards information exchange and the coordination of donor activities.

In looking to a future incarnation of the Fac, the Fac members agreed to explore how the Fac could be improved by expanding the list of eligible products for donation and reviewing some of the procedural rules. The example was cited of donations of fortified products and micronutrients being added as eligible products in addition to the present grains, pulses, oil, root crops, sugar and milk powder. The Committee is said to be holding more discussions in 2009 ahead of the June 2009 official Fac session.

In deference to the decision to await progress from the WTO negotiations, it was agreed that the Fac of 1999 (as extended) should be renewed for yet another term to be decided and made effective from 1 July 2009. It is notable that resigning the Fac has been on ice as it were since June 2004 based on the premise that the WTO negotiations need to set the pace and that the Fac can then take its lead from the WTO. This is reminiscent of the birth of the Fac during the Kennedy trade round of the late 1960s. Notably, the linkage between Fac and WTO is emphasised by an exchange of letters of understanding. Fac is not only cross linked to WTO, but also to Fao. In this regard, Article IX of Fac makes reference to the requirement that food aid transactions are executed to be consistent with Fao's "Principles of Surplus Disposal and Consultative Obligations" (CSSD). The CSSD is discussed in the following section.

**II.3. The Fao Consultative Sub-Committee on Surplus Disposal**

The origin of the Fao Consultative Subcommittee on Surplus Disposal (CSSD) dates back to 1954. Unlike Fac, the CSSD includes governments of both donor and recipient countries among its members, with a number of international organisations and NGOs, notably the International Federation of Agricultural Producers (IFAP), being admitted. This immediately raises an opportunity in that SACAU might evaluate what influence it may bring to bear on the CSSD through its own membership of the International Federation of Agricultural Producers. The CSSD constructed what are known as the Fao's Principles of Surplus Disposal (the Principles). It should be stated upfront that this is a non-binding code of good practice for food aid transactions.

According to Fao, these Principles look to ensure that agricultural commodities which are exported on concessionary terms result in additional consumption for the recipient country and do not displace normal commercial imports. Likewise, domestic production should not be discouraged or otherwise adversely affected. The Principles are not a binding instrument and they do not represent a commitment but only intent by signatory countries. They assist governments to focus on their responsibilities as parties to concessionary transactions and to avoid the potential for disagreements. The interests of food aid recipients are safeguarded by the Principles which emphasise the importance of increasing consumption rather than restricting supplies. The interests of exporting countries are protected by the undertaking that such disposals should be made without harmful interference with normal patterns of production and international trade; by assurances against resale or trans-shipment of commodities supplied on concessionary terms.

It is notable that the Principles are specifically referred to in Article 10.4 of the WTO Agreement on Agriculture together with the reference to Fac. In practice, the CSSD addresses programme food aid where aid is given through untargeted government to government transfers. In contrast, project and emergency food aid (usually targeted to vulnerable groups, linked to humanitarian or development activities, and carried out by NGOs or the WFP) are generally regarded as additional to commercial exports. Because it operates under the umbrella of Fao's Committee on Commodity Problems, it is able to draw on Fao's expertise on agricultural trade, food aid, and food security. However, the 12 copies of these letters are appended to the actual text of Fac 1999.

A further concept of Fao's CSSD to consider here are the "Usual Marketing Requirements" (UMRs). The UMR is a commitment by the recipient country of food aid to maintain a normal level of commercial imports of the same commodity and is based on a rolling average of the last five years of commercial imports. Its aim is to ensure that food aid results in additional consumption and that there is no adverse impact on commercial trade. UMRs are thus required to be negotiated between the supplying and recipient countries and included as part of their contractual arrangement in any case in point involving these concessionary transactions. The UMR concept primarily safeguards the interest of donor countries. It is interesting that Fac, post 1995, ceased to mention UMRs. The provision addressing the issue simply provides that food aid transactions must be carried out consistently with the Fao "Principles of Surplus Disposal and Consultative Obligations". Thus the inclusion of UMR provisions in food aid agreements between donor and receiving countries is not a requirement under international law. However, it is not prohibited.

## II.4. The World Trade Organisation

The WTO has assumed a primary role in the food aid arena as food aid is closely linked to trade, as was evident in looking at Fac and Fao structures earlier. In addition, we noted that the revision of the primary international food aid instrument, Fac, is being held on ice pending progress in the Doha Round of trade negotiations. One of the reasons why the WTO has developed a prominence in the food aid arena is because it has a binding and enforceable dispute settlement system which is absent in Fac and Fao. In addition to its WTO unique provisions, WTO's legal text does also make cross reference to both Fac and Fao treaties within its texts, thus confirming the authority of WTO to deal across the three treaties in a manner of speaking. The two places where food aid is notable in WTO aquis is firstly under the Agreement on Agriculture and secondly in the "Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries". These are discussed in turn below.

### II.4.1. The Agreement on Agriculture

When the WTO Agreement on Agriculture was negotiated, food exporting countries were suspicious that international food aid might be used by some large subsidy using countries as a ruse to avoid their reduction commitments on export subsidies, which were essentially prohibited save for those scheduled. The essence of the concern is that the distinction between food aid and commercial sales can be unclear and it may happen that a country claims to be providing food aid while it is actually exporting food at a subsidised price, on what would be a purely commercial sale absent of the subsidy. It is for this reason that Article 10 on the prevention of circumvention of export subsidy commitments found its way into the agreement. The aim was to ensure that there was no foul play while at the same time recognising that there was a perfectly legitimate role for aid17. The text of Article 10.4 of the Agreement on Agriculture is directly addressed at food aid donors and lists three conditions that they must adhere to. Interestingly, the text makes cross-reference to the Fac and to the Fao and thus includes their disciplines by way of borrowing and subsuming these disciplines.

In short:

1. Donors cannot "tie" (that is conditionally connect) international food aid directly or indirectly to commercial exports to the recipient country.

2. Food aid transactions, including aid which is monetised, must adhere to the Fao's "Principles of Surplus Disposal and Consultative Obligations" and the system of UMRs.

3. The food aid must be provided to the extent possible fully in grant form or on terms "no less concessional" than those provided for in Article IV of the Food Aid Convention 1986.

It is thus evident that WTO members decided not to reinvent food aid disciplines but to use the existing international architecture as it pertained to providing disciplines on trade. The implication for Africa is that trade rules are determined not only at WTO but have been outsourced to Fac and Fao. Tripartite participation at all these three forums is required if a country is to pursue a holistic domestic food aid policy. In addition to this, Article 10.3 is also informative in assigning the burden of proof in instances where there is suspicion of export subsidy commitments being flaunted. The provision requires that a country claiming that a quantity of a food product exported in excess of its reduction commitment levels is not subsidised (as would be the case for food aid shipments), that exporter has the onus to establish that no export subsidy has been granted in respect of the quantity of exports in question. This is a stringent provision as the onus is squarely on the exporter to justify the claim that he remains within his WTO obligations.

## II.4.2. Decision on Least-Developed and Net Food-Importing Countries

The preamble to the Agreement on Agriculture states that "commitments under the reform programme should be made in an equitable way [..] taking into account the possible negative effects of the implementation of the reform programme on least developed and net food-importing developing countries". This is then addressed in substance in Article 16 where the link is made to the so-called "Decision" 20. The text states that developed countries must take actions provided for in the "Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries" (LDC's & NFIDCs).This is supported by a reading of the preamble to the Agreement on Agriculture which indicates that "commitments under the reform programme should be made in an equitable way among all members, having regard to non-trade concerns, including *food security* and the need to protect the environment" [emphasis added].

The 1986 Fac today equates to the 1999 Fac as currently renewed to July 2009. The concern that a government's donations of food aid could be motivated more by a desire to promote domestic prices and dispose of a domestic surplus than in response to genuine need of the receiving country is not new.

Indeed, it was in response to such concerns that donor country members of Fao adopted the Principles of Surplus Disposal and Consultative Obligations in 1957. The objective of the Principles was to try to ensure that food aid resulted in additional consumption rather than displacing commercial transactions – which also became part of the mandate for the DDA negotiations on food aid. This was, for many in the negotiations, the primary concern because commercial displacement means other supplying countries lose out. Therefore, it is commercial displacement in non-emergency situations which has been the main target of food aid disciplines.

Essentially in the Decision it is recognised that while the implementation of the Uruguay Round will generate increasing opportunities for trade expansion, in the scheduled reform programme LDCs and NFIDCs may experience constraints in the availability of adequate supplies of basic foods. It is this concern that the Decision seeks to address. The Decision has three main thrusts; it determines that:

1. There will be a review of the level of food aid established periodically under Fac and to initiate negotiations' in the appropriate forum to establish a level of food aid commitments sufficient to meet the legitimate needs of developing countries.

2. Guidelines are established to ensure that a growing part foods aid is provided to LDCs and NFIDCs in full grant form in line with Fac.

3. Full consideration under donor aid programmes should be given to requests for technical and financial assistance to LDCs and NFIDCs to improve agricultural productivity and related infrastructure.

It is notable that the Decision does not infer any firm obligations. It is perhaps for this reason that it has not been very effective. Desta, for example, reasons that the encouragement for donors to give consideration in the aid programmes to the requests of LDCs and NFIDCs is not subject to any multilateral monitoring and there is a complete lack of information on it. He adds that it is unclear that any LDCs or NFIDCs have ever made any requests under the Decision. He forms an opinion that points to the overall experience with the Decision as being unsatisfactory. Desta also remarks that the failure of WTO set disciplines governing the export credits has rendered the obligation to ensure differential treatment in favour of LDCs and the NFIDCs irrelevant. [Desta MG: 'Food Security and International Trade Law: An Appraisal of the WTO Approach'; Journal of World Trade, volume 35 no 3 of 2001, Kluwer Law International, The Hague, pages 449-468].

The reason is that as long as no such agreement is reached on the practice of agricultural export credits, the legality of export credits used for food aid purposes within the parameters of "concessionality" prescribed in the relevant provisions of the Food Aid Convention remains out of question. Also the concept of differential treatment for the benefit of these countries does not arise from the outset because the primary treatment (the rule on export credit) is not established. These comments and others indicate that food aid in WTO is an issue that requires further negotiating effort under the Doha Development Agenda talks. We will thus proceed to examine these negotiations in brief.

### II.4.3. The Doha Negotiations

In looking ahead, we see that although the elimination of commercial displacement is the primary objective, all food aid deliveries, both emergency and non-emergency, will be subject to some basic provisions such as the food aid being needs-driven, provided in fully grant form, not tied to commercial exports of agricultural or other goods and services and not linked to market development objectives. These disciplines, which are important for many WTO members, simply underlie the fundamental rationale and purpose of food aid and that food aid should not be used as a means to profit in other areas of international trade; i.e. food aid should not be used as a means to develop market share via increased access to one country's product which gains a foot hold with local consumers who then purchase the good, or tied to the provision of the purchase of other goods and services in the donor country. An explanation on relative levels of trade distortion by different types of food aid is provided in Annex 5.

According to WTO secretariat, surveyed in this study, food aid has been one of the more controversial issues in the WTO Doha negotiations on agriculture. To some extent, this was based on substantive issues as some WTO members sought to restrain what they considered to be the circumvention of export subsidy commitments by the US through large quantities of food aid donated in kind. But, to some extent, some countries' positions were political as they were giving up export subsidies and wanted to make sure others made equivalent commitments for any export support provided through food aid, export credits and exporting state trading enterprises. However, nobody wanted to create a situation where new WTO disciplines could restrict future food aid transactions. To ensure that the new disciplines do not create problems for genuine food aid, WTO members reaffirmed their commitment to maintaining adequate levels of food aid and that the food aid disciplines do not unintentionally impede the delivery of food aid provided to deal with emergency situations.

### II.4.3.1. Food aid in the Hong Kong Ministerial Declaration

The legal basis upon which the current WTO initiatives on food aid reform are based, can be found in the text of the 2005 Hong Kong Ministerial Declaration. The Food Aid topic was included in the preamble to the Declaration under the text that deals with the elimination of export subsidies. In Hong Kong, it was decided to ensure the elimination of all forms of export subsidies and on export measures with equivalent effect to such subsidies. The greatest stride in the negotiations post the launch of the Doha Round in 2001 was that a specific end date for the elimination of export subsidies would be the end of 2013[24]. In this context, the same paragraph of the Hong Kong text also indicates that:

"On food aid, we reconfirm our commitment to maintain an adequate level and to take into account the interests of food aid recipient countries. To this end, a "safe box" for bona fide food aid will be provided to

ensure that there is no unintended impediment to dealing with emergency situations. Beyond that, we will ensure elimination of commercial displacement. To this end, we will agree effective disciplines on in-kind food aid, monetisation and re-exports so that there can be no loop-hole for continuing export subsidisation. The disciplines on export credits, export credit guarantees or insurance programmes, exporting state trading enterprises and food aid will be completed by 30 April, 2006 as part of the modalities, including appropriate provision in favour of least-developed and net food importing developing countries as provided for in paragraph 4 of the Marrakesh Decision."

This concept is then described in the Hong Kong agriculture annex L25 in greater detail as follows: "There is consensus among members that WTO shall not stand in the way of the provision of genuine food aid. There is also consensus that what is to be eliminated is commercial displacement. There have been detailed and intensive discussions, some of which have even been text-based, but not to a point where a consolidated draft text could be developed. This has been precluded by Members clinging to fundamentally disparate conceptual premises. There are proposals that in the disciplines a distinction should be made between at least two types of food aid: emergency food aid and food aid to address other situations. However, there is not yet a common understanding where emergency food aid ends and other food aid begins, reflecting concerns that this distinction should not become a means to create a loophole in disciplines. A fundamental sticking point is whether, except in exceptional, genuine emergency situations, Members should (albeit gradually) move towards untied, in-cash food aid only, as some Members propose but other Members strongly oppose."

The negotiations in Hong Kong leading to this position were not easy and in many respects reflected a classic divide between North and South, rich and poor. This can be gleaned from a press release issued in Hong Kong by the LDC Group, stating that:

"If the EU and the US were fighting to see who delivers the most sustainable and least disruptive food aid as proposed by the beneficiaries, LDCs would consider the fight over their empty stomachs as an honourable affair. As things stand, the LDCs consider the current battle as another excuse for the two not to deliver on the promises of the Doha Development Agenda."

Arguably the three most controversial issues within the food aid dossier have been the "definition" of circumstances that would allow food aid to be provided in emergency situations; ensuring there is no commercial displacement caused by food aid in non-emergency situations (the potential for commercial displacement is much less in emergencies anyway); and monetisation of food aid. While the first issue primarily relates to ensuring genuine food aid in emergency situations (as opposed to deliveries for the purpose of circumventing other disciplines), it is the last two situations that WTO members have been concerned to ensure that non-emergency food aid does not have negative consequences for other producers or traders. In this respect, even food aid recipients have been cognisant of the negative impact of commercial displacement, either via the supply of physical commodities or through monetisation. These concepts are encapsulated in the Hong Kong text.

The other issue that is of importance is "monetisation" where there are sales of in-kind aid in the recipient country. Some NGOs use monetisation, to some extent at least, for finance to help run their development and aid programmes while some governments use it to obtain budgetary support. Thus, restrictions on monetisation may have significant implications for future food aid programmes. Many WTO members acknowledge, and some object to, the negative impact that monetisation can have in the recipient country (e.g. increasing competition for domestic producers, lowering domestic prices and displacing sales of domestic products which impact on the income of domestic producers). But, some others have stated that monetisation is at times necessary to ensure that development aid programmes are able to proceed. As a result, certain exceptions have been provided for LDCs and net food-importing developing countries whereby monetisation may be available for nutritional requirements, internal transportation and delivery of food aid, or the procurement of agricultural inputs to low income or resource poor producers.

*II.4.3.2. The African Response to Food Aid*

In response to the Hong Kong text, Africa made its own negotiating submission on the food aid topic. The African paper takes both an aid and trade element on board.[ "Joint Submission by the African and LDC Groups on Food Aid"; WTO document TN/AG/GEN/13 of 6 March 2006]. The introduction states that: "Any disciplines on food aid should not have the effect of hindering the delivery of food aid to needy countries and communities. It is therefore important to have commitment by cooperating partners in the context of the Food Aid Convention to make food aid available at all times. In proposing these disciplines, the African and least developed countries, while being among the beneficiaries of the aid, wish to ensure that food aid does not, advertently or inadvertently, abet dumping of food or encourage commercial displacement in recipient countries."

The proposal distinguishes between emergency food aid and other non-emergency food aid. In emergencies they support the "Safe Box" concept arguing that as it will be used for emergency food aid, it should not be subject to any disciplines at all. Regarding other forms of food aid and to ensure that food aid does not displace commercial trade or adversely affect local agricultural production, the paper makes the following proposals that food aid should: Be demand driven; Be provided in full grant form; Not be tied to commercial exports; Account for local market conditions and be sourced locally; Be aimed at addressing developmental objectives; Not be used for advancing market development for the donor; Only be monetised under the auspices of a UN agency and the recipient governmental authority, to ensure that there is minimal risk of commercial displacement and disincentive to local production; and, not be re-exported.

The Chair of the agriculture negotiations has substantially taken these issues on board in subsequent drafts of an agriculture modalities text. In the main interview, respondents indicate that African negotiators are satisfied with the food aid provisions in the negotiating text. The December 2008 text confirms that emergency food aid would be in a Safe Box with more lenient disciplines. Emergencies would be declared or appealed by relevant international organisations such as the UN World Food Programme or Red Cross. Other non-emergency aid would be disciplined to prevent the aid from displacing commercial trade, and with needs assessment, which would be under the responsibility of a UN agency. In addition the text gives the recipient government priority over all food aid operations, emphasises a needs assessment, and gives the UN the final say when NGOs assess needs. The parts on monetisation (the selling of donated products to raise funds for aid) no longer have options and can only be permitted under certain strict conditions. It is expected that African negotiators will continue to support a food aid text in this format.

Unlike in Fac where food aid recipient countries are absent, the WTO secretariat observes in discussion with the author that given the importance of food aid for many developing and least developed countries (in emergency situations or developmental food aid programmes) it is unsurprising that this issue has been followed closely by food aid recipient members of the WTO. Moreover, the importance of the issue is also underlined by the particular participation in the WTO negotiations of food aid recipients, many who are LDCs.

## III. FOOD AID IN SOUTHERN AFRICA

When food availability from local production and commercial imports is insufficient, as most commonly occurs in acute emergencies, food aid can fill a crucial gap, thereby contributing to economic development and the protection of basic human rights. But if used inappropriately or managed poorly, food aid can undermine agricultural production, market development and international trade, thus impeding economic development and human rights. It is, therefore, crucial to have some understanding of the possible impacts of various forms of food aid.

### III.1. A Statistical Snapshot

Southern Africa is the region that has received the highest proportion of food aid over recent years[31]. Its position remains unchanged as the largest recipient of food aid despite a 20 per cent decline in volume terms. In 2004, the food aid deliveries to Southern Africa was 3.65 million tonnes and then increased to 4.57 million tonnes in 2005. Food aid continued to decline to 3.19 million tonnes delivered in 2007. (Source: World Food Programme Statistical Report: '2007 Food Aid Flows': World Food Programme, International Food Aid Information System (INTERFAIS); Policy, Planning and Strategy Division; Rome, Italy 2007). Some key statistics from the above source reveal the following:

- The importance of food aid has declined over the past decade, with quantities decreasing from 15.1 million tonnes in 1999 to 5.9 million tonnes in 2007. This is a record low for food aid deliveries. Over the years it has been found that the availability of food aid is high when there have been good harvests and low prices. In contrast, availability of food aid is low when prices are high, which critically compromises the compensating role of food aid in times of food shortages. This is indicative of the link between food aid and surplus disposal policies.
- The share of food aid in world cereal trade has decreased from 10 per cent in the 1970s to less than 3 per cent in 2007.
- In terms of its contribution to the global official development assistance (ODA), food aid has declined from approximately 20 per cent of total ODA in the 1960s to less than 5 per cent today.
- In recent years the majority of food aid deliveries were provided as grants, about 97 per cent, and the remainder on concessional terms.
- In 2007 the United States provided 44 per cent of global food aid, while the European Union provided 25 per cent. Sub-Saharan Africa received 65 per cent of all food aid with Asia following with 21 per cent.

### III.2. The Impact of Food Aid on Local Production

If the possible impacts of food aid deliveries are well understood and anticipated, various mechanisms can be introduced in the form of monitoring, reporting or following an alternative form of food aid to avoid adverse impacts on the agricultural industry at large. In the following section, the positive and negative impacts of food aid on crop production are analysed. This analysis incorporates a detailed explanation of the importance of equilibrium pricing conditions in markets and the underlying information systems. This explanation is followed by a discussion of possible policy options and food aid strategies.

The impact that food aid has on the region lies in the distinction that has to be made between the forms in which food aid is provided. SADC cites the following as an example of market and crop production interference SADC cites: Mousseau (2004) 'Roles and Alternatives to Food Aid in Southern Africa':

"In 2002/2003 (and again in 2005/2006) food aid donors over reacted to a projected 600 000 tonne food deficit in Malawi, and sent close to 600 000 tonnes of food in aid. However, commercial and informal importers brought in an additional 350 000–500 000 tonnes. Malawi was flooded and had very large carryover stocks. Maize prices dropped from US$250 per tonne to US$100 per tonne in the course of a year. Local production of maize, cassava, and rice fell markedly, and estimated losses to the Malawian economy were approximately US$15 million."

The greatest concern identified by SADC in food aid is the possibility that it can undermine the livelihoods of poor farmers by creating disincentives for local food producers, by flooding markets and depressing prices. In their view, substantial volumes of food aid provided over a long term basis could discourage local production, resulting in increased poverty, and the creation of long-term food insecurity due to increased dependence on food imports. Regenerating agricultural production and local markets is central to any strategy for longer term recovery and development. Across the Southern African region there are numerous cases where producers report falling prices and market displacement as a result of an influx of food aid commodities. Unfortunately, economic studies are often inconclusive about the extent of disincentives for local production caused by food aid. However, there is strong historical evidence that the use of food aid tends to correlate with long-term independence on food imports, either food aid or commercial imports.

The case of Malawi provides a perfect example of a form of food aid that is not beneficial for local production and the agricultural sector at large. In other words, food aid has a negative impact on the local agricultural sector if it supplies a local market with large volumes of physical commodities that are imported so that local prices fall to levels at which local producers cannot make a profit. If food aid, however, promotes the local economy by sourcing the product from local producers or even countries in the region that have a surplus of a particular commodity to offer, then programmes can benefit the economy at large.

The formation of commodity prices in markets is one of the key elements to understand and analyse the possible impact of food aid on prices and, therefore, production and consumption in the region. If one assumes perfect markets and trade occurs between two markets, according to the law of one price, the markets are integrated and the difference in the prices equals the transaction costs to move the goods between those markets in the long run. The equilibrium price in the smaller market can be estimated as a function of the equilibrium price in the dominant market, the exchange rate and the transaction costs.
As soon as the difference in the market prices becomes less than the transaction costs, trade is discontinued and the markets are not integrated any longer. Now the market equilibrium (equilibrium price) is a function of the domestic supply and demand factors in each market respectively. Thus, the formation of prices also referred to as the equilibrium pricing condition, in a specific market changes as the market switches between different trade and policy regimes. If a commodity moves from a non-tradable (importable) to an exportable (non-tradable) equilibrium, the correlation between the parity price and the local market prices should jump from (to) zero to (from) significantly positive, to (from) one if the law of one price holds strictly.

These are the principles of equilibrium pricing conditions in a market. To make it clearer, if food aid enters a net importing country where local prices are already trading at import parity then local prices can be depressed if the volume of food aid is sufficient to change the status of the country from being a net importer to a country where the total supply exceeds total demand. This will have a negative impact on local producers that will receive less for their produce in the market. This is typically what happened in the case of Malawi. If only small volumes of targeted food aid enter a net importing country, then prices are likely to remain at import parity.

If markets function well and information is available, then the impact of food aid on production, consumption, trade and prices can be projected. In 2005 Meyer et.al simulated the impact of food aid procurement in South Africa. The main findings of the report mentioned that the WFP is, in strictly economic terms, a welcome addition to the South African market. It does not compete with state domestic programmes in any way, it adds to the demand for maize (which has been in continuous surplus production for more than a decade), and its purchases of other commodities are too small to have any real effect on South African markets. The BFAP sector model was applied to simulate the possible market effects of WFP procurements in South Africa. Modeling results indicated that local maize prices increased by 7.61 per cent due to the procurement of food aid maize. This caused the area under production to increase by 2.56 per cent, boosting local production by 169 000 tonnes. [Meyer, Vink, Mkhabela and Kirsten: 'Food aid procurement in South Africa: An Analytical Review of WFP Activities'. Unpublished report prepared for the Economic Analysis Unit (PSPE) in the Strategy, Policy and Program Support Division (PSP) of the World Food Programme, Pretoria April 2005].

The issue of the possible impact of food aid on local crop production has been on the food security agenda for many years and more specifically, we note that Fac (Art XIII (a)(i)) aims to avoid: "harmful effects on local harvests, production and marketing structures, by appropriately timing the distribution of food aid". One of the ways to do this is to provide seed, relating also to notions of food security. The Fac list of eligible products includes seeds. In this regard the IGC stated that example, in 2007-2008, some 5 000 tonnes of seed were provided to recipients by donors. Unfortunately markets in Southern Africa are not always transparent and prices are not formed according to the standard principles of equilibrium pricing conditions. To understand the formation of prices in the region a comprehensive intelligence unit needs to be established that can research and inform on formation of prices in the region. Further recommendations with respect to the importance of good market information are set out under the policy recommendations.

## IV. POLICY CONSIDERATIONS ON FOOD AID

"To the people of poor nations, we pledge to work alongside you to make your farms flourish." (US President Barack Obama, Inaugural Address, January 2009).

### IV.1. The International Architecture of Food Aid

The future role and structure of the multilateral organisations that have jurisdiction in the food aid arena has emerged as a matter that will require attention going forward. These are each addressed in turn and some future possibilities raised.

*IV.1.1. The Fac*

Is FAC working well? This is a question that has been posed in the research community, and there have been suggestions that Fac could be improved. For example the ODI has observed that under Fac cash contributions to meet transportation and delivery be attributed against Fac commitments, which in their view means that there is likely to be a decline in the amount of food aid available. They contend that most of Fac's minimum commitment is already accounted for by ongoing commitments of what they call "protracted relief aid", or multi-year donor commitments. This would then imply that there is inflexibility to respond to any new emergencies within Fac's structure. The ODI concludes in the reference above that "The Food Aid Convention has largely been ineffective in assuring stability in food aid levels. Traditionally strong links to agricultural surpluses are major sources of uncertainty". [See 'Reforming food aid: time to grasp the nettle?' ODI Briefing Paper, London, January 2000 at pages 1-4].

Similar views were raised by IFPRI in a 2007 study. Essentially IFRPI raises three concerns Hoddinott, J & Cohen, MJ: 'Renegotiating the Food Aid Convention: Background, Context, and Issues'; IFPRI Discussion Paper 00690, Washington DC, February 2007 at pages 4 & 17-2].

- Firstly they contend that the tonnages committed under Fac are too low to be meaningful, they contend that "[the commitments] should represent a meaningful floor below which shipments should not fall".
- Secondly, representation on the Food Aid Committee is limited only to Fac signatories and as such recipient countries and NGOs are excluded from negotiations over Fac terms. This said IFPRI concedes that representatives from the World Food Programme (WFP), Fao, WTO, OECD, and the UN Conference on Trade and Development (UNCTAD) are able to attend as observers and are invited to speak to at certain meetings. Their concern is however that practically the representatives cannot attend the sessions when Committee members have not requested their presence.
- Thirdly, Fac operates without much transparency. Fac provides remarkably little public information on its deliberations, even though the members are represented by officials of democratic governments that are accountable to their citizens. Background position papers provided by signatories are difficult to obtain and no minutes of the meetings are made publicly available.

This third critique can be confirmed by reference to Rule 18 of Fac which requires that proceedings of Fac remain confidential. It is thus also difficult for interviewees consulted in the research of the present paper to comment fully on their experiences in attending Fac meetings. IFPRI makes the following suggestions in order to remedy the shortcomings of the FAC [See 'Time to Update the Food Aid Convention'; IFPRI FORUM newsletter, July 2007, at page 7]:

- Fac needs to change its focus from the provision of food aid to one of "preventing famine, reducing hunger and malnutrition, and working toward improved food security". They postulate that this would clarify the appropriate role of food aid.
- Fac should retain minimum commitments by members but the manner of calculating this tonnage could be revised. The IFPRI view is that better "counting" will encourage more local purchases, micronutrient provision and enable greater donor coordination.
- Fac needs to ensure greater transparency in its workings. Documents should be posted publicly and Fac could include a way of having representation from all recipient countries. It is also contended that international organisations, the private sector, and non-governmental organisations have rights to observe and be heard at meetings.

- Fac should be revised so that better monitoring and evaluation are present, perhaps through a peer review mechanism. Present interviews indicate that Africa needs to show a greater interest in the IGA in general terms, including Fac and the Fao. In some sense Africa has itself
  reneged on its responsibilities as there are a very limited number of African countries active in the IGC. Only Kenya and South Africa are members from sub-Saharan Africa. South Africa in particular has become a donor in the region and as such could be eligible for direct Fac membership. South Africa has attended some Fac meetings as an observer since 2004 and interviews suggest that the South African government is considering this option.

According to Fac, a minimum tonnage of 20 000 tonnes of grain (or cash equivalent) is required as a commitment by new signatories. In the case of new members, this tonnage can be built up over a 3 year period, but commencing at no less than 10 000 tonnes in the first year. Based on recent history, it appears that South Africa is already contributing at these levels. The views of the outgoing 2009 IGC Chairman, Mr. Itumeleng Makabanyane, a South African agricultural diplomat was surveyed for the study. He was of the view that African agriculture does have a role to play in food aid policy making. He comments that farmers should lobby the national governments to get membership status of the IGC and lobby South African government to join Fac – noting that there is no single aid recipient voice in Fac; with this representation of recipient countries made by Fao and WFP, who may not necessarily master the social and political dynamics of all regions around the globe. In addition he contends that only meaningful involvement and participation in policy making decisions at national level by farmers and processors can result in an appropriate food aid policy mix and then national and regional farmer organisations can participate in IGC conferences and propose relevant conference themes which directly affect them.

Makabanyane also makes some further notable observations:

- At times the same assistance is counted twice because it is published by both the donor and the distributing agency. Food aid is sometimes accounted for and published as official development assistance and thus overestimates or underestimates the real food aid assistance attributable to one donor.
- Some donors club together development, food aid and emergency aid budgets. This can be used conveniently in any way for international political gains.
- The international regulatory mechanisms for food aid are not efficient. Food aid often ends up in the wrong hands and does not reach target beneficiaries. Receiving authorities in beneficiary countries are often not accountable to donors or to the target beneficiaries.
- In conflict areas food aid is open to abuse and can be a power wielding tool for local receiving authorities. In functioning economies within a country or the region in which a receiving country is located, food aid may distort the market. Food aid agencies are likely to overestimate the food aid need in an effort to solicit more pledges. Donors often deliver less than they pledge.
- In some cases donating inputs (like fertilizers) may be both more cost effective and may effectively break aid dependency syndrome.
- Donors have monopoly over decisions and conditions of delivery, aid recipients have no say at this stage.

### IV.1.2. The FAO- CSSD

As regards reforms to the CSSD, Konandreas makes suggestions as to the changes to the 'Principles of Surplus Disposal' and the operational procedures of the CSSD. [See Konandreas, P. 'Multilateral Mechanisms governing food aid and the need for an enhanced role of the CSSD in the context of the new WTO disciplines on agriculture'; Background paper presented at the FAO]. These include:

- Dovetailing the existing register of transactions with the definition for food aid as it becomes settled in the Doha Round of WTO.
- Allowing the CSSD makes better use of the pre-existing information at Fao's GIEWS and WFP on food aid needs.
- Changing the concept of "Usual Marketing Requirements" (UMR) to one of "Commercial Import requirements" (CIR). The benefit of this would be to focus on the ability to import commercially assessed through a multilateral process, as compared to UMR's bilateral determination.

- Establishing a legal obligation in WTO for donors to notify regularly and comprehensively their food aid transactions to the CSSD, which in turn would report formally to the WTO's Committee on Agriculture.
- The name "surplus disposal" is dated and does not reflect modern trade-speak in subsidy disciplines.
- The seat of the CSSD should be housed within Fao in Rome as opposed to its present removed location in Washington.

In considering an African view on these suggestions, Grant observes that additional in-country consumption is difficult to achieve in the face of food aid interventions and therefore the UMR tends to only safeguard the commercial interests of exporting countries and not necessarily the interests of domestic producers in the recipient country. Recognising this problem, the UMR can be negotiated at a bilateral level to take into account additional factors. Recipient countries are thus likely to benefit from this process being multilateralised. Grant expresses the view that the concept of commercial import requirements (as proposed by Konandreas above) would do this by looking at the capacity of recipient countries to import commercially. [See Grant C: 'Food Aid: A Regional Study of Southern Africa'; chapter 6 in 'Trade in GMO Foods – Decoding Southern African Regulatory Approaches' edited by Draper P & Khumalo N; SAIIA ohannesburg July 2007 at pages 182 & 183]. The result would be a greater level of assurance provided to recipient countries that food aid would not be provided in levels that cannot be absorbed by the local market. Interviewees have indicated a lack of familiarity with the CSSD and suggest that African countries do not participate actively in the CSSD, although several do attend the meetings. Clearly the activities of the CSSD need to be further investigated.

As Barrett and Maxwell observe, the CSSD is "lacking the legal status of a treaty and any enforcement mechanism, and organised around the objective of preventing trade displacement, the CSSD has languished as food aid has evolved". This begs the question as to whether Africa needs to take its responsibility for this state of languish, as unlike at Fac, African countries are represented at the CSSD. Grant has observed that few Africans have actively participated in the CSSD meetings. [See Barrett, C. and Maxwell, D: 'Towards a Global Food Aid Compact'; December 2005 version (unpublished, pending in Food Policy) New York 2005 at page 6].

*IV.1.3. The WTO*
As regards the WTO, it appears that Africans have had the most positive and influential experience within this forum. This is especially so in that the African inputs into the Doha negotiations as regards food aid have essentially been driven by Africa and its inputs subsumed into the current negotiating texts. This being the case, it has come to light that because WTO members have decided not to reinvent Informal Expert Consultation on food aid, food aid disciplines but to use the existing international architecture in providing disciplines on trade. The implication for Africa is that trade rules are determined not only at WTO but have been outsourced to Fac and Fao. Tripartite participation at all these three forums is required if a country is to pursue a holistic domestic food aid policy.

*IV.1.4. Possible New Structures*
How will this reform work and how should the reform be directed as regards Fac, CSSD and WTO? There are those who suggest that the efforts of Fac, CSSD and WTO all need to be replaced with the concept of the Global Food Aid Compact (GFAC). This emanated from a food aid workshop in Germany in September 2003. Barrett and Maxell contend that the GFAC could include recipient governments and the distribution agencies with the donor countries. This would apparently improve the coherence of food aid given that it will assign explicit responsibilities under a code of conduct to all parties that join.

To operationalise this, the proponents talk of a Global Food Aid Council. [Barrett, C. and Maxwell, D: 'Towards a Global Food Aid Compact'; December 2005 version (unpublished, pending in Food Policy), New York 2005 at pages 10-14]. This would be an inter-agency body drawing on existing technical capacity. The detail of this is unclear however the WTO Committee on Agriculture would apparently outsource its monitoring and compliance function to this GFAC, but then any disputes would be handled through WTO.

Only one interviewee made reference to GFAC. We observe that this reflects a wider concept often seen where bodies and persons dealing with so-called "non-trade concerns" have an aversion to WTO law, but cannot distance themselves from WTO as it is the only effective forum for economic dispute settlement available.

On the other hand the IGC Secretariat, for example, indicates that how to best address food insecurity is a topic being considered in a number of forums, with the 2008 global food price crisis reinforcing the need for urgent international cooperation and action. They mention that the Global Partnership for Agriculture and Food Security (GPAFS), as well as the so called Comprehensive Framework for Action of the UN High level Task Force, are major initiatives that seek to achieve greater coherence in setting global food security policies, including the provision of food aid. Fac is being kept informed of GPAFS developments, its members recognising the importance of the linkages between food aid and other tools to help improve food security. The GPAFS may be a more lucid incarnation of the GFAC concept.
Africans will have to evaluate whether their preference is to reinvent the international food aid architecture, or elicit reform from within the existing structures.

The concern that a government's donations of food aid could be motivated more by a desire to promote domestic prices and dispose of a domestic surplus than in response to genuine need of the receiving country is not new. Indeed, it was in response to such concerns that donor country members of Fao adopted the Principles of Surplus Disposal and Consultative Obligations in 1957. The objective of the Principles was to try to ensure that food aid resulted in additional consumption rather than displacing commercial transactions – which also became part of the mandate for the Doha negotiations on food aid. This was, for many in the negotiations, the primary concern because commercial displacement means other supplying countries lose out. Therefore, it is commercial displacement in non-emergency situations which has been the main target of food aid disciplines.  Also, as in many policy formulation and execution scenarios, a focus on strengthened in-country structures has emerged as key in the reform of food aid structures and operations. In other words, one has to be organised locally in order to have the wherewithal to make effective international inputs.

## IV.2. Food Aid Management

After addressing the institutional architecture some practical, functional aspects of the international regime also bear comment. Fao releases an annual report titled "The State of Food and Agriculture" (Sofa). Each year the report adopts a theme. In 2006 the adopted theme was "food aid for food security". The report draws widely from findings in numerous food aid related literature. The report together with the present analysis thus provides a useful synthesis of possible policy approaches for food aid at a global level. Fao emphasises the importance of solid food aid management, and suggests food aid be provided in the form of cash or food coupons rather than food aid shipments, as the latter distorts international trade. A staggering 90 per cent of food aid provided may be tied to specific donor demanded conditions, which often hampers implementing agencies in being efficient in food aid delivery and targeting.
This is all said upon the caveat that there is no substitute for food aid in coping with humanitarian crises where food aid has historically saved millions of lives. The main policy recommendations may be distilled as follows:

- Food aid should be seen as one of many options within a broader range of social support measures ensuring access of the poor to food.
- Cash transfers or food vouchers can stimulate local production, strengthen local food systems and empower recipients in ways that traditional in-kind food aid cannot.
- Eliminate any programme (government to government) of food aid which by its very construct is not specifically targeted to the needy.
- Monetisation of aid should be ended. Currently one quarter of all food aid is sold in recipient countries to generate funds for development projects.
- Assistance aimed at improving markets might be more effective than in-kind aid.
- Use local food aid procurement where possible as this can be of great benefit to agricultural development.
- Improve information systems, needs analysis and monitoring.
- Guard against the emergence of "relief traps". This occurs when extreme hunger triggers constant food aid delivery which eventually ignores medium to long term development strategies.

## V. CONCLUDING REMARKS

The agricultural sector is thus critical to the region as it plays a significant role in food security, job creation, poverty reduction, export revenue and rural development. It is crucial to prevent food aid from weakening it, and rather to seize the opportunity of making food aid a tool that contributes to unlocking the agricultural potential of the region to produce enough food for its people, enhancing its commercial capacities as well as creating jobs for rural people. Food aid would then truly contribute to building sustainable food security and reducing poverty.

It is imperative that farmers in Southern Africa are brought up to speed on these issues and secondly develop positions with respect to a food aid mechanism addressing legitimate food needs without compromising local food production systems. These collective considerations highlight certain elements that would be appropriate for regional farmers to address, adopt or develop. In this regard, a SACU food aid policy has been developed and adopted[44]. In essence the policy draws from the analysis of the international legal regime for food aid. The farmers of Southern Africa recognise that Food Aid cannot be a replacement for the benefits that a long term food security strategy and related system will provide. Southern African farmers acknowledge the necessity for and benefits of food aid to augment their productive activities in providing human relief in times when circumstances outside of the control of regional farmers lead to a shortage of food in the region to the extent that some people do not have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. However, they also wish to guard against the introduction of ill timed and poorly targeted market disrupting food aid into their home and regional markets. Attention to ongoing international engagement, together with attention to in-country activities to back up this engagement, is a key part of what is seen to be the optimal policy approach for regional agriculture in the food aid sphere.

# LIBERALISATION OF FINANCIAL SERVICES IN THE CONTEXT OF THE CURRENT ECONOMIC CRISIS

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## I. INTRODUCTION

The onset of the global financial meltdown beginning in 2007 has led to a wide range of initiatives and proposals for a reform of the international financial and monetary systems: much of this work is centered in multilateral fora notably G-20, World Bank/ IMF and the United Nations[41]. In tandem, there has been an outpouring of research addressing the reasons for the crises, its impact on developing countries and short term measures to contain and mitigate its consequences. In addition to the proximate causes, the analysis has addressed the longer term reasons and consequences of the crises. Less discussed, but almost as important for the future health of the monetary and trading systems, are the implications of the on-going negotiations on financial services in several fora: at the centre of this process are the Doha/GATS negotiations. But perhaps of even greater consequence are the on-going negotiations or those concluded in bilateral and regional trading agreements and the ACP-EU centred Economic Partnership Agreements (EPAS). Moreover, considerable amount of market opening in this sector has already taken place in the context of structural adjustment programmes.

Indeed, this avenue of market opening continues to be part of the current rescue and aid packages designed by the Bretton Woods institutions. In this connection, the absence of policy coherence (notwithstanding many declarations of its importance) between the Bretton Woods bodies and WTO has been a source of concern for developing countries involved in conditional borrowing from the World Bank and IMF. This is most evident in the progressively greater role arrogated by the financial institutions in the area of trade policy and limiting WTO acquired rights in areas such as financial services.

Conditional financing of adjustment programmes and bilaterally negotiated RTAs between developed and developing countries have provided a fertile ground for financial services liberalisation outside the multilateral framework of GATS. But even in the GATS framework, countries undertaking commitments under delivery modes 1, 2 and 3 of the financial services agreement are in effect opening up capital accounts, a policy shift neither demanded in GATS nor sanctioned in IMF Articles. Although the question of capital controls (a concept embracing a wide spectrum of financial inflows and outflows) is often at the forefront of the debate about liberalisation, it is arguably less important in low-income countries than domestic financial reforms particularly in nurturing institutions to monitor and regulate financial flows.
In the Doha negotiations on financial services, developing countries' main objective has been to strike a balance between liberalisation of the financial services on the one hand and financial stability and development on the other. This concern arises from the likely consequences of surges in international financial flows on balance of payments, exchange rate and development. Moreover, there is widespread concern that that they will lose the ability to regulate and expand their financial services sectors in competition with established financial intermediaries from developed countries.
Developed countries on their part have been pressing the case for a wider and deeper liberalisation of the services sector believing that accelerated opening of this sector will enhance competition, capital market efficiency and guarantees financial sector stability.

In the on-going discussions on the reform of the financial system, there is little evidence to suggest that developed countries position regarding further liberalisation of the financial services sector has changed. The challenge therefore lies with developing countries to use the current conditions to exercise a standstill on further liberalisation commitments and pursue deeper reforms of the domestic financial services industry.

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41    For a detailed analysis of this and of the history of GATS, see C.Raghavan, "Financial Services, the WTO and Initiatives for Global Financial Reform", Inter-Governmental Group of 24 Washington D.C., 2009.

## II.  FROM FINANCIAL REPRESSION TO REFORMS AND LIBERALISATION

The case for liberalisation of financial services in developing countries[42] has been well articulated by both academic and policy makers. There is, first of all, a broad consensus about the need for macro economic reforms of which a key component is an ordered and carefully sequenced liberalisation of financial services. A well functioning financial system is a near-prerequisite for growth, stability and development. Likewise, there is broad acceptance of the need to strengthen regulatory, monitoring and enforcement systems in this area. However, there is lesser consensus on the speed and scope of reforms and liberalisation: in particular, the question of capital controls and convertibility continues to be a source of much controversy.

As a result, developing countries continue to face pressures to accelerate the pace of liberalisation in a variety of fora and institutions. The on-set of recent financial crisis (viewed by many as an inevitable consequence of collective failures of regulatory regimes in place in developed countries) has not dampened the enthusiasm of the protagonists of faster liberalisation. Recently, the Director General of WTO stated that "financial services liberalisation was neither a villain nor a cause of this crisis but a casualty. As you all know, in the world of the GATS, 'liberalisation' is essentially about opening specified sectors to competition on a non-discriminatory basis. It does not mean deregulation." [43] It is precisely the implied case for a faster market opening and decoupling of liberalisation from deregulation that troubles many developing country policy makers.

In many respects, the drive for a reform of the financial services involving both deregulation and liberalisation stems from the excesses of policies collectively referred to in banking and finance literature as "financial repression". Early in the post-independence period, to deal with the weaknesses in the inherited financial and banking systems and at the same time to  accelerate development,  many developing countries adopted policies that included using monetary tools to maintain a low or negative interest rates in real terms; encouraged local and/or public ownership and management of commercial banks and related financial institutions; promoted  allocation of credit by *fiat* to preferred sectors and borrowers; maintaining  high reserve requirements to facilitate the funding of public debt; establishing ceilings on deposits and credits together with  a host of similar policies and measures.

The consequences of financial repression have been well documented[44]: among them include misallocation of savings, disincentives to save and invest, absence of intermediation and longer term lending and a high default rate on loans in consequence of directed lending. Absence of competition in the provision of basic banking services further diminished the contribution of the sector to support development policies.

 A common experience in many low income countries in Africa and elsewhere has been a significant curtailing of the catalytic role that a vibrant financial services sector can play in the development process. The sector that emerged following the first wave of post-independence banking reforms remains segmented and dualistic; their functions largely geared towards funding public sector deficits leading to a crowding out of private investment. Given the protection and support they enjoyed from the public sector, many of the financial institutions remain quasi-monopolies with few incentives to improve productivity and enhance performance. There is little doubt that in many newly independent countries in sub-Saharan Africa, the services sector in place at the time of independence was scarcely able to contribute to accelerate growth and development.

The sector was characterised by branch banks or subsidiaries of international banks making self-liquidating

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42    GATS definition broadly covers banking, insurance, asset management, pension funds, and a wide variety of securities, financial information, sovereign rating services and financial advisory services).

43    Statement at   Global Services Summit — Washington, October, 2009.

44    See, for example, Francis Mwega and Njuguna Ndung'u in "The Political Economy of Economic Growth in Africa, 1960–2000" Volume 2, Country Case Studies, Chapter 10, Cambridge University Press.

loans mainly to enterprises engaged in some combination of natural resource exploitation and distribution of goods imported from Europe. The first phase of asserting control over the financial sector began with the establishment of a central bank and, in several cases at a later date, by the establishment of stock exchanges and additional specialised financial institutions for lending to small and medium sized enterprises. The sector's domination by a few foreign banks ensured that there was little incentive to expand services to cover farm credit, long term financing or mobilising domestic savings for investment. Then again, there was no presumption that the banking sector could be more than any other profit making activity. It is important to keep these considerations in mind in discussing the prevalence of financial repression in post-independent Africa and elsewhere[45].

In the case of Kenya[1] with a relatively developed financial services sector, an IMF study has observed that "Although it is too early to evaluate the success of financial liberalisation, the lack of accompanying institutional reforms suggests that financial sector liberalisation will provide only modest benefits to the overall Kenyan development strategy"[2]. Likewise, new risks have come to the fore as a weak domestic services sector is exposed to competition. Paucity of skills to analyse credit and exchange rate risks has put new and even established banks at a serious disadvantage vis-à-vis foreign competitors.[3]

## III. GATS AND FINANCIAL SERVICES: MAIN ISSUES

One of the major objectives of OECD countries in the on-going Doha negotiations is to further liberalise trade in financial services through easing of regulatory and other barriers to foreign competition. On their part, developing countries wish to ensure that liberalisation is consistent with financial stability. Their concerns regarding the potentially destabilising effects of international capital movements have been underscored by the earlier experiences with the Asian financial crisis in 1997 and even more so in the context of the current financial meltdown. Developed countries have been pursuing this objective in a coordinated manner in a variety of fora: first of all, in the context of structural adjustment programmes of the World Bank and IMF; in WTO under the umbrella of GATS; in a variety of bilateral and regional trading arrangements and in the framework of Economic Partnership Agreements (EPAS) defined by the Cotonou Agreement.

Since GATS provides the core legal framework for these multiple (and often parallel) negotiations, it may be worthwhile to look at some of the salient features of GATS and the areas therein which are the focus of OECD members efforts to pry open developing countries' financial services markets. The Uruguay Round mandated negotiations on financial services (along with those on basic telecommunications and maritime transport,) resulted in a stand-alone Financial Services Agreement in 1997 and which took effect in 1999. The Agreement represents an important milestone since for the first time over 100 WTO members bound market access commitments in this new area of multilateral discipline.

GATS is constructed in two parts: the first part consists of a framework of rules, principles and concepts (such as MFN and national treatment) and the second consists of specific negotiated commitments listed in countries schedules of commitments for service sectors. The provision of these services is through the following four modes of supply:

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45    M.Brownbridge and C.Kirkpatrick  "Financial Reforms in Developing Countries" Journal of Development
       Studies,October,2000 and M.Brownbridge and C.Harvey " Banking in Africa: Impact of financial reforms since independence"
       James Curry (Publishers) 1998.

vMode 1 (known as "cross-border supply") covering matters such as domestic consumers taking a loan from a bank located abroad;

Mode 2 (known as for "consumption abroad") such as domestic consumers buying financial services while traveling abroad);

Mode 3 (known as "commercial presence" ) such as foreign banks setting up subsidiaries or branches in host countries to provide banking services and

Mode 4 (known as "movement of natural persons") covering areas such as business visas or temporary entry of foreign individuals in host countries to supply financial services.

Except mode 3 which directly involves investment in a host country, modes 1, 2 and 4 are related to different forms of cross-border supply of services. As is clear, the four supply modes cover market access and modalities and classifications for the provision of traded services. Whilst market access is not defined, GATS lists six categories of measure which are prohibited unless specified in a country's schedule of commitments (for each of the four modes delivery)[46]. Whilst the main areas of interest for low-income countries are banking and insurance, the Agreement also covers acceptance of deposits and other repayable funds; lending of all types; financial leasing; payment and money transmission services; guarantees and commitments; and trading[47].

 The Agreement is generally regarded as having contributed to more transparent policy regimes in both developed and developing member countries. On the other hand, its contribution to improving market access has at best been modest: indeed, as suggested by Dobson [48] the Agreement represents no more than a status quo:  its contribution to the opening of markets to foreign suppliers varied greatly among the different parties to the agreement. This is not surprising as the interests of developed and developing countries vary widely: the former are largely concerned with improved market access for their growing financial services industry while the latter have been preoccupied by the need to strengthen the domestic services capability which in most cases translates into a pace of market opening more gradual and measured than required by the financial services industry.

One of the key objectives of the Doha Round launched in 2001 was to address the perceived lack of progress in the liberalisation of the financial services sector: the Doha negotiations envisaged a faster pace of commitments and liberalisation from developing countries and established a time table for the submission of offers and indeed the completion of the negotiations. Submission of initial requests was originally scheduled for mid-2002 and that of formal offers as part of the negotiation of commitments by the end of March 2003. The response to these deadlines appears to have fallen short of expectations of demandeurs. As of now, about  50 countries have put forward services offers in the current round.

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46    The six categories are: (a) limitations on the number of service suppliers: (b) limitations on the value of service transactions or assets; (c) limitations on the number of service operations or on the quantity of service output: (d) limitations on the number of natural persons who may be employed; (e) limitations on the type of legal entity through which a service is supplied; and (f) limitations on the permissible size of the participation of foreign capital either in terms of a maximum percentage limit on foreign shareholdings or in terms of the total value of an individual entity or of aggregate foreign investment.

47    Trading covers (i) money market instruments, (ii) foreign exchange, (iii) exchange-rate and interest-rate instruments and other derivative products, (iv) transferable securities, and (v) other negotiable instruments and financial assets; (vi) participation in issuance of securities; asset management; settlement and clearing intermediation and other auxiliary financial services related to activities already mentioned.

48    Dobson, Wendy and Pierre Jacquet. "Financial Services Liberalization in the WTO", Washington, DC: Institute for International Economics. (1998)

According to ABAC[49], a US based lobby, the offers "contain very few market-opening measures that would lead to new business opportunities, and some do nothing to open financial services beyond what was agreed in 1997." The slow pace of progress has many reasons but an important one revolves around the caution that defines developing countries approaches towards financial services liberalisation. The Asian financial crises did little to encourage them to shed their caution. The current financial crisis on the other hand does not appear to have dampened the enthusiasm of the demandeurs for a faster pace of liberalisation[50].

Developed countries priorities in the negotiations include expanded market access and the removal from countries commitments of limitations affecting several different financial activities including those relating to capital controls and the rights of establishment/national treatment. In the WTO as in several other fora, developing countries continue to express reservations in this regard, most notably about the destabilising effects of capital movements on macro-economic stability in general and exchange rate and balance of payments management in particular. In response to the perception of developed countries about the pace of negotiations, they have attempted to shift the focus of negotiations from the request/offer approach to one that cuts across the sectors and argues for the setting up of benchmarks to measure progress in the negotiations. The key elements of the proposals include: uniform classification of subsectors/activities, undertaking minimum new commitments and a method for translating these commitments into operational targets.

The submissions by developed countries also include other specific proposals intended to achieve the same objectives or to supplement them[51]. Furthermore, under the "benchmarking" approach, developing countries would have to commit to liberalise in a certain minimum number of sectors (the EU proposal envisages 57 per cent of the services sub-sectors). Another proposal requires countries requested by others to take part in plurilateral and sectoral negotiations. Under this, a group of countries wishing to open up their financial services can request countries whose markets they are targeting to join in negotiations for a plurilateral deal, and these requested countries would then *have to participate.*

The GATS framework as it affects market access issues has been the subject of much criticism in some quarters. It is alleged to have "design challenges" that raise questions about its capacity to deliver on further market opening. According to this viewpoint, a key impediment to faster liberalisation commitments can be linked to the positive list approach (in contrasts with the negative list approach, employed in the negotiations of the North American Free Trade Agreement and the US- Singapore FTA) where countries commit to full liberalisation unless specific exclusions are negotiated. With the negative list approach, market opening and market access are the central objective; in contrast, the positive list approach tends to reinforce the status quo. *Reciprocity* is viewed as another weakness of the GATS framework. The division of the WTO negotiations along sectoral lines—that is, separating services from goods and individual services from each other—makes reciprocity less credible and less effective. Asymmetry in the interests of developed and developing countries in services negotiations adds to the difficulties.

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49   ABAC is a US based business lobby functioning under the auspices of APEC (Asia and Pacific Economic Cooperation).

50   Pascal Lamy, Director General, WTO, Op cit.

51   These include(1) specific quantitative targets for the minimum commitments for different modes of supply and different categories of country; (2) formulae in terms of which these targets are set and the limitations in offers of countries are assessed; (3) suggestions as to ways of dealing with the qualitative as opposed to quantitative dimension of limitations; (4) binding commitments at levels reflecting at least existing levels of market access and national treatment; (5) specification of economic-needs tests in offers of countries including both criteria used for the tests and any discrimination they involve; and (6) delinking of commitments under Mode 4 (supply from one country through the presence of persons in the territory of another) from those under Mode 3 (supply from one country through commercial presence in the territory of another).

For developing countries, the positive list approach is an important safeguard, since it addresses the underlying weaknesses in their supply capabilities in the sector. The gradual and phased approaches implicit in the positive list provides them with choices to develop the sector and liberalise when conditions are right. Fortunately, this is also the approach adopted in the EPAS negotiations.

As regards reciprocity, there was an implicit acknowledgement of the fact that the asymmetry in the supply capacities of developed and developing countries make any reciprocal arrangement meaningless: few countries have the capacity or resources to seek access to developed country financial services markets.

The proliferation of RTAs in the recent past has been explained in terms of the frustration with the pace of Doha negotiations as well the relative ease with which developed countries are able to secure WTO plus concessions in the area of financial services. A recent study by the Third World Network[52] has addressed this question (and the related issue of bilateral investment treaties dealing with access issues in this area) in terms of the effect of these provisions on the ability to effectively regulate the operation of financial institutions/instruments and capital flows.

The negative list approach in many RTAs and the extension of national treatment has compromised the ability of developing countries to deal with financial crises. At the same time, the demands for liberalisation have been ratcheted up: in the CARICOM interim agreement with the EU, one of the provisions requires market access for new financial services: since even the developed country regulators have experienced difficulties in fully understanding them (such as derivatives and securitisation of mortgages)[53], it would be prudent for developing countries to eschew such commitments. On the other hand, it is almost certain that EU requests are part of a wider template of demands likely to be extended to all ACP members.

## IV. LIBERALISATION OF FINANCIAL SERVICES: THE SPECIAL CASE OF CAPITAL ACCOUNTS

The on-going financial crisis has inevitably focused the attention of policy makers on the question of capital controls and their efficacy and desirability (or otherwise). In this connection, the Managing Director of IMF stated recently: "I have no ideology on this," adding that capital controls were "not something that comes from hell". However, he also stated that IMF would not recommend them as a standard prescription either – as they carried costs and were usually ineffective[54]. According to this line of thinking, control of capital account is seen as either a second best response or last resort once a crisis breaks out. Others, however, observe that it is "not considered as part of governments' macroeconomic policy armory to protect their countries from the hazard and risk of financial crises in the first place. This is because there is reluctance among the Bretton Woods's institutions and neo-liberal economists in recognising short-term capital flows as a culprit[55]."

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52   Third World Network: Preliminary Note on Financial Crisis and Trade and Investment Treaties (Penang, Malaysia, March, 2009.)
53   Derivatives are financial instruments whose prices are derived from the value of stocks, bonds, commodities, currencies, interest rates and even stock market indices. They are normally used to hedge against risk but can also be used for speculative purposes.  One such new instrument as reported in the press is in securitizing life insurance policies that are then sold on to investors who would receive payments upon the demise of the insured.

54    IMF refuses to rule out use of capital controls By Krishna Guha in Financial Times, November 2 2009
55    Anis Chowdhury and Iyanatul Islam "Financial Crises: Revisiting Capital Account Liberalization" The University of Western Australia, August, 2009.

Controls are often presented as short-term tools to confront emergencies, but the reasons why they are established in the first place are seldom explored; moreover, they are rarely presented as part of a set of coherent public polices. Thus, conventional heterodox theories help little in understanding why so many countries implement controls. Since capital accounts embrace a wide range of transactions, their management and operations is subject to an equally wide and diverse set of policies and measures. For example, controls can be imposed on some (or most) of inflows (or outflows); on flows of different maturities (e.g. short term or longer term), on different types of flows (such as foreign direct investment, portfolio equity or portfolio debt) and flows to different sectors[56].

It is important to bear in mind that the need and type of such controls is likely to vary among countries: the so-called emerging market economies[57] with greater integration and exposure to international capital markets are more likely to feel the need to manage and control them than low income countries. In the latter, low savings and relative insulation from international financial markets makes their exposure less problematic. A study by Epstein, Grabel and Jomo (2003) [58] has examined capital management techniques used by Chile, Colombia, Taiwan Province of China, India, China, Singapore and Malaysia during the 1990s. The study demonstrates that policymakers were able to use capital management techniques to achieve critical macroeconomic objectives such as prevention of maturity and locational mismatch; attraction of favoured forms of foreign investment; reduction in overall financial fragility, currency risk, and speculative pressures in the economy; insulation from the contagion effects of financial crises; and enhancement of the autonomy of economic and social policy. These experiences point to the possibility of engaging in selective liberalisation policies while ensuring that the authorities had the arsenal in place to deal with contingencies and addressing contagion before it affects growth and development.

There is, however, no single type of capital management technique that works best for all developing countries. Indeed as suggested by the wide array of financial flows and transactions, policy makers can choose from a large pool of measures depending on the circumstances of their respective countries.
  The major benefit of capital account liberalisation was the expectation that it would help low-income countries expand access to external savings and thus generate higher rates of economic growth. However, according to a recent survey quoted in a study by R.Rajan and E.Prashad[59], cross-country regressions show little relationship between foreign capital inflows and more rapid economic growth for low income countries. This suggests that the lack of domestic savings may not be the primary constraint on growth in these economies, as implicitly assumed in much of the theoretical literature on development economics. The discussions about openness to external finance and liberalisation is now less about whether they are necessary but rather about the preconditions necessary to engage in the process.

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56    A recent study on controls on capital transactions breaks down to eight sub-categories covering controls on capital and money market instruments, derivatives, FDI, credit operations (loans), real estates, commercial banks, institutional investors, and personal capital transactions. The controls on foreign exchange transactions alone are sub-divided into exchange taxes, exchange subsidies, controls on forward markets, administrative controls, controls on setting up bank accounts, controls on current transfers, controls on trade in gold and bank coins, and existence of arrears due to lack of FX.  Hang in "Collateral Damage and International Trade "IMF Working Papers, WP/07/8, Washington D.C.

57    There is no accepted definition of this group of countries but they are likely to be middle income and closely integrated with internatio9nal capital markets: examples include Malaysia, Argentine, South Africa, India, China and Brazil.
58    Quoted from the paper by Chowdhury, op cit.
59    21 Eswar S. Prasad and Raghuram Rajan: A Pragmatic Approach to Capital Account Liberalization, Working Paper, National Bureau of Economic Research, June, 2008.
59    Quoted from the paper by Chowdhury, op cit.

 Thus, the debate is refocusing on the indirect or "collateral" benefits that accrue to a country's governance and institutions when it opens up to cross-border capital flows. It is also likely to be the case that collateral benefits of openness  are likely to be greater at higher levels of development: countries need some core set of functioning  regulatory institutions with a pool of skills and track record of success to benefit from exposure to newer and additional financial flows. Rajan and Prasad[60] argue that there is "somewhat of a Catch-22 situation for countries that might be close to, but below the undoubtedly difficult-to-define threshold. The country's institutions will likely improve with greater openness to financial flows, allowing the country to eventually secure net gains from openness, but it may be exposed to significant immediate costs."

 A conclusion relevant for sub-Saharan Africa then is that the associated costs and risks of openness are greater at lower levels of development. This suggests that a good time to liberalise is when costs of opening up further are low. Likewise, times of financial crises are least propitious for liberalisation as the capacities of regulatory regimes is likely to be weak (a good plausible reason for the crisis in the first place) and costs likely to exceed benefits. GATS commitments concerning market access and capital account liberalisation (or convertibility and which is a remit of the IMF) are closely related. De facto capital account liberalisation has occurred in the past few decades as many countries have legalised foreign currency instruments in the face of increased trade flows, the internationalisation of production, and improved communications. In respect of cross-border capital transactions, GATS safeguards "the rights and obligations of the members of IMF under the Articles of Agreement of the Fund" (Article XII).

This provision legitimises[61] controls over capital transactions in as much as the remit of IMF's Articles do not extend to capital account transactions as defined in the balance of payments. However, this flexibility is circumscribed by the GATS requirement that a member shall not impose restrictions on any capital transactions inconsistent with its specific commitments. More specifically, Article XVI states that if a country undertakes a commitment regarding market access through Mode 3 (commercial presence), it is thereby committed to allow related transfers of capital into or out of its territory.  Notwithstanding the separation in GATS of market opening for financial services from capital-account liberalisation, considerable scope remains for inter-links between the two in practice. In a hypothetical case, cited by Cornford, for example, a country entering into commitments under modes 1-3 without horizontal limitations would be obliged to undertake comprehensive liberalisation of capital account transactions[62].

From the standpoint of developing countries, therefore, considerable vigilance is warranted in ensuring that the safeguards built into GATS in general and financial services in particular are not undermined by actions taken in other fora.

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61    For a fuller discussion of this (and GATS in general), see Andrew Cornford "The WTO Negotiations on Financial Services: Current Issues and Future Discussions "UNCTAD Discussion Paper No 172, June 2004.

62     Cornford (op cit) points out that "Moreover a country. not that in the hypothetical example just described whose commitments were made through the Understanding (see footnote 4) would also be making an open-ended commitment to the liberalization of such transactions required by its obligation to .permit financial service suppliers of any other Member established in its territory to offer in its territory any new financial service."

# MITIGATING THE IMPACTS OF FINANCIAL CRISIS: INCREASED COOPERATION AMONG AFRICAN COUNTRIES

By Suresh P. Singh (CUTS International, Jaipur, India)

## I. INTRODUCTION

The current financial crisis, starting 2007 and popularly known as mortgage crisis in the US, is unique in its depth and breadth ; it is devastating in its impact on both advanced and developing economies. It has created a situation of complete loss of confidence among consumers and the investing class. LDCs, which were thus far struggling with their subsistence living, are equally affected. One important issue that has come to the fore and which requires focused attention is the restoration of confidence in the financial and other markets through regulation and other measures. Moreover, there are additional challenges such as the deeply entrenched hunger and poverty in a large section of global populace across continents, behind-the-border policies that hinder investment; trade agreements which create complexities for traders and investors; numerous border and transit disputes which stymie the flow of goods especially to landlocked countries, and the protectionist policy followed by developed countries. Global presence of these characteristics which influence a country's current economic policy lead to further distortions in the economic activities, in turn impacting the recovery process and its duration.

The depth and intensity of the current crisis on different countries widely vary for the developed, developing and LDCs. The real impact of the current financial recession has negated the earlier belief that developing countries – especially the emerging economies – and LDCs would be least affected. The current economic indicators reveal quite the opposite. The nature of impact is different for different countries, especially the three sets of countries -- developing, developed and the LDCs. Impacts are different even among the developing countries. For example, while sub-Saharan Africa has one type of impact, developing economies in Asia have other types of impacts. Impacts also vary from country to country within the same area – for landlocked and coastal countries. The imapct is expected to be more severe on those developing countries and LDCs which have developed internal inertia for external support and high concentration of exports to countries, which are the epicentre of the current financial crisis.

This paper intends to explore ways through which African countries can mitigate the impacts of global recession of which two -- regionalism and diversification of markets away from traditional ones -- are more critical. The paper is divided into five sections. Section I focuses on the major financial crises witnessed after the 1930s. It also highlights different types and nature of financial crises. Section II attempts to analyse the impact of the present financial crisis on African countries. Section III analyses the current trend in regional economic cooperation among African countries, especially in terms of international trade, FDI inflows and remittances. Section IV deals with policy responses actually made and required by these countries to mitigate the impact of the crisis. Section V concludes.

## II. THE NATURE AND GENESIS OF THE FINANCIAL CRISIS

Financial crises, witnessed after the Great Depression of 1930, in both developing and developed countries are of many types and dimensions. Some of the major types of crises include; (a) stock market crisis, (b) savings and loan crisis, (c) mortgage crisis, (d) currency crisis, (d) debt crisis, (e) oil price crisis, (f) asset price bubble crisis, (g) balance of payment crisis, and (h) banking and financial institutions' crisis.

The impact of all of these crises varied widely in depth and dimensions. Some got confined to their place of origin (India's balance of payment crisis), some others trespassed regional boundaries, and some engulfed the entire global economic system. A distinguishing feature of the different types of crises in developing and developed countries is that while most of the crises in developing countries emerged due to strict regulation of economy and sectors, in developed countries, most of the crises have been due to sustained deregulation, untimely policy measures and manipulation of the market forces. Sometimes such policy changes have also led to distorted performance of market forces in the medium and long term. The depth and dimensions of the crises and their implications also depended on the global positioning of the country of origin and also the type of sector in which the crisis originated. Global crises and recessions possess the wherewithal to encompass the whole of global economic system, and has devastating effects in virtually every country, rich and poor.

Global financial crises, leading to economic recessions and depressionary conditions, have one thing in common ; while these are caused by distortion and/or malfunctioing of one or a combination of various economic factors, the ultimate victim is one, and that is reduced demand across different segments and sectors[63]. The Great Depression of 1930s, triggered by a sudden, total collapse in the stock market (known as Black Monday), led to slackening of consumer demand for products covering almost the whole of economy.

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### BOX 1

#### *List and types of some major financial crises since the Great Depression*

##### *Financial Crises originating in the US*

- 1930s – The Great Depression – the largest economic depression in the 20th century
- 1987 – Black Monday (1987) – the largest one-day percentage decline in stock market history
- 1989-91 – United States Savings and Loan crisis
- 2007-09 – The American financial (mortgage) crisis leading to global financial crisis of 2008–2009

##### *Financial Crises originating in Europe*

- 1992-93 – Black Wednesday – speculative attacks on currencies in the European exchange rate Mechanism

##### *Financial Crises originating in Latin America*

- 1980s – Latin American debt crisis – beginning in Mexico
- 1994-95 – 1994 economic crisis in Mexico – default on Mexican debt

##### *Financial Crises originating in the Middle East*

- 1973 – oil crisis – rise in oil prices caused the 1973–1974 stock market crash, related to conflict of interest between the OAPEC and the US

##### *Financial Crises originating in Asia*

- 1990s – Japanese asset price bubble collapsed
- 1991 – balance of payment crisis – India
- 1997-98 – 1997 Asian Financial Crisis – devaluations and banking crises across Asia

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63  [1] This, however, does not hold true in the case of forced crisis arising as a result of conflict of interest between countries (oil crisis of 1973).

The financial crisis that led to the recession of 2008 is no different from the earlier ones, except that (i) it has a larger number of countries in its fold, and (ii) while the crisis of 1930s was caused by liquidity crunch in the U.S. due to an inadequate monetary policy, the current crisis, also originating in the U.S., has led to liquidity crunch. It has now penetrated into all parts of the real economy. The current crisis, called "once-in-a-century credit tsunami" has surged from sector to sector, first from housing into banking and other financial markets, across the public-private boundary, and has imposed heavy demands on the public sector's finances. It has also surged across national borders and has swamped emerging markets and other developing countries and has neutralised the considerable economic gains made during the last few years. The economic crisis is severely affecting many areas of people's lives and livelihoods, including employment, food prices, interest rates and the money people earn abroad and send back home (remittances).

Out of the total major crises (as listed in the Box 1), four originated in the US, one in Europe, two in Latin America, one in the Middle East and three in Asia. Seven of the listed crises took place in developed markets, while four happened in the developing world. A significant number of the crises, originating in the developed markets, were due to speculation and wrong monetary policy(4), and excessive deregulation(2), whereas in other countries, these were due to untimely policy decisions and regulations, requiring rapid industrialisation and to meet increasing demand for poverty reduction employment generation. In other words, most crises in developed countries (current financial crisis is a glaring example) can be attributed to undue manipulation of market forces. On the contrary, LDCs have been made a part of the crises because of their heavy dependence on other countries where the crises originated. A distinguishing feature of the crises witnessed so far is that none of the crises originated in the LDCs. The LDCs' economic problems are frequently caused by a host of other external factors – inflation, declining demand for commodities, deteriorating terms of trade and protectionism, rising real rates of interest on foreign debt, and poor harvests – beyond LDCs control.

### III. IMPACTS OF THE FINANCIAL CRISIS IN AFRICAN COUNTRIES

The crisis has impacted export volumes, manufacturing sector performance, remittances, foreign direct investments, commodity prices, tourism, and foreign aid**.** All of the African countries, as is the case with other developing countries, are affected by the slow-down in demand for their manufactured products arising from reduced global demand, weak domestic markets, and reduced inflows of foreign capital. Post-financial crisis issues in these countries are neither loss of confidence nor reduced domestic demand, but an already aggravated issue of survival.  The primary concern of these countries is managing survival.

In the prevailing circumstances of global slowdown in economic growth resulting from reduced economic activities, qualitatively, the African countries most impacted by global financial crisis include:

- Countries with significant exports to the US and the EU markets
- Countries exporting high income elasticities' products
- Countries dependent on remittances and foreign capital (FDIs)
- Countries with weakly regulated markets for securities
- Countries dependent on aid
- Big producers with small domestic markets
- Countries with poor infrastructure for sustaining internal growth
- Countries with small savings' rate

Projections made by international institutions such as the IMF and the World Bank indicate that 2009 will be the worst year in terms of economic growth for African and other developing countries. One projection after other continue to be revised downward to accommodate the second round impacts of financial crisis on African and other developing countries. Economic growth in Africa will be worst hit as the real GDP growth for 2009 is projected to decline to almost half at 3.3 per cent from a growth of 6.3 per cent in the preceding year. It is expected that, due to the current financial crisis, Africa might experience an increase in the number of its poor citizens and a decrease in the living standards of the most vulnerable segments of its population.

| TABLE 1 World Economic Outlook Projections (GDP growth %) | | | | |
|---|---|---|---|---|
| **Countries by Groups** | **Actual** | | **Projections** | |
| | **2007** | **2008** | **2009** | **2010** |
| Emerging and developing economies | 8.3 | 6.3 | 3.3 | 5.0 |
| Africa | 6.2 | 5.2 | 3.4 | 4.9 |
| Central and Eastern Europe | 5.4 | 3.2 | -0.4 | 2.5 |
| Commonwealth of Independent States | 8.6 | 6.0 | -0.4 | 2.2 |
| Developing Asia | 10.6 | 7.8 | 5.5 | 6.9 |
| Middle East | 6.4 | 6.1 | 3.9 | 4.7 |
| Western Hemisphere | 5.7 | 4.6 | 1.1 | 3.0 |

Most of the African countries will pass through the declining growth syndrome in the coming period, especially during 2009, and if appropriate corrective measures are not taken this declining, and in some cases negative, growth will characterise the economic outlook of these countries. Projections carried out by various international institutions demonstrate that while for some African economies the GDP growth would be substantially low compared to earlier periods, some of the countries would feature in the negative growth list (as shown in Figure 1).

Some five African countries will realise a negative growth compared to two countries which would grow by less than 1 per cent. The expected growth rate for another 15 countries would be in the range of 3 to 4 per cent. Only 15 of the total African countries would realise a growth rate exceeding 5 per cent.



Figire 1
Projected GDP Growth for African Countries
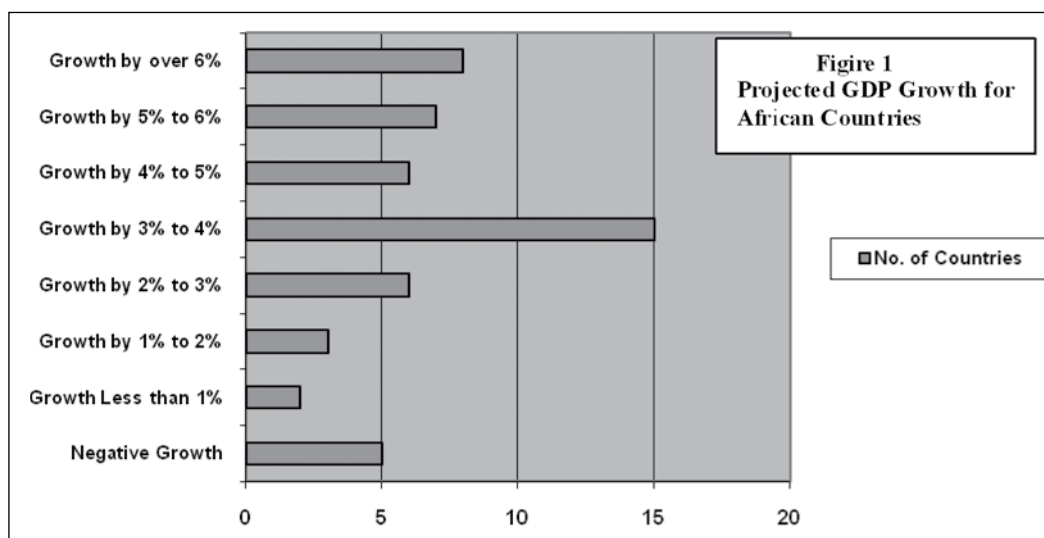
African countries would also be adversely impacted by the decline in remittances. Remittance flows to developing countries grew by 7 per cent to $283 billion in 2008, up from $265 billion in 2007. The increase in remittances was strongest in South Asia, followed by the Middle East, North Africa and sub-Saharan Africa (SSA). However, this increase was much slower than in previous years due to the growing unemployment and weakening economies in industrialised countries. Overall remittance flows to African countries are expected to decline in 2009.

Greater degree of economic and financial exposure – higher dependence on exports to developed markets, high dependence on foreign aid and remittances and also increased FDI inflows -- of African countries over the last one and half a decade -- have made the continent more vulnerable to the shocks of the present financial crisis. Data shows that a large number of African countries have attained vulnerability status since the beginning of the financial crisis.

| Table 2 Vulnerability Table for some SSA Countries | | |
|---|---|---|
| **COUNTRY** | **Reserves (in Months of Imports 2009 less 2008)** | **Vulnerability Overall Assessment** |
| Angola | -1.0 | H |
| Burundi | -0.6 | H |
| Central African Rep. | -0.9 | H |
| Congo, Dem. Rep. of | 0.6 | H |
| Côte d'Ivoire | 0.0 | H |
| Djibouti | 0.2 | H |
| Ghana | -1.2 | H |
| Lesotho | -0.8 | H |
| Liberia | 0.0 | H |
| Mauritania | -0.3 | H |
| Nigeria | -3.9 | H |
| Papua New Guinea | -0.9 | H |
| Sudan | 0.2 | H |
| Zambia | 0.2 | H |

H = High risk; M=Medium risk
*Source:* Extracted from **The Implications of the Global Financial Crisis for Low-Income Countries, IMF, March 2009**
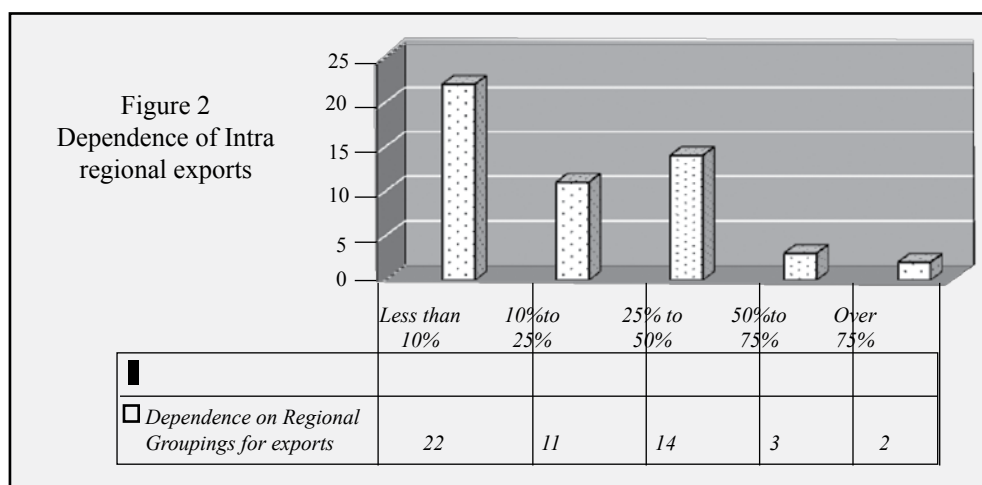
## IV. TRENDS IN REGIONALCOOPERATION

Over the past 20 years, intra-regional trade in all developing regions has expanded faster than extra-regional trade. It has expanded most rapidly among the developing countries of East Asia, where today it represents almost half of that region´s total trade. In Latin America, it has grown significantly since the late 1980s, and is now close to 30 per cent of total trade. Despite the proliferation of regional trade arrangements in Africa and sub-Saharan Africa (SSA) in the past two decades, intra-African trade is still very limited and has hardly grown over time. It accounts for less than 10 per cent of Africa's overall trade.

Over the period 2004–2006, intra-African exports represented 8.7 per cent of the region's total exports. Intra-African imports, on the other hand, represented 9.6 per cent of total imports. This proportion was substantially higher for sub-Saharan Africa (about 12 per cent) than for North Africa (about 3 per cent). Nonetheless, even the sub-Saharan African proportion of intra-regional trade remains far below other regions.

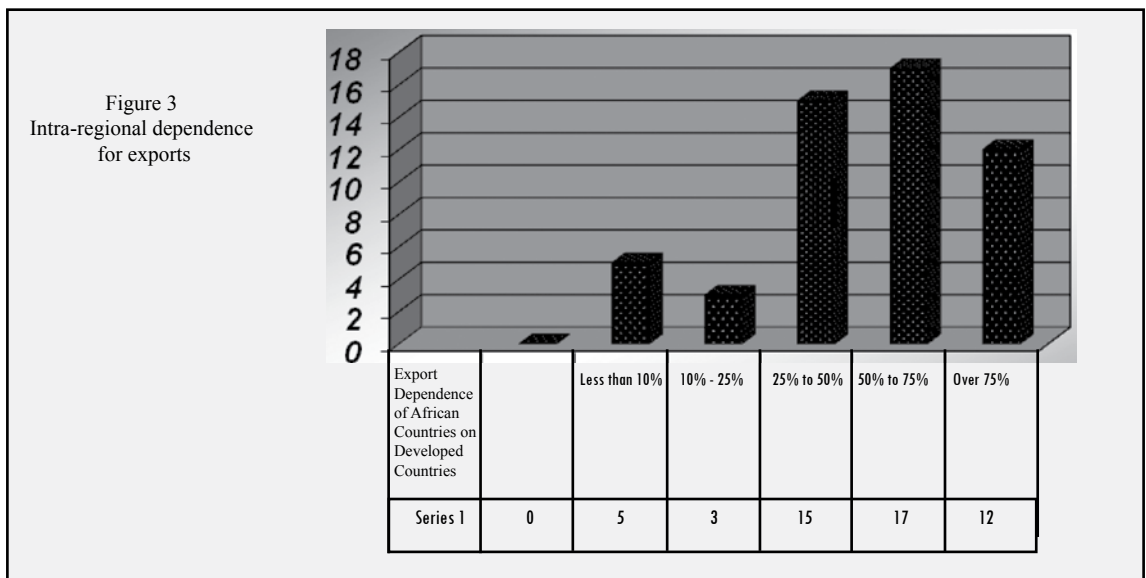| Table 3 | | |
|---|---|---|
| Intra-regional imports and exports as a proportion of total trade (2004–2006 averages in %) | | |
| Region | Imports | Exports |
| Africa | 9.6 | 8.7 |
| Developing America | 20.9 | 18.5 |
| Developing Asia | 48.1 | 45.5 |
| Developed America | 23.3 | 39.8 |
| Developed Europe | 68.1 | 71.4 |

Source: UNCTAD, 2008c.

It is observed that since 2000, the proportion of intra-African merchandise trade has stabilised at about 10 per cent, with a slight decline towards 2008. This is despite the fact that the absolute value of intra-African trade has increased during the period. The stagnation of the proportion is due to the fact that Africa's trade with the rest of the world increased much faster than intra-African trade. While intra-African trade increased by 13.64 per cent per year on average, between 1999 and 2006, the average yearly increases in Africa's trade with the United States was 27.57 per cent, and trade with China stood at 60.85 per cent over the same period.

Figure 2
Dependence of Intra regional exports

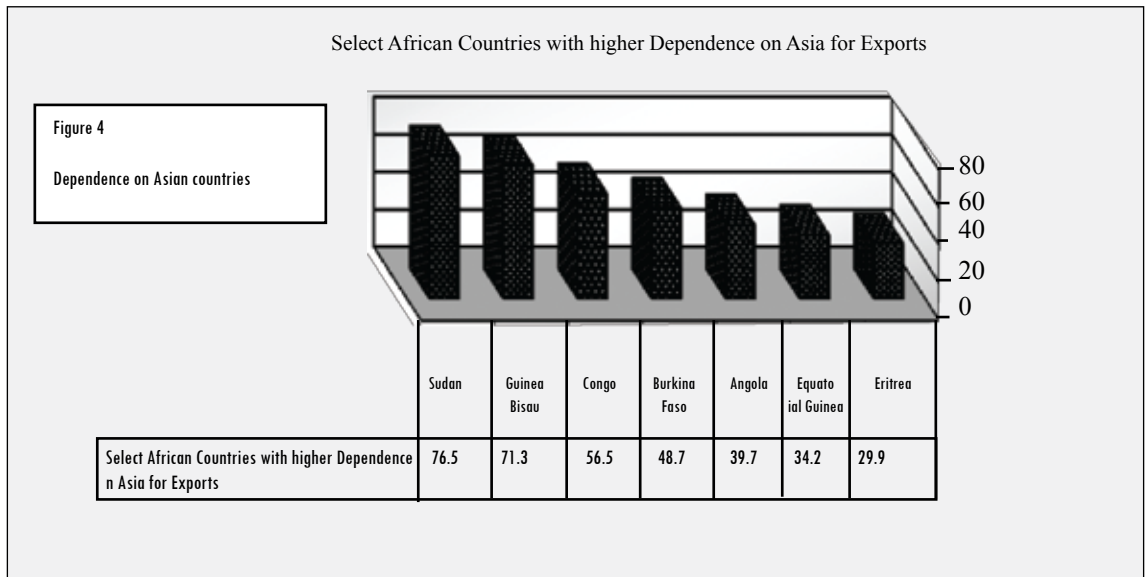| | Less than 10% | 10%to 25% | 25% to 50% | 50%to 75% | Over 75% |
|---|---|---|---|---|---|
| ☐ Dependence on Regional Groupings for exports | 22 | 11 | 14 | 3 | 2 |

The level of exports between the African countries is one of the lowest. Only two of the total African countries are dependent on others for over 75 per cent of their exports, and another 3 countries for 25 to 50 per cent of their total exports. For a majority of countries (22), exports within Africa are less than 10 per cent. The proliferation of regional and sub-regional blocks has been totally ineffective in promotion of intra-regional trade and has not helped these countries in integrating.

Data further shows that most of the export markets based on major bilateral trade relations for intra-regional products from Africa are concentrated in a few products and are not diversified. Of the 25 top intra-African trade relations by value[642], which together account for over half of total intra-African exports, 11 are strongly concentrated on a single product. For seven of these, it is petroleum while gold and gas make up the four others. The 14 other trade relations in the list are made up of a more varied list of products. Seven are export flows from South Africa, and five are from other Southern African countries to South Africa. This suggests that intra-African trade, though it is more diversified in terms of products traded than Africa's trade with the rest of the world, remains highly concentrated with respect to a few strategic commodities. These all will have a significant bearing on the recovery prospects of African economies.



Figure 3
Intra-regional dependence for exports

| | | Less than 10% | 10% - 25% | 25% to 50% | 50% to 75% | Over 75% |
|---|---|---|---|---|---|---|
| Export Dependence of African Countries on Developed Countries | | | | | | |
| Series 1 | 0 | 5 | 3 | 15 | 17 | 12 |

Dependence of African countries for exports on economies relatively less impacted by the current financial crisis in Asia such as India and China is also not significant from the recovery point of view. However, in the recent few years, trade and economic relations of African countries with Asian economies have improved considerably. It is observed from the available data that there are only seven countries in Africa which are dependent on emerging Asia for roughly over 30 per cent of their total exports. Sudan and Guinea Bissau are the two countries whose export dependence on Asian economies are way above the rest -- 76.5 per cent and 71.5 per cent respectively. These two appear to have better prospects of recovery than others.

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64      [2] United Nations, Economic Development in Africa, Report 2009

Select African Countries with higher Dependence on Asia for Exports

Figure 4

Dependence on Asian countries

| | Sudan | Guinea Bisau | Congo | Burkina Faso | Angola | Equato ial Guinea | Eritrea |
|---|---|---|---|---|---|---|---|
| Select African Countries with higher Dependence n Asia for Exports | 76.5 | 71.3 | 56.5 | 48.7 | 39.7 | 34.2 | 29.9 |

The indirect effects of the financial crisis are also expected to be significant, with falling FDI, ODA flows and lower remittances. Even if industrialised countries keep aid as a percentage of gross national income (GNI) constant, the recession in those countries will result in lower absolute aid flows. The financial crisis will weaken many African countries, especially mineral exporters.

**Figure 5**
**FDI Source to African Countries**
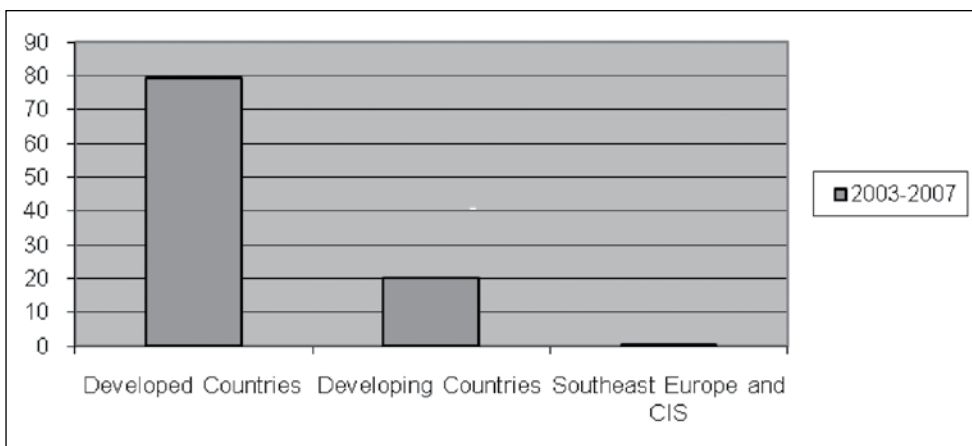


In terms of FDI inflows, developed countries (USA and the UK), the epicentre of the current financial crisis, are the largest contributor, having a share of 80 per cent in the total FDIs inflows in Africa. Data on intra-regional flows of FDIs shows that very few African countries are dependent on regional sourcing. This low regional share wiould further aggravate the problems faced by African countries since most of the developed countries are under recession.
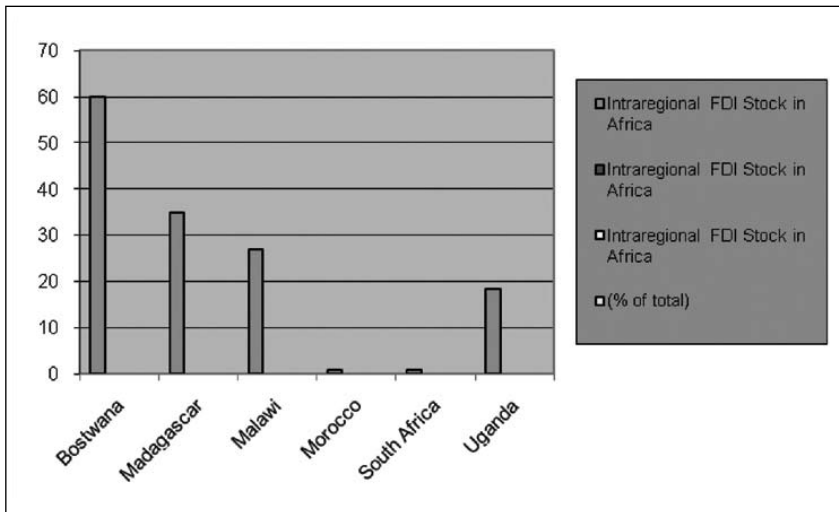
Dependence on developed and other developing countries outside Africa has been a feature of African countries for quite a long time now. Over-reliance on external investment is the result of African countries' inability to mobilise sizable financial resources to invest in other African countries until very recently. During the period 2002-2004, intra-African FDI was estimated at only $2 billion annually on average. This represented about 13 per cent of total inward FDI (See UNCTAD, 2006b). In comparison, intra-regional FDI in countries from the Association of South-East Asian Nations (ASEAN) is estimated at 30 per cent of total FDI. However, According to a UNCTAD (2008 Report), in 2007, the flow of intra-African investment increased to $6 billion. This raised the accumulated stock to $73 billion (See UNCTAD, 2008g).

The low level of intra-regional FDI in Africa can be attributed to several factors. Key among these is the lack of adequate transport and communication infrastructure, skilled labour, and weak economic links and contacts among investors within the region. Moreover, there is a strong correlation between foreign and domestic investment because foreign investors view the behaviour of the local investors as important information signals. The low level of domestic investment in Africa can be said to be partly responsible for the limited intra-regional investment.

## V. CONCLUSION

The experience of the Great Recession of 1930s and other crises demonstrate that countries take varying duration of time to overcome the crisis. This will hold true in the present case also. Complete recovery from depressionary conditions and recessions of African countries would depend on various factors which include:

- Degree of openness or liberaralisation,
- Inherent strength of the domestic economy,
- Business and trade relations with countries relatively less impacted by the current financial crisis,
- Level and intensity of intra-regional trade and economic cooperation,
- Technological strength and infrastructure,
- Level of dependence on other countries for capital and knowledge resources,
- Nature of economy – planned/unplanned, and lastly
- Economic policy from other countries, which needs to complement domestic economic policy.


There is explicit evidences that suggest that trade is an engine for economic growth and prosperity. However, in response to mitigate the impacts of financial recession, countries have Oopted to be more inward looking and regional in approach. Trade data over the last few years demonstrates that economies which have diversified their exports and are less dependent on few major global economies for their exports, are relatively less impacted by the current global crisis. The data also shows that the volume of regional trade in Africa and other developing countries has increased over the last one and half decade. This needs to be sustained and further strengthened. Not surprisingly, world trade polices now are being largely influenced by regional trade arrangements. It is therefore more important for the developing countries to be more focused on regional and extra-regional trade with other developing countries in the existing economic dynamics, where developed economies – especially North American and the EU – are finding it increasingly difficult to absorb exportable goods from other developed and developing countries. It is essential that developing countries create a more conducive regional environment and cooperate with other countries in promoting economic growth and trade. This can be done through identifying product complementarities between developing countries in the region as well as outside the region. African countries need to further diversify their export destinations.

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(Footnotes)

1 Kenya has a relatively developed financial services sector but ceilings on bank lending rates were not removed until 1991. The central bank continued to announce guidelines for the sectoral composition of bank credit expansion, while offshore borrowing by domestic residents has been permitted only since early 1994. Likewise, portfolio capital inflows from abroad were restricted until 1995. Supporting structural and institutional reforms have yet to be fully implemented. Many banks remain publicly owned and competition among them is limited. Deregulation of interest rates in this monopolistic environment permitted banks to widen their margins such that real interest rates on bank deposits fell substantially. Partly in consequence, financial deepening has been modest, especially when measured by the ratio of private sector credit to national income. ("Financial Indicators and Financial Change in Africa and Asia), IMF Working Paper No. 95/123 (Washington: IMF, November 1995).

2 "Financial Indicators and Financial Change in Africa and Asia, "IMF Working Paper No. 95/123 (Washington: IMF, November 1995).

3 Kenya, Nigeria, Uganda and Zambia and others have suffered from the failure of privately owned banks and NBFIs - often due to fraud and abuse by managers and owners, especially insider lending. These bank failures have proved costly for taxpayers, who have often had to fund the reimbursement of deposits. Many of the failures exposed serious weaknesses in prudential systems: prudential regulations were not properly enforced and distressed banks were allowed to continue operating, often with financial support from central banks and governments, for too long after they had become insolvent, merely increasing the eventual cost of collapse.(M.Brownbridge: Bank "Reforms in Africa: What has been learnt" ID 21 Insights, March, 2002.

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