



TRADE OPENNESS AND GROWTH IN DEVELOPING COUNTRIES: AN ANALYSIS OF THE RELATIONSHIP AFTER COMPARING TRADE INDICATORS

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ABSTRACT

*The paper demonstrates that trade policy liberalization have weakly contributed in improving economic growth in 82 developing countries two years after the Uruguay round and until 2012. The assertion is preceded by a trade indexes comparative analysis in order to prove that the $(X+M/GDP)$ trade ratio, used as variable of interest in our model, is less exposed to methodological shortcomings faced by three trade openness indexes, commonly used in empirical literature, namely the *Sachs and Warner (1995)*, the *Dollar and Kraay (2002)* and the *Wacziarg and Welch (2003)* indexes. Finally, the paper attributes liberal policies measures in developing countries to the presence of a strong positive association between the “official development assistance and official aid” variable and $(X+M/GDP)$ ratio.*

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JEL Classification: F13, F14, F15, F43.

Contribution/ Originality

The paper's primary contribution is finding out that theoretical controversy about the effects of trade on growth was largely due to conceptual differences in trade openness measures. The comparative analysis of trade indexes provided in this paper demonstrates that the use of trade share ratio, as trade measure in growth regressions, provides credible findings.

1. INTRODUCTION

During the last three decades, the world economy has experienced a great proliferation of economic openness policies. Before 1986, developing countries were not very involved in trade openness negotiation processes and multilateral trade agreements were generally limited to industrialized economies.

But the situation has changed after 1994 with the achievement of the Uruguay round, which is, according to the IMF, the 'most complete multilateral trade negotiation in economic history'.

Situation has also changed after this date when the World Trade Organisation (WTO) succeeded to the General Agreement on Trade and Tariffs (GATT). WTO negotiations, which began in Qatar in 2001, were designed to address issues which had not been addressed during the Uruguay round.

The Doha Round, also called Doha Program for Development, due to the high priority given to developing countries, covered manufactured goods, agriculture and services. It also provided the establishment of special arrangements, aid and assistance in order to encourage these countries to engage in trade liberalization process ([International Monetary Fund, 2006](#)).

On the academic field, the debates surrounding the impact of liberal orientation on economic performances of developing countries have provided different findings. Some authors argued that trade openness has improved economic performances, but others concluded that this reform is not statistically linked to growth and other development indicators.

The contribution of present work in this academic corpus can be summarised through the following purposes.

Firstly, we consider that theoretical controversy about the relationship between trade and growth was largely due to conceptual differences in trade openness measures.

Empirical literature experienced several trade openness indicators, but even if these indices are designed to measure the same concept, the manner by which they were conceptualised differs.

Empirically, these different appreciations of trade openness degrees were reflected in estimation's results and led to divergent conclusions about the impact of trade on growth and other economic variables. So the reliability of results; and thus of theoretical conclusions; depends largely on the quality of the trade measures used in empirical framework.

Secondly, we defend the thesis that trade openness have weakly contributed in improving economic growth in developing countries during the last three decades and the support of these countries for liberal policies was motivated by the desire to obtain loans and aids from international organisations.

In order to demonstrate our purposes, the present work will be organised as follow:

In the next section we will expose the conceptual shortcomings of three trade measures which were been commonly used in empirical studies that supported the existence of a strong positive association between trade and growth. These indexes are those of [Sachs and Warner \(1995\)](#), [Dollar and Kraay \(2002\)](#) and [Wacziarg and Welch \(2003\)](#).

This analysis can be read as a calling into question of academic position supporting the existence of large association between trade openness and economic growth.

In the third section we will demonstrate that the $(X+M/GDP)$ ratio, used as a variable of interest in our model, is less exposed to methodological shortcomings than trade measures mentioned above. The aim of this section is to provide academic support to the empirical framework that we will achieve in the fourth section.

In this fourth section, we will demonstrate that $(X+M/GDP)$ ratio, when it is associated to Kaufmann *et al.* (2012) governance indicators, has a very low marginal effect in explaining growth variations in 82 developing countries and during the 1996-2012 period.

In this section we will provide theoretical arguments in order to justify our findings while in the fifth section we will demonstrate that liberal orientation of developing countries was motivated by their desire to obtain loans and aid from international organisations.

Section six concludes.

2. TRADE INDICATORS CONCEPTUAL SHORTCOMINGS, A CAUSE OF BIAS IN ESTIMATIONS RESULTS

The causality between trade openness and economic performances has been debated by several contemporary studies. However, these studies have provided divergent conclusions.

According to some authors, including Gwartney *et al.* (1998), Dollar and Kraay (2002), Warner (2003) and Wacziarg and Welch (2003), openness to international trade is strongly linked to economic performances.

Gwartney *et al.* (1998) find that in a panel of 82 countries and for the 1980-1995 period, liberal economic reforms explain 31% of growth variations. They argue that « economic freedom explains by itself a substantial amount of the variation across countries in the long-term growth rates ».

Dollar and Kraay (2002) concluded that « the post-1980 globalizers countries have seen large increases in trade and significant declines in tariffs. Their growth rates accelerated between the 1970s and the 1980s and again between the 1980s and the 1990s, even as growth in the rich countries and the rest of the developing world slowed. The post-1980 globalizers are catching up to the rich countries, but the rest of the developing world (the non-globalizers) is falling further behind ».

Warner (2003) argues that there is a negative relationship between the “non weighted middle tariff rates on the level of capital and intermediate goods” and growth¹. And for Wacziarg and Welch (2003), « liberalization has, on average², robust positive effects on growth (...) and investment rates within countries ».

¹Warner (2003). used the data base of Barro and Lee (1994).

² These two authors use the term "on average" to express the effect of liberalization on growth and investment because their economic liberalization indicator is an aggregated one, formed by several indicators.

However, other studies consider that trade openness reform hasn't contributed so much on improving economic performances. In this regard, we quote the proposal of [Rodriguez \(2006\)](#) with regard to [Warner \(2003\)](#) results: « The results of the studies that we surveyed were not as strong as their authors had indicated (...). Trade policy is not very important for growth (...) Regrettably, I have been unable to reproduce Warner's results using the Barro-Lee data. The Coefficient (of the variable tariff rate), -1.51 (t-stat =-1.24), is not too different from Warner's reported coefficient of -1.53 (t-stat =-1.23), so that the results could be due to approximation errors. The same thing is true when one excludes India from the regression; the estimated coefficient of -3.67 (t-stat=-2.38) which is similar (though not identical) to his -3.84 (-2.22). The differences start when one controls for the log of GDP: the estimated coefficient is now -3.38 (t-stat=-1.33), whereas he reports -4.70 (t-stat=-2.43) and when one adds schooling rates, making the estimated coefficient -3.96 (t-stat=-1.06) versus his reported -7.45 (tstat =- 3.43) ».

[Rodrik et al. \(2002\)](#) also reported that neither geographical variables nor trade shares hold their significances when they are associated to institutional variables in growth regressions.

Academic position we support in this paper is closely aligned with that of [Rodrik et al. \(2002\)](#) and we assume that the choice of different trade openness measures in empirical studies constitutes a substantial cause of the divergent stands mentioned above.

Trade measures used by [Gwartney et al. \(1998\)](#), [Dollar and Kraay \(2002\)](#), [Warner \(2003\)](#) and [Wacziarg and Welch \(2003\)](#) are different from those used by [Rodriguez \(2006\)](#) or by [Rodrik et al. \(2002\)](#). Empirical literature includes several indices for measuring trade openness degrees. [Yanikkaya \(2002\)](#) divided the existing openness measures into five categories:

First, trade shares measure, which is exports plus imports divided by GDP.

The second category includes measures of trade barriers that include average tariff rates, export taxes, total taxes on international trade, and indices of non-tariff barriers. In this regard we mention the [Dollar and Kraay \(2002\)](#) openness measure.

The third category includes bilateral payments arrangements as a measure of the trade orientation of countries. The fourth category uses the exchange rate. The most commonly used measure in this category is the black market premium that shows the success of the rationing function of prices in the foreign exchange market

Finally, indices of trade orientation (such as [Leamer \(1988\)](#) openness index, [Dollar \(1992\)](#) price distortion and variability index, [Sachs and Warner \(1995\)](#) openness index and the [Wacziarg and Welch \(2003\)](#) indicator). The basic claim of these studies is that outward-oriented economies have consistently outperformed inward-oriented economies. (See [Yanikkaya \(2002\)](#))

The purpose of this section does not consist on relating the main features of all these indicators but calls into question studies that support the existence of a strong relationship between trade and growth through the exposure of conceptual shortcomings of three commonly used trade measures in these studies, namely the [Sachs and Warner \(1995\)](#), [Dollar and Kraay \(2002\)](#) and [Wacziarg and Welch \(2003\)](#) trade indexes.

2.1. The “Globalisers and Non-Globalisers” Dollar and Kraay (2002) Openness Index

In their study, “Trade, growth and poverty”, Dollar and Kraay concluded that economic openness improves growth. According to these authors, countries they called "globalisers" knew a rise of 2.1% of their growth rates between 1970's and 1980's. Growth rate of these countries passed, in average, from 2.9% to 5% during these two decades. Whereas, during the same period, countries they called "non globalisers" recorded a decrease of 1.9% of their growth rates.

But the manner by which Dollar and Kraay has classified countries as "globalisers" and "non globalisers" is subject to critiques. These critiques have been addressed by [Nye and Reddy \(2002\)](#) who considered that Dollar and Kraay criteria's appreciations of openness degrees were 'arbitrary'.

Dollar and Kraay restricted the statute of "globalisers" only to countries that established reforms of reduction of their tariffs rates between the end 1970's and the 1980's. In doing so, Dollar and Kraay founded significant results, allowing them to conclude that reformers countries have increased their economic growth, whereas the non reformers recorded less advantageous results.

But some countries, that have been catalogued as "non globalisers" because they haven't established tariffs reductions reforms in the specified period, have in reality recorded similar or sometimes better levels in term of commercial exchanges and tariffs levels than "globalisers" ones.

Classifying countries exclusively on the basis of “efforts of reforms” conduced Dollar and Kraay to consider some countries as "non globalisers" although they were more open to international trade than "globalisers" ones and this inadequate appreciation of openness degrees lead to biased results.

In fact, when classifying countries according to “levels of openness”, [Nye and Reddy \(2002\)](#) founded different results than those of [Dollar and Kraay \(2002\)](#). According to [Nye and Reddy \(2002\)](#): « non-globalizers saw an acceleration of 1.7 percentage points in their growth rates between 1985-89 and 1995-97, whereas globalizers saw an increase of 1.3 percentage points ».

2.2. The Sachs and Warner's (1995) Index

According to [Sachs and Warner \(1995\)](#), a country is classified as “closed” if it displays at least one of the following criteria:

- An average tariff rates of 40% or more.
- A non tariff barriers covering 40% or more of trade transactions.
- A black market exchange rate that is, at least 20 percent lower than the official exchange rate.
- A state monopoly on major exports.
- A socialist economic system (as defined by [Kornai \(1992\)](#)).

The aggregated indicator of Sachs and Warner takes into account the inhibitory effect of the tariffs and non tariffs barriers and the opportunity costs caused by black market activities on commercial transactions.

For Sachs and Warner, the existence of a black market premium on exchange transactions could have the same effects of a formal tax. For example, if local exporters buy raw material with

foreign currency acquired at black market, and sell their finished products with the legal exchange rate, they will undergo exchange losses.

In addition, Sachs and Warner introduced the 'socialist economic system' variable to demonstrate the negative relationship between socialist regimes, with centralized economies, and openness to international trade.

In spite of his original contribution in measuring country's openness degrees, the Sachs and Warner's index has also been exposed to critiques. In this regard, we quote the comments of [Rodriguez \(2006\)](#):

« Whereas we found the rationale for including these variables jointly into an index reasonable, we also found that the explanatory power of this variable in growth regressions came almost exclusively from its use of the state monopoly of exports and black-market premium variable: an index that combined just these two indicators had as much explanatory power as the Sachs-Warner variable, and an index that combined the other three variables (socialism, tariffs and non-tariff barriers) did not enter significantly into the regression ».

In addition, the variables " State monopoly of exports "and" black market premium ", which support the largest explanatory weight of the aggregated indicator, include measures bias.

« For example, the export-marketing board dummy was based on a 1994 World Bank study called 'Adjustment in Africa' that covered only 29 African economies undergoing adjustment programs during the eighties. Thus non-African economies that had state monopolies of exports would not be classified as closed according to this variable; neither would African economies that had state monopolies of exports but were not undergoing adjustment programs during the eighties » ([Rodriguez, 2006](#)).

In other words, Sachs and Warner recorded just only countries that have been counted by the adjustment in Africa World Bank program and overlooked non Africans countries and African countries which have not been concerned by the adjustment plan.

2.3. The [Wacziarg and Welch \(2003\)](#) Index

The [Wacziarg and Welch \(2003\)](#) indicator constitutes an update of the [Sachs and Warner \(1995\)](#) indicator. According to [Wacziarg and Welch \(2003\)](#), « the Sachs-Warner methodology was followed as closely as possible ».

The contribution of [Wacziarg and Welch](#) compared to the initial conceptual measure of [Sachs and Warner](#) can be summarized through the following items:

The [Sachs and Warner \(1995\)](#) index was designed for 118 countries and for the 1970-1989 period. [Wacziarg and Welch](#) established this index for 23 additional countries and they updated it for the 1990's.

[Wacziarg and Welch](#) included a dummy variable which takes into account the country's date of trade liberalization. « The liberalization date is the date after which all of the Sachs-Warner openness criteria are continuously met ».

Using this updated indicator [Wacziarg and Welch \(2003\)](#) reported that « Analysis based on the new data set suggests that over the 1950–98 period, countries that liberalized their trade regimes experienced average annual growth rates that were about 1.5 percentage points higher than before liberalization. Post liberalization investment rates rose 1.5–2.0 percentage points, confirming past findings that liberalization foster growth in part through its effect on physical capital accumulation. Liberalization raised the average trade to GDP ratio by roughly 5 percentage points, suggesting that trade policy liberalization did indeed raise the actual level of openness of liberalizers». Conceptual shortcomings of the [Wacziarg and Welch \(2003\)](#) index were very similar to those of [Sachs and Warner \(1995\)](#) index. In this regard, [Rodriguez \(2006\)](#) argued that « a look at the Wacziarg and Welch data indicates a heavy reliance on the black market premium and export marketing boards to rate economies as open or closed. Out of 31 economies that they classify as closed at the end of 2001, 27 are deemed closed exclusively because of their black market premium or state monopoly of exports. Only in 3 cases (Angola, China and India) is information provided that would lead to classifying these countries as closed because of their tariffs, quotas or state socialist system. In one remaining case (Republic of Congo) an IMF assessment of its “insufficient progress” in economic reforms was used to classify it as closed. The average growth rates of the countries that are rated as closed exclusively because of their black market premium or state monopoly of exports during the 1990-03 period is -0.1%, considerably below the world average of 1.1% (...). Despite Wacziarg and Welch’s attempt to correct some of the biases in the Sachs-Warner data by comprehensively revising their ratings, a close examination of their revisions shows a number of preoccupying inconsistencies».

3. (X+M/GDP), AN EXHAUSTIVE INDEX FOR MEASURING TRADE OPENNESS

The conceptual shortcomings mentioned above conduced some authors to express a « considerable scepticism as to the appropriate interpretation of their results »[Rodriguez \(2006\)](#).

We will demonstrate in this section that the X+M/GDP openness index is less exposed to such inconsistencies. Using this index in our model will provide more relevant results.

The common shortcomings of openness indexes provided by [Sachs and Warner \(1995\)](#), [Dollar and Kraay \(2002\)](#) and [Wacziarg and Welch \(2003\)](#) is that respective authors do not evaluate uniformly openness degrees of countries.

This problem is often due to unavailability of data’s.

[Sachs and Warner \(1995\)](#) used the World Bank’s data’s in order to record 29 African countries, but they have not applied the same criteria’s for countries that have not been subject of the "Adjustment in Africa’s program". [Wacziarg and Welch \(2003\)](#) have also faced similar problems: « Non tariff barrier data comparable to those used by Sachs-Warner are hard to obtain. Sachs-Warner used average non tariff barrier data for 1985–88 from the Barro-Lee data set, itself based on data from the United Nations Conference on Trade and Development (UNCTAD). Their

data cover only 29 countries for the period 1995–98. Where comparable data on non tariff barriers were missing, the countries were classified based only on the other four Sachs-Warner criteria ».

The problem of non uniformity of openness country's degrees can also be explained by the reliance of respective authors on given openness criteria's in expense of others. For example, [Sachs and Warner \(1995\)](#) and [Wacziarg and Welch \(2003\)](#) have relied primarily on "Black market premium" and "state monopoly on major exports" criteria and they accorded less importance to the other constituents of their aggregate index. The (X+M/GDP) index is not exposed to such inconsistencies. It is not subject to evaluations bias related to the unavailability of statistical data's and identifies uniformly openness degrees since it does not favours a given criteria at the expense of another. All countries will be so catalogued on the basis of the same criteria, namely the sum of their exports and imports divided on their GDP. In other words, the unit of measure will be applied univocally to all countries of the sample. The third major technical shortcoming of previous indexes is that they evaluate countries openness degrees on the basis of 'efforts of reforms' and this evaluation method lead to several classification bias. (X+M/GDP) index, which evaluates openness degrees on the basis of 'level of openness' avoids this classification bias. When using (X+M/GDP) index, countries opened to international trade will not be falsely catalogued as so only because they have not recorded liberal policies reforms in a specified period. Arguments mentioned above allow as reporting that the use of trade share ratio in growth regression provide credible findings.

4. EVALUATING THE IMPACT OF TRADE OPENNESS ON GROWTH IN DEVELOPING COUNTRIES

4.1. Presentation of Variables

Our model takes the following basic form:

$$Growth_{it} = f(Lib_{it}, X_{it}) \quad (1)$$

Where ($Growth_{it}$) is the annual percentage growth rate of GDP³, (Lib_{it}) is the sum of imports plus exports as a percentage of GDP⁴ and X is a vector of other conditioning variables, that are:

The gross capital formation in percentage of GDP ($Invest$)⁵, the consumer price index (annual %) (Inf), the natural logarithm of the amount of reserves minus gold ($LnRES$)⁷ and the [Kaufmann et al. \(2012\)](#) governance indicators⁸ (Dem) and ($Polstab$).

³Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. Source: World Bank national accounts data, and OECD National Accounts data files.

⁴The sum of exports and imports of goods and services measured as a share of gross domestic product. Source: [World Bank](#)

⁵Gross capital formation consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress."

(*Dem*) and (*Polstability*) are two institutional variables who serve to evaluate respectively the degree of democratisation and political stability of a given country. These governance estimates « are normally distributed with a mean of zero and a standard deviation of one in each period. This implies that virtually, all scores lie between -2.5 and 2.5, with higher scores corresponding to better outcomes» (Kaufmann *et al.*, 2010).

So the economic relationship we are interested in identifying is:

$$(Growth)_{it} = \alpha + \beta_1(Trade)_{it} + \beta_2(Invest)_{it} + \beta_3(Inf)_{it} + \beta_4(LnRES)_{it} + \beta_5(Dem)_{it} + \beta_6(Polstab)_{it} + \varepsilon_{it} \quad (2)$$

The variables contained in our model are particularly influent on growth rate evolution of developing countries. (*Lib*) is a proxy of economic liberalisation, (*Dem*) is a proxy of political liberalisation, (*Invest*) and (*Inf*) are standard variables in empirical growth literature and (*Polstab*) evaluates the domestic political country's efforts in order to insure an efficient institutional framework.

4.2. Findings and Discussion

The estimation method that we followed is to apply OLS (Least Square Dummy Variables) to our model, in which we have introduced a dummy variable for each country. The objective is to estimate our fixed effects model after correcting the (t) of Student from heteroscedasticity using the White method. This method provides the same values for the parameters estimated by OLS, the difference lies in the estimated standard deviations. Correcting errors from heteroscedasticity provides robust estimators. The estimations results are as follow:

Table-1. Panel Least Squares Dummy Variables estimates for 82 developing countries. Dependent variable: *Growth*

Variable	Coefficient	t-stat
Constant	1.01	0.25
<i>Trade</i>	0.05	3.81***
<i>Invest</i>	0.13	2.87***
<i>Inf</i>	-0.013	-2.68***
<i>LnRES</i>	-0.16	-0.67
<i>Dem</i>	0.71	1.08
<i>Polstab</i>	0.002	0.00

*, **, *** indicate statistical significance at 10%, 5% and 1% level, respectively

R-squared = 0.35, F(6,1146) = 9.38, Prob> F = 0.0000

According to the 1993 SNA, net acquisitions of valuables are also considered capital formation. Source: International Monetary Fund, International Financial Statistics and data files.

⁶ It reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. Source: International Monetary Fund, International Financial Statistics and data files.

⁷ Total reserves minus gold comprise special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. Gold holdings are excluded. Data are in current U.S. dollars. Source: International Monetary Fund, International Financial Statistics and data files.

⁸Source: World Bank Data relating to 1997 are calculated using the average of the years 1996 and 1998's data's, those of 1999 from the average's data's relatives to the years 1998 and 2000 and those of 2001 from the average scores of 2000 and those of 2001.

The Fisher-test indicates that our explanatory variables are jointly significant at 1% level and the R-Squared value indicates that they explain 35% of the amount of variance of growth rates.

The negative sign of the estimated coefficient relative to the variable (*Inf*) was expected. Inflation exerts an inhibitory effect on growth. The price increase reduces consumption and therefore production and employment. It also reduces investment because of the rise of the nominal wages and raw materials prices, both in local and foreign currency (Fenira, 2014).

The variable (*LnRES*) is not statistically significant. But we can explain its negative correlation with the dependent variable by the fact that reserves accumulation is associated to less investment-oriented resources.

The positive relationship between investment and growth was also expected. Investment is widely recognised as key driver of economic growth.

The results indicate that institutional variables are not statistically significant at the 10% conventional level but these two variables are positively associated with growth. This positive association can be explained as follow:

Improving democratic standards and political stability in developing countries improves the degree of property rights protection and social cohesion, which has a positive effect on macroeconomic performance. Against by, an inefficient institutional environment improves the rent seeking behaviour, promotes corruption and arbitrary decisions and reduces the state control on the informal sector, which reduces investment and economic growth (Fenira, 2014).

Considering the impact of democracy variable on growth, a 1% improvement in democracy index, as established by Kaufmann *et al.* (2012) ameliorates the growth rate of GDP by 0.71%. In other words, a developing country that in the specified period have improved its democracy index by one percentage point have experienced, on average, a GDP growth that is 0.71 percentage point more than a country that haven't insured the same institutional effort.

The result we are mostly interested in concerns the effect of trade openness index on growth. Estimation results shows that ($X+M/GDP$) ratio is statically significant at 1% level but it has a very low marginal effect in explaining growth variations.

A 1% improvement of ($X+M/GDP$) ratio in developing countries during the 1996-2012 period ameliorated growth rate of GDP only by 0.05%.

Twenty eight years after the establishment of the Uruguay round agreements, openness to international trade has weakly contributed in improving economic growth in developing countries.

Such a result can be explained by three distinct arguments:

The first argument refers to 'preferences erosion' (Alexandraki and Lankes, 2004), that is the loss in comparative advantage in foreign markets incurred by some exporters « as a result of preferential trade treatment—both unilateral and reciprocal. Preference erosion can occur when export partners eliminate preferences, expand the number of preference beneficiaries, or lower their most-favoured-nation tariff without lowering preferential tariffs proportionately ».

Many developing countries have for long time enjoyed trade preferences which generally take the form of very low tariffs on their exports to richer countries.

African, Caribbean and Pacific countries group have enjoyed preferential access to EU markets. Exports from less developed countries enjoy, with the exception of sugar, bananas and rice, a practically free of rights and contingents access, not only to EU markets, under the "Everything except arms" program but also to those of many other OECD countries through similar programs. African countries have preferential access to US markets under the Africa Growth and Opportunity Act. (International Monetary Fund, 2006).

As consequence of trade liberalization agreements that occurred during the last three decades, OECD countries reduced their tariffs on imports for all their trading partners and preferential access to OECD markets includes now 144 countries (International Monetary Fund, 2006) and this 'preferences erosion' caused the reduction of export earnings in developing countries.

Trying to confirm this statement, we have run a second estimation for the previous sample of developing countries. The model evaluates the impact of trade openness on external balance during the 1996-2012 period and takes the following form:

$$(\text{external balance})_{it}^{\circ} = \alpha + \beta_1(\text{Trade})_{it} + \varepsilon_{it} \quad (3)$$

Using the Least Square Dummy Variables as estimation method, we find a negative and significant association between the two variables. This suggests that liberal orientation in trade policies has caused the deterioration of external balance.

The estimations results report that a 1% improvement in trade ratio reduces external balance (in percentage of GDP) by 0.34 percentage point. Such a result confirms the 'preferences erosion' thesis.

The weak contribution of trade openness on growth in developing countries can also be explained by the lost revenue in agricultural exports earning. This loss of income is due to the support accorded by OECD countries to their agricultural producers. This argument has been argued by Tokarick (2003), according to which, « many countries; mainly the organization for Economic Cooperation and Development (OECD) countries with their high per capita income; provide support to their agricultural producers through a complex array of policy measures, such as tariffs that discriminate against agricultural imports, subsidies that encourage greater production and export, and input subsidies that effectively lower the cost of production. These support policies are often cited as important obstacle to more rapid development of low-income countries, as well as a major reason farmers remain mired in poverty in developing countries. Both the International Monetary Fund and the World Bank called on OECD countries to eliminate the support they provide to their agricultural sectors in order to reduce poverty and spur economic development. At the World Summit on Sustainable Development conference in Johannesburg in 2002, world leaders

⁹Where *(external balance)* denotes the exports of goods and services minus imports of goods and services in percentage of GDP. Source: International Monetary Fund, International Financial Statistics and data files.

also called for a reduction (and eventual removal) of agricultural support in rich countries, especially on products of export interest to developing countries. Indeed, a broad-based, international consensus has emerged that agricultural support policies in OECD countries are detrimental to the interests of developing countries ».

The third argument refers to the reduction of public receipts caused by the reduction of trade taxes revenues.

Trade taxes revenues in developing countries have become less important over the last twenty years because of the tariffs reductions, but these taxes remain a crucial source of financing in these governments, were they represent generally the fifth, and often more, of total tax revenues (International Monetary Fund, 2006).

Studies carried out by the IMF as regards to the effects of trade liberalization on revenue of 125 countries from 1975 to 2000 have shed light on the nature and the extent of the statement mentioned above. Over the past two decades, trade liberalizations agreements that occurred in low-income countries produced a loss of tax revenue that corresponds to 2.5% of GDP, namely one sixth of their total tax revenues. For high or middle income countries the losses were less pronounced but even so significant.

The losses in taxes revenues and so in public income affect negatively the amount of public investment and so economic growth.

5. EXPLAINING THE TRADE OPENNESS POLICIES ORIENTATION IN DEVELOPING COUNTRIES

In this section, we tried to explain the causes that led developing countries to support liberal policies although these policies haven't contributed so much in improving economic performances.

Knowing the liberal orientations of international economic organisation's guidelines and knowing the great influence of these organisations on developing country's policies establishment, we involved in a third equation the role of these economic agencies by regressing the amount of official development assistance and official aid on (X+M/GDP) ratio.

The equation takes the following form:

$$(Trade)_{it} = \alpha + \beta_1(LnOfficial\ assistance)_{it} + \varepsilon_{it} \quad (4)$$

Where $(LnOfficial\ assistance)_{it}^{10}$ is the natural logarithm of net official development assistance distributed by official agencies to the 82 developing countries of our sample and for the 1996-2012 period.

¹⁰Net official development assistance (ODA) consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent). Net official aid refers to aid flows (net of repayments) from official donors to countries and territories in part II of the DAC list of recipients: more advanced countries of Central and Eastern Europe, the countries of the former Soviet Union, and certain advanced developing countries and territories. Official aid is provided © 2015 AESS Publications. All Rights Reserved.

Estimation results show the presence of a strong positive correlation between the two variables at 1% level. Moreover, R-Squared value indicates that our explanatory variable explains 86% of the amount of variance of (X+M/GDP). A 1% improvement in natural logarithm of official development and aid assistance ameliorates (X+M/GDP) by (4.41) percentage point.

Such a result confirms our precedent statement: More donations from international agencies during the 1996-2012 period was associated to greater openness to international trade in developing countries.

Openness to international trade in developing countries was largely motivated by the desire to obtain loans and aids from international organisations, which themselves support any liberal orientation.

6. CONCLUSION

We demonstrated in this paper that openness to international trade during the 1996-2012 period have weekly contributed in improving growth in developing countries. Assuming that trade openness index conceptualisation matters in growth regressions, we demonstrated that trade share ratio, used as variable of interest in our model, is less exposed to conceptual shortcomings faced by three influent trade openness indexes, namely the [Sachs and Warner \(1995\)](#) index, [Dollar and Kraay \(2002\)](#) index and [Wacziarg and Welch \(2003\)](#) index. Such an analysis provides academic support to our results.

We explained the weak contribution of trade openness policies on economic growth by the deterioration of external balance caused by the 'preferences erosion' phenomenon, the OECD countries support to their agricultural producers and the losses in taxes revenue.

As regards to the causes that motivated developing countries to liberalise their trade systems, we argued that trade liberalization policies were largely motivated by the desire to obtain loans and aids from international organisations. Economic crisis faced by these countries during the 1970's and 1980's constrained them to resort to international organisations, like World Bank, International Monetary Found or World Trade Organisation which support liberal orientations. These countries had to conform with international agencies recommendations in order to obtain loans and aids and liberalization of trade systems, among other recommendations relating to political and institutional factors, constitutes one of the major conditions for obtaining loans.

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under terms and conditions similar to those for ODA. Part II of the DAC List was abolished in 2005. The collection of data on official aid and other resource flows to Part II countries ended with 2004 data. Data are in current U.S. dollars.

Source: [Development Assistance Committee of the Organisation for Economic Co-operation and Development](#)

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APPENDIX

The 82 countries of the samples are:

Albania, Argentina, Armenia, Azerbaijan, Burundi, Benin, Burkina Faso, Bahamas, Belize, Brazil, Barbados, Bhutan, Central African Republic, China, Cameroon, Colombia, Dominica, Dominican Republic, Algeria, Egypt, Arab Rep., Ethiopia, Fiji, Gabon, Ghana, Guinea-Bissau, Equatorial Guinea, Grenada, Guatemala, Guyana, India, Jamaica, Kazakhstan, Kenya, Kuwait, Libya, St. Lucia, Sri Lanka, Latvia, Morocco, Moldova, Madagascar, Mexico, Macedonia, FYR, Mali, Mongolia, Mozambique, Mauritania, Mauritius, Malawi, Malaysia, Niger, Nigeria, Nepal, Panama, Peru, Philippines, Paraguay, Qatar, Russian Federation, Rwanda, Saudi Arabia, Sudan, Senegal, Serbia, Seychelles, Syrian Arab Republic, Chad, Togo, Thailand, Tonga, Trinidad and Tobago, Tunisia, Tanzania, Uganda, Ukraine, St. Vincent and the Grenadines, Vietnam, Vanuatu, Samoa, Yemen, Rep., Congo, Dem. Rep. and Zambia.

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