

Measuring Transaction Costs of International Trade for 9 West African Countries

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Economics

Eastern Mediterranean University
February 2019
Gazimağusa, North Cyprus

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ABSTRACT

In this study, we determined the effect of total compliance costs on the current value of imports for 9 West African countries. As a result, we managed to measure the estimated change in value of import after administrative reform and more importantly the total efficiency gained due to administrative reform using partial equilibrium framework and price elasticity of demand equation.

It showed that countries that have higher total compliance cost, take longer to import and have a more price elastic demand to import such as Cameroon and Nigeria, would benefit more from administrative reform.

Next, we calculated the total efficiency gained on their current value of GDP. We understood that total efficiency gained on the value of GDP is about 1% of most of these countries. And the total efficiency gained on their value of import is between 2%-5%. Lastly we measure the total value of efficiency gained as a percentage of Development AID received.

Keywords: compliance cost, administrative reform, price elasticity of demand, GDP

ÖZ

Bu çalışmada, toplam uyum maliyeti etkisi ithalat 8 Batı Afrika ülkeleri için geçerli değerini belirler. Sonuç olarak, idari reform ve daha da önemlisi toplam verimliliği nedeniyle idari reform kısmi denge çerçeve ve fiyat talep esnekliğini kullanarak kazandı sonra ithalat değeri tahmini değişikliğini ölçmek başardık. Daha yüksek toplam uyumlu ülkelerin mal ve almak için uzun zaman alır ve Kamerun ve Nijerya, yarar öyle aynı derecede daha idari reform da daha fazla fiyat elastik olduğunu gösterdi. Daha sonra geçerli GSYİH değerlerine kazandı toplam verimliliği hesaplanır. Biz toplam verimliliği GSYİH değerini elde bu ülkelerin çoğunda yaklaşık % 1 anlaşılmaktadır. Ve onların değerini alma kazandı toplam verimliliği % % 2-5 arasında. Son olarak verimlilik geliştirme alınan yardım yüzdesi olarak kazanılan toplam değerini ölçmek.

Anahtar Kelimeler: Uygunluk maliyeti, Idari reform, Talebin fiyat elastic, GDP

DEDICATION

I wish to respectfully dedicate this thesis to my supportive and helpful parents and my amazing brother

ACKNOWLEDGMENT

I give glory to God Almighty, the source of all knowledge.

I am indebted to Prof. Dr. Prof Jenkins, my supervisor for his perfect guidance, constructive comments and academic support during the course of this study.

I also would like to express my special gratitude to Dr. Pejmanand Bahramian and Dr. Seyi Saint Akadiri for their sincere support and relentless assistance.

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LIST OF ABBREVIATION

WB	World Bank
WTO	World Trade Organization

Chapter 1

INTRODUCTION

International trade in goods and services has experienced a growth rate even faster than that of global income through most of the post-war period. Simultaneously the share of domestic and foreign production in world trade has expanded significantly (Behar & Venables, 2011).

International trade has proven to encourage employment, create competitive advantage, increase capacity utilization, enhance technological progress, establishes backward and forward economic linkages and eventually excels the welfare and standard of living of a nation as a whole.

International trade can be greatly influenced by some elements such as distance, borders and diverse political and cultural issues (Behar, 2010). Having a country to become integrated is a crucial factor indicating the prosperity of the fastest growing economies in the world (Growth Commission, 2008). However, many countries have avoided and failed to accomplish this integration to the desired degree.

Fiscal barriers to international trade such as tariff and import quotas have been decreased by many governments over time. Having said that it also has to be taken into account that although the governments in the recent years may have decreased the visible trade barriers such as taxes and tariffs at the same time governments have increased their focus on non-tariff barriers such as rules of origins to determine the

applicable tariff rate (Krugman and Obstfeld, 2000; Biederman, 1999). These rules have tended to increase the administrative and compliance cost of international trade. An issue that can greatly affect international trade is the presence of trade transaction costs. Trade transaction costs are basically defined as the total cost of international trade excluding the production cost. These costs are categorized into four main categories which are document preparation cost, custom and clearance inspection costs, port and terminal handling costs and domestic and international transportation costs.

Transaction costs are normally greater for internationally traded goods than for locally produced goods. The reason behind this is the fact that there is high international transportation cost involved for the delivery of goods produced abroad.

Transportation costs are as mentioned above important factor as they can shape the pattern of international trade. It has been found that responsiveness of trade to transportation cost is very high and also the delay costs are measured to be just as much as freight costs consequently impacting both trade volume and mode of transportation (Berhan, 2010).

Unreasonably high levels of custom-related transaction costs will lead to a level sub-optimal in the volume of international trade by raising the final costs of imports incurred by the consumer in that particular country as well as reducing the prices that exporters receive for the goods they sell. These high transaction costs are made up and developed by cumbersome custom regulations requiring excessive custom documentation and obsolete port management. As a result of high custom related transaction costs not only firms will suffer, but also the whole economic growth will

be in jeopardy. (E.g. Terpstra and Sarathy, 2000 Levy et al. 1999; Leonidas and Katsikeas, 1996).

The importance of decreasing transaction cost is because it helps to enhance the volume of international trade through the globalization of business activities. It has been found that such transaction costs can be significantly lowered by shortened and friendlier procedures and utilization of modern IT (WTO 2001).

The reduction of non-tariff barriers such as improvements in port and custom efficiency can have a very significant impact on the volume of international trade for about 10 to 20 percent and raise the level of income gain. (Edwards 2007).

Custom-related transaction costs have shown to be a burden for international trade that can affect the real income in a particular country. For example, before the removal of cross-border customs administrative in the EU there used to be huge transaction costs related to customs procedures and clearance. One study done by Cecchini et al. (1988) measured the expenditure incurred by 500 companies in the EU and gathered that custom related transaction costs were about 8 million Euro or 2 percent of the value of trade across borders hence Putting an end to this costly custom procedure freed the movement of goods.

In this thesis, I will be applying the principles of welfare economics and international trade theory for 9 selected West African countries to measure the potential gains that could be realized by undertaking administrative reforms leading to lower compliances costs related to international trade transactions that take place at the borders of

countries. In addition, I will measure the total efficiency gained as a percentage of their GDP, current value of their import and the net official development aid received.

This study will only focus on the efficiency gain related to the imports of the countries being studied.

Chapter 2

LITERATURE REVIEW

A study done by Verwaal and Donkers (2001) they determined the relationship between the custom related transaction cost, firm size and the intensity of international trade. It can be gathered from the findings that the barrier of custom related transaction cost is purely dependent on the transaction economics of scale, the thorough and proper use of information and communication technology and simplified custom related process. It is also found that a high level of custom related transaction costs can have a restrictive effect on international trade. This, in turn, will have an impact on the growth of firms and organizations in a country. It has been found the development of the export market can have a significantly positive effect on the firm's growth and the profitability (Roper 1999). The variation in custom related transaction costs is not proportional to the size of the firm. Small firms have a proportionally greater burden. This fact illustrates that the custom related transaction cost does not necessarily have to be high to have an impact on the fairness of trade in an economy. The results of this study shows that firms can decrease the expenditure resulting from custom transaction costs by use of advanced information and communication technology, simplified customs procedure and efficient clearance process. Such policies become more useful as the use of online marketing becomes more mainstream and bigger which makes the use of tangible inventory obsolete and creates a wider variety of goods and products in the market. These creations and innovations will drop the average monetary size of the transitory cost, these could potentially result in raise in the barrier of custom related

transaction costs. Transaction costs do not drop proportionally to the average size of the transaction.

A study was done by Prober (2006) using the gravity model examined the relationship between transaction cost and international trade for Asian countries. It was concluded that to enhance regional trade in Asia two major steps needs be taken 1- proper supervision and control over transaction costs 2-strengthen the chain of required trading infrastructure facilities, beginning from the manufacturing point to the shipment and loading point and related trade facilities measures. For North Cyprus, one study done by Berhan and Jenkins (2012) identifies that the one percent loss of GDP of this nation is due to not having access to efficient port and customs administration. These expenditures are between 1.42%-2.96% times bigger than the additional transportation costs levied by the international barrier on its business with all the EU and non-EU countries. The results reveals that more than 65 percent of port economic efficiency losses are coming from excessive trade transaction costs. This issue comes to special attention as the average rate of trade taxation is something between 15.34%-15.5% and the average rate of transaction cost is something between 1.5%-2.20 of the cost of imports.

This study concludes that efficiency losses were as a result of misallocation of resources which are used to deal with the ports and custom system in north Cyprus. This can have a huge impact on consumption and production decisions in the economy. (Berhan & Jenkins 2012).

In the case of India exports officials have realized not only that they have to concentrate on raising the volume of export, but also they must also pay special

attention to making India competitive in the world economy. An important element surpassing export competitiveness of a country are the high transaction costs which are related to law and regulatory requirements, procedure and compliance, transportation and communication costs, etc. Proper Trade facilitation can help countries gain competitiveness in international trade. India has recently carried out different tasks to create an efficient and effective trade facilitation mechanism, such as reducing the level of transaction cost and enforcing much simpler legislation, administration and regulation procedure. Based on the data found on the World Bank Ease of Doing Business India 2018 Business Report on Trade Across Border clearly shows that its performance is not optimum as it shows it takes about 19 days and cost 945 per container to export from Indian border which is relatively high compared with other countries such as Denmark, Israel and Malaysia. For India to tackle these issues, it needs to familiarize itself with a country such as Denmark to understand why it lacks so much in terms of efficiency and performance. There are indicative factors that can help the Indian exports to become more competitive such as maximum usage of e-trade, reduction or altogether removing the import duty tax and excise tax for domestic production, eliminating the examination at the time of export and lastly making use of outsourced call center run by the customs all day.

Chapter 3

METHODOLOGY

In this study, it is aimed to measure the total efficiency gain as a result of port administrative reform through reduction of transaction compliance costs on the value of import for 9 selected West African countries using a partial equilibrium framework.

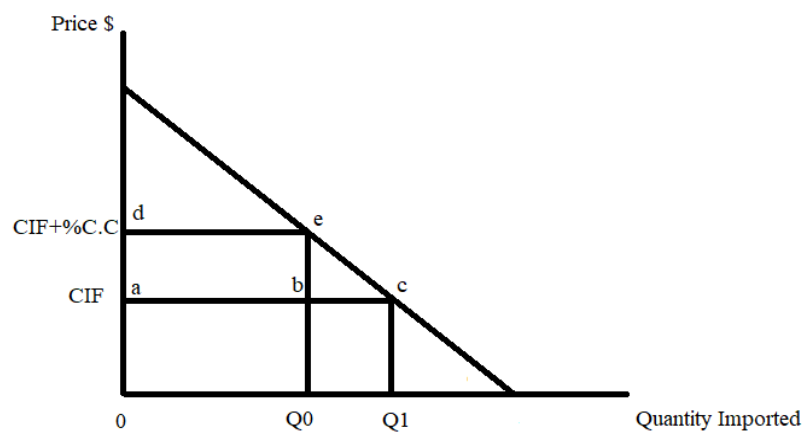


Figure 1: Efficiency gain due to reduction in Compliance Cost

As shown in figure 1, the current value of imports before reform is noted as Q_0 (*expressed in \$*) and our price of import is given as (CIF) which is taken as 1\$ is noted as (a). And Q_1 is the estimated increase in the initial value of import after reform. The efficiency gained from economic welfare is shown as the trapezium area of (a d e c).

In order to calculate the efficiency gained from reform, certain data such as total compliance cost and total time to import has to be taken from the World Bank Ease of Doing Business 2017 report. In addition, the total value of import is taken from World

Bank report 2017. And demand elasticity of import for each country is taken from the estimates according to (Tokarick, 2010).

Given the data available, the level of efficiency gained can be determined in three steps using our figure 1. First, it is required to measure the C.C% which is the potential reduction in compliance cost as result of reform and it is calculate using equation 1.

$$\%C.C = \frac{E-M}{20000}$$

Where E is total compliance cost of import by a particular country and M is the total compliance cost of import by our base country (Mauritius), and \$20000 is the average value of imports per container.

Second, the estimated increase in value of import Q_1 as a result of reform has to be measured. In doing so we have to make use demand elasticity equation (2) for importers.

$$\Delta Q = E_d * Q_0 * \%C.C$$

Where E_d is the demand elasticity for importers (which shows the responsiveness of change in price to the value of import) and Q_0 is the initial level of imported good and

C.C% is the potential incremental reduction in compliance cost. Lastly, the total efficiency gained from reform (a b c d e) can be measured by calculating the area of trapezium using equation 3.

$$\text{Efficiency} = (Q_0 * \%C.C) * (\Delta Q * \%C.C) / 2$$

Chapter 4

EMPRICAL FINDINGS

4.1 Senegal

This country with having over 15 million residents is considered to be a fairly densely populated country in West Africa. It is located next to the Atlantic Ocean, and its neighbors are Gambia Guinea and Mali. Its main trading partners are France, China, Nigeria, Netherlands and India. It is reported that the total value of GDP in 2017 was about 16.375 billion dollars and its total import value has increased in recent years from 2015 and reached up to 7.001 billion dollars in 2017.

Given the data available in World Bank Ease of Doing Business report for Senegal in 2017, the number of documents required to import is 8 and the total time needed for cargo to be prepared to leave the port is 125 hours' and total cost to import excluding the inland transportation cost is 1289.8\$ which are shown in Table 1 and table 2.

Now, to determine the efficiency gained created by administrative reform for Senegal, we first need to measure the total potential reduction in compliance costs due to a reform of the administration of international trade as a percentage of CIF as compared to our base country Mauritius. In doing so, we shall take the value of total cost to import for Senegal and deduct the value of total cost for Mauritius and divide that by the number of containers (20000) which comes to 3.6%. Shown in Table 2, column 1. Second, it is required to measure the estimated increase in total value of import after

reform. In doing so, we shall first determine the demand elasticity for imports by Senegal which is -1.09 shown in table 3 column 2 (Tokarick, 2010). Then we need to use equation 2 in order to find the incremental change in the value of import which is the highlighted area (e f b c), and as it is shown in table 3, column 4 it comes to 278.53M\$.

Lastly to calculate the total efficiency gain from reform we have to measure the highlighted area (d g h f). for ease of calculation we can divide this area into a rectangle which is the efficiency gains due to the administration reform with current imports (g h e d), and a triangle (h e f) which is the efficiency loss due to reduction in import and they come to 255.53M\$ and 5.540M\$ respectively these values are presented in table 4 column 3 and 4. Now we can find the total efficiency gained from reform by adding these two numbers, which is 261.25M\$ and is shown in table 4 column 5.

Lastly, we can measure the total efficiency gained for Senegal as percentage of its GDP, total value of import in and net official aid received in 2017 which are 1.5%, 3.74% and 35.4% and shown in table 5 column 1, 2 and 3 respectively.

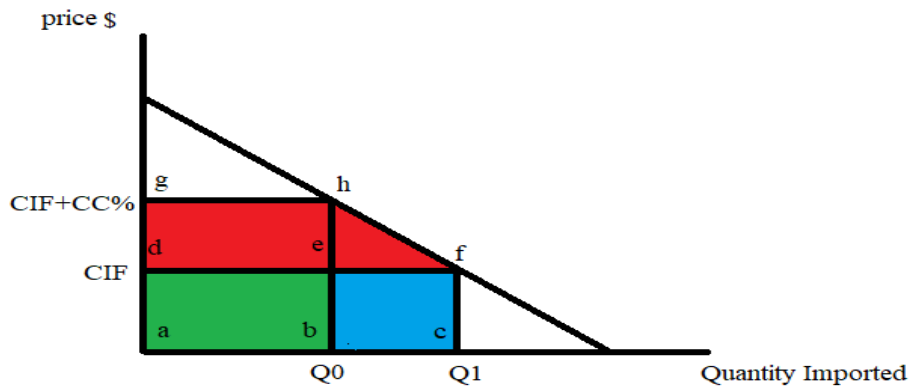


Figure 2: Total efficiency gain for Senegal

4.2 Ghana

It is located along the Gulf of Guinea and the Atlantic Ocean in West Africa. It is neighbor to Burkina Faso in the south, Togo in east and Ivory Coast in the west. Its main trading partners are China, UK, USA, UAE, and India. According to the latest report from the World Bank in 2018, the total population of Ghana has reached 29million and its GDP in past recent years has increased to 47.3 billion dollars. It has also been reported by World bank that Ghana has increased its value of imported goods which are mostly refined petroleum and cars and settled at 24,004 billion dollars 2017 and is expected to continue its upward trend in both the value of GDP and value of imported goods.

According to information available in World Bank Ease of Doing business report for Ghana in 2017, the number of documents required to import is 10 and the total time in hours to import is 125 and the total cost to import is 10801\$ per container and the demand elasticity for importers is -109 (Tokarick, 2010) which are all shown in Table 1 and table 2.

Now to measure the total efficiency loss caused by compliance cost in Ghana, first we need to use equation one measure the reduction in compliance cost as a percentage of CIF value of import after reform, which as shown in Table 3 column 1 is 2.24%. Then all we need to do now is to calculate the change in the level of import after reform which can be calculated using equation 2 which comes to 627.94M\$ as represented in

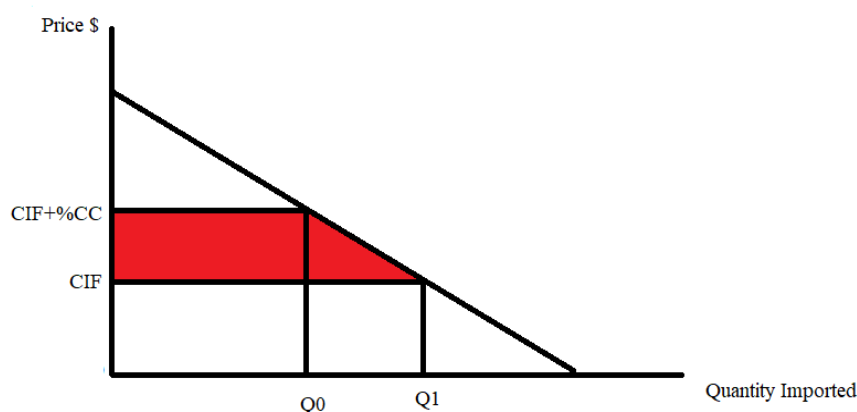


Figure 3: Total efficiency gain for Ghana

Table 3 column 4. Lastly, the total amount of efficiency gain now can be calculated by utilizing equation 3 as shown in Table 4 column 5 is 610.74M\$.

4.3 Cote d'Ivoire

It is also along the Gulf of Guinea and the Atlantic Ocean. It's a neighbor to Liberia and Guinea in the west Burkina Faso and Mali in the north and Ghana in the east. It has three main ports to import and export to and from the country which are San Pedro, Abidjan and Esplor terminal. According to a recent report from World Bank, Cote d'Ivoire is home to 24.2 million residents and its GDP in 2017 was reported by World Bank to be over 40 billion dollars.

Given the data available in World Bank Ease of Doing Business for Cote d'Ivoire in 2017, the total number of documents to import is 12 and the total time to import in hours is 155 and the total cost to import per container is 792.8\$ and demand elasticity for importers is -1.12 (Tokarick,2010). These data are all shown in table 1 and 2.

Now we have obtained all the necessary figures we can find the efficiency gained generated by administrative reform for Cote d'Ivoire. From equation one we can find the incremental reduction in compliance cost as a percentage of CIF, and as it is written in table3, it is 1.17%. From our equation 2 we can gather the estimated change in the value of import after reform, and that is as shown in table 3 column 4 it comes to 102.69M\$.

We can now use our equation 3 and determine the total efficiency gained after reform, which is 92.564M\$ represented in table 4 column 5. We can now measure the total efficiency gained for Cote d'Ivoire as percentage of its GDP, total value of import in and net official aid received in 2017 which are 1.08% ,1.08% and 12.9% and shown in table 5 column 1, 2 and 3 respectively.

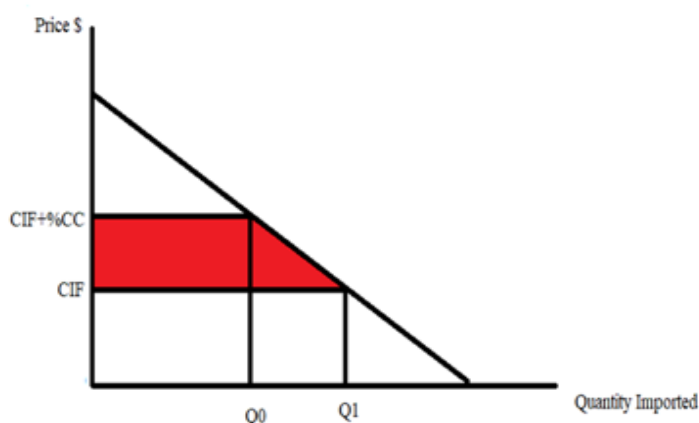


Figure 4: Total efficiency gain for Cote d'Ivoire

4.4 Sierra Leone

It is deemed to be one of the smallest and least crowded countries in West Africa, Having only a little more than 7.5 million residents. Sierra Leone is surrounded by Guinea in the north, Liberia in the south and the Atlantic Ocean in the southwest. It has two main ports which are Freetown and Pepel. Sierra Leone imports its primary commodities from China, India, USA and UK which are rice, machinery, fuel and equipment and the total level of GDP was 3.78 million dollars, and the total value of import was 1.94 million dollars.

Given the data available in World Bank Ease of Doing Business in 2017 for Sierra Leone, the total time to import in hours is 319 and total cost to import per container is 1317.2\$ and number of documents to import is 8, and the demand elasticity for importers is -1.15 (Tokarick2010). These figures are all shown in Table 1 and 2.

Given the information above we can simply determine the level of efficiency loss over at its ports. Firstly, using equation one we can calculate the reduction in compliance cost as a percentage of CIF which as shown in table 2 column 1 is 3.79%. Secondly, we have to find the change in quantity imported using equation 2 and that comes to 75.8M\$ and it is shown in Table 3 column 4. Lastly, we have the find the area for total efficiency gained that can be measured by making use of equation 3 and that comes to 68.38M\$ which is shown in table 4 column 5.

We can now measure the total efficiency gained for Sierra Leone as percentage of its GDP, total value of import in and net official aid received in 2017 which are 1.8%

,3.5% and 9.9% and shown in table 5 column 1, 2 and 3 respectively

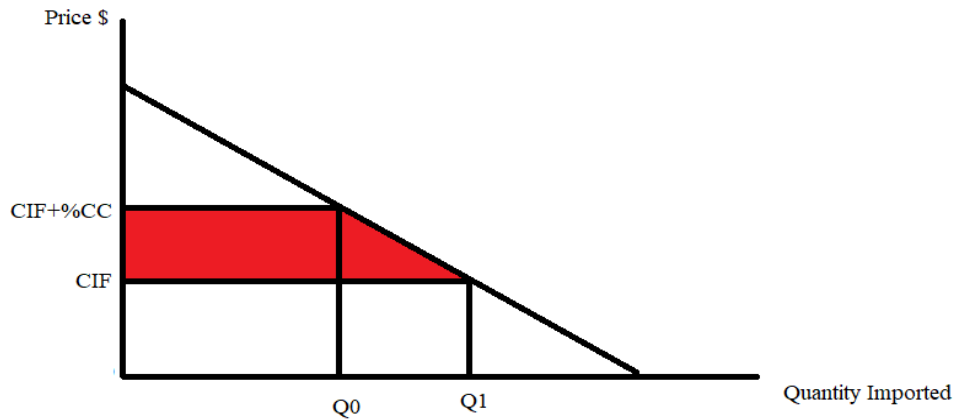


Figure 5: Total efficiency gain for Sierra Leone

4.5 Togo

This country again is another country in West Africa, bordered by Ghana to the west, Benin to the east and Burkina Faso to the north. The country has a total population of 7.61 million and GDP of 4.813 million dollars (World Bank 2017). It has two main ports along the Gulf of Guinea which are Lomé and Kpeme. Togo has four main import trading partners which are Japan, Nigeria, France, and China. Its main import commodities are oil, natural gas, food products and machinery. It was reported in 2017 by World Bank that the total value of imports for Togo is 2.864 billion dollars.

From data collected by the World Bank Ease of Doing Business report for Togo in 2017, the number of documents required to import is 10 and the total time for cargo to be prepared to leave the port in hours is 348 and the total compliance cost per container to import is 983\$ which are represented in table 1 and 2. And demand elasticity for importers is -1.09 (Tokarick 2010) which is shown in Table 3 column 2. Now in order to calculate the level of efficiency gained made by administrative reform over at ports

of Togo, first we should find the potential reduction in compliance cost due to administration reform of trade as a percentage of CIF using equation 1 and that comes to 2.12% shown in Table 2 column 1. Now we need to determine the estimated level of change in value of imports using equation 2 and the 61.18M\$ represented in Table 3 column 4.

Given the gathered values above, we can easily determine the level of efficiency gained using equation 3 and as it is shown in Table 4 column 5 the total value of efficiency gained is 66.18M\$.

Lastly, we can now measure the total efficiency gained for Togo as percentage of its GDP, total value of import and net official aid received in 2017 which are 1.17%, 1.98% and 34.4% and shown in table 5 column 1, 2 and 3 respectively.

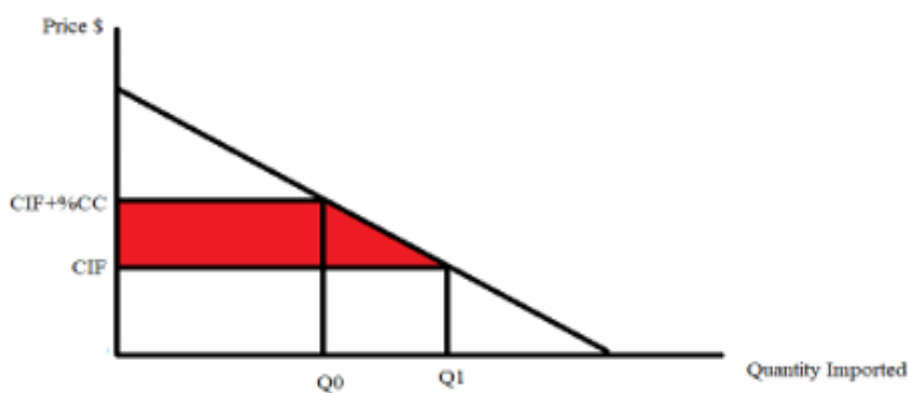


Figure 6: Total efficiency gain for Togo

4.6 Nigeria

It is the biggest and most crowded country in term of size and population in West Africa. The entire population is about 190.9 million (World Bank 2017). It is surrounded by Cameroon to the east, Benin the west and Niger to the north. Nigeria has many ports such as TICIP, Apapa, Pennington, Harcourt and Onne. Nigeria's main import trading partners are China, India, USA and Netherlands. Total value of GDP and import for Nigeria was more than 375.7B\$ and 46.5M\$ (World Bank 2017), which makes it be the most active economy in West Africa.

Now given the data available in World Bank in 2017 for Nigeria the number of documents required to import is 14 and the total time in hours for preparation of cargo to leave the port is 457 and total cost to import is 1792.5\$ per container and the elasticity -1.32 (Tokarick, 2010). all this data are shown in Table 1 and table 2.

In order to measure the total value of efficiency gained occurred as a result of reduction in compliance costs we first Use equation 1 to find the total reduction in compliance cost as a percentage of CIF which is shown in table 2 column 1 and it is 6.17%. Then we must find the estimated change in level of import using equation 2 and that is 3.78B\$ and shown in Table 3 column 4. now we can easily determine the total level of efficiency loss using the data above and equation 3 and that is 2.623B\$ which is shown in Table 4 column 5. Lastly, we can now measure the total efficiency gained for Nigeria as percentage of its GDP, total value of import and net official aid received in 2017 which are 0.69% ,5.63% and 102% and shown in table 5 column 1, 2 and 3 respectively.

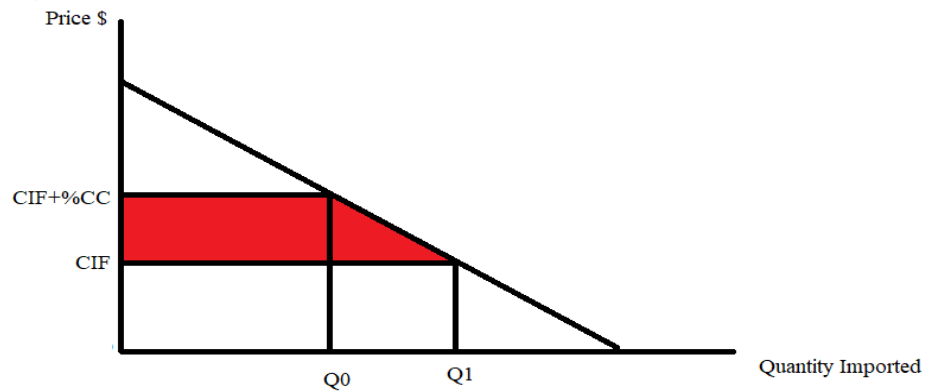


Figure 7: Total efficiency gain Nigeria

4.7 Cameroon

This country next to Nigeria is one of the more populated countries in West Africa with having more than 24M residents (World Bank, 2017). Cameroon is surrounded by Nigeria to the west and Central African Republic to the east and it is along the Gulf of Guinea. Cameroon has one main trading port which is called Douala. Cameroon has three main trading partners which are USA and UK and Italy. Cameroon main import commodities are capital equipment, fish and cement. The total value of import and GDP is 6.951B\$ and 34.799B\$ respectively (World Bank 2017).

According to data provided by World Bank Ease of Doing Business report in 2017 for Cameroon, the number of documents required to import is 8 and the total time to import in hours is 434 and the total cost to import per container is 2404.6\$ and the demand elasticity to import is -1.25(Tokarick,2010). These data are all shown in table 1 and 2.

Now in order to measure the efficiency gained due to the reduction in compliance cost imposed to the imported goods through administrative reform we shall first find the

total reduction in compliance cost as percentage of CIF after the reform using equation 1 which as shown in table 2 column 1 it is 9.23%. then we to determine the estimated incremental increase in value of import after reform by using equation 2 and that comes to 801.97M\$. shown in Table 3 column 4.

Given the calculated value, we can simply calculate the level of efficiency gain after administrative reform by using our equation 3 and as it is written in Table 4 column 5 it comes to 656.94M\$.

Lastly, we can now measure the total efficiency gained for Cameroon as percentage of its GDP, total value of import and net official aid received in 2017 which are 1.88%,9.4% and 68.8% and shown in table 5 column 1, 2 and 3 respectively.

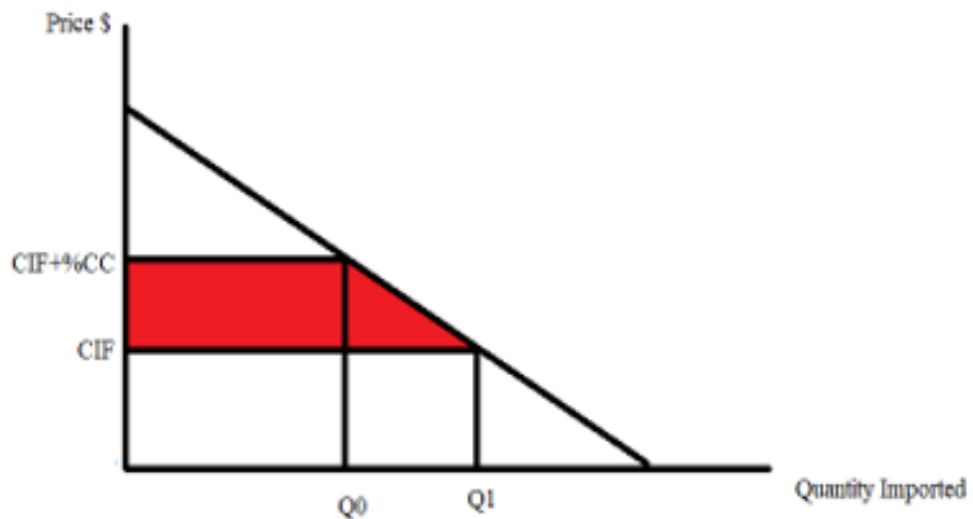


Figure 8: Total efficiency gain for Cameroon

4.8 Liberia

Liberia is another West African country which is bordering Sierra Leone and Guinea and Cote d'Ivoire. Liberia's population has reached over 4.5 in 2017 (World Bank, 2017). Liberia has four main trading partner which are Japan, China, South Korea and Hong Kong. Its main import commodities are fuel, machinery, chemicals and transportation. Liberia has 5 trading ports which are Greenville, Harper, Buchanan, Palmas and Cape.

According to information available in World Bank Ease of Doing business for Liberia in 2017, the number of documents required to import is 7 and the total time to import in hours is 409 and the total cost to import per container is 1523\$ and demand elasticity to import is -1.15 (Tokarick, 2010). These figures are all represented in table 1 and 2.

Now in order to determine the total efficiency gained as a result of administrative reform via the reduction in compliance cost we need to first, using equation 1 gather the total reduction costs in compliance cost as percentage of CIF after the reform which as shown in Table 2 column 1 is 4.12%. Then using equation 2 we can find the estimated increase in the total value of import which is 119.21M\$ and it is shown in Table 3 column 4.

Now total efficiency gain from administrative reform can be simply calculated by using equation 3 and by doing so we get 111.56M\$ and this also shown in Table 4 column 5.

Lastly, we can now measure the total efficiency gained for Liberia as percentage of itsGDP, total value of import and net official aid received in 2017 which are 5.16%,5.29% and 13.7% and shown in table 5 column 1, 2 and 3 respectively

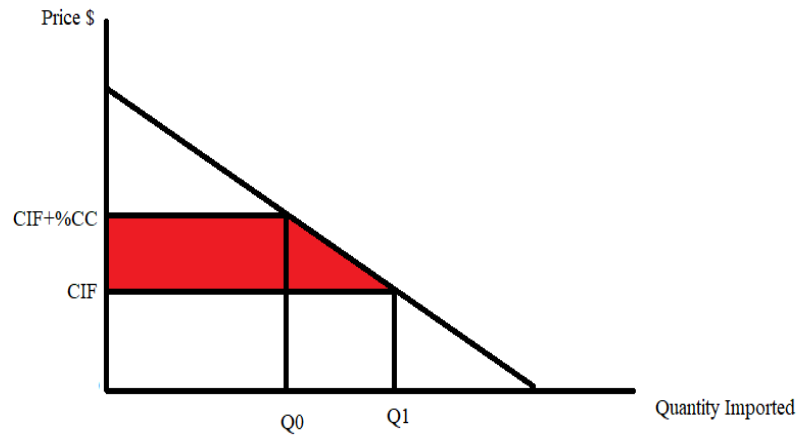


Figure 9: Total efficiency gain for Liberia

4.9 Guinea

Guinea is located in West Africa and it is surrounded in west by the Atlantic Ocean, in east by Mali, in north by Gambia and south Sierra Leone. Guinea has a total population of over 13 million residents. Its main import trading partners are China, France, Belgium. Guinea primary import commodities are refined petroleum, rice, textile and machinery. Its total GDP and total value of import are 10.496B\$ and 10.902B\$ as shown in table 1 and 4.

According to information available in World Bank Ease of Doing business for Guinea in 2017, the number of document required to import is 7 and the total time to import in hours is 247. The total cost to import per container is 1173.6\$ and demand elasticity to import is -1.1 (Tokarick, 2010). These figures are all presented in table 1 and 2.

Now in order to determine the total efficiency gained as a result of administrative reform via reduction in compliance cost we need to first, using equation 1 gather the total reduction costs in compliance cost as percentage of CIF after reform which as shown in Table 2 column 1 is 3.07%. Then using equation 2 we can find the estimated increase in the total value of import which is 368.19M\$ and it is shown in Table 3 column 4.

Now total efficiency gain from administrative reform can be simply calculated by using equation 3 and by doing so we get 341.46M\$ and this also shown in Table 4.

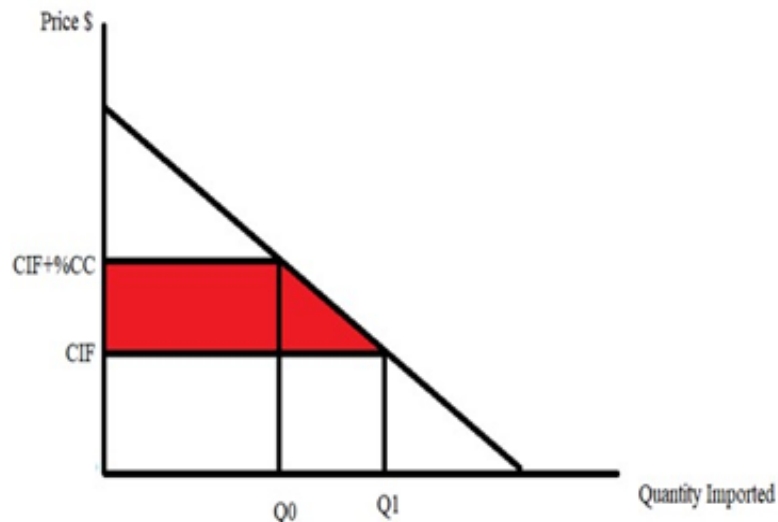


Figure 10: Total efficiency gain for Guinea

Table 1: Total time and total cost to import

No	ECONOMY	GDP in US dollars in 2017 (1)	No of documents required to import (2)	Total time to import in hours (3)	Documentary compliance cost per container in US dollars (4)	Borders compliance cost per container in US dollars (5)	Total direct compliance cost to import per container in US dollars (6)
1	Mauritius	13.338B\$	5	60	372	166	538
2	Senegal	16.375B\$	8	125	545	702	1247
3	Ghana	24.004B\$	10	155	553	474	1027
4	Côte d'Ivoire	7.837B\$	12	204	456	267	723
5	Sierra Leone	3.78B\$	8	319	821	387	1208
6	Togo	4.813B\$	10	348	612	252	864
7	Nigeria	375.771B\$	14	457	1077	564	1641
8	Cameroon	34.799B\$	8	434	1407	849	2256
9	Liberia	2.158B\$	7	409	1013	230	1243
10	Guinea	10.496B\$	7	247	909	180	1089

Table 2: Total costs and total reduction in C.C

No	ECONOMY	Financial costs of time lost goods per container (1)	Total direct compliance costs to import per container in US dollars (2)	Total costs to import per container in US dollars (3)	Total potential reduction in compliance costs per container (4)	Reduction in compliance costs as % of CIF by reform (5)
1	Mauritius	20.5	538	558.5	-	-
2	Senegal	42.8	1247	1289.8	731.3	3.65%
3	Ghana	53	1027	1080	448.5	2.24%
4	Côte d'Ivoire	69.8	723	792.8	234.3	1.17%
5	Sierra Leone	109.2	1208	1317.2	758.7	3.79%
6	Togo	119	864	983	424.5	2.12%
7	Nigeria	156.5	1636	1792.5	1234	6.17%
8	Cameroon	148.6	2256	2404.6	1846.1	9.23%
9	Liberia	140	1243	1523	984.5	4.92%
10	Guinea	84.6	1089	1173.6	615.1	3.07%

Table 3: Potential increase in value of import after reform

No	Economy	Reduction in compliance costs as % of CIF by reform (1)	Demand elasticity for imports (2)	Total value of import before reform in 2017 (3)	Estimated increase in value of import (4)
1	Mauritius	-	-	-	-
2	Senegal	3.65%	-1.09	7.001B\$	278.53M\$
3	Ghana	2.24%	-1.09	24.004B\$	627.94M\$
4	Côte d'Ivoire	1.17%	-1.12	7.837B\$	102.69M\$
5	Sierra Leone	3.79%	-1.15	1.938B\$	84.46M\$
6	Togo	2.12%	-1.09	2.864B\$	66.18M\$
7	Nigeria	6.17%	-1.32	46.533B\$	3.78B\$
8	Cameroon	9.23%	-1.25	6.951B\$	801.97M\$
9	Liberia	4.92%	-1.15	2.107B\$	119.21M\$
10	Guinea	3.07%	-1.1	10.902B\$	368.19M\$

Table 4: Total efficiency gained after reform

No	Economy	Total value of import before reform (1)	Total value of import after reform (2)	Efficiency gained on value of import before reform (3)	Efficiency gained after reform (4)	Total efficiency gained due to reform (5)
1	Mauritius	-	-	-	-	-
2	Senegal	7.001B\$	7.279B\$	255.53M\$	5.540M\$	261.25M\$
3	Ghana	24.004B\$	24.631B\$	537.68M\$	7.535M\$	610.74M\$
4	Côte d'Ivoire	7.837B\$	7.939B\$	91.692M\$	872865\$	85.14M\$
5	Sierra Leone	1.938B\$	2.930B\$	73.450M\$	1.600M\$	68.38M\$
6	Togo	2.864B\$	2.92B\$	60.71M\$	701508\$	56.72M\$
7	Nigeria	46.533B\$	50.313B\$	2.871B\$	116.61M\$	2.623B\$
8	Cameroon	6.951B\$	7.752B\$	641.57M\$	37.010M\$	656.94M\$
9	Liberia	2.107B\$	2.226B\$	109.51M\$	2.056M\$	111.56M\$
10	Guinea	10.902B\$	11.270B\$	345.98M\$	5.544M\$	341.46M\$
11	Total	110.137B\$	117.26B\$	4.987B\$	177.46M\$	5.650B\$

Table 5: Total efficiency gain as a % of GDP and AIDs received

No	Economy	Total value of efficiency gained as a percentage of GDP (1)	Total value of efficiency gained as a percentage of total import after reform (2)	Total value of potential efficiency gained as a percentage of AIDs received by World Bank 2017 (3)
1	Mauritius	-	-	-
2	Senegal	1.5%	3.74%	35.4%
3	Ghana	3.7%	2.50%	46.4%
4	Côte d'Ivoire	1.08%	1.08%	12.9%
5	Sierra Leone	1.8%	3.5%	9.9%
6	Togo	1.17%	1.98%	34.4%
7	Nigeria	%0.69	5.63%	
8	Cameroon	1.88%	9.4%	68.8%
9	Liberia	5.16%	5.29%	13.7%
10	Guinea	3.25%	3.13%	60.8%

Chapter 5

CONCLUSION

International trade has proved to be an important factor for economic growth of any country. It can simply assist countries with their unemployment, competitiveness international markets, improve capacity utilization and enhance technological level. However, the high level of transaction costs associated with international trade has been a huge burden for countries. Those that have been able to manage and control their transaction costs, have been able to seize the benefits of international trade.

In this study we concluded that, there are two main elements affecting the total efficiency gain after administrative reform. These two factors as mentioned before are the responsiveness of price change to the quantity of import and the level of total compliance cost in relation to the value of import.

In addition, it was deduced that these West African countries can improve their value of GDP by over 1% annually and also they can increase their current value of import by 3% to 9% depending on the economic size of these countries. We also collected the data for the amount received for development AIDs for these countries and as it showed the majority of the loss in revenue received by these countries through high transaction costs can be as high as even %40 development AIDs received from World Bank in 2017.

Lastly, we understood that as a result of excessive compliance cost and misallocation of resources consumers and importers are the ones that have to bear the cost of these inefficiency. Improvement on trade administrative reform can greatly benefit the consumers and importers utility.

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