

Determinants of bilateral trade to North African countries: Empirical Study for the period 1990-2014.

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Abstract:

The need for greater bilateral trade operations between countries, economic integration gate. A strategic goal and a necessity imposed by economic developments in a climate of economic globalization and therefore focused on many of the countries and regions to liberalize trade and to promote trade, has been attributed visible recent economic and political integration.

It is here we see out a lot of trade integration as a result of the role of trade regionally and internationally, as a key engine of economic growth significantly, especially in countries with export promotion policy, as countries of North Africa, which includes countries: Morocco, Algeria, Mauritania, Tunisia and Libya, as well as Egypt, it remains the least dynamic in terms of volume of trade exchanges intra-registered, despite the many initiatives taken since its independence in order to launch the dynamics of economic integration, especially the establishment of the Arab Maghreb Union and bilateral agreements.

In this context, we will try in this paper to know the determinants of bilateral trade to countries in northern Africa.

Key words: bilateral trade, North African countries, determinants of trade.

الملخص:

أصبحت الحاجة إلى تحقيق المزيد من عمليات التجارة البينية بين الدول، بوابة التكامل الاقتصادي . هدفا استراتيجيا وضرورة تفرضها التطورات الاقتصادية في ظل مناخ العولمة الاقتصادية ولذا اهتمت العديد من البلدان و الأقاليم لتحرير التجارة وذلك لتشجيع التبادل التجاري، وقد يعزى ذلك ظهورا مؤخرا تكتلات اقتصادية وسياسية ومن هنا نرى خروج الكثير من التكتلات التجارية نتيجة لدور التجارة إقليميا و دوليا، باعتبارها محرك أساسي للنمو الاقتصادي بشكل كبير لاسيما في البلدان التي تتبع سياسة تشجيع الصادرات كدول شمال إفريقيا التي تضم الدول: المغرب والجزائر وموريتانيا وتونس وليبيا، فضلا عن مصر ، إلا أنها تبقى الأقل ديناميكية من حيث حجم المبادلات التجارية البينية المسجلة رغم المبادرات المتعددة المتخذة منذ استقلال دولها من أجل إطلاق ديناميكية للاندماج الاقتصادي، لاسيما تأسيس اتحاد المغرب العربي والاتفاقيات الثنائية. وفي هذا السياق، سنحاول في هذه الورقة معرفة محددات التجارة البينية لدول شمال إفريقيا .

الكلمات المفتاحية: التجارة البينية، دول شمال إفريقيا، محددات التجارة .

1-General Framework:

1-1Introduction:

Occupies the African countries, the economic bloc, a low position in the global economic classification and the African continent is home to 14% of the world's population, it accounted for less than 3% of GDP, and receives only 3% of foreign direct investment. With regard to trade international commodities, the continent represents only 1.8% of imports and 3.6% of exports. These rates are much lower in the service sector: 1.7% of imports and 1.8% of exports. Apart from general sites is relatively favorable, the situation varies considerably if we look at the countries individually. Intra-African trade is of about 12% versus 60%, and 40% and 30% of bilateral trade made by Europe, North America, and Asia, respectively.

Even if we take into account the cross-border informal and unregistered trade in Africa, the overall level of intra-African trade will likely exceed 20%, a rate still lower for the other major regions of the world.

North Africa's economy belongs to the developing economy, like most developing economies overshadowed the initial activities on industrial activities,, where extractive industries represent the largest structure in the GDP, and the most important exports depends on the outside to provide the needs of consumer goods, making it more sensitive to fluctuations global economic. In light of its contribution to business is very modest in the markets Alaalmih.vkd developing economies deteriorated during the eighties which is represented in the severe decline in growth rates as a result of the worsening external debt, deteriorating terms of trade in international markets. Developing economies have deteriorated during the eighties which is represented in the severe decline in growth rates as a result It yielded results and important developments, and brought the world to the new requirements and challenges made states looking for different ways to enable them to meet the needs of the times and face Thdyate.mn by the emergence of economic entities and interests can withstand global competition in various economic fields.

The economic work of the most important areas in which they can unite nations and move them out of the cooperation and coordination to the advanced stages of integration and economic unity, which have become a necessity to adapt to global changes. Therefore, African countries have sought along the lines of the world to form blocs to counter the economic developments of the trade blocs involving in some cases, the amount of political cooperation and economic as the group of West Africa's ECOWAS and the southern African development SADC, which have achieved some progress in concluding agreements of free trade for the launch of the customs their union in 2015 and 2013 respectively. Economic Community of Central African States ECCAS region launched free trade in 2004, but faces enormous challenges in the field of implementation. And the remaining countries of North Africa is moving slowly through the Arab Maghreb Union except Egypt and limiting cooperation at the stage of cooperation among Member States.

1-1 Importance of the Study:

The overall purpose of this research is to study of the economic challenges faced by the bilateral trade and the urgent need to put up strategies to improve their conditions. In addition to shedding light on the Bilateral trade to North African countries flows the potential to enhance the trade.

1- 2 Research Questions:

Problematic study remain post bilateral trade for African countries is relatively small and does not exceed its share of the amount of 10% value of world trade in the average, but this modest participation does not reflect the vital role that the trade in the economic life of the countries of North Africa so play this study seeks to answer the question which It is:

What are the determinants of bilateral trade of the countries of North Africa?

2. Theoretical Issues

2-1 Problems of integration for the countries of North Africa:

The presence of regional blocs put on the North African countries along the lines of other countries (countries of East Africa "COMESA", West Africa, "ECOWAS") to deal with the developments and current challenges one block, but the reality is the opposite, it is these countries still seeking separately to conclude bilateral agreements with the EU, which is weakening the bargaining power of the group before the bloc is united and strong, and barriers and integration problems facing the countries of North Africa:

2-1-1 Join North Africa for more than an economic bloc:



Source: ECDPM. 2010

This problem is particularly the African continent as a whole along the lines of North African countries is considered as there is in Africa, a large number of regional economic blocs, but the African Union Commission recognizes only eight blocs just to the integration of Africa, while the continent by at least 14 regional group, there three of which are in West Africa ECOWAS, the economic and monetary Union of West Africa "UEMOA", and MRU Manu River. The other three in the center of the continent is a ECCAS, the Economic and Monetary Union of Central Africa "CEMAC", Economic and Community of the Great Lakes CEPGL. While there is in the east and south of the continent six (06) groups are COMESA, EAC, IGAD, SADC, SACU, and the Commission of the Indian Ocean IOC . In the north of the continent there is the Arab Maghreb Union, in addition to the Community of Sahel-Saharan States CEN-SAD, which has a membership of countries from different regions.

Because most African communities to not put preconditions and criteria should be met states before acceding to, as a result of the deal the African countries with the question of accession to these communities as a matter of state sovereignty and to maximize its national interests, consequent enjoy the majority of African countries membership of more than a regional bloc (see table 2), and therefore there has been a significant overlap between the most and complexity of existing groupings. If we take into account all the blocs become our 26th state with dual membership, compared to 20 in the country with a membership of three-and six countries are in a single-ended, and one country is a member of four regional groups.

2-1-2 Indirect costs:

Suggest studies and analyzes carried out by several international institutions over the past decade, particularly the Economic Commission for Africa and the Organization for Economic Cooperation and Development (OECD) that the indirect costs can represent between 2 and 15% of the value of mutual products. And vary the real effects on goods and effectiveness of the prices of Commerce series of one country to another in terms of delays and additional costs for import and export operations also vary according to the nature of mutual products, such as those of perishable or limited jurisdiction which imposes additional costs of conservation, as well as the risk of damage is expected.

2-1-3 Dominance of road transport:

The state of transport infrastructure in the North African countries made up of ports, railways, border posts wilderness. But that road transport across the roads remains the most widely used for the transport of goods between these countries means that .As trade exchanges between Tunisia and Libya, or between Morocco and Mauritania are 99% by road.

2-1- 4 Length of the export and import procedures:

In the light of international trade procedures between the North African countries it turned out to be necessary for export term of 11 days in Morocco and Egypt in 12 days and 13 days in Tunisia. And increases in Algeria to 17 days is a very long while in Libya by 23 days and 31 days in Mauritania.

That the average rate for the countries of the Middle East and North Africa of 20 days, far longer than the time required in the OECD which amounts to 11 days States.

In the case of imports, the time required to import from Egypt is Luxor B (15) days, followed by Morocco for 16 days and then Tunisia for 17 days. And long-term to 38 days in Mauritania and 37 days in Libya and 27 days in Algeria, far exceeding the average of the Middle East and North Africa, which are 24 days and the Cooperation and Development (OECD) where the term exceeds 10 days.

Besides important respect stage preparation of documents where approximately (7) days in Egypt and 8 days in Tunisia, Algeria and 16 days in Libya and (21) days in Mauritania.

At the side of intra-imports, intra-imports to Tunisia in Algeria concentrated by about 40%, and imports interfaces to Libya from Tunisia and Egypt by nearly 50%, while intra-imports to Morocco from Algeria by about 10%, while imports Mauritanian sourced from Morocco and Algeria, at a rate ranging between 25% -40%.

2-1- 5 Resemblance to the economic and social structure of the countries of North Africa:

Led to similarities in export industries to fear from open markets to each other, along with the weakness of the productive base and the low level of industrialization in these countries, what made the Arab economies lack a wide range of products, prompting her to go to foreign countries with strong production bases and a variety of on intra-continental trade account.

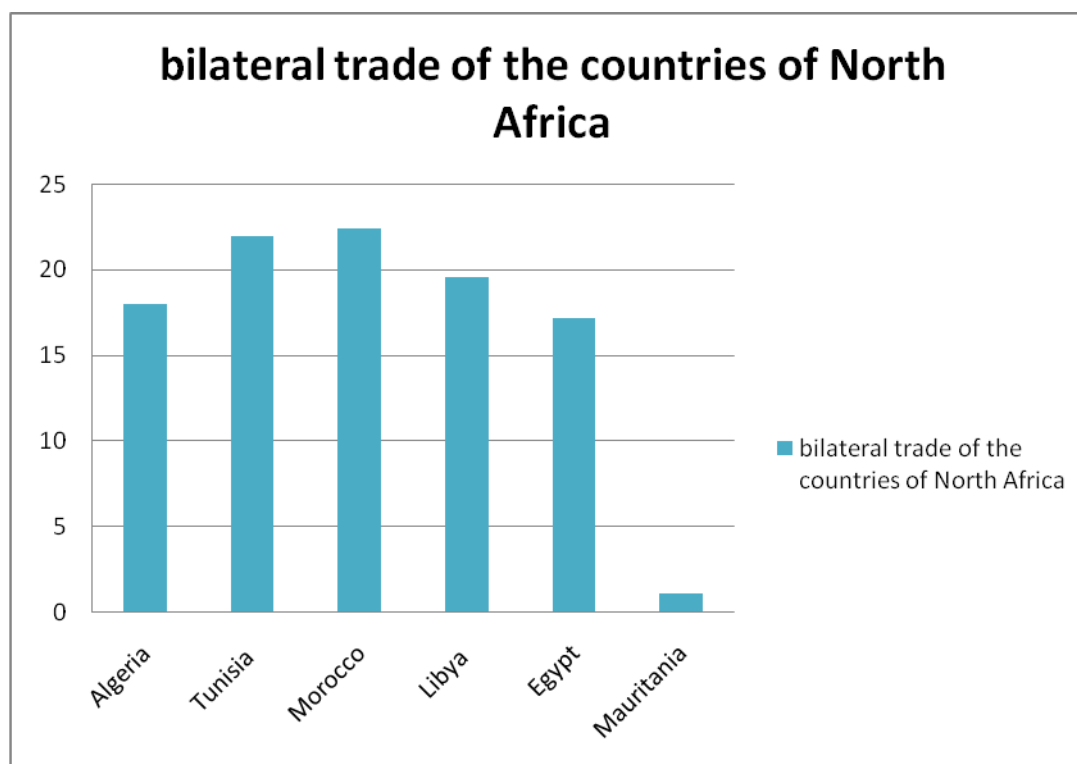
3. Analytical Issues:

3- 1 bilateral trade to North African countries Performance:

Economic reports indicate that, if managed African countries to increase their share of world trade increased by only 2%, this means increasing the GDP of Africa about 200 million billion dollars a year and this equates to almost five times what is obtained by the African countries from

donors and foreign partners the form of grants The annual development aid. Certainly economic integration of the continent any setting legislation to facilitate the needs of citizens, workers, and the flow of goods traffic across all parts of the continent, and the promotion of bilateral trade will create more job opportunities for the youth of Africa. According to data from the World Bank statistics, three of every five unemployed young people in Africa, on average, about 72% of them to exceed the daily income are only \$ 2, and they make up 60% of the total unemployed.

And in the context of bilateral trade liberalization and encouraged the African countries, the contribution of bilateral trade of the countries of North Africa, as shown in the following figure:



Source: prepared by researcher

Through the shape it is clear that Morocco and Tunisia occupy the first two places in the contribution of Bilateral trade by an estimated 21.57% and 20.87%, respectively, followed by Egypt and Libya by an estimated 19%, to come to Algeria in fifth place with 13.49%. As the last place Mauritania increased by 4.85% and 1.06%, respectively, and the proportions are very small compared to other North African countries.

3- 2 Development of bilateral trade of the countries of North Africa:

Bilateral trade to North African countries during the period from 1990-2014 has evolved to size up bilateral trade exchanges to about 187.381,75 million dollars, and the table below shows the average volume of trade (exports and imports) between the North African countries.

Table (01): The average volume of trade (exports and imports) to North African countries for the period (1990-2014)

Unit: million US dollars

Countries	bilateral trade	Algeria	Tunisia	Morocco	Libya	Egypt	Mauritania
Algeria	Exports		263,40	94,293	02,10	265,14	15,70
	imports		66,171	23,74	26,20	147,05	7,28
Tunisia	Exports	04,202		85,141	40,370	40,40	13,23
	imports	50,292		67,111	93,282	85,53	10,04
Morocco	Exports	279,07	278,06		51,14	245,27	30,12
	imports	341,72	117,56		65,35	162,63	9,43
Libya	Exports	18,62	306,91	45,55		78,37	19,58
	imports	10,15	454,84	68,29		355,18	20,69
Egypt	Exports	109,94	179,73	136,77	329,21		18,28
	imports	263,14	38,59	25,39	91,16		18,05
Mauritania	Exports	3,95	0,98	0,73	0,00	3,97	
	imports	12,31	9,46	35,21	0,18	6,52	

Source: Arab Monetary Fund in 2015.

Algeria:

Algerian enjoy Bilateral trade with the North African countries a positive performance during the period 1990-2014, where intra-exports accounted for 66.95% vs. 33.05% for imports interfaces, while the volume of exchanges in Morocco ranked first in the export side compared to Tunisia from imports.

Tunisia:

Tunisia to the way trade balanced somewhat with North African countries during the period 1990-2014 by a combination in exports is estimated at 49.25%, and imports increased by 50.75%, and nearly half the size of the exchange with Libya on the part of exports and 35% of the imports for about 36 % with Algeria, Mauritania occupied the last position on the part of imports.

Morocco:

Are bilateral trade positive for Morocco with North African countries during the period 1990-2014 with exports estimated at about 55% compared to 44% of imports, while the size of the largest exchange by exports has shared confiscated each from Algeria and Tunisia by 31%. It is the part of imports in Algeria by about 47 %. Mauritania to come in last place on the part of exports and imports, respectively.

Libya:

Bilateral trade with the Libyan estimated the North African countries during the period 1990-2014 increased by 36.20% for exports and 63.80% of imports, with Algeria exports head size of the exchanges from both sides of exports and imports, and the last place it was the share of Mauritania.

Egypt:

Egypt to the positive way trade with the North African countries during the period 1990-2014, and exports were estimated at 67.21% and imports by 32.79%, while the size of the exchanges in both Libya and Algeria from both sides of the exports and imports respectively with Mauritania in last place for exports and imports.

Mauritania:

Mauritanian bilateral trade has been modest with North African countries during the period 1990-2014, and the exchange was estimated at 12.43% for exports and 87.57% of imports, with Algeria, Egypt issued the forefront of exchange for exports and Morocco made half the size of imports, and exchanges with Libya from the exports side and by a very small part of imports.

3-3 Commodity Structure of bilateral trade to North African countries:

Commodity structure of exports of components does not differ from the commodity structure of imports to North African countries, and this is illustrated by the following table:

Table (02): Commodity Structure of bilateral trade of North African countries for the year 2014:

Commodity structure of exports of components does not differ from the commodity structure of imports to North African countries, and this is illustrated by the following table:

		Algeria	Tunisia	Morocco	Libya	Egypt	Mauritania
Food & drinks	Exports	0.40 %	6.79%	16.54%	0.00%	15.04 %	24.46%
	imports	21.27 %	8.83%	10.88%	39.90%	20.92 %	13.10%
Raw materials	Exports	0.20%	5.17%	12.98%	0.00%	6.72%	9.93%
	imports	4.20%	6.72%	6.46%	16.37%	12.92 %	2.30%
Mineral fuels	Exports	98.61%	12.57%	4.17%	98.30%	17.68 %	13.97%
	imports	2.36%	12.83%	25.40%	0.65%	13.90 %	28.06%
Chemicals	Exports	0.55%	7.12%	21.87%	1.00%	16.58 %	37.26%
	imports	11.25%	9.09%	9.75%	11.89%	11.11 %	3.34%
Machinery and transport equipment	Exports	0.02%	30.17%	18.86%	0.00%	5.58%	0.00%
	imports	37.70%	32.96%	24.71%	15.48%	19.08 %	37.95%
Manufactures	Exports	0.23%	38.18%	25.30%	0.70%	31.87 %	14.38%
	imports	23.22%	29.57%	22.61%	14.95%	21.94 %	15.25%

Unprocessed goods	Exports	0.00%	0.00%	0.28%	0.00%	6.53%	0.00%
	imports	0.00%	0.19%	0.76%	0.13%	0.00%	0.00%

Source: Arab Monetary Fund, the bulletin of economic statistics for the Arab States 2015.

Illustrated by the table (02) to mineral fuels top of bilateral exports, which reached rate of about 98% for Algeria and Libya, and 84% for Sudan.oma for Mauritania it occupies the first rank chemicals exports, and manufactures of Tunisia, Morocco and Egypt. Constitute machinery and transport equipment exports second for Tunisia and Morocco, chemicals and food and beverages to Egypt and Mauritania.

The goods are exported unprocessed by Egypt at rates of about 6% and a very small percentage of the tip of Morocco.

As can be seen by the above table that machinery and transport equipment occupies the first rank and exports Algeria, Tunisia and Mauritania at rates ranging between 30% -40%, to come manufactures in second place for the same At.oma Libya comes food and beverage at the head of imports, mineral fuels leads Morocco's imports.

It is already clear that the bilateral exports of raw materials the bulk structure, and form merchandise exports unprocessed least percentage. And machinery and transport equipment tops and exports, and imports of goods are formed is manufactured very small percentages. This is what explains the similarity of productive structures.

4 Empirical Issues:

4-1 Data Description:

This study attempts to employ a different standard formats, using a common approach to integration and error correction data panel, so take advantage of the information and data time Sectional study

The form of the model is as follows:

$$\text{TRD}_{it} = \alpha + \beta_1 \text{CPI}_{it} + \beta_2 \text{EXC}_{it} + \beta_3 \text{GDP}_{it} + \beta_4 \text{XPW}_{it} + \beta_5 \text{MPW}_{it} + \varepsilon_{it}$$

Where:

- TRD_{it} : is the logarithm of the product of the total bilateral trade of North African country i in the time period t.
- CPI_{it} : is the logarithm of the price index.
- EXC_{it} : is the logarithm of the fluctuation of currency exchange rate of North African countries against the US dollar.
- GDP_{it} : is the logarithm of the gross domestic product.

- XPW_{it} : is the logarithm of exports.
- MPW_{it} : is the logarithm of import.

4-2- Estimate model of the determinants of bilateral trade to North African countries (dependent variable $\ln TRD_{it}$):

To achieve the goal of the study of interpretation of the nature of the relationship between the two-way trade determinants are estimated in the model to achieve results through the use of time-series and CT data (Panel Data) through the application of three models: the model meta-regression (Pooled Regression Model), and the fixed effects model (Fixed effects model) and the random effects model (random effects model), depending on the Eviews 8 program we have acquired the following results shown in the following table:

Table (03): The dependent variable: $\ln TRD_{it}$

variables	Estimation method		
	Pooled Regression Model	Fixed Effects Model	Random Effects Model
Constant	-3.594 (-11.263)***	-6.675 (-10.760)***	-3.594 (-12.507)***
$\ln EXC_{it}$	0.010 (1.125)	0.014 (1.311)	0.010 (1.250)
$\ln GDP_{it}$	0.084 (0.984)	0.670 (4.818)***	0.084 (1.093)
$\ln CPI_{it}$	0.641 (10.260)***	0.413 (5.632)***	0.641 (11.394)***
$\ln XPW_{it}$	-0.040 (-0.889)	-0.079 (-1.761)*	-0.040 (-0.988)
$\ln MPW_{it}$	0.854 (8.366)***	0.674 (5.838)***	0.854 (9.290)***
R^2	0.930619	0.945693	0.930619
Adj. R^2	0.928209	0.941786	0.928209
Prob (F-statistic)	0.000000	0.000000	0.000000
N of obs	150	150	150

***, **, and * significant at 10%, 5% and 1 % respectively (t-student are in brackets)

Through Table (3) described above it is clear that the best way to estimate panel model is a method of fixed effects Compared with the method of estimation built, we find that the statistical (F) significant, and thus refused to nothingness based homogeneously breakers states a hypothesis, and using **HausmanTest** to differentiate between model fixed effects and random effects, we find

that the ability of random effects is consistent, and thus becomes a fixed effects model is more appropriate. In addition to the rate improved some statistics, such as the coefficient of determination (Adj. R^2) 94%.

Table (04): Hausman test results

P-Value	(Chi-Square.Statistic)
38.582996	0.0000**

By the results of the fixed effects model, we find that product domestic product, and the price index, exports to the outside world, and imports from the outside world are key determinants of the size of bilateral trade, trade of the countries of North Africa.

When Significant 5% of GDP, the price index, and the level of imports from the outside world a positive impact on bilateral trade, which means that there is a direct correlation, as the rise in GDP by 0.67% in the volume of trade affected, leads higher prices index imports by 1% to an increase bilateral trade volume by 0.41% and 0.67% respectively.

As for exports, they are defined negatively to the size of bilateral trade at a significant level of 10%, as an increase of 1% of the exports to the outside world the size lead to reduced trade volume ratio of approximately 0.08%.

4-3 Results:

Through unit root test results it is clear that both the bilateral trade variables, GDP, exports and imports differentiated from first-class, leading to not to reject the presence of unit root hypothesis for these variables.

As for the exchange rate and the price index at the level of understanding of dwelling and therefore the absence of unit root. This leads us to the study of the co-integration.

After the stability of the test and the presence of some of the variables is stable and integrated first different, which is characterized by the same pace of the long term trend (long-term) equilibrium relationship, it leads us to do testing integration relations simultaneous these variables using Pedroni test, which is based on the root of the tests the panel estimated residuals

The results of the above table to the absence of co-integration relationships between integrated variables of the same class and this is what is observed in each of the statistical: V, RHO, PP, ADF, which turned out to accept the premise of the lack of co-integration within and between dimension.

5 Conclusions and Recommendations:

The study aimed to identify the determinants of bilateral trade of the countries of North Africa for the period 1990-2014 using Panel data to reach the following conclusion:

- The existence of a positive relationship between each of the two-way trade and determinants of: GDP price index, imports from outside science. The results also show the large role of these variables.

- The existence of an inverse relationship between bilateral trade and exports from the outside world. This can be explained this relationship that exports to the outside world play a competitive role with bilateral trade to North African countries size.
- The results also reveal that the expansion of bilateral trade could significantly enhance the pace of bilateral trade expansion and thus its contribution to the creation of local markets more flexible through modest in cost reduction.
- The similarity of bilateral trade structures for the North African countries of the reasons for the low volume.

Through previous results can be drawn the following recommendations:

- Continue efforts to expand bilateral trade, given that global production is expected to be more stable than the regional production. To several factors such as transportation costs, and the availability of foreign exchange, import sector response.
- Should be bilateral trade is seen as part of a broader strategy supply stability as complementary and not as a substitute for world trade so that it will also include increased trade with markets outside the region.
- On the North African countries to find ways to accelerate the growth of bilateral trade with other African countries, which would increase in bilateral African trade.
- Construction of an advanced information networks, to link all customs centers unified central systems and activation of electronic communication between customs agents and economists operations.

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