

# Morocco's Trade, between Free Trade Agreements and Integration into the African Union: Which Potential for Morocco's Foreign Trade?

Oumaima Saadallah and Benaceur Outtaj

*Laboratory of Economic Analysis and Modeling (LEAM), Research Center CIRPEC,  
Mohammed V University of Rabat, Morocco*

**Keywords:** Globalization, Free Trade Agreements, the African Continent, Trade Flows, Gravity Model, Trade Potential.

**Abstract:** In a context characterized by a remarkable consolidation of Morocco's efforts to effectively integrate the globalization process, represented mainly by the signing of free trade agreements and the orientation towards intra-regional trade with the African continent, this work aims at analyzing the trade flows of Morocco and its two main trading partners; those of the African continent and those with which it has signed free trade agreements, over the period 2000-2018. For this purpose, we use an augmented gravity model to estimate trade between Morocco and these two groups of partner countries, and then simulate and calculate the trade potential between Morocco and these countries. The results we generated demonstrate the existence of a trade potential not yet exploited by Morocco in the two cases studied. The effective exploitation of the latter would allow the Kingdom to boost its trade.

## 1 INTRODUCTION

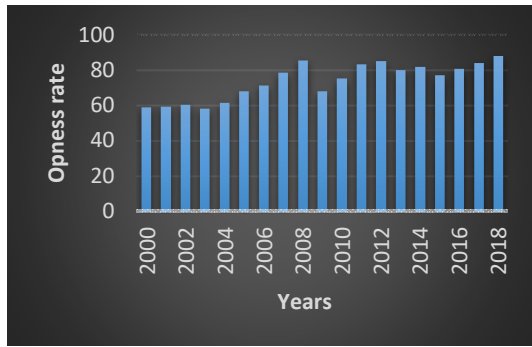
In recent decades, the world economy has experienced accelerated growth. This growth has been largely sustained by the even faster growth in international trade. Growth in trade can result from technological advances as well as specific efforts to promote trade and remove barriers. Thus, many developing countries have opted to open up their economies in order to take advantage of the development opportunities offered by foreign trade. However, the majority of these countries still do not adopt this approach.

Morocco, as a developing country, has become aware of the importance of trade openness as a key factor in accelerating the development of its economy. To this end, since the end of the 1990s, the opening of the Moroccan economy has been characterized by a remarkable and diversified progress, particularly with the signing of free trade agreements with the European Union, Egypt, Tunisia, Jordan, the United States, Turkey and the United Arab Emirates. This openness continues to develop over time with the integration of Morocco into the African Union and the strengthening of its relations with its African neighbors by signing more than a thousand agreements since 2000. The main objective

of this paper is to conduct empirical research to analyze the trade between Morocco and its trading partners, whether under free trade agreements or those of the African continent. Such an analysis will mainly allow to identify the potential of trade that the kingdom has with its partners and the opportunities it can get out of it to reduce its trade deficit. To do so, we use a gravity model to estimate the magnitude of trade between Morocco and the countries with which it has signed FTAs on the one hand and Morocco and countries on the African continent on the other. Based on these estimates, it will be possible to simulate the potential bilateral trade between Morocco and its partners and to understand the weaknesses and strengths of these trade relationships to finally determine the countries with which it would be beneficial to strengthen trade relations.

## 2 THE STRUCTURE OF MOROCCO'S FOREIGN TRADE

The openness rate of the Moroccan economy is characterized by a growing trend: a remarkable decrease from 2009 because of the global economic



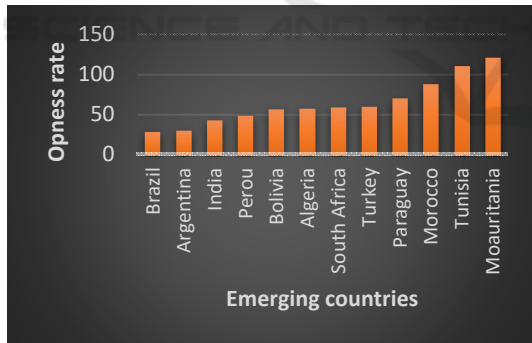
Source: Generated by the author from UNCTADstat database.

Figure 1: Morocco's opening rate during the period from 2000 to 2018.

crisis and a recovery since then to return to pre-crisis levels.

Morocco's trade was multiplied by 4.5 from 1999 to 2018, rising from USD 17.5 billion to USD 80.1 billion according to the World Bank). The kingdom's openness rate (calculated as the ratio (exports + imports) to GDP) increased from 54.62% in 1999 to 87.99% in 2018.

Comparing Morocco to other middle-income countries, the Moroccan economy is more open than Brazil's with a rate of 29.08%, Argentina with 30.7%, India with 43.37%, Algeria (56%) or Turkey (60%), but it's less than Tunisia (99%) or Mauritania (126%), and is almost at the average for the Arab world (89%).



Source: Generated by the author from UNCTADstat database.

Figure 2: the opening rate of a panel of emerging countries in 2018.

The principal source of this openness to foreign trade is the strong growth in imports, which has resulted in a significant worsening of the trade deficit.

The trade deficit widens for the third consecutive year, to reach 205.9 billion DH in 2018 representing 18.5% of GDP against 17.8% in 2017.

In 2018, Morocco's trade balance shows a deficit with all continents except Africa, with which Morocco records a trade surplus.

## 2.1 Foreign Trade between Morocco and Its African Partners

Trade between Morocco and its African partners has grown remarkably (from an average of US\$342.78 million during the period 1995-1999 to an average of US\$1.08 billion in 2000-2018 for exports and US\$469.64 million to US\$1.58 billion for imports over the same periods), However, if we reason in terms of weight, their share in Morocco's total trade has remained almost the same for both imports and exports, yet we note that the share of Morocco's trade with the European Union still represents the largest share of the kingdom's trade with the rest of the world (more than 50% of exports and also imports). In addition, the weight of North Africa remains important in Moroccan trade with the African continent. However, over the last two decades, North Africa has ceded its position in favor of sub-Saharan Africa in terms of exports with the Kingdom.

Table 1: Morocco's exports to the African continent in thousands of U.S. dollars.

| Partner               | Average 1995-1999 | Part | Average 2000-2018 | Part |
|-----------------------|-------------------|------|-------------------|------|
| World                 | 7090602.33        | 1.00 | 16856013.81       | 1.00 |
| Africa                | 342778.83         | 0.05 | 1082939.39        | 0.06 |
| North of Africa       | 226326.65         | 0.03 | 314399.90         | 0.02 |
| Sub-Saharan Africa    | 118034.25         | 0.02 | 754652.98         | 0.04 |
| EU28 (European Union) | 4752639.11        | 0.67 | 10713593.65       | 0.64 |

Source: Generated by the author from UNCTADstat database.

Table 2: Morocco's imports from the African continent in thousands of U.S. dollars.

| Partner               | Average 1995-1999 | Part | Average 2000-2018 | Part |
|-----------------------|-------------------|------|-------------------|------|
| World                 | 10065480.81       | 1.00 | 32095669.11       | 1.00 |
| Africa                | 469637.30         | 0.05 | 1583563.85        | 0.05 |
| North of Africa       | 242532.78         | 0.02 | 379422.13         | 0.01 |
| Sub-Saharan Africa    | 227417.13         | 0.02 | 1204689.29        | 0.04 |
| EU28 (European Union) | 5306733.78        | 0.53 | 16865816.36       | 0.53 |

Source: Generated by the author from UNCTADstat database.

The classification of Moroccan exports to the African continent by country confirms that North African countries are the most dominant, notably Algeria, Tunisia, Libya and Egypt which still retain their position among the top 10 preferred destinations for Morocco's exports on average over the two periods 1999-1995 and 2000-2018, with Libya as

Morocco's main African customer in 1999-1995, before being replaced by Algeria over the period from 2000 to 2018, Tunisia still retains its place as Morocco's second largest customer. As far as sub-Saharan Africa is concerned, countries such as Senegal, Côte d'Ivoire and Nigeria are still among Morocco's first partners over both periods. What these countries have in common is that they have signed trade agreements with Morocco dating back to at least 1980.

## 2.2 Trade between Morocco and FTA

Morocco's trade under FTAs accounts for the majority of Morocco's overall trade (more than two-thirds of exports and imports are to or from these countries).

The agreement with the European Union remains the main free trade agreement with a very large share. Exports benefiting from this agreement amount to US\$10.71 billion in the period from 2000 to 2018. Reasoning in terms of share, we note that the weight of Morocco's exports to the EU fell from 67% between 1995 and 1999 to 63% in the period from 2000 to 2018. On the import side, we note a stagnation of the share of EU countries with a percentage of 53%.

The agreement with the Arab Free Trade Area represents the second dominant group in the trade carried out within the framework of FTAs, with a very low share compared to the agreement with the European Union (0.04 for exports and 0.11 for imports in the period from 2000 to 2018). The agreement with the United States ranks third before the agreement with Turkey. For all the free trade agreements signed by Morocco, it is noticeable on the one hand that the level of exports over the periods 1995-1999 and 2000-2018 has decreased and on the other hand that imports have increased. Over time, the latter eventually outweighed exports to reach 74%.

Table 3: Moroccan exports in the framework of FTAs in thousands of U.S. dollars.

| Partner               | Average 1995-1999 | Part | Average 2000-2018 | Part |
|-----------------------|-------------------|------|-------------------|------|
| World                 | 7090602.33        | 1.00 | 16874528.08       | 1.00 |
| EU28 (European Union) | 4752639.11        | 0.67 | 10706101.84       | 0.63 |
| AFTA                  | 352872.25         | 0.05 | 655513.82         | 0.04 |
| Turkey                | 55487.75          | 0.01 | 324059.04         | 0.02 |
| USA                   | 274914.86         | 0.04 | 682100.88         | 0.04 |
| Others                | 68755.84          | 0.01 | 212007.75         | 0.01 |
| FTAs                  | 5435913.97        | 0.77 | 12367775.58       | 0.73 |

Source: Generated by the author from UNCTADstat database.

Table 4: Moroccan imports within the framework of the FTAs in thousands of U.S. dollars.

| Partner               | Average 1995-1999 | Part | Average 2000-2018 | Part |
|-----------------------|-------------------|------|-------------------|------|
| World                 | 10065480.8        | 1.00 | 32076261.8        | 1.00 |
| EU28 (European Union) | 5306733.78        | 0.53 | 16860506.7        | 0.53 |
| AFTA                  | 870965.32         | 0.09 | 3656892.75        | 0.11 |
| Turkey                | 89138.17          | 0.01 | 971340.30         | 0.03 |
| USA                   | 606946.28         | 0.06 | 2042314.97        | 0.06 |
| Others                | 118559.58         | 0.01 | 316112.27         | 0.01 |
| FTAs                  | 6992343.13        | 0.69 | 23847166.99       | 0.74 |

Source: Generated by the author from UNCTADstat database.

The classification of Moroccan exports to the European Union by country shows that France, Spain, Germany, Italy, Belgium, Portugal and Poland are still at the top of the list of preferred destinations for Morocco's exports on average over the two periods 1999- 1995 and 2000 and 2018, with France and Spain still holding their leadership as Morocco's first and second customer respectively since 1995. Germany was Morocco's third European customer in 1999-1995, before leaving its place to Italy over the period from 2000 to 2018. The United States, in turn, occupies a very important place in Moroccan trade to the world; it is among the top ten preferred destinations for Morocco on average during both periods with a remarkable improvement; moving from sixth position in the 1995-1999 period to fourth in the following period. Such improvement is also noticeable in trade with Turkey, from eleventh to ninth rank in both periods respectively.

But it should be noted that the Kingdom has not been able to take advantage of these agreements. In fact, out of more than fifty countries with which it has signed free trade agreements, it has a trade deficit except with Jordan.

## 3 GRAVITATIONAL MODEL: LITERATURE REVIEW

### 3.1 The Theoretical Foundations of the Gravity Model

The International Trade Gravity Model is considered to be the most effective model for forecasting and explaining bilateral trade from an econometric perspective. This model is based on the principle of the Newtonian theory of gravitation; it highlights trade between two economies as a function of their GDP, which represents the economic power of the

countries, and the distance between them, which represents transport costs.

Anderson (1979)<sup>1</sup> was among the firsts to attempt to provide a theoretical basis for gravity models. Anderson's theory is based on a hypothesis that was considered innovative at the time, namely, that each nation produced a unique good that was only imperfectly substitutable for the goods of other nations.

The next set of theoretical foundations for the gravity equation came when Bergstrand (1985)<sup>2</sup> sought to provide theoretical foundations based on monopolistic competition; in particular, he developed the idea discussed by Paul Krugman (1980)<sup>3</sup>, and Helpman and Krugman (1985)<sup>4</sup>. In this model, similar countries trade differentiated goods because each consumer has a preference for variety.

This approach, which theoretically derives the equation from the gravity model, is mainly used to explain intra-industry trade. More generally, the emergence of the "new trade theory" in the late 1970s and early 1980s explained the volume of trade between two countries by the size of the economies, distance, price levels, and the exchange rate. In light of this trend of studies, the gravity model has moved from too few theoretical bases to too many. This theory is particularly successful in approximating the potential for trade between developed countries.

#### A. Presentation of the gravity model :

The simple gravity model is written as:

$$X_{ij} = c \frac{Y_i^{\alpha_0} Y_j^{\alpha_1}}{D_{ij}^{\alpha_2}}$$

With:

$X_{ij}$  : is the level of exports from country i to country j;

$c$  : is a constant;

$Y_i$  : is the volume of GDP of country i;

$Y_j$  : is the volume of GDP of country j;

$D_{ij}$  : is the distance from country i to country j;

We take this equation in logarithmic form so that we can interpret the coefficients of each explanatory variable in terms of elasticity:

$$\log(X_{ij}) = \log(c) + \alpha_0 \log Y_i + \alpha_1 \log Y_j + \alpha_2 \log D_{ij}$$

This so-called simple model takes only GDP and distance as explanatory variables, but in reality foreign trade is not only influenced by these two factors, hence the need for the augmented gravity model that adds other potential determinants to broaden the scope of the model and better capture the effect of other characteristics of trading partners.

The first augmented gravity model emerged through the work of Tinbergen, Linneman (1966)<sup>5</sup> by including a single "population" variable as an explanatory variable in the simple gravity equation. Then, recent empirical studies (Frankel, 1997; Frankel et al., 1995; Glick and Rose, 2002; Anderson and van Wincoop, 2003; Carrère, 2004) have attempted to add other variables that influence trade in order to further increase the simple gravity model such as: the level of economic development measured by GDP per capita, cultural factors such as common language and common colonizer; trade agreements; common borders; etc. The first model of augmented gravity was developed by Tinbergen, Linneman (1966) by including a single "population" variable as an explanatory variable in the simple gravity equation.

Taking these improvements into account, the logarithmically augmented gravity model can be written in the following generalized form:

$$\log(X_{ij}) = \log(c) + \alpha_0 \log Y_i + \alpha_1 \log Y_j + \alpha_2 \log D_{ij} + \sum_k^n \gamma_k \log B_{ijk} + \varepsilon_{ij}$$

Where:

$X_{ij}$  : is the level of exports from country i to country j;

$c$  : is a constant;

$Y_i$  : is the volume of GDP of country i;

$Y_j$  : is the volume of GDP of country j;

$D_{ij}$  : is the distance from country i to country j;

$B_{ij}$  : any other variables that influence trade such as population sizes, trade agreements (Ghosh and Yamarik, 2004; Carrère, 2004), common language and common border, etc.

<sup>1</sup> Anderson J. (1979) A Theoretical Foundation for the Gravity Equation, American Economic Review, vol. 69, n° 1, 106-116

<sup>2</sup> Bergstrand, J.H. (1985). The gravity equation in international trade: Some microeconomic foundations and empirical evidence. Review of Economics and Statistics num. 67

<sup>3</sup> Krugman, P. (1980). Scale economies, product differentiation, and the pattern of trade. The American Economic Review, n° 70.

<sup>4</sup> Helpman, E. & P. Krugman (1985). Market structure and foreign trade: Increasing returns. Imperfect Competition and the International Economy. Cambridge, MA: MIT Press

<sup>5</sup> Linnemann, H. (1966). An econometric study of international trade flows. Dissertation. Netherlands School of Economics.

## 4 ESTIMATION METHODS AND RESULTS

### 4.1 Data Base

Our estimates are based on two samples: a sample of 44 countries that includes Morocco's African partners and the second sample of 43 countries that includes the various countries with which Morocco has signed free trade agreements (see Annex 1). Our study analyzes the period from 2000 to 2018. The export variable was collected from the UNCTADstat database. GDP, GDP per capita, area and population are available in the World Bank's database (WDI). The distances between Morocco and each partner and the common language and border dummy were collected from the database available on geo-cepil. Trade and investment agreements are extracted from the UNCTAD database. All estimates were made using Stata 15 and Eviews 9 software.

### 4.2 Expected Signs of the Variables

The expected signs of the variables give an idea of their effects on trade flows.

The expected sign of GDP is positive because the more developed countries are, the more they will tend to trade. Weighted distance is a proxy for transport costs and presents an obstacle to exchange, so it negatively affects trade (negative sign).

The existence, or otherwise, of a common border between two countries should have a considerable effect on the volume of trade. The expected sign for the coefficient on this variable is therefore positive. Sharing a common official language in turn considerably reduces trade barriers. This ease of communication should also have a positive impact on trade flows. To this end, we anticipate a positive sign for this variable.

The presence of an investment agreement is often followed by the establishment of trade agreements. This variable leads to a reduction in resistance to trade, which would then imply an improvement in export flows. The expected sign of this variable then is positive.

The surface area of importing countries is used to express market size. The expected sign of this variable is then positive.

### 4.3 Specification of the Model

We retain for our study an augmented specification of the gravity model in the following form:

$$\begin{aligned} \log(X_{ij}) = & \alpha_0 + \alpha_1 \log Y_i + \alpha_2 \log Y_j + \alpha_3 \log POP_i \\ & + \alpha_4 \log POP_j + \alpha_5 \log Sup_j \\ & + \alpha_6 \log D_{ij} + \alpha_7 Contig_{ij} \\ & + \alpha_8 lang off_{ij} + \alpha_9 AI_{ij} + b_i + c_i \\ & + u_{ij} + \varepsilon_{ijt} \end{aligned}$$

Where:

$X_{ij}$ : Exports of goods from the country to country j in thousands of \$US.

$Y_i$  and  $Y_j$ : The volume of GDP of country i and j in constant US\$ 2011;

$POP_i$  and  $POP_j$ : The volume of the population of country i and j;

$Sup_j$ : The area of country j Km<sup>2</sup>;

$\log D_{ij}$ : The weighted distance between countries i and j;

$Contig_{ij}$ : The common border between i and j, takes the two values 0 and 1;

$lang off_{ij}$ : The common language between i and j, takes the two values 0 and 1;

$AI_{ij}$ : Investment agreements between i and j (this variable is devoted to the gravity model used to estimate Morocco's trade with its African partners, takes the two values 0 and 1);

$b_i$ : Country specific effects i;

$c_j$ : The country-specific effects j;

$u_{ij}$ : Individual effects specific to country pairs.

\*These variables are in logarithmic form in the model, which makes it possible to interpret their coefficients in terms of elasticity.

### 4.4 Estimation Methods

Today, studies working on gravity models use panel data estimates instead of time-series estimates. This method makes it possible to exploit more information-rich data with a greater number of observations and a lower risk of collinearity, more accurate and more efficient estimators.

In this study we use the following forms of panel econometric models in order to find the best estimates:

- Specific effects model estimation (fixed or random effect) according to Hausman test results.

- The Generalized Least Squares model, in order to be able to fill in the gaps of the fixed effects model and the random effects model.

### 4.5 Estimation Results

The results of the estimation of the random-effect model appear to be more relevant than the results



estimated using the fixed-effect model. This model takes into account dummy variables and assigns a coefficient to each one. For comparison purposes, we estimated the same equation using the Generalized Least Squares Method; this model gives us better results because it allows correlation and error heteroscedasticity to be corrected.

The following summary table shows that the variable Morocco's GDP and the GDP of importing countries (whether African partners or those with which Morocco has signed FTAs) have positive and significant coefficients, in accordance with the expected signs.

The distance variable is always negative and significant. The values of these coefficients indicate that exports are highly inelastic with respect to resistance factors related to purchase costs. Concerning the "common language", the coefficients associated with this variable are positive and significant. The values of these coefficients show that exports are highly elastic in relation to the common language (strictly greater than 1).

These results are robust because they are invariable with the different estimation methods used, and in the two different cases studied in our study (Morocco with the African continent and Morocco with the countries with which it has signed FTAs).

The coefficient of the surface area of the importing country is not significant, and this is invariable with the different estimation methods used.

With respect to trade and investment agreements, used as a dummy variable in the case of gravity model estimation between Morocco and African countries, the coefficient of this variable is positive with all three estimation methods and significant with the random effect method.

All the signs of the coefficients of the gravity models used for the two cases studied show their conformity with the hypotheses formulated previously. With the exception of the common border between two countries, the expected sign is positive, but the estimates show the opposite. This may be justified by the fact that Morocco cannot cope with the problems associated with tariff and especially non-tariff barriers, such as the presence of complex customs and administrative procedures and regulations, inefficient and costly transport systems, etc. The reason for this may be that Morocco is not able to cope with the problems associated with tariff and especially non-tariff barriers, such as the presence of complex customs and administrative procedures and regulations, inefficient and costly transport systems.

Table 5: Estimation results of the gravity model.

| Methods         | Africa        |         | FTAs          |        |
|-----------------|---------------|---------|---------------|--------|
|                 | Random effect | GLS     | Random effect | GLS    |
| $\log Y_i$      | 1.01*         | 2.51**  | 1.66*         | 1.81*  |
| $\log Y_j$      | 2.52*         | 0.49**  | 1.31*         | 1.08*  |
| $\log Sup_j$    | -1.09         | 0.04    | -0.15         | -0.03  |
| $\log D_{ij}$   | -2.51*        | -2.39*  | -1.70*        | -1.76* |
| $Contig_{ij}$   | -1.96**       | -0.87*  | -0.61         | -0.76* |
| $lang\ of\ f_i$ | 0.58**        | 0.39*   | 0.23***       | 0.21*  |
| $AI_{ij}$       | 0.49***       | 0.07    | -             | -      |
| C               | -19.98*       | -21.91* | -22.75*       | -22.1* |

Source: Generated by the author from the *eviews9* software.

Note: \*\*\*, \*\* and \* refer to the significance of the coefficients at the 1%, 5% and 10% thresholds respectively.

## 5 ANALYSIS OF TRADE POTENTIAL

Based on our previous estimates using the Generalized Least Square Method, we calculate the trade potential, which is the ratio of observed exports to estimated exports.

A ratio that exceeds 100% means that there is no untapped trade potential. On the contrary, a ratio below 100 % means that there is trade potential to be exploited and that the importing country should take greater advantage of trade opportunities with the partner country.

### 5.1 The Case of Trade between Morocco and the African Continent

Table 6: Morocco's trade potential with Africa.

| Id  | export   | estimated export | trade potential | CODE | Export    | estimated export | trade potential |
|-----|----------|------------------|-----------------|------|-----------|------------------|-----------------|
| BFA | 1000.38  | 26525.53         | 3.77%           | SWZ  | 48.41     | 320.02           | 15.13%          |
| CAF | 1342.23  | 2182.72          | 61.49%          | SYC  | 321.20    | 427.50           | 75.13%          |
| EGY | 112.73   | 53061.59         | 0.21%           | TCD  | 5187.60   | 9004.10          | 57.61%          |
| ETH | 3568.57  | 3677.13          | 97.05%          | TUN  | 110003.16 | 125574.69        | 87.60%          |
| LBY | 62647.74 | 65723.74         | 95.32%          | UGA  | 2202.33   | 2222.36          | 99.10%          |
| MWI | 336.65   | 526.99           | 63.88%          | ZMB  | 18.44     | 1224.65          | 1.51%           |
| RWA | 1948.48  | 2954.31          | 65.95%          | ZWE  | 19.63     | 902.63           | 2.17%           |

Source: Author's calculations using estimates

Estimating the ratios of Morocco's export trade potential with these African partners allows the following findings to be derived:

There is a category of countries with which Morocco has no trade potential, where the ratio calculated exceeds 100%. This group represents almost 70% of our sample of African countries,

including Algeria, Angola, Côte d' Ivoire, Kenya, Mauritania, and South Africa.

A second category of countries with which Morocco has a trade potential below 100%. In this category, there is a group of countries with which the kingdom has a trade potential that is below 50%, with Egypt leading the way with the greatest potential for adjustment (the lowest foreign trade potential), followed by Zambia, Zimbabwe, Burkina Faso and Eswatini. And a second group, countries with which Morocco has a trade potential of more than 50%, which are 9 of which: Central African Republic, Ethiopia, Libya, Tunisia, and Uganda.

In general, we can see that Morocco manages to exploit the full range of possible export potential with African countries, with an average trade potential of the entire sample exceeding 400 percent. This is mainly due to Morocco's efforts to consolidate its relations with the continent by signing more than 1,000 preferential agreements with its neighboring countries. Moreover, when analyzing for each partner country, the Kingdom needs to strengthen its efforts to further boost trade with economies whose potential is not fully exploited.

To boost Morocco's intra-African trade further, a number of problems need to be addressed that impede the exploitation of the continent's full export potential. The problem of competitiveness of Moroccan products relative to those of other countries outside the continent is among the major problems that need to be addressed. There are cases where products that could have been supplied by Morocco to other African countries are instead supplied by other economies outside the continent because of Morocco's lack of competitiveness. The latter is associated in most cases with technical progress and production processes, but there are other factors that emerge particularly in the shipping and marketing phase, such as the existence of complex customs and administrative procedures and regulations, inefficient and costly transport systems, differences in rules of origin, and product and transport standards. Therefore, it is essential to review and simplify customs procedures to take full advantage of the benefits offered by this market.

Infrastructure, in turn, is a major problem that impedes such trade on the continent. Indeed, inadequate and inefficient infrastructure is one of the main causes behind the low level of trade between the Kingdom and the African continent, and the lack of competitiveness not only of Morocco but of the continent in general. The establishment of solid infrastructure (road, rail, and air) at the continental

level would undoubtedly lead to an optimization of the costs and time required for the transport of goods.

The existence of appropriate financing mechanisms is, for its part, a prerequisite for an optimal and efficient exploitation of the trade potential between African countries. The absence of a common currency, regional institutions for financing enterprises, and the lack of a continent-wide currency are all factors that discourage many enterprises and slow down the development of trade. The development of continental financial institutions, as well as regulatory frameworks to govern and encourage trade and financial exchanges among countries on the continent, are therefore necessary conditions for African trade to begin to flourish.

## 5.2 The Case of Trade between Morocco within the Framework of Free Trade Agreements

Table 7: Morocco's trade potential under FTAs.

| Id  | Export    | estimated export | trade potential | Id  | Export     | estimated export | trade potential |
|-----|-----------|------------------|-----------------|-----|------------|------------------|-----------------|
| ARE | 89620.22  | 90631.17         | 98.88%          | IRQ | 22642.95   | 84210.57         | 26.89%          |
| AUT | 184254.84 | 203603.54        | 90.50%          | ITA | 1212853.33 | 1784329.74       | 67.97%          |
| BEL | 410076.78 | 504136.54        | 81.34%          | KWT | 20769.57   | 34805.94         | 59.67%          |
| BHR | 6611.26   | 9832.33          | 67.24%          | LBY | 62647.74   | 74190.20         | 84.44%          |
| CYP | 1919.67   | 5439.96          | 35.29%          | LTU | 10197.99   | 20182.60         | 50.53%          |
| CZE | 128156.00 | 154389.20        | 83.01%          | LUX | 4945.79    | 52295.07         | 9.46%           |
| DNK | 34560.13  | 98802.10         | 34.98%          | LVA | 2823.26    | 10564.49         | 26.72%          |
| EGY | 112.73    | 407137.67        | 0.03%           | OMN | 8604.60    | 15665.87         | 54.93%          |
| EST | 5103.07   | 7576.29          | 67.36%          | POL | 290786.08  | 390329.98        | 74.50%          |
| FIN | 13731.12  | 47465.64         | 28.93%          | PRT | 307833.95  | 1206630.50       | 25.51%          |
| GBR | 819553.47 | 1822898.90       | 44.96%          | SAU | 148308.41  | 339048.62        | 43.74%          |
| GRC | 21400.30  | 101372.99        | 21.11%          | SWE | 124708.36  | 134182.28        | 92.94%          |
| HRV | 19141.75  | 43495.10         | 44.01%          | TUN | 110003.16  | 157639.52        | 69.78%          |
| HUN | 32175.81  | 102990.05        | 31.24%          | USA | 1493148.11 | 1569362.01       | 95.14%          |
| IRL | 81596.83  | 200864.59        | 40.62%          | DEU | 977399.41  | 2265120.77       | 43.15%          |

Source: Author's calculations using estimates

According to this table, which groups together the various countries with which Morocco has an export trade potential of less than 100%, we can see that Morocco exploits its full trade potential just with 13 countries in our sample of 43 countries, namely: Bulgaria, Spain, Algeria, Malta, France, Jordan, Lebanon, Netherlands, Qatar, Romania, Slovenia, Sweden and Turkey.

The rest of the countries in the table with which Morocco has a trade potential of less than 100 percent can be subdivided into two categories: the one with which Morocco has a high trade potential, which includes 14 countries, including Denmark, and

Germany, Egypt, Greece, Libya, and Portugal, and one that brings together countries with which there is a potential greater than 50% including: Austria, Belgium, Kuwait, Tunisia and USA.

On average, we note that Morocco does not manage to exploit all the potentialities of possible exploitation with its partners within the framework of the Free Trade Agreements, with an average trade potential of the whole sample of 95%, which does not exceed 100%. However, when analyzing in individual terms, Morocco should focus more on those countries with which it benefits from a partially exploited trade potential.

The key to maximizing the trade potential that exists between Morocco and the countries with which it has signed FTAs is to first address the competitiveness of Moroccan products vis-à-vis products supplied by other developing countries such as China, Turkey, and India. As already mentioned above, to increase competitiveness, Morocco must focus on simplifying customs and administrative procedures in parallel with technical progress and production processes.

It is also essential to strengthen the negotiating team in the administrations. Especially when negotiating with large nations, negotiators must have the capacity to defend national interests. Transport infrastructure is also a component that requires development by Morocco.

## 6 CONCLUSIONS

The consolidation of trade relations between Morocco and the rest of the world, in order to integrate into the globalization process in an effective manner, requires first and foremost the implementation of reforms and sound and efficient trade policies at the regional and global levels. The results of the analysis of trade relations between Morocco and the countries of the African continent on the one hand and Morocco and the countries with which it has signed free trade agreements on the other, have shown the existence of a more or less remarkable trade potential in both cases. Analyzing in terms of Morocco's individual trade potential with each group of partners, we find that:

The kingdom manages to exploit its full trade potential with 70% of the African partner countries in our sample. This result is satisfactory and shows that Morocco manages to benefit effectively from the relations consolidated with the African continent in recent decades.

On the other hand, within the framework of free trade agreements, Morocco has a trade potential with 32 countries. This result is not surprising and reveals the weakness of relations between Morocco and these partners. In fact, based on a logic based on the Kingdom's trade balance, it can be seen that out of all the countries with which it is linked by free trade agreements, it records a trade deficit except with Jordan.

These observations show that the Kingdom's trade relations with its partners (from the African continent and especially the countries with which it has signed free trade agreements) can be pushed beyond their current levels by focusing especially on economies whose potential is not fully exploited.

In order to benefit from this trade potential, Morocco must address several problems to increase its international competitiveness, notably through the substantial reduction of tariff and especially non-tariff barriers (the presence of complex customs and administrative procedures and regulations, inefficient and costly transport systems, differences in rules of origin and product and transport standards) in order to significantly boost exports. Indeed, these problems are very often identified as major barriers to sustainable growth in Morocco's trade. The reduction of these barriers will have to go hand in hand with the development of a competitive and harmonized business ecosystem to facilitate trade, as well as a focus on the development of an integrated transport infrastructure scheme to reduce transaction costs over time.

## ACKNOWLEDGEMENTS

Authors would like to thank the National Center for Scientific Research (CNRST) of Morocco for its support for this research through the excellence scholarship.

## REFERENCES

- Achy L. (2006) *Le commerce en Afrique du Nord : évaluation du potentiel de l'intégration régionale*, Rapport pour le Bureau Afrique du Nord de la CEA, Rabat, 32 p
- Alain Pirotte (2013), *Econométrie des données de panel: Théorie et applications*, édition ECONOMICA, 2011.
- Albert Millogo, Nassim Oulmane (2012), *Potentiel De Commerce Dans L'espace Maghrébin*, Cairn.info pour De Boeck Supérieur, DOI: 10.3917/med.158.0115.



- Anderson J. (1979) A Theoretical Foundation for the Gravity Equation, *American Economic Review*, vol. 69, n° 1, 106-116
- Anderson J., Van Wincoop E. (2003) Gravity with Gravititas: A Solution to the Border Puzzle, *American Economic Review*, vol. 93, n° 1, 170-192.
- Bergstrand, J.H. (1985). The gravity equation in international trade: Some microeconomic foundations and empirical evidence. *Review of Economics and Statistics* num. 67.
- Carrere, C. (2003). Revisiting the effects of regional trade agreements on trade flows with proper specification of the gravity model. *European Economic Review*, 50(2), 223-247.
- Frankel J. A., Stein, E., & Wei, S. J. (1997). Regional trading blocs in the world economic system. Peterson Institute.
- Ghazi Tayeb, Msadfa Yassine, Potentiel du commerce extérieur entre le Maroc et ses partenaires africains : Application d'un modèle de gravité, Equilibres externes, compétitivité et processus de transformation structurelle de l'économie Marocaine. Etude réalisée par OCP Policy center et le laboratoire d'économie appliquée, de l'Université Mohamed V de Agdal (Maroc).
- Ghosh and Yamarik (2004). Are regional trading arrangements trade creating? An application of extreme bounds analysis. The University of Akron (Akron) and Tufts University (Medford).
- Helpman, E. & P. Krugman (1985). Market structure and foreign trade: Increasing returns. Imperfect Competition and the International Economy. Cambridge, MA: MIT Press.
- Karima Ben Slimane, Mohamed Ayadi et Med Salah Rejeb (2007), Estimations du potentiel de commerce dans la zone méditerranéenne en présence d'accords de commerce: Approches par l'économétrie Spatiale (Version Préliminaire).
- Krugman, P. (1980). Scale economies, product differentiation, and the pattern of trade. *The American Economic Review*, n° 70.
- LABRAR Sara, TABIT Safae, Creation et détournement du commerce sous les accords de libre-échange signés par le Maroc : les enseignements d'un modèle de gravité en données de Panel.
- Linnemann, H. (1966). An econometric study of international trade flows. Dissertation. Netherlands School of Economics.
- Raouf, R. & Ghoufrane, A. (2015). Trade potentiel between morocco and Senegal: An evaluation using an augmented gravity model. Etude conjointe réalisée par la Chaire de l'OMC de l'Université Mohammed V-Souissi (Maroc) and la Chaire de l'OMC de l'Université Sheikh Anta-Diop (Senegal).
- William GREENE, *Econométrie*, 7ème édition, Edition francophone dirigé par Dodier SCHLACTHER.
- (2020) The Mondiale Bank website. [Online]. Available: <https://donnees.banquemondiale.org/>
- (2020) The CNUCED website. [Online]. Available: <https://investmentpolicy.unctad.org/international-investment-agreements/advanced-search>
- (2020) The CNUCED website. [Online]. Available: [https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS\\_ChosenLang=fr](https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=fr)

## APPENDIX

Annexe 1: Code and name of the countries of the 2 samples.

| FTAs                    |              | Africa       |                                   |
|-------------------------|--------------|--------------|-----------------------------------|
| Country Name            | Country Code | Country Code | Country Name                      |
| United Arab Emirates    | ARE          | AGO          | Angola                            |
| Austria                 | AUT          | BDI          | Burundi                           |
| Belgium                 | BEL          | BEN          | Benin                             |
| Bulgaria                | BGR          | BFA          | Burkina Faso                      |
| Bahrain                 | BHR          | CAF          | African Republic                  |
| Cyprus                  | CYP          | CIV          | Côte d'Ivoire                     |
| Czech Republic          | CZE          | CMR          | Cameroon                          |
| Denmark                 | DNK          | COD          | Congo, Democratic Republic of the |
| Algeria                 | DZA          | COG          | Congo, Republic of the            |
| Egypt, Arab Republic of | EGY          | COM          | Comoros                           |
| Spain                   | ESP          | CPV          | Cabo Verde                        |
| Estonia                 | EST          | DZA          | Algeria                           |
| Finland                 | FIN          | EGY          | Egypt, Arab Republic of           |
| France                  | FRA          | ETH          | Ethiopia                          |
| United Kingdom          | GBR          | GAB          | Gabon                             |
| Greece                  | GRC          | GHA          | Ghana                             |
| Croatia                 | HRV          | GIN          | Guinea                            |
| Hungary                 | HUN          | GMB          | Gambia                            |
| Ireland                 | IRL          | GNB          | Guinea-Bissau                     |
| Iraq                    | IRQ          | GNQ          | Equatorial Guinea                 |
| Italy                   | ITA          | KEN          | Kenya                             |
| Jordan                  | JOR          | LBR          | Liberia                           |
| Kuwait                  | KWT          | LBY          | Libya                             |
| Lebanon                 | LBN          | MDG          | Madagascar                        |
| Libya                   | LYB          | MLI          | Mali                              |
| Lithuania               | LTU          | MOZ          | Mozambique                        |
| Luxembourg              | LUX          | MRT          | Mauritania                        |
| Latvia                  | LVA          | MWI          | Malawi                            |
| Malta                   | MLT          | NAM          | Namibia                           |
| Netherlands             | NLD          | NER          | Niger                             |
| Oman                    | OMN          | NGA          | Nigeria                           |
| Poland                  | POL          | RWA          | Rwanda                            |
| Portugal                | PRT          | SEN          | Senegal                           |
| Qatar                   | QAT          | SLE          | Sierra Leone                      |
| Romania                 | ROU          | SWZ          | Eswatini                          |
| Russian Federation      | RUS          | SYC          | Seychelles                        |
| Saudi Arabia            | SAU          | TCO          | Chad                              |
| Slovenia                | SVN          | TGO          | Togo                              |
| Sweden                  | SWE          | TUN          | Tunisia                           |
| Tunisia                 | TUN          | TZA          | Tanzania                          |
| Turkey                  | TUR          | UGA          | Uganda                            |
| USA                     | USA          | ZAF          | South Africa                      |
| Allemagne               | DEU          | ZMB          | Zambia                            |
|                         |              | ZWE          | Zimbabwe                          |