The development of intra-regional trade under the Euro-Algerian .partnership agreement , 2000-2020

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Abstract:

Algeria, like other countries in the world, seeks to develop its economy, and make its trade more Elasticity, open and competitive, this is what made it sing n several trade agreements, the most important of which is the Association Agreement between Algeria and the European Union, which we will address in this research paper, We will try to address its content and the most important issues it brought up.

We will shed the light on the agreements impacts on intra regional trade in Algeria during 2000-2020, using the gravity model and we dealt with the most exchanged States with Algeria, which are Germany, France, Spain, and Italy.

Keywords: trade, Agreements, Gravity model .

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I- Introduction:

In the 20th century, foreign trade witnessed radical developments, due to the stations that the global economy went through, And this is what compelled nations to strive to achieve the so-called economic openness, the transition towards a market economy, the spread of economic blocs and trade agreements of all kinds, Algeria, like other countries, seeks to develop and upgrade its economy and transfer it to globalization and openness, and this is what made it resort to signing several agreements, on top of which is the Euro-Algerian Partnership Agreement, which was officially signed on April 22, 2002 in Spain, This agreement entered into force on 01/09/2005, This agreement dealt with all cultural, social and economic fields, and one of the most important things it brought in the field of intra-trade is the gradual abolition of customs duties over a period of 12 years, with the aim of establishing a free exchange zone, , the research problematic was as follows:

How does the Euro-Algerian Partnership Agreement affect intra-Algerian trade flows?

In this regard ,we propose those hypotheses:

- Institutional differences are to a significant degree associated with country clustering, on one hand , by economic criterions ,and on the other hand ,by geographic affiliation .
- The structure of international trade flows at the country level also influences cross-country institutional variation. that is, similarities in both national trade structures and degrees of trade openness diminish institutional differences between the countries.

We answer to the problematic by using the descriptive analytical methodology based on the case study and relying on statistical techniques, and these research papers are aimed at:

- Introducing the Euro-Algerian Partnership Agreement and the areas it included.
- Determine the impact of the Euro-Algerian Partnership Agreement on the intra-regional trade flows in Algeria and the extent of Algeria's attractiveness to trade flows.
- The motives of Algeria and the European Union countries behind the association agreement.

1. The Euro Algerian Participation Agreement 1994-1996.

After the Algerian Government Hesitation to sign Agreement with the European Group, She wants to sign the Participation Agreement in Barcelona Conference in 1995.

1.1. The Preliminary Negotiation Stage.

The Relationship between Algeria and the European Union has witnessed an observable Development ,the Algerian Government highlights its will to sign the Participation Agreement ,that by bringing the European committee to agree to sign the Agreement by the Algerian Government in October ,13^{th} .1993.

After that the Exchanges Stage which extended from Jun 1994 to February 1996,which aimed to highlight the benefits and the Costs which are resulted on that Agreement for both Sides .

1.2. The Official European Negotiation Stage 1997-2001.

However, The Exchanges between both Algeria and the European Government were jest meetings, but, they tried to make it more Formal in special January $4^{th} - 5^{th}$ 1997 in Brussels when Algeria required.

- Growth of the Algerian Economy because of its Specialty.
- Strengthen and widen the Collaboration Field with the European Union (حبيب، 2003، صفحة 48) .

Many cycles have legislated for both sides to be satisfied , while the Second Exchange in April $21^{th} - 23^{th}$.1997 and the Third Exchange from $27^{th} - 28^{th}$.1997.When those Exchanges have finished by Mai to establish 4 Groups to care of Economy and Capital Collaboration .Social and Cultural Collaboration. Agriculture , Services .However ,Those Exchanges were stopped due to the ignorance of the European Government toward the Algerian Economic Specialty ,which is a rentier economy at first .

Moreover, the Carelessness of an important Points like Depts. as well as ,the catastrophic Security cases at that period due to the Civil War (Belmoukadem & Halim, 2006, p. 13).After that ,the Exchanges were late to April , 17^{th}.2000,base on the Algerian Government' s Two Conditions After 2002 to protect the Nation deference. Protect the Agricultural field Specialty .In $\text{February}12^{th}$-13^{th}.2001 a Conference has put for Security, Judgment field ,and Transportation Freedom .While ,another cycle put dealt with Capitals in March $15^{th}-16^{th}$. 2001. Mai $3^{th} - 5^{th}$, 2001.cycle dealt with agriculture and Services .While, Those cycle awarded to sign the Participating Agreement between Algeria and the European Union in19^{th} .2001 and published by Algerian External Minister (فيروز، 2013، صفحة 170) .

1.3. The Euro Algerian Participation Agreement Sign .

After finishing the Exchanges cycles which are 17 ,Algeria withdraws on the Economic Specialty low, in contrast, the European Union agrees to transportation Freedom and Terrorism Struggle throw the Exchanges ,to sign the Euro Algerian Participation Agreement in December , 19^{th} .2001at the European cycle Residence Brussels and the Final Sign in April 22^{nd} , 2002.Valancia Spain by Abd Al Aziz Bel Khadem and the Algerian External Minister v ,and Kriss Patten and External Ministers from the European Union ,while the Algerian Government interred that Agreement in Application by hiring a Ministry to follow this Application of that Agreement in September 01^{st} , 2005(هاني, حبيب، 2003، صفحة 48) .

2. The Euro Algerian Relationship Agreement Level.

These Agreement Contains Eight main Pivots, that discusses many deferent fields.

2.1. The First Pivot Political Discussion.

It contains some Lows that discuss to put a political debate between Algeria and Economic Volume Shapes a collaborated relationship due to achieve the welfare of the region.

2.2. The Second Pivot the Goods Pass.

It involves 6to 29 Sets that restate a free exchange region of goods except the Agricultural products and hunted products which is augmented steadily.

2.3. The Third Pivot Services Trades.

Monitory Banks Services, Associations Establishment in One region are involved by the Agreement members (بن سمينة، 2011، صفحة 154)

3.4. The Fourth Pivot Capitals, Payments, Compilations and other Economic judgment.

Promises are given by the Agreement members in the 38to 46 Sets to regulate the Payment Operations or regular Agreement by A changed currency, moreover, The Algerian direct investigations that are related to the capitals movement Freedom.

3.5. The Fifth Pivot Economic Cooperation.

The Economical collaboration was empowered by members in the regions that have internal problems or those which are agreed on and free exchanges and the regions that facilitate the close between the Economies members, Especially, Those that help to rise the Economic development create opportunities based on the 47 to 66 Set.

3.6. The Sixth Pivot The Social and Cultural Cooperation .

This Side involves Special affairs of the Workers , and that by equalize the work conditions as well as , awards and the Social insurance that is dealt with in the country , and that the Participation Agreement of 67to 78 Seta .

3.7. The Seventh Pivot Financial Cooperation.

This later involves the reformations that aim to update and develop the Economy , Putting in consideration ,the country side development and requalify the Economical structure and develop the investigations , and put in count the Effects of building a free exchanging Zone for the Economy Natural .and that what the mentioned agreement from the Set 79 to 81 .

3.8. The Eighth Pivot Justice and The Internal Affair Cooperation.

This Later contains Some Central Points:

- The Cooperation in Case of Transport Especial Points Ticket.
- The Cooperation in Case of the illegal immigration Surveillance.
- The Cooperation to ban Terrorism and the Organized Crime and Fraud and that what the International Seta 82 to 91 Involved in the Participation Agreement.

3.9. The Ninth Pivot.

It's the last Document of the Agreement that contain ,For Instance, Set a Participation Council that apply the Agreement ,and Set a Participation Committee deals with the Agreement Explanation based on the Sets 92 to 110 (فطيمة، 2020، صفحة 86،88) .

4. The Algerian Motives.

- Support the Algerian Economy and get in the International Markets, concerning the European Union as the movable power of the Economic development.
- The capitals flows due to enrich the project by extra helps and loans, Once to attract the hard coin .
- Facing the External competition .
- Benefit from the customs exemptions the primary goods that get in as a essential former of the National industries.
- Collaboration of the security field for passing the hard cases of country.
- Updating the Technologic development in inventing and trying to get up the petroleum complimentary(محمد و محمد، 2006، صفحة 153)
- Establish a free trade Zone.

5. European Union Motives.

- Referred to the huge production and limited European markets, and lack of covering the own needs of the Arabian Countries ,So fore it looks for getting in market .
- Limit the American large that goes to the African continent especially the northern countries .
- Establish a flourish region that supports the European Union relationships.
- Trying to cover the increased brain drain problems, especially from the Arabian Morocco refers to the near geographic position, by decreasing the employment at these countries.
- Cover the Violence wave that is spread in some of the Mediterranean countries by putting a plan to face terrorism(ضياء مجيد، 2005، صفحة 169) .

- Referred to it strategic position as the African Gate and the huge measures that she owns, that what pushed the European Union to make a participation with Algeria involved in (فاطمة الزهراء، 2014، صفحة 59).

6. Gravity Model.

In 1687 I.Newten discovered the word Gravity for the first time in physics ,transcripted the Gravitation powers between two Objects as it is follow .

$$F_{ij} = G\frac{M_i M_j}{D_{ij}^2}$$

F_{ij} =Gravitation Power.

$M_i, M_j = Volum$

D_{ij} =Distance between two Objects.

G =Fixed gravity Counted by power scale and field (WATAKA, 2016).

Next, That rule put to be considered as the most central model used in Economic while it was used for the first time by karry in 1860. As well as, the Gravity power Explanation in Trade for big regions Tinbergen in 1962 and poyhonen in 1979 did when developed a metric model to count the dual Trade volume and highlight the trade flows between countries(عبد الله و بلحاج، 2017، صفحة 79)

6.1. Gravity Model Definition.

It's an analyzing tool used largely to modelize the in between flows between deferent Geographic powers, it applied among a deferent in between cases. For instances ,Commercial and Social like Immigration and Commercial Flow (Fernandez, 2008, p. 02),so fore, it was classified as one of the best Economically .So, it was used at first for the Physics Phenomena ,than ,it was enlarged to the Second part in the Twentieth Century to cover the Social Economic Phenomenon ،2018 ،مختار) . (60 صفحة

6.2. Gravity Model Sizes.

There are two main faces of the Gravity model.

- **Simple Gravity Model .**

Usually ,The Gravity main model is highlighted the Trade flows Imports –Exports from the Country I to the Country J. while ,it equalizes the result of the general Outcome of both countries Y, Y_i divided into the distance in-between ,and modelize the exact as its flows

$$T_{ij} = A\frac{Y_i^{\propto} \times Y_j^{\beta}}{D_{ij}}$$

T_{ij} : The Intra Trade flows between both j, i countries .

A: Content.

Y_i , Y_j: The real Gross Domestic Product between both j, i countries

D_{ij}=The distance between both countries.

This Equation may changed to be written for Economic analysis needs by using .it may be trascripted as .

$$L_n(T_{ijt}) = L_n(A) + \propto_1 L_n(Y_{it}) + \propto_2 L_n(Y_{jt}) - \propto_3 L_n(D_{ij}).$$

Based on this equitation, we can observe the logarithm explanation .and the Trade Flows which is the followed variable that relied on 3 Variables .Which are language Economic Volume of the exported country and the independent language of the Economic Volume of the importer country, and the Language of the

Distance between both countries ,we concise $\infty_1, \infty_2, \infty_3$ as the flexibility scale of the commercial flows to highlight the average of the Economic Volume of the countries or the Distance between ,Wherever ,the Economic Volume of the country i for 1 % increases, the Trade Flows decrease between both countries ,Otherwise , Once the Trade increases for 1 %(سعاد، 2020، صفحة 44) .

- **The augmented Gravity Model.**

All the applied Outcomes of the Gravity Models Target that the Simple model changes highlight just a tiny part from the whole ones of the Trade Flows (Frederique & Nolwenn, 2005, p. 10),that what makes the majority of the use of extra changes that put in consideration the unmixed Targeted countries .For Instance ,the averages of the payment ,inhabitant Number the prices level ,the participated borders ,Language ,History, and Colonization ,The Changes Prices ,The Direct Foreign Inventory ,After ,adding these changes to the Simple model s equitation .It highlights at large the followed equitation:

$$lnT_{ijt} = \beta_0 + \beta_1 lngdp_{it} + \beta_2 lngdp_{jt} + \beta_3 lngdpp_{it} + \beta_4 lngdpp_{jt} + \beta_5 lnpop_{it} + \beta_6 lnpop_{jt} + D_{ij} + Border_{ij} + Langage + Colonizer + \varepsilon_{ijt}$$

i:The Primary indicator of country .

j:The Secondary indicator of the Country .

lnT_{ijt}: The commercial exchange between both countries.

$lngdp_{it}$:is the real Gross Domestic Product of country i.

$lngdp_{jt}$: is the real Gross Domestic Product of country j.

$lngdpp_{it}$: is the GDP per capita of country i.

$lngdpp_{jt}$: is the GDP per capita of country j.

$lnpop_{it}$: is the Population of country i.

$lnPOP_{jt}$: is the Population of country j.

D_{IJ}:is the geographical or economic distance between the to countries .

$Border_{ij}$: is dummy variable which takes the value 1 if the two countries share a contiguous border and 0 otherwise.

Language : is a dummy variable which takes the value 1 if the two countries share a common language and 0 otherwise.

Colonizer :is a dummy variable equals 1 if the exporting country is a former colony of importing country or if the two countries share a common colonial linkage and 0 otherwise .

ε_{ijt} = The random error term (سعاد، 2020، صفحة 45،46)

6.3. The Gravity Model Applications: There are many uses that the Gravity Model witness in the applied investigations to cure the intern Trade matters.

- **The Edges Costing.**

In case of the combinated borders of the dual Trade facilities between both i, j countries , There are some barriers that face commerce but , because of the rest stable factors ,it must develop the in between Trade quickly between both countries borders .That is called The Borders Effect.

- **The Trade Genders Analysis.**

To explain the Trade Genders between the Products we can rely on the Gravity Model refers it effects on the Trade average.

- **Trade Creation vs Trade Transfer:** The Gravity model was used in addressing the issue of regionalism, according to the Sign of the regional Agreement and Two variables i and j States .

- The First is "Both in" means that the Two Countries are in an agreement.

- The Second is "In out" means that the Two Countries are out of the agreement.

Based on this, if the first variable is positive, then there is the creation of Trade, and if the "In Out" sign is negative, this indicates that there is a diversion of Trade, and this test is conducted in order to depict the potential Trade as a result of Regional Integration Systems. (Howard, 2008, p. 17).

- **Estimation of potential trade.**

The Gravity model is also used to explain the bilateral Exports between the Countries of the studied Sample, depending on the distance, the size of the economy ,and the population...etc.

7. Estimation of the gravity model of trade flows with the most important European partners.

7.1. Standard export model testing with all sample countries.

First, we will estimate the different models of impact on exports for each sample country.

Table (01):Panel Pooled model for exports.

```
. reg lnexp lngdp lngdpp lnpop dis cln

      Source |       SS           df       MS      Number of obs   =       105
-------------+----------------------------------   F(5, 99)        =     95.57
       Model |  127.695905         5  25.539181   Prob > F        =    0.0000
    Residual |  26.454983         99  .26722205   R-squared       =    0.8284
-------------+----------------------------------   Adj R-squared   =    0.8197
       Total |  154.150888       104  1.48222008   Root MSE        =    .51694

------------------------------------------------------------------------------
       lnexp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lngdp |  -1.335456   .1377316    -9.70   0.000    -1.608745   -1.062167
     lngdpp |   2.102768   .2872762     7.32   0.000     1.532749    2.672786
       lnpop |  -.9573689   .6385877    -1.50   0.137    -2.224465    .3097277
         dis |  -.0001689   .0001187    -1.42   0.158    -.0004044    .0000667
         cln |   .3466126   .1463455     2.37   0.020     .0562313    .6369939
       _cons |   29.73462   10.53527     2.82   0.006      8.83035    50.63889
```

Source : Prepared by the researchers based on the program STATA 15.

From the STATA outputs program, it can observe that, the P value is less than 0,05 .rely on that ,The Zero Hypothesis refused. Which refuse the existence of the statistical clarification relationship between the study s variations .In another word, there is a statistical clarification between EXP and the rest variations. As well, the value Adj .R-squared=0.8197.in short. ,the intepended variations clarify that 81% of Exports .

Refers to lngdpp ,lngdp and cln .From the above table ,it can be noticed that all its counted values are less than 05%.As result ,these variation are economically and this impacts the exports ,just ,the Distance and the Habitants ,this because of the new regionalism does not put the Distance in consideration ,especially ,through the Technological Development.

Table (02):Fixed Effects Test for Exports.

```
. xtreg lnexp lngdp lngdpp lnpop dis cln, fe
note: dis omitted because of collinearity
note: cln omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       105
Group variable: country1                        Number of groups   =         5

R-sq:                                           Obs per group:
     within  = 0.3790                                         min =        21
     between = 0.6236                                         avg =      21.0
     overall = 0.3568                                         max =        21

                                                F(3,97)            =     19.73
corr(u_i, Xb)  = -0.9230                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       lnexp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lngdp |   .3135201    .359065     0.87   0.385    -.3991245    1.026165
      lngdpp |   1.468776   .3120798     4.71   0.000     .8493836    2.088168
       lnpop |  -3.15212    1.082727    -2.91   0.004    -5.301032   -1.003207
         dis |          0  (omitted)
         cln |          0  (omitted)
       _cons |   52.76228   17.37612     3.04   0.003     18.27549    87.24908
-------------+----------------------------------------------------------------
     sigma_u |  2.5038846
     sigma_e |  .46689425
         rho |  .96639805   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(4, 97) = 10.07                     Prob > F = 0.0000
```

Source : Prepared by the researchers based on the program STATA 15.

The test results showed that there is a relationship between the dependent variable and some independent variables only, and this is due to the existence of an overlapping linear relationship, and this is evident in relation to the distance and the colonial link, Also, only GDPP and POP really have anything to do with exports , Where the value of the coefficient of determination was estimated at 0.96, and this indicates that 96% of the variance in exports is due to the difference in the independent variables, After conducting the Hausman test, we concluded that the random effect test is more suitable than the fixed effect test.

Table (03):Random Effects Test for Exports.

```
. xtreg lnexp lngdp lngdpp lnpop dis cln, re

Random-effects GLS regression                   Number of obs     =       105
Group variable: country1                        Number of groups  =         5

R-sq:                                           Obs per group:
     within  = 0.2331                                         min =        21
     between = 0.9992                                         avg =      21.0
     overall = 0.8284                                         max =        21

                                                Wald chi2(5)      =    477.86
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
       lnexp |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lngdp |  -1.335456   .1377316    -9.70   0.000    -1.605405   -1.065507
     lngdpp |   2.102768   .2872762     7.32   0.000     1.539717    2.665819
      lnpop |  -.9573689   .6385877    -1.50   0.134    -2.208978    .2942401
        dis |  -.0001689   .0001187    -1.42   0.155    -.0004015    .0000638
        cln |   .3466126   .1463455     2.37   0.018     .0597807    .6334446
      _cons |   29.73462   10.53527     2.82   0.005     9.085862    50.38338
------------------------------------------------------------------------------
    sigma_u |          0
    sigma_e |  .46689425
        rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source : Prepared by the researchers based on the program STATA 15.

The above table shows us the results of the random effect test for exports, and through it we can formulate the standard model for exports as follows:

$$lnexp = \beta_0 + \beta_1 lngdp_{it} + \beta_2 lngdpp_{it} + \beta_3 lnpop_{it} + \beta_4 dis + \beta_5 cln + \varepsilon_{it}$$

$$lnexp = 29.73462 - 1.335456 lngdp_{it} + 2.10275 lngdpp_{it} - 0.95736 lnpop_{it} - 0.00016 dis + 0.34661 cln + \varepsilon_{it}$$

The results of the test showed that there is a direct relationship between exports and each of the per capita GDP and the colonial factor , While the relationship between it and the rest of the variables was inverse ,The test value was wald= 477.86, and its P value is less than 0.05, which means that it is significant , The test value was 477.86, and its P value is less than 0.05, which means that it is significant.

We also note that the regression value for both GDP and GDPP were respectively -1.33545 and 2.10276, meaning that a change in imports of $1,000 leads to a change in them of $13,355 and $2,102, respectively , As for the distance and population, since their P values are greater than 0.05, they do not affect exports.

7.2. Test the import standard model with all sample countrie.

We will estimate all impact models for the import sector for all sample countries.

Table (04):Panel Pooled model for imports.

```
. reg lnimp lngdp lngdpp lnpop dis cln

      Source |       SS       df       MS      Number of obs   =       105
-------------+------------------------------   F(5, 99)        =     74.84
       Model |  141.297191     5  28.2594381   Prob > F        =    0.0000
    Residual |  37.3835111    99  .377611223   R-squared       =    0.7908
-------------+------------------------------   Adj R-squared   =    0.7802
       Total |  178.680702   104  1.71808367   Root MSE        =    .6145

------------------------------------------------------------------------------
       lnimp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lngdp |  -1.712298   .1637269   -10.46   0.000    -2.037168   -1.387429
      lngdpp |   2.108132   .3414962     6.17   0.000     1.430529    2.785735
       lnpop |   2.157892   .7591138     2.84   0.005     .6516453    3.664138
         dis |  -.0003019   .0001411    -2.14   0.035    -.0005819   -.0000219
         cln |   .8060375   .1739666     4.63   0.000     .4608501    1.151225
       _cons |  -20.81253   12.52368    -1.66   0.100    -45.66224    4.037176
------------------------------------------------------------------------------
```

Source : Prepared by the researchers based on the program STATA 15.

As seen in Table 04,the P value Prop >F is minus 0,05 .So ,there is a relationship of a statistical Significance between the Imports and the rest of variables as well the value Adj R-square =0,7802 .This mean ,that the Intipanded variables highlight what equal 78%of the discrepant and in Imports .

According to the obtained results ,it observed that all the counted values of the study's variables are less than 5%.So ,these variables are abstract in side of economy and it effect the Imports .While the Economic development and Distance effect negatively on the Imports field ,this equals 1712$in GDP faces 1000$ in IMP In case of it link between it and GDPP and POP was ……When it is 1000$in IMP as changing in GDPP about 2108$and inhabitants about 2157P .However for the colonization link it effects positively in Imports .

Table (05):Fixed Effects Test for Imports.

```
. xtreg lnimp lngdp lngdpp lnpop dis cln, fe
note: dis omitted because of collinearity
note: cln omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       105
Group variable: country1                        Number of groups   =         5

R-sq:                                           Obs per group:
     within  = 0.5809                                         min =        21
     between = 0.8646                                         avg =      21.0
     overall = 0.5761                                         max =        21

                                                F(3,97)            =     44.82
corr(u_i, Xb)  = -0.9855                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       lnimp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lngdp |   1.536403   .3212049     4.78   0.000        .8989    2.173906
     lngdpp |   .8278324   .2791739     2.97   0.004      .2737495    1.381915
       lnpop |  -1.898101   .9685632    -1.96   0.053    -3.820431    .0242285
         dis |          0  (omitted)
         cln |          0  (omitted)
       _cons |   20.14119   15.54397     1.30   0.198    -10.70929    50.99168
-------------+----------------------------------------------------------------
     sigma_u |  4.9387798
     sigma_e |  .41766461
         rho |  .99289897   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(4, 97) = 52.40                     Prob > F = 0.0000
```

Source : Prepared by the researchers based on the program STATA 15.

From this study ,It observed that , there is a relationship between the continued variables and some of the intepented variables ,when we observe that the p value of both per capita ,GDP ,and the Population of Statistical Simple .means that , there is a link between them and the Imports Otherwise ,there is a compact written relationship for the rest variables ,while the exactness confusion value equalize 0,99 means 99%of the contradiction of the Exports refers to the difference of the intepanted variables .Relying on Hausman Experiment ,it highlighted that the granted Impact model is suitable for our case studying .

Table (06):Import random effects test.

```
. xtreg lnimp lngdp lngdpp lnpop dis cln, re

Random-effects GLS regression                   Number of obs     =       105
Group variable: country1                        Number of groups  =         5

R-sq:                                           Obs per group:
     within  = 0.1328                                         min =        21
     between = 0.9987                                         avg =      21.0
     overall = 0.7908                                         max =        21

                                                Wald chi2(5)      =    374.19
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
      lnimp |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+----------------------------------------------------------------
      lngdp |  -1.712298   .1637269   -10.46   0.000    -2.033197    -1.3914
    lngdpp |   2.108132   .3414962     6.17   0.000     1.438812    2.777452
     lnpop |   2.157892   .7591138     2.84   0.004      .670056    3.645727
       dis |  -.0003019   .0001411    -2.14   0.032    -.0005784   -.0000253
       cln |   .8060375   .1739666     4.63   0.000     .4650693    1.147006
     _cons |  -20.81253   12.52368    -1.66   0.097    -45.3585    3.733439
------------+----------------------------------------------------------------
   sigma_u |          0
   sigma_e |  .41766461
       rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source : Prepared by the researchers based on the program STATA 15.

Standard model of exports:

$$lnimp = \beta_0 + \beta_1 lngdp_{it} + \beta_2 lngdpp_{it} + \beta_3 lnpop_{it} + \beta_4 dis + \beta_5 cln + \varepsilon_{it}$$

$$lnimp = -20.0125 - 1.71229 lngdp_{it} + 2.10813 lngdpp_{it} + 2.15789 lnpop_{it} - 0.00030 dis + 0.80603 cln$$

The Study's results show that there is a positive relation between the imports and both GDP per capita ,Population size ,and distance .Hence, the link is in and the rest variables was inverse .For, the value of the study wald =374,19and its P value is less than 0,05which mean, its abstracts .So fore, there is a statistical between the exports and the rest of the variables .

According to POP, GDPP and DIS 2.1081m, 2.15789 ,0.80603.Which means ,the Imports change is 1000$deals to the change in it values by 2108$,2157 P .But for the rest variables it has a inverse relationship of the Imports .While the GDP decreases by 1712$under the Imports change by 1000$.

Table (07):multicollinearity test.

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       lngdp |     29.13    0.034330
     lngdpp |     28.70    0.034839
      lnpop |     13.38    0.074749
        dis |      6.01    0.166261
        cln |      1.35    0.742684
-------------+----------------------
    Mean VIF |     15.71
```

Source : Prepared by the researchers based on the program STATA 15.

During the multicollinearity study, we observe that the value VIP =15,71which is more than 5, so there is a multicollinearity.

Table (08):testing for heteroskedasticity.

```
. hettest lngdp lngdpp lnpop dis cln

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: lngdp lngdpp lnpop dis cln

         chi2(5)      =    31.50
         Prob > chi2  =   0.0000
```

Source : Prepared by the researchers based on the program STATA 15.

The heteroskedasticity study results show that, the P value is less than 0,05 .Means that,we refuse the null hypothesis that call for non heteroskedasticity .

Conclusion.

Referred to the Association Agreement between Algeria and the European Union in terms of nutshell and purposes, We found that, it is the best choice to establish a National Economy and getting out the oil dependency, In fact it serves the European Interests and its advantages are limited for Algeria Putting in consideration the rules of the Origin mentioned in the Agreement, which made matters worse for Algerian exports, and this what made many importers go to other countries and give up the preferential treatment that arises from the agreement.

Also, the results that we reached through the study model were not encouraging, as it was suffering from overlapping linear relationships, which led to resorting to the random effect model, whose results were more positive compared to the fixed effect model, Among the results obtained :

- The rules of origin mentioned in the agreement are more complicated, which made it a stumbling block in the way of Algerian exports
- Creating a free Trade Zone in its Classical form leads to diverting Trade in one direction in favor of the European Union, especially in light of the exclusion of Agricultural products from the Agreement and the persistence of the Algerian Trade balance deficit outside of hydrocarbons
- It became clear to us through the aggregate regression Test for both exports and Imports that there is an Economic Relationship between the latter and the variables of the Study, where the independent variables explain about 81% of EXP, and 78% of IMP
- There are problems with the fixed-effect model for both Exports and Imports, due to the existence of an overlapping linear Relationship, and with the help of the Huisman Test, it was found that the random-effect Test is more appropriate
- The results of the randomization Test shew that the value of wald = 477.86 and its calculated value is less than 0.05, means that it is significant, and accordingly there is a statistically significant Relationship between Exports and the rest of the variables.

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