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Tunisian - European Integration Factors Evaluation

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Abstract
In this paper I propose an evaluation of the Tunisian-European integration process through the study of the Tunisian economic returns convergence with those of its European economic and financial partners. This work is founded on the influence of three fundamental variables on this convergence. I begin with a descriptive study of these variables, and then try to formulate an empirical measurement to evaluate Tunisian-European integration aspects. Results shows that the Tunisian integration fluctuation through the period is mainly due to the country governance problems and not to the economic or financial spheres.
Keywords: Tunisian-European Integration, Convergence, Growth, Returns, Governance, Saving, Investment.

1. Introduction

Tunisia and the European Union (EU) have a long history of successful business relationships. The European Union is the most important Tunisian trading partner. Over than half of Tunisian trade is achieve with the EU. It is also the largest foreign investor in the country. Thus exports to the EU represented 74.3% of total Tunisian exports and 52.8% of total imports in 2014. In this year exports increased 6.9% compared to 2013 and imports from the European Union rose by 1.1%. Consequently, Tunisia is one of the EU's most established trading partners in the Mediterranean.

So, as part of its regional integration, Tunisia signed several regional preferential agreements with countries that represent the main European economic and financial partners. Therefore, conditions are suitable for Tunisia and the European Union to reach a strategic level to deep economic relations in light of mutual higher integration ambitions. The Tunisian-European link represents a constant and fundamental choice of its foreign policy.

This paper aims to check the Tunisian European integration degree and to detect some fundamental economic variables influence on this phenomenon. In this quest, we tried initially to define the variable that evaluates regional economic integration and its calculation for Tunisian case.

The answer is provided by the international trade theory contribution which predicted that markets integration into a common economic space leads necessarily to yields equalization in these markets. Therefore, more integration level is high, less are yield spreads between countries. This measure is used to evaluate Tunisia engagement degree in such process.

However, it is important to analyze some other fundamental variables that influence strongly such integration. Indeed, in addition to the country economic capacity[1], domestic saving investment correlation[2], institutions ability to govern integration process[3] must be taken into account in any meaningful study of Tunisian - European integration relations.

2. Tunisian – European cooperation relationships

Tunisia and the EU signed a first cooperation agreement in 1969, followed by the conclusion of an Association Agreement in 1995. Then, in the context of European Neighborhood Policy a first action plan was adopted in 2005 (Del Sarto et Schumacher, 2005). Tunisia and European Union share also the view that economic and social integration establishment is a growth and employment source and promote mutual development and prosperity (European Community Commission, 2005). The Privileged partner status assigned to Tunisia by the EU seeks deeper partners' integration in economic, social and human domains. This status should consider, since the democratic transition began in 2011, Tunisian challenges such economy expansion and solider and sustainable development imperatives (Sutour et al., 2013). In view to develop trade and economic cooperation, a second action plan provides the conclusion of deep and complete free trade agreement between Tunisia and the European Union. This agreement will contribute to a gradual Tunisia integration in the European Union market to achieve the Common Space creation.

Identifying the disparities between the Tunisian economy and the Community requirements motivated the partners to work towards more economic harmonization with progressive legislations rapprochement. For this purpose Tunisia has established a National Harmonization Program supported by the following three basic objectives:

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[1] A stable minimum economic growth.
[2] In agreement with Feldstein and Horioka (1980) contribution to define integration by domestic investment and saving correlation degree.
[3] Cf Cardwell P. J., (2011.)

First, promote gradual integration and rapprochement between the partners by the Tunisian economic and regulation harmonization with the EU, with the support of the Community institutional instruments. To this end, a joint mechanism is adopted to identify priority domains where reconciliation is necessary, the steps and resources required for its achievement. A Tunisian convergence program with standards is also implemented with the EU in order to achieve integration process.

In Europe, integration concerns, essentially, countries whose economic development levels are below the EU average. Also, European integration was mainly based between countries whose economic cycles' structures are synchronized.

In the Mediterranean countries, and even less in Tunisia, studies regarding economic cycles' synchronization, condition for any regional integration, are restricted[1]. Unless some contributions (Bernd et al, 2004 ; Gallegati et al ,2004 ; et Elachhab, 2007), there is not, to date, significant analyzes of cycles' synchronization determinants.

Second, consolidate macroeconomic framework to boost economic growth and accelerate its rhythm in order to strengthen the economic capacity through macroeconomic fundamentals improvement, which constitutes a regional integration fundamental platform.

Several authors have attempted to develop tests predicting Euro-Mediterranean integration agreements effects on Mediterranean countries economic growth. Page and Underwood (1997) analyze the potential consequences of Euro-Mediterranean agreements on Moroccan and Tunisian economic growth, focusing particularly on foreign direct investment. They conclude that the agreements signed between the EU and Morocco and Tunisia accelerate growth and income convergence compared to European countries. A similar study for Tunisia (Stern, 2001) shows that a free trade agreement between Tunisia and the EU would improve Tunisian growth by 3.11 percent in the short term and 4.65 percent in the long term. However, studies concerning developing countries economic growth level impact on integration process are rare.

Third, strengthen Tunisian public governance and implement a communication strategy in order to consolidate and evaluate governance and economic policies performance. In fact, governance is at the heart of major debates about the best way to achieve and promote an economic integration oriented towards the common objective of creating a new economic space with identity and common institutions. Thus, Tunisian economic integration contributes to new institutional frameworks for cooperation creation, involving not only states but also private actors to establish a favorable business climate (Ruggie, 1992).

3. Integration variables specification: descriptive study

Tunisian regional integration in an European space will be studied through a descriptive analysis of absolute yield spread as integration indicator.

We consider in this study countries training the principal Tunisian-European economic and financial partners.

The yields convergence degree between various regional markets subjects to possible integration should be logically based on the unit price law (UPL) contribution and its correlate the interest rate parity (IRP) to check the markets regional integration (Abiad, Leigh and Mody (2009)). We must observe the incomes in selected countries and calculate the Tunisian Absolute yield spread.

Thus, Tunisian-European integration level can be studied by the following variable:

$$X_t = \left| Y_t^{Tn} - \overline{Y} \right|$$

With:

X_t represents the absolute yield spread for country i, here Tunisia, compared to the zone average during the period. It reflects Tunisian integration along the period.

Y_t^{Tn} the Tunisian yield for the year t (t = 1......,T) based on investment incomes to investment position (or stock) ratio(Cardebat and Teïletche (2000)).

$\overline{Y}$ represents the zone average yield. It's an intra-individual average:

$$\overline{Y} = \frac{1}{N} \sum_{i=1}^{N} Y_{i.}$$

$Y_{i.}$ is the average yield for country i:

$$Y_{i.} = \frac{1}{T} \sum_{t=1}^{T} Y_{it}$$

Y_{it} represents the yield for country i for the year t (t = 1......,T)

[1] Cf works of Backus et Kehoe (1993), Kose, Prasad et Terrones (2003), Stock et Watson (2005), or more recently, Kose, Otrocket Prasad (2008) on analyzes of cyclical movements in developed and / or developing countries.

Figure 1 describes the absolute yield spread evolution for Tunisia compared to the zone. The general tendency shows Tunisian-European integration fluctuation through the period.

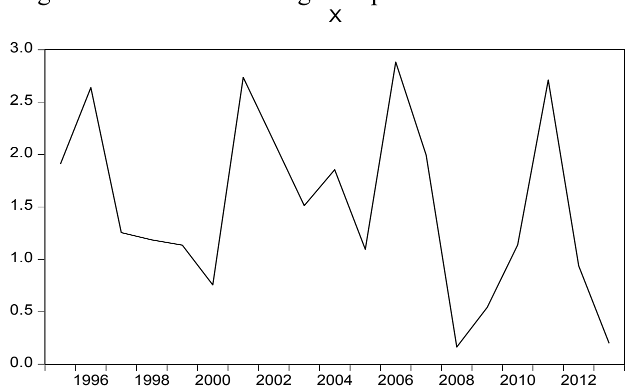

Figure1. Absolute Tunisian Yield Spread

The detailed analysis of figure 1 shows a cyclical trend of yields convergence. In fact we can observe 3 main periods. the first extend from 1996 to 2001, the second from 2002 to 2005 and the third from 2005 to 2011. Each cycle beginning lets appear that Tunisian yield spread tends to narrow, so the tendency shows a remarkable progress of the Tunisian-European integration process. In fact, the Tunisian authorities proceeded to monetary and financial national system reform through building a new institutional structure supporting exchange rate nominal stability compared to the principal economic and financial European partners (fixed exchange rate with fluctuation margins). Moreover, new products were emitted on money and financial markets in order to ensure their opening to non-financial economic actors. These arrangements and others supported Tunisian financial system dynamism and increase credibility and foreign investments attraction. In addition, nominal interest rates adjustments promote capital inflows.

However, the peaks observed in 1996, 2001, 2006 and 2012 are caused by several economic phenomena. In fact, yield spreads increase between Tunisia and European partners in these dates is exceptional and represents **responses** to several factors like:

- The rise of Tunisian economic performances due to national productivity improvement as a result of adjustment plan adoption by Tunisian enterprises in the early 90 and national financing sources availability.
- The Euro adoption as European single currency required a Tunisian exchange rate adjustment in 2001.
- Better economic conditions in 2006, motivate Tunisian investment increase and affected positively growth rate.
- Political changes started in 2011 induced Tunisian authorities to redefine there external economic policy.

Therefore, we note Tunisian-European integration process fragility caused by Tunisian economic sensitivity to economic and political difficulties. We can also conclude that Tunisian integration depend on three major variables.

First, economic growth defines Tunisian needs for foreign investments and determines its international cooperation degree.

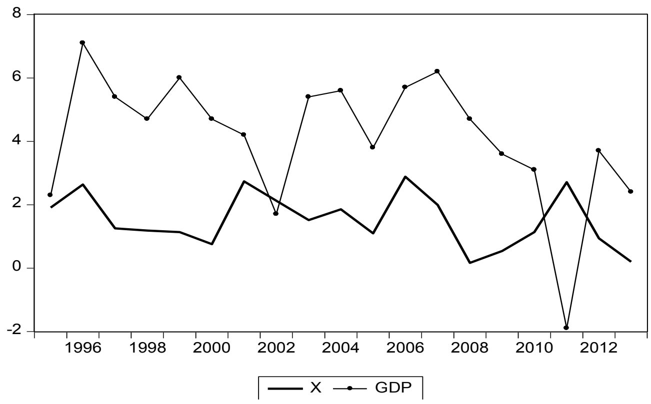

Figure2. Tunisian GDP growth (% annual)

In fact, according to figure 2 we can distinguish 2 types of growth effects on absolute yield spread:

- If economic conditions are great in Tunisia, yields tend to rise so the spread with European average blow up.

- When economy let appear good results, Tunisian economic dependence on European flows decrease. Therefore, integration process decline.

Second, according to Feldstein and Horioka (1980) contribution, if integration is advanced, saving is free to move towards the most advantageous placements in national or foreign markets. Then, there would be disconnection between national saving and investment.

So, the relation between national saving and investment rates and absolute yield spread appears very strong.

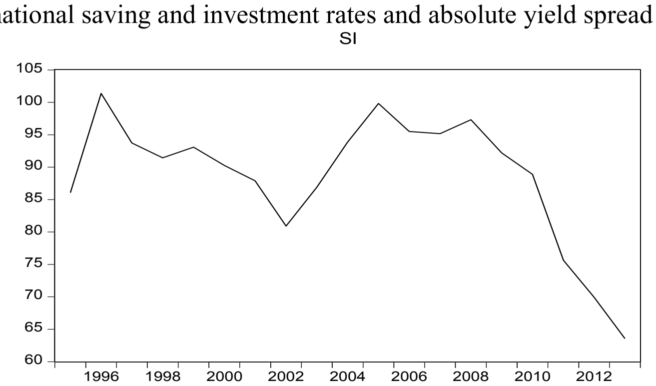

Figure3. Tunisian Saving Investment Coverage Rate

Indeed, according to figure3, we note that Tunisian yield spread evolution compared to the European zone is relatively influenced by saving investment coverage rate.

We notice between 1995 and 2005 that coverage rate increase, at beginning and end periods; spreads tend to rise, which influence negatively integration level of Tunisia (Same thing for the period between 2005 and 2008). For the periods (1996-2002 and 2011-2013), the tendency was reversed. This report reveals the strong substitution between national and foreign financial saving. Indeed, once the resident agents financing capacity is reinforced, capital markets liquidities increase which decreases foreign capital needs requiring relatively higher risk prime. Tunisian yields will be influenced and increase compared to the European average.

Third, Tunisian authorities capacities to lead such integration is very important because open economies are complex and require high governance quality. It's fundamental to build institutions capable to carry out effectively this process.

The study of governance quality can provide a better understanding of its importance for the integration process between countries. Today, governance indicators have an essential interest in the choice of countries cooperation policies.

4. Measurement description and estimation

In order to formulate an integration global analysis, various contributions built by economic theory would be used to introduce a simplified conceptual framework for such regional phenomenon evaluation and measurement. However, theory and empirical surveys are not conclusive about the most regional integration adequate measurement. Most of these liberal inspiration studies concentrate on the opening policies effects, in particular for transition countries which seek to improve their development, and not to measure their effective integration degree in regional or international scale (Kallel and Zoghlami (2015)).

Such measurement must include four essential dimensions to quantify regional integration. Indeed, and according to international exchange traditional theory, production factors are supposed to be perfectly mobile so international trade contributes to factors prices equalization. This conclusion refers to the unit price law and its correlate the interest rate parity. Thus, if markets are perfectly integrated, then yields in considered countries will be equalized. In other words, more return spreads are contracted, better would be homogeneous the regional markets subjects of integration.

These yield spreads can be strongly influenced by country economic performances. In fact, the economic growth variation acts on factor incomes fluctuation in future countries regional integration. Also, when the integration process advance, foreign demand increases, which affect domestic investments acceleration and stimulates consequently factors returns increase.

In addition, foreign capital input effect on investment depends on national investment environment than the local saving behavior. Consequently factors mobility involves correlation reduction between domestic investment and saving. Regional integration appears in agreement with Feldstein and Horioka (1980) definition.

In the same way, the institutional development was often considered as a necessary condition to ensure regional integration policies success. In fact, there is a package of instruments to measure country institutional level. Governance constitutes one of most significant indicators. The largely allowed idea is that countries must reinforce their governance structures when they are engaged in an economic integration process. Institutional systems weakness seems to be a handicap for reliable monetary policy establishment and successful integration.

Thus, the search of a regional integration global measure should take into account markets yields convergence, macroeconomic dimension such economic growth, , financial dimension based on national saving and investment correlation and institutional dimension through Tunisian governance indicator.

In the following we try to use a model which gathers these various aspects of regional economic integration. We will present our model variables specification, proceed to its application for the Tunisian-European case. This work will give us an idea about Tunisian engagement specificities with European zone.

The Tunisian-European integration study should logically lead us to test the following model:

$$X_t = \alpha_t + \beta_1 (GDP)_t + \beta_2 (S/I)_t + \beta_3 (WGI)_t + \varepsilon_t \qquad t = 1 ...... T \qquad (1.1)$$

With (X_t) the Tunisian absolute yield spread. It is defined within our descriptive study as being the most direct and homogeneous regional integration measurement; it represents our endogenous variable. More Tunisia integers the observed area, these returns spread compared to the areas average (X_t) tend to zero. We consider a model without constant to verify this hypothesis.

$(GDP)_t$ is the Tunisian gross domestic product,

$(S/I)_t$, represent the national saving investment coverage rate in Tunisia,

$(WGI)_t$; is the Tunisian governance indicator.

ε_t is the error term

The annual percentage growth rate of GDP at market prices is based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Studying the saving investment relation leads us to follow the logic inspired from Feldstein and Horioka (1980) test in order to calculate these two variables in Tunisia. Following this test we will be able to conclude about saving and investment connection. More these variables are disconnected in the area, more it is integrated and saving is free to move between countries according to markets profitability. We will use the saving investment coverage rate (S/I) which reveal national economic agent's saving capacity to cover national investor's needs.

Governance indicator is defined as "the set of practices and institutions through which authority is exercised in a country ". It is measured by the World Bank by six aggregate indicators summarize in Worldwide Governance Indicators (WGI). (Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi (2010)).

The starting idea is to check if the general tendency which lets appear Tunisian-European integration process fragility through the period, result from economic growth rate instability, national saving and investment relative connection or could rather be due to Tunisia specific governance characteristics. In other words, we will try to show if this convergence fluctuations are explained by macroeconomic variable *(GDP)*, financial variable *(S/I)* or by institutional variable *(WGI)* or rather by their mixed contribution.

This test would be applied to conclude about Tunisian-European integration level.

5. Empirical Study

The empirical Study will start with some descriptive tests of the model variables then try the model estimation and results interpretations.

5.1. Descriptive tests

At first, this study shows some descriptive statistics, then, normality, unit root tests and variables correlation.

Table1. Variables Descriptive Tests

	X	GDP	S/I	WGI
Descriptive statistics				
Mean	1.5143	4.1263	88.6076	-0.0735
Median	1.2560	4.7000	91.4414	-0.0505
Maximum	2.8820	7.1000	101.3703	0.0270
Minimum	0.1628	-1.9000	63.5643	-0.1808
Std. Dev.	0.8492	2.0504	9.9081	0.0688
Normality Test				
Skewness	0.1334	-1.2721	-1.1559	-0.3604
Kurtosis	1.9574	4.9772	3.6613	1.9995
Jarque-Bera	0.9170	8.2192	4.5771	1.2038
Probability	0.4322**	0.0164*	0.0941*	0.4478**
Unit root tests				
ADF	-3.9669	-3.3508	-0.2389	-0.9125
P-P	-9.9181	-3.3776	-0.4016	-0.9125
Correlation matrics	X	GDP	S/I	WGI
X	1.0000			
GDP	-0.0386	1.0000		
S/I	0.1653	0.6490	1.0000	
WGI	0.4372	0.4741	0.4516	1.0000

Descriptive tests in Table 1 give an idea about the study variables properties. The normality test shows that the model variables follow a normal distribution. The correlation matrix indicates no significant correlation between the model variables.

5.2. Estimation and interpretations

The final model specification is:

$$X_t = \beta_1 (GDP)_t + \beta_2 (S/I)_t + \beta_3 (WGI)_t + \varepsilon_t$$

The estimation gives the following coefficients:

$$X_t = -0.2\ (GDP)_t + 0.03\ (S/I)_t + 6.02\ (WGI)_t$$
$$(0.0989)^{***} \quad (0.0004)^{*} \quad (0.0469)^{**}$$

To understand the integration process fragility between Tunisia and the EU we estimated the model presented above. The results are both surprising and significant. First, we will interpret each coefficient then found results overview.

* Significant at 1%, ** significant at 5%, *** significant at 10%

Results show a negative effect of the Tunisian economic growth on the integration process. This result although it is strange at first look, however, it is logical and can be explained either by the integration measure definition or by the Tunisian economic specificities. Indeed, our measurement is based on the spread between Tunisian yields and those of the considered area average. Thus, any change in Tunisian yields resulting from national economic performance fluctuations necessarily influences its integration.

When the economy results are good, investors anticipated demand will increase and investment rise which will encourage the factor prices increase (assumed to be paid at their marginal productivity). Because Tunisian yield is higher than the European average, the production factors yields increase amplifies the yields spread compared to this average. This also explains that in recession times, Tunisia seems to be more integrated with the EU because the domestic yields decrease leads to its convergence towards the European average.

Regarding to the national saving investment coverage rate effect on Tunisian regional integration, we note that although the positive and significant coefficient, its weight is low (this observation appears also in the correlation matrix between the endogenous variable and the national saving investment coverage rate).

Remember that the national saving investment coverage rate reflects the correlation degree between these two variables within the Feldstein and Horioka (1980) meaning. Thus, a higher coverage rate mean a high correlation between domestic investment and national saving. In this logic, the result found is explained by the strong correlation between Tunisian investment and saving, but regional integration implies a disconnection between these two variables.

Indeed, the Tunisian government has implemented some measures to strengthen national long term saving, by improving the saving remuneration, banking modernization and financial market development through the financial products diversification. the objective is to encourage economic operators to increase saving and boost domestic investment. This tends to improve the national saving investment coverage rate and to increase the correlation between these two variables. This finding invalidates the commitment of Tunisia in a process of regional integration with European countries.

Another interesting result is provided by the governance central role in the Tunisian regional integration administration. The governance coefficient let appear an important positive and significant effect on the endogenous variable. The Tunisian integration process progress depends heavily on the political governance quality. This process fluctuations observed in the descriptive analysis confirms the country governance problems.

Indeed, the country opening (placed under structural adjustment since the 90s), procured very mixed economic results. This caused more and more criticism from non-governmental institutions.

Thus, despite the Tunisian economic fundamental characteristics in human capital development and macroeconomic stability, it was characterized by bad governance which manifested by the systematic laws violation, administration arbitrariness in several domaines, corruption, lack of public accountability obligation and political interference at all levels. The Tunisian foreign policy was penalized because this reality.

In Tunisia, the governance is now the subject of a discourse on the state role redefining and the new political practices emergence and dynamic institutions (under pressure from European partners and international organizations). Good governance appears as a prerequisite and not a consequence of the Tunisian regional integration.

Indeed, any effort or attempt to create an integrated regional space is constrained by the governance policies membership adoption, which consist in taking into account the country local economic structures, protecting the economic and financial actors of information asymmetry and moral hazard problems.

In summary, the Tunisian Regional integration is at first a political decision which requires partners good governance for a single factors market creation from the beginning between the co-integrated countries (and not a gradual rapprochement between markets) to prevent any yields spread between different markets.

7. Conclusion

In this paper, we tried to use an evaluation of Tunisian integration process with principal European economic and financial partners. We consequently initiate in a descriptive study the contributions of various measurements which generally affect Tunisian regional integration in order to formalize an empirical appreciation of this process on a regional scale.

The results analysis show that the Tunisian integration fluctuation through the period is mainly due to the country governance problems and not to the economic or financial spheres. This observation demonstrates that policies management into the zone must be more rigorous to establish a good integration climate between partners.

For successful integration challenge, Tunisia has several advantages such as a high level of economic and human development, a modern basic infrastructure and qualified human resources. But to win this bet, Tunisia needs to implement a governance strategy in a coherent framework. In this regard, strategic management and operational management approach for good governance establishment would be recommended to the Tunisian government.

Tunisia has started since 14 January 2011, a new page in its modern history, marked by a peaceful revolution for dignity and freedom. This revolution has laid the democracy development foundation based on the rights rule, human rights respect and fundamental freedoms. These values shared with the European partner motivate the mutual desire to raise their integration relations to a higher and more strategic level.

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