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Euro - Mediterranean Zone: Between Macroeconomic and Institutional Integration

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Abstract
This paper's purpose is to use a direct and homogeneous measure of regional financial integration for countries which composed the Euro-Mediterranean, economic and financial, principal partners. We tried to gather contributions of three measurements used generally to evaluate financial integration level in order to formalize a global appreciation of this regional phenomenon. Results show that financial yields spread contraction between countries through the period is not due to macroeconomic integration process acceleration but to Euro-Mediterranean institutional similarity.
Keywords: Financial Integration; Interest Rate Parity; Investment; Saving; Central Bank Independence; Euro-Mediterranean Space.

1. Introduction

In order to formulate a global financial integration analysis, various contributions built by economic theory would be necessary to advance a simplified conceptual framework for such regional phenomenon measurement and evaluation. Owing to the fact that it's a wide concept, theory and empirical surveys are not conclusive about the most appropriate regional financial integration measurement. Moreover, most of these liberal inspiration studies concentrate on the opening policies effects, in particular for transition countries which seek to finance their development, and not to measure their effective integration degree in regional or international scale.

Such measurement must include three essential dimensions to quantify financial integration. Indeed, and according to international exchange traditional theory, production factors are supposed to be perfectly mobile and international trade contributes to factors prices equalization. This conclusion gives rise to the one price law and its correlate the interest rate parity. Thus, if markets are perfectly integrated, then financial yields in considered countries will be equalized. In other words, more return spreads are contracted, better would be homogeneous the financial markets integration. In addition, foreign capital input effect on investment depends on national investment environment than the local saving behavior. Consequently capital mobility involves correlation reduction between domestic investment and saving. Financial 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 financial integration policies success. In fact, there is a package of instruments to measure country institutional level. Central bank independence constitutes one of most significant indicators. The largely allowed idea is that countries must reinforce their institutional structures when they are engaged in a financial integration process. Institutional systems weakness seems to be a handicap for reliable monetary policy establishment and successful integration.

Thus, the search of a global measure of regional financial integration should take into account macroeconomic dimension such as national saving and investment correlation, microeconomic dimension based on various financial markets yields and institutional dimension through studying central banks independence degrees.

In this work, we will try to formulate a measure which introduces these various aspects of regional financial integration. First, we will present our model variables specification, then; we will proceed to its application for the Euro - Mediterranean zone.

2. Euro - Mediterranean financial relations characteristics

From cooperation agreements to partnership, the European Union Mediterranean "policy" tried, in each stage, to take into account the rise of real and financial exchange liberalization process (Cardwell (2011)). For Mediterranean Transition Countries (MTC), it is clear, following their economic evolution and long-term contracts conclusion with several European countries, that they express a sharp political desire of integration with EU (Ghesquière (1998)). Their capital movements opening degree and stock markets emergence are certainly an orientation sign towards financial commitments with the euro area (Larbi (1998)).

Financially integrated Euro - Mediterranean area creation doesn't appear, actually, as pure illusion. In addition to opportunities offered to European Union (EU) and to Mediterranean Transition Countries (MTC), different financial integration geostrategic stakes consolidate such space creation (Pace (2004)). Indeed, apart mediterranean countries geographical proximity and historical links, EU represented and remains for most region countries the principal capital supplier. Furthermore, following the increasingly Mediterranean financial markets

opening, which offer at the same time raised yield products and similar legal and constitutional structure to Europe, this integration idea would have taking form.

The EU has engaged a dynamism process of its Mediterranean policy, with a conclusion of new generation euro - Mediterranean agreements which one of the objectives is a stable common financial space creation promoting financial transfers between the area countries. European Union attraction seems to be increasingly strong for MTC in view of significant potential results on their long-term development (Johansson-Nogués (2004)).

Mediterranean integration in a single Euro - Mediterranean capital market offer opportunity of solving, at the same time, developing countries financing problems and their multiple divergences. It is clear now that the non-integration cost is higher than that of integration. Integration will procure better economic and financial performance for whole region (Larbi (1998)).

Euro - Mediterranean area creation should incite MTC authorities to think about their membership formalities and procedures in such zone. The question is to know if the Euro introduction will motivate authorities to redefine their economic policies, in particular their monetary and financial policies.

For MTC, financial integration agreement, initially, requires the stability of their currencies parity compared to Euro and then, that this parity be an equilibrium one. This exchange rate stability is conditioned by two criteria checking, first, if EU represents significant commercial and financial partner with MTC, second, if symmetrical shocks affect these countries similarly (Del Sarto and Schumacher (2005)).

It is clear that the theoretical study, analyzing MTC exchange rates choices and suggesting recommendations as regards exchange policies, should be done within the theoretical framework of Optimal Monetary Areas theory (OMA). Indeed, according to this theory, it appears that exchange rate volatility is explained by the economic cycle's asymmetry between various partners and by their exchanges distribution asymmetry on three sectors (industry, agriculture and services) (Georgescu and Popescu (2014)). This purpose is checked in our case since MTC economic cycle profile is similar to its principal European partners (Germany, France and Italy). Also, within the framework of European association agreement, exchanges between these partners tend to converge, which encourage authorities to align their exchange parities. Thus, a policy of fixed exchange rate compared with the Euro is crucial and necessary to carry out financial integration process.

Following financial integration, capital account liberalization requires greater economic policies synchronization to complete the monetary and financial interdependence between Euro - Mediterranean zone countries.

According to Lamfalussy (2002), the Euro introduction in the economic and monetary union has already incidences on European countries. The monetary union [2]effect analyses in term of nominal and real convergence (Investment, growth…) within the Euro area provide optimism report. In addition, following the Euro advent, the economic and financial relations between the Mediterranean countries and the euro zone were reinforced, on the one hand, for reasons of trade cooperation and financial and, on the other hand, following the agreements of association signed with the UE by certain countries (Tunisia, Morocco, Turkey…).

However, studies which explicitly treat Euro external implications are scarce and related to its effects on the dollar area (White, Glatati and Tsatasaronis (2002)). Also, its implications on transition countries close to the EU, such as the Central and Eastern European Countries (CEEC) and Mediterranean Transition Countries (MTC), are subject of more limited analyses.

This search of integration leads us to build a global test in order to check empirically the Euro - Mediterranean financially integrated space creation progress.

3. Financial integration test variables specification

In the aim to construct our global financial integration test we will take into account three variables whose quota will be presented below.

3.1. Financial yields spread

This stage of our financial integration test consists in examining financial yields convergence degree between various financial markets subjects to future financial integration (Abiad, Leigh and Mody (2009)). Financial yields spreads is inspired mainly by the unit price law (UPL) contribution and its correlate the interest rate parity (IRP). To check the unit price law i.e. that the markets are perfectly integrated; we must observe the prices in considered countries and demonstrate the financial yields equalization.

With FY_{it} financial yield expressed in % for country i (i = 1.....,I) in the year t (t = 1.....,T). We define the following variable:

$$X_{it}^{FY} = \left| FY_{it} - FY_{.t} \right|$$

corresponds to the absolute spread between the country i yield and the average yield for the whole countries in year t. We also define the following variables:

$$X_{.t}^{j} = \frac{1}{I}\sum_{i=1}^{I} X_{it}^{j}$$

Where $X_{.t}^{j}$ corresponds to the average absolute spread of each country for a given year (inter individual average). This variable constitutes our global integration measure. Indeed, if countries are perfectly integrated, the yields should converge between countries in which case $X_{.t}^{j}$ tend towards zero.

The variables used in this measurement will be based on financial investment incomes to investment position (or stock) ratio (Cardebat and Teïletche (2000)).

3.2. Saving investment coverage rate

In agreement with Feldstein and Horioka (1980) contribution, we will establish the domestic saving and investment relation. Studying this relation must normally lead us to follow the logic inspired from their test in order to calculate these two variables in concerned countries. This stage consists in fact to highlight the saving and investment evolution, along the period taken into account, for all integrated financially countries. Saving investment coverage rate (S/I) reflects national economic agent's surplus capacity to cover national investor's needs. According to this rate we will be able to conclude about these two variables connection. Therefore, in assumption that capital mobility is complete - saving is free to move towards the most advantageous placements in national or foreign money markets - then, there would be disconnection between national saving and investment. S/I coefficient will be necessarily distant from the unit. Thanks to Feldstein and Horioka contribution, and by adapting it to our conception, we will use saving investment coverage rate in our test (Giannone and Lenza (2008)).

3.3. Central bank political independence index (CBI)

Recently, many Mediterranean countries chose central bank independence because of its anti-inflationary policy credibility (Kydland and Prescott (1977)). We use central bank independence measure constructed by Cukierman, Webb and Neyapti (1992). In fact, they propose three central bank autonomy categories staff independence, political independence and financial independence.

Alesina and Summers (1993), demonstrate that central bank political independence may reduce inflation, and consolidate the idea according to which there is a negative and significant correlation between central bank independence degree and inflation. The political independence degree study could contribute to the formulation of a preliminary idea relating to the economic and financial performances of the countries (inflation in our case) (see also De Haan and Kooi (2000).

4. Measurement description and estimation

4.1. Model presentation

The financial integration level study of the Euro - Mediterranean zone should logically lead us to test the following model:

$$\mathbf{X^{FY}_{it} = \alpha i + \beta\,(S/I)_{it} + \lambda\,CBI_{it} + \varepsilon_{it} \qquad i = 1..... I;\ t = 1..... T \qquad (1.1)}$$

With ($\mathbf{X^{FY}_{it}}$) the absolute financial yield spread between countries. It is defined within our study framework as being the most direct and homogeneous financial integration measurement; ¶it represents our endogenous variable.

$\mathbf{(S/I)_{it}}$ and $\mathbf{CBI_{it}}$ respectively represent the national saving investment coverage rate and the central bank political independence index for country i (i = 1...., I) and the year t (t = 1...., T).

$\boldsymbol{\varepsilon_{it}}$ is the error term.

The starting idea is to check if the general tendency which lets appear a countries financial yields convergence through the period, really arises from regional financial integration process acceleration. Indeed, this phenomenon, which should result from national saving and investment relative disconnection, could rather be due to each country specific institutional characteristics. In other words, we will try to show if this financial convergence is explained by macroeconomic variable (S/I) or by institutional variable (CBI) or rather by their mixed contribution.

This test would be applied to conclude about Euro - Mediterranean financial integration level. We will use panel data econometric techniques.

4.2. Euro-Mediterranean financial integration: tests and results interpretation

We consider countries training the principal Euro - Mediterranean economic and financial partners. Mediterranean developing countries choice was carried out under data availability constraint. The study covers the period 1999-2013.

The countries are as follows:

- Euro Zone: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the

Netherlands, Portugal and Spain, taken as a whole.

- Four Mediterranean Transition Countries: Jordan, Morocco, Tunisia and Turkey.

4.2.1. Preliminary tests

a. Unit root and cointegration tests

To avoid false regression, it is necessary to ensure the variables stationarity and the absence of cointegration relation between them.

The study of the panel stationarity is requested in the case of a large sample size. In our analysis we will use the generally recommended tests, ie Levin, Lin and Chu (2002) and Im, Pesaran and Shin (2003) tests which null hypothesis assumes the presence of unit root and thus the non stationarity of the variable. However, while the first test permits the presence of specific individual effects and heterogeneity between individuals, the latter allows also the possibility of heterogeneity of the unit root in the panel.

Tests results are:

Table 1: Level unit root test

Variables	Levin, Lin and Chu				Im, Pesaran and Shin			
	Model without trend		Model with trend		Model without trend		Model with trend	
	Statistic	*P-values*	*Statistic*	*P-values*	*Statistic*	*P-values*	*Statistic*	*P-values*
X^{FY}	2.43195	0.9944	-2.34241	0.0095	4.56360	1.0000	0.11952	0.5477
CBI	-19.4834	0.0000	-14.0813	0.0000	-8.19444	0.0000	-15.5230	0.0000
S/I	-1.63092	0.0415	-3.11189	0.0009	-2.49316	0.0061	-1.98061	0.0239

The null hypothesis of Level unit root presence could not be rejected for the variable XFY. This is mainly due to the effect of symmetric shock (subprime crisis in 2008) and asymmetric shocks (debt crisis of Greece, Spain, Portugal and Italy since 2010) as well as socio-political turbulences of some Mediterranean countries partners (since 2010). This brings us to apply the unit root test in first differences.

The results are shown in the following table:

Table 2: First difference unit root test

Variables	Levin, Lin and Chu				Im, Pesaran and Shin			
	Model without trend		Model with trend		Model without trend		Model with trend	
	Statistic	*P-values*	*Statistic*	*P-values*	*Statistic*	*P-values*	*Statistic*	*P-values*
X^{FY}	-18.6904	0.0000	-17.3622	0.0000	-16.6051	0.0000	-14.3279	0.0000

With the First difference test the null hypothesis of unit root presence could be rejected for the variable. En conclusion la série non stationnaire en niveau est intégrée d'ordre 1. In conclusion, the level non-stationary variable is order one integrated.

The next step is to check, referring to the works of Pedroni (1997, 1999, 2004), if a linear combination of these variables can be characterized by a stationary process. We tried to check the existence of a long-term stable relationship for our function

In fact, Pedroni developed seven cointegration tests for panel data, four for the "within" model (when the considered panel is homogeneous) and three for the "between" (for heterogeneous panel). The first, called cointegration statistics pool is based on the combination of autoregressive coefficients between the different members for unit root tests on the estimated residuals. The second, called average group cointegration statistic, is based on estimators that represent estimated individual coefficients average for each country. Of the seven tests, we use the Phillips-Perron (PP) and ADF tests.

Table 3: Pedroni cointegration test

		Statistic	***Prob.***
Statistic Of PP	*Pool*	-7.507311	0.0000
	Group	-15.96229	0.0000
Statistic Of ADF	*Pool*	-9.446309	0.0000
	Group	-10.60255	0.0000

This table shows that the tests reject the null hypothesis of no cointegration relationship between the variables. Thus, we see that there is a long-term relationship between financial integration and other variables. So we can estimate the different relationships

b. Individual effects test: Hausman test

Hausman test (1978) consists to verify if the individual effects are fixed or random.

The results show less than 10% probability (0.0301) which leads us to reject the hypothesis of random individual effects existence. Thus, we hold in follows that our model individual effects are fixed.

4.2.2. Estimation and interpretations

Our model final specification is:

$$X^{FY}_{it} = = \alpha i + \beta\,(S/I)_{it} + \lambda\, CBI_{it} + \varepsilon_{it}$$

The empirical validation gives us the following estimators:

$$X^{FY}_{it} = 0.223081 - 0.394449\ (S/I)_{+}\ 2.93036\ CBI$$
$$(0.036)\quad (0.0354)\qquad (0.0102)$$

P-values are in parentheses

The estimation show, on one hand, a significant negative relationship between the countries financial yields convergence degree and national saving investment coverage rate, on the other hand a significant positive relationship between the countries financial yields convergence degree and political central bank independence index.

In fact, it proves that national saving investment coverage rate influences negatively financial integration process. In other words, national financial resources abundance for local investors decreases their requirement in foreign capital.

The negative relation between (XFY) and (S/I) (-0.394449) reveals the strong substitutability between national and foreign financial saving. Indeed, if the resident agents financing capacity is reinforced with capital flows increase, following financial integration, then capital markets liquidities increase which reduces need for foreign capital requiring relatively higher prime risk. Financial yields will be influenced and will move away from Euro- Mediterranean countries average.

This result is in conformity with those of Ramey and Ramey (1995) and Fatas (2000), which stipulate that in opened economies, increase in national saving reduced the dependence to foreign saving, thus protecting economy from external shocks. Indeed, with a solid financial system, saving porvides insurance against foreign capital flows risks and prevent macroeconomic vulnerability and financial crises.

Levine and Zervos (1998) analysis insists on the fact that financial opening does not lead to permanent increase in capital stock growth rate and investment. The authors analyzed the increasing integration effect on investment growth rate behaviour. Results suggest that, in spite of positive stock exchange market liberalization impact on capital cost because it contributes to its reduction, external capital flows don't induce capital stock growth rate increase.

With regard to the positive relation between (XFY) and (PII), the coefficient λ (+2.93036) shows that financial convergence is based on monetary policy convergence between Euro - Mediterranean countries which permanently aims financial system safety within the meaning of Patat (1992) and Jochimsen (1992). Indeed, there is a common countries monetary authorities orientation to found an operational macroeconomic and a stability price environment. This context will be more suitable for financial institutions strength than a high inflation volatility one. This new regional financial architecture orientation will improve multilateral financial system functioning, so as to allow a better crises prevention or their best resolution if, by misfortune, they occurred.

6. Conclusion

In this paper, we tried to use, a direct and global measurement of financial integration for principal Euro-Mediterranean economic and financial partners subject of a potential future integration. We thus gathered the contributions of three measurements generally used to evaluate financial integration in order to formalize a total appreciation of this phenomenon on a regional scale.

The results analysis showed that the financial yield spread variations of the Euro-Mediterranean countries through the period don't reflect the financial integration level within the meaning of Feldstein-Horioka. This observation indicates these variations would be due mainly to the monetary policies management into the Euro-Mediterranean space.

References

Abiad A., Leigh D., Mody A., (2009), "Financial integration, capital mobility, and income convergence, finance and convergence", *Economic Policy*, April, pp. 241-305.

Alesina, A., Summers, L.H., (1993), "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence", *Journal of Money, Credit and Banking*, 25 (2), May, pp. 151-162.

Cardebat, J. M., Teïletche, J., (2000), « Intégration Réelle et Intégration Financière : Mesure et Relations », *Économie Appliquée*, Tome LIII, 1, pp.133-153.

Cardwell P. J., (2011), "European Neighborhood Policy and the Union for the Mediterranean: Overlapping Policy Frames in the EU's Governance of the Mediterranean", *Journal of Common Market Studies*, Volume 49, Issue 2, March, pp. 219–241.

Cukierman, A., Webb, S.B., Neyapti, B., (1992), "Measuring the Independence of Central Banks and its Effect on Policy Outcomes", *World Bank Economic Review*, 6 (3), September, pp. 353-398.

De Haan J., Kooi W. J., (2000), "Does Central Bank Independence Really Matter?: New Evidence for Developing Countries Using a New Indicator", *Journal of Banking & Finance*, Volume 24, Issue 4, April, pp. 643–664.

Del Sarto R. A., Schumacher T. , (2005), "From EMP to ENP: What's at Stake with the European Neighbourhood Policy towards the Southern Mediterranean?", *European Foreign Affairs Review*, 10, Issue 1, pp. 17–38.

Fatas, A., (2000), "Do Business Cycles Cast Long Shadows? Short-Run Persistence and Economic Growth", *Journal of Economic Growth*, 5, 2, pp. 147-162.

Feldstein, M., Horioka, C., (1980), "Domestic Saving and International Capital Flows", *Economic Journal*, 90, pp. 314-329.

Georgescu B., Popescu V. I., (2014), "Optimal Monetary Areas and European Experience", *International Journal of Economic Practices and Theories*, Vol. 4, N. 6.

Ghesquière H. C., (1998), "Impact of European Union Association Agreements on Mediterranean Countries", *IMF Working Paper* ,98/116, pp 1-24.

Giannone D. and Lenza M., (2008), "The Feldstein Horioka Fact", European Central Bank, *Working paper* series, N. 873, February.

International Monetary Fund, (2014), *Balance of Payments Statistics Yearbook*.

Jochimsen, R., (1992), « Entretien avec Dr Reimut Jochimsen », *Revue d'Economie Financière*, 22, pp. 57-59.

Johansson-Nogués E., (2004), "Profiles: A 'Ring of Friends'? The Implications of the European Neighbourhood Policy for the Mediterranean", *Mediterranean Politics*, Volume 9, Issue 2, pp 240-247.

Kydland, F.E., Prescott, E.C., (1977), "Rules Rather than Discretion: The Inconsistency of Optimal Plans", *Journal of Economy*, 85, 3, pp. 473-491.

Lamfalussy, A., (2002), « Eu Egard à l'Euro par Quels Eléments Positifs et Négatifs les Dernières Années ont-elles été marquées », *Revue d'Economie Financière*, 68, pp.289-297.

Larbi, E., (1998), « Les Pays Du Maghreb: Intégration Européenne ou Moyen Orientale », *Finance et Développement*, 21.

Levine, R., Zervos, S., (1998), " Stock Markets, Banks and Economic Growth Regression", *American Economic Review*, 88, pp. 537-558.

Pace, M., (2004), "The Euro-Mediterranean Partnership and the Common Mediterranean Strategy? European Union Policy from a Discursive Perspective", *Geopolitics*, Volume 9, Issue 2, pp. 292-309.

Patat, J.P., (1992), « Quelques Remarques sur la Question de l'Indépendance de la Banque Centrale », *Revue d'Economie Financière*, 22, pp. 5-12.

Ramey, G., Ramey, V., (1995), "Cross-Country Evidence on the Link between Volatility and Growth", *American Economic Review*, 85, 5, pp. 1138-1151.

White, W.R., Glatati, G., Tsatasaronis, K., (2002), « L'Euro sur les Marchés Financiers Internationaux : Bilan », *Revue d'Economie Financière*, 68, pp.329-342.