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THE EUROZONE DYNAMIC COHESION: CONVERGENCE OR DIVERGENCE

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Abstract

The long term economic dynamics of the Eurozone's original 12 countries (Greece, Italy, Spain, Portugal, Ireland, Germany, Netherlands, Luxembourg, Belgium, Austria, Finland, France) is analyzed and compared. It is today increasingly recognized that the diverging competitiveness between the Eurozone members is at the root of the current crisis. But the competitiveness dynamics and its impact on the crucial fiscal and financial variables during the common currency existence is seldom analyzed and compared, especially as far as the different groups of countries (and/or different areas within the Eurozone) are concerned.

Keywords: Eurozone Convergence, Eurozone Divergence, Dynamism

1. Introduction

Empirical observation would indicate that the European Union (and the Eurozone's) economic dynamism metastasized from the crisis prone dynamism fueled by the financial (both public and private) sector into the stubborn recession of the real sector. The latter is less headline grabbing, but, indeed, more insidious – especially because its impact on employment and (related to it) the political and social stability. (European Commission, 2013)

The crisis transformation brings up the questions of the economic policies and with it (again) the questions of the common currency and the Eurozone's (and the EU) structure and governance. (Rusek, 2013; Van Rompuy, 2012a, 2012b)

Whereas the fiscal stabilization implied the similar policies across the common currency area (exemplified by the Fiscal Stability Pact), the situation is more complicated as far as policies aimed at the recovery of the economic growth are concerned. Does the restoration of the economic dynamism imply common policies on the Eurozone (or even the EU) level or is the each individual country justified in its own ways? At this time, there is no common, generally accepted answer. (Veron, 2012)

In the search for the answer, it is important to analyze the longer term trends. This is especially so in the organization like EMU (Eurozone), where the monetary centralization operates in the environment of decentralized fiscal structures, limited fiscal transfers between the participating entities (independent states) and a very limited labor mobility.

In such an environment, the diverging trends between the participating entities (states) are unlikely to be compensated for by an induced factor movements and/or structural changes (not to mention fiscal transfers etc.), as happens in the similar dynamics within the centralized political entities (individual states).

This paper endeavors to investigate the dynamics of the basic macroeconomic variables in the EMU, looking both at the general dynamics (which includes, *inter alia*, fiscal issues) and the competitiveness. This dynamics is then evaluated against both the stability of the EMU as an institution and against the future challenges.

The method and the scope of the analysis will be discussed in part II. Part III then provides the estimates of the diverging (or converging) trends variable by variable. Part IV evaluates and concludes.

2. Method and the Scope of the Analysis

Economies were, are, and probably always will be, different. Differences pertain to both structural characteristics and (more often than not) to economic dynamism. The roots of the differences among the members of the European common currency area (Eurozone) are historical, cultural and in differing policies followed in the post WWII era. (The latter reflected both different levels of economic development and – perhaps – different preferences in the inflation-unemployment nexus.)

The important question for the Eurozone (and, in fact, for the future of the European integration process) is whether the economies participating in the European “experiment” converge or diverge. (I.e. whether the initial differences among them are diminishing or increasing.)

This is important on two (albeit interrelated) grounds. The first is the assumption that an increased integration – i.e. the increased “Europeanization” of economic and political decision making – requires a similar response (across the board) of individual participating economies. Otherwise the benefits of integration will be lost (at least to some). The second consideration looks at the dynamism of the Eurozone member countries in the “Euro” era. Did the “common” monetary policy and the individual fiscal policy (albeit loosely coordinated via SGP) result in a convergence or a divergence of the participating national economies? The answer to this question is the key for the both the Eurozone and the EU future.

Empirical inquiries regarding the question of the Eurozone convergence or divergence entail the three factors: a) The choice of the measurement; b) the choice of the scope and c) the choice of the time period.

In this paper we choose the evaluation of the broad set of economic variables (see below) which reflect the general economic performance, circumstances faced by economic agents and the competitiveness of individual member economies. The dynamics of ‘togetherness’ of these indicators (i.e. how individual countries indicators relate to one another) is evaluated by the coefficients of variation. The dynamics of the latter over time then serves to evaluate the nature of either a convergence or a divergence.

The scope of the analysis includes the original eleven Eurozone members plus Greece. The recent additions to Eurozone (Cyprus, Malta, Slovenia, Slovakia, Estonia) are left out due to the short time period of their membership. The time period covered by the analysis includes the Eurozone from its inception in 1Q of 1999 to the 2Q of 2012 (the last period for which data were available at the time of writing). The analysis uses the mixture of the annual, quarterly and monthly observations, depending on the frequency of the available data. Data used come from both Eurostat and ECB data bases.

3. Empirical Results

11 different variables were used, covering a broad spectrum of economic phenomena and activities. The general economic performance is characterized by the GDP per capita, consumption per capita, unemployment and CPI inflation. Fiscal and financial positions are characterized by the public debt to GDP ratio and private credit to GDP ratio. Competitiveness

dynamics is reflected in real effective exchange rates based on unit labor costs (REER) and the current account to GDP ratio. Longer term dynamics (growth) determinants are reflected in net foreign investment to GDP ratio, productivity (per person) and fixed business investments per person in productive age (15-64).

Each data point for each variable consists of 12 observations (one for each of 12 countries). Hence the mean and standard deviation can be calculated for all variables at every data point. The measure of the relative dispersion (coefficient of variation) can then be constructed for each variable at the each data point. ($cv_t^i = \sigma_t^i / \mu_t^i$, where cv_t^i is the coefficient of variation for the variable i at the period t , σ_t^i is the standard deviation of the variable i at the period t and μ_t^i is the mean for the variable i at the period t .)

For each variable the time series defined by the coefficients of variation over the period of inquiry (1999:1 to 2012:6) then describes the dynamics of the “relative” dispersion of this variable over time. Indeed, if this “relative dispersion” increases, underlying national economies diverge and vice versa.

The dynamics of the coefficients of variation for the variable under consideration in this paper is graphically described in Figures 1 to 3. (An increasing graphs indicates divergence and vice versa)

Visual inspection indicates that no obvious answer to the convergence or divergence question exists. However, several graphs indicate possible change in convergence-divergence dynamics associated with the onset of recession in 2009.

To get more detailed and informative answer regarding the dynamics of a convergence and/or a divergence in the Eurozone, more formal computational methods were used.

First, all variables were tested for unit roots. The hypothesis is that if the unit roots exist, the variable under consideration either increases (divergence) or declines (convergence) over time. If unit root hypothesis is rejected the variable remains stationary (both with respect to the mean and variance – i.e. neither convergence no divergence).

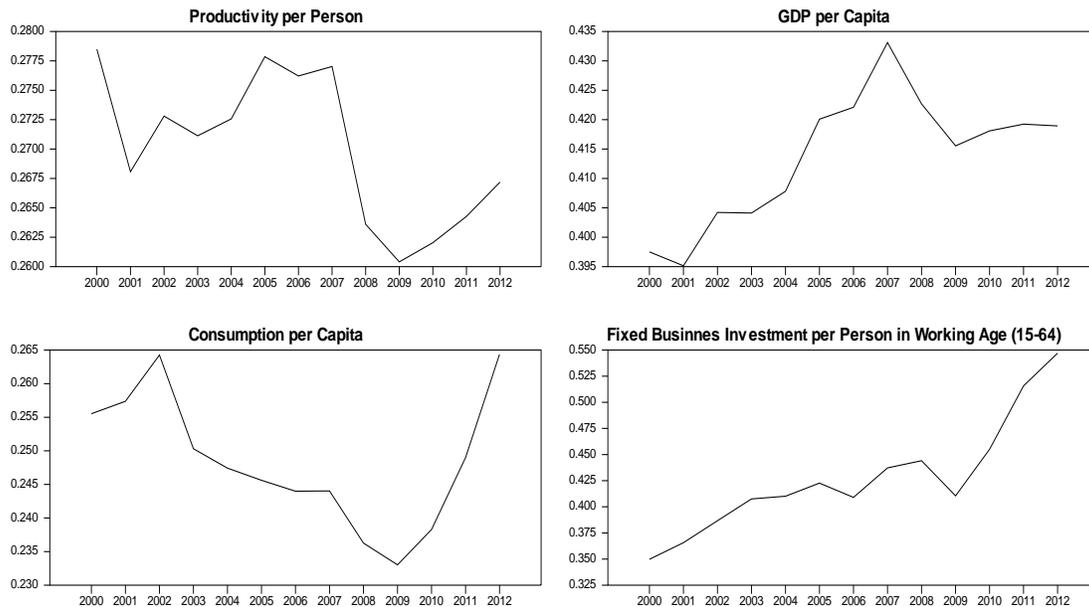


Figure 1. Variances of productivity, consumption, GDP, and fixed business investments

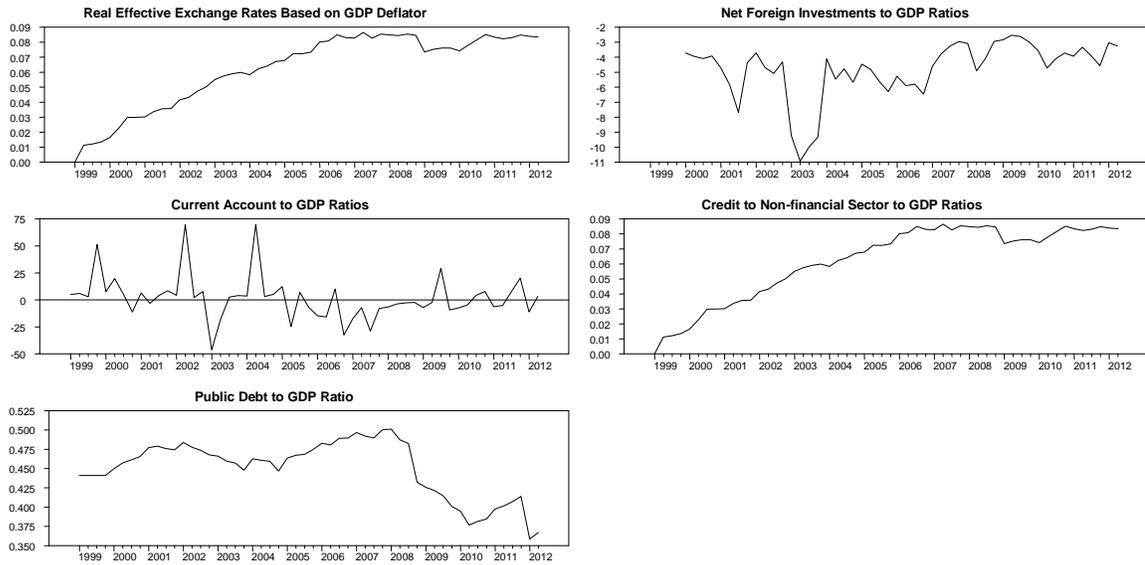


Figure 2. Variances of REER's, current account, debt, net foreign investment and credit to non-financial institutions

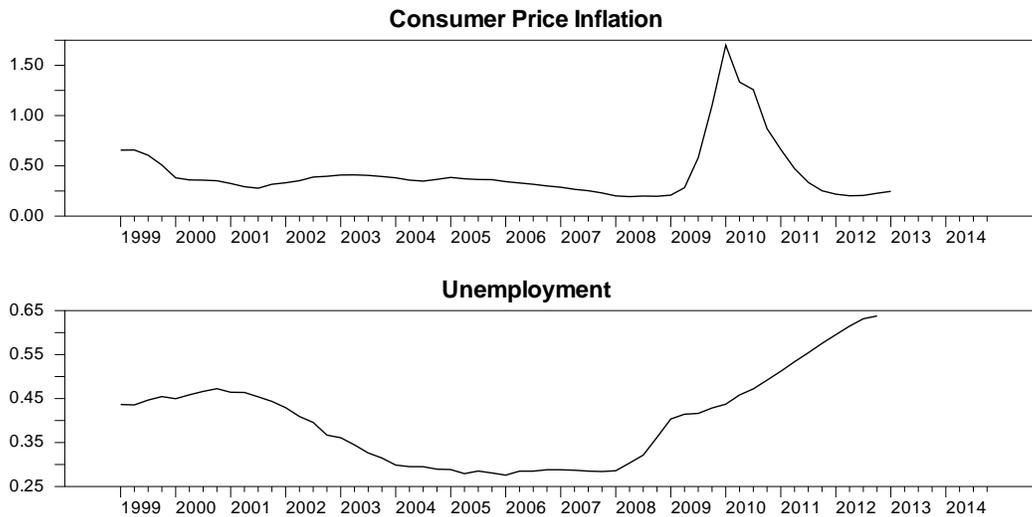


Figure 3. Dynamics of inflation and unemployment

Results are reported in Table 1

Table 1. Unit root tests

Characteristic	t-statistic	5% Critical Value	Result
Variable			
Unemployment	3.421	-2.877	Unit root
CPI inflation	-2.303	-2.877	Unit root
Debt to GDP ratio	-0.304	-2.911	Unit root
Current account/GDP	-7.264	-2.911	No unit root
Net Foreign Inv/GDP	-2.852	-2.920	Unit Root
Private Credit/GDP	-1.057	-2.911	Unit Root
REER (GDP deflator)	-1.499	-2.911	Unit Root
GDP per capita	-2.894	-3.066	Unit Root
Consumption per cap	-1.287	-3.066	Unit Root
Productivity per person	-1.883	-3.066	Unit Root
Fixed Bus. Inv. Per work	0.259	-3.122	Unit Root

Only one variable – current account to GDP ratio – indicates no unit root. I.e. the dispersion of the current account to GDP among the Eurozone members remains basically stable over time.

To get more insight into the dynamics of other variables under consideration, each variable – i.e. the relevant coefficients of variance – was regressed on constant, trend, dummy and trend dummy. The last two variables are intended to capture (possible) changes associated with the post 2009 recession.

$$cv_t^j = \text{Constant} + \alpha_0 * \text{Trend} + \alpha_1 * \text{Dummy} + \alpha_2 * \text{Dummy} \quad (1)$$

The estimates of equation 1 are in the Table 2. The results vary depending on the variable. Whereas unemployment, inflation, private credit to GDP ratio and consumption per capita indicate a convergence (negative sign for the trend variable coefficient), debt to GDP ratios, net foreign investments to GDP ratios, REER (i.e. the competitiveness), GDP per capita and the fixed business investment per individual in productive age all indicate a long term divergence (positive signs for the trend variable coefficient). In addition to current account, long run productivity neither converges nor diverges.

The impact of the ongoing recession somewhat reverses some long term trends. Debt to GDP ratio, REER, GDP per capita and productivity per person indicate some convergence in the recession period, whereas unemployment and consumption per capita started to diverge. The fixed business investment per individual in productive age divergence accelerated in the recession period.

These results are not really surprising. But the limited convergence and the rising divergence here constitutes the major problem for the cohesion of the Eurozone – or perhaps even a threat for the Eurozone's survival in its current re-incarnation.

Table 2. Estimates of variability dynamics

RHS Variable	Constant	Trend	Dummy	Dummy Trend	R-bar Squared
LHS Variable					
Unemployment	0.487 (69.48)	-0.002 (20.71)	-0.872 (15.94)	0.008 (21.14)	0.896
CPI Inflation	0.675 (4.61)	-0.004 (2.43)	1.0159 (5.21)		0.162
Debt	0.449 (77.12)	0.001 (3.81)		-0.002 (12.57)	0.819
Current Acct	22.048 (2.32)				0.22
Net Forg Inv	-6.871 (8.97)	0.059 (2.81)			0.123
Private Credit	1.170 (92.94)	-0.014 (27.18)			0.933
REER		0.002 (78.06)	0.035 (2.27)	-0.001 (4.63)	0.960
GDP	0.374 (94.19)	0.005 (9.55)		-0.002 (5.54)	0.885
Consumption	0.267 (69.34)	-0.002 (4.84)	-0.173 (6.05)	0.013 (6.37)	0.798
Productivity	0.273 (193.41)			-0.001 (3.53)	0.470
Fixed Bus Inv	0.317 (28.99)	0.011 (8.36)	-0.516 (7.78)	0.036 (7.72)	0.966

4. Conclusion

In conclusion to this analysis, it has to be emphasized again that EMU is first and foremost the political arrangement, albeit with a significant economic impact. Its cohesion is therefore determined by the political will to remain the member of the arrangement. This in turn will be influenced by the impact of relative economic performances on the domestic political processes in individual Eurozone member countries. But it must be stressed here that economic considerations, even if they receive the most attention from both the economists and the general public, are only a part of the overall process of political decision making, and may be not the most important ones. Countries engagement in complicated structures of the global security and political and economic relationships goes far beyond a simple calculus of economic gains and losses. And it is with this in mind we should evaluate the above reported results.

Indeed, in its first 14 years of existence, the Eurozone was a reasonably cohesive political arrangement. However, significant cracks in its economic facade are clearly developing in the areas most important for the long run economic performances of individual countries –

investments and competitiveness. Unless addressed, these may constitute significant, and perhaps ultimate, threats to the Eurozone cohesion and perhaps to its existence.

References

- European Commission, 2013. *Quarterly report on the Euro area*, 12(1), March.
- Rusek, A., 2013. *Quo Vadis, Europa*. Forthcoming, *International Advances in Economic Research*, September.
- Van Rompuy, H., 2012a. Towards a genuine economic and monetary union Available at: <http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf> [Accessed 26th of June].
- Van Rompuy, H., 2012b. Towards a genuine economic and monetary union Available at: <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/132809.pdf> [Accessed 12th of October].
- Veron, N., 2012. The challenges of Europe's fourfold union. *Breughel policy contribution*, 2012/13, August.