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The Competitiveness Dynamics in the Eurozone

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Abstract - The goal of this paper is to analyze the long term dynamics of the competitiveness in the individual Eurozone countries and to estimate how their competitiveness is affected by the dynamics of both external (i.e. the current account) and internal (the fiscal stance and the credit dynamics) positions. It is today in creasingly recognized that the diverging competitiveness between the Eurozone members is at the root of the current crisis. But the competitiveness dynamics and how it is impacted by the crucial fiscal and financial variables during the common currency existence is seldom analyzed and compared, especially as far as the different countries are concerned. This paper aims to contribute to filling this gap.

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The Competitiveness Dynamics in the Eurozone

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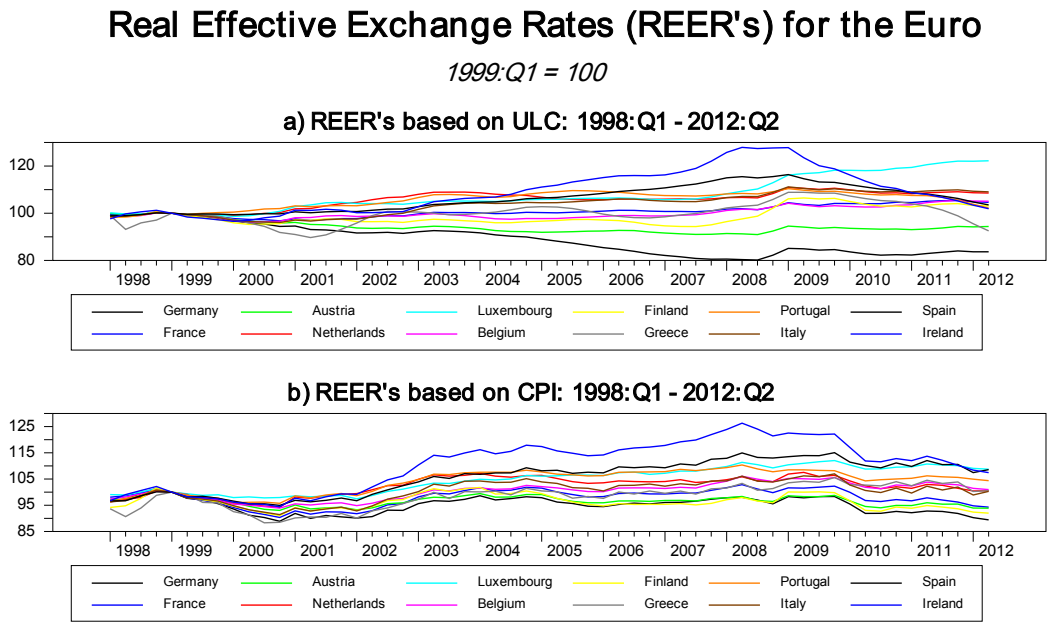
Abstract - The goal of this paper is to analyze the long term dynamics of the competitiveness in the individual Eurozone countries and to estimate how their competitiveness is affected by the dynamics of both external (i.e. the current account) and internal (the fiscal stance and the credit dynamics) positions.

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 how it is impacted by the crucial fiscal and financial variables during the common currency existence is seldom analyzed and compared, especially as far as the different countries are concerned. This paper aims to contribute to filling this gap.

I. Introduction

In the first 10 years of its existence, the common European currency (Euro) appeared to be highly successful (DG ECOFIN, 2008). Indeed, the problems existed but were considered to be either insignificant or solvable. Most visible at the time were the divergences in competitiveness as measured by both the unit labor costs based or the CPI based real effective exchange rates – REERs. (Figure 1).

Figure 1



However, these were usually explained by pointing out that the Germany entered the Eurozone with the overvalued exchange rate, hence the observed divergencies were actually equilibriating processes. This explanation (false, as it turned out) was sometimes supplemented by pointing out at the possibility (and desirability) of the Ballasa–Samuelson phenomenon to be expected in the economically less advanced Mediterranean counties, together with possible statistical biases as a consequence of the structural changes associated with the advancing globalization processes. (For the more detailed discussion, see Rusek, 2012.)

The fastly diverging current account positions (growing deficits of countries on the Mediterranean littoral and growing surpluses especially in Germany) were attributed to the "catching up" processes and (to a lesser degree) to the observed German economic malaise (Sinn, 2007). At any case, the prevailing theory maintained that current account positions play no role within the currency union. Similarly, the persistent inflationary differentials – especially between the Mediterranean countries and Germany – were attributed to both the catching up processes and the structural inertia. Basically nothing to be concerned about as long as the overall inflation in the Eurozone remained close to the ECB target of 2% (even if this target was more often than not exceeded, causing some uneasiness).

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On the other side, the expansion (the "Europanization") of the large European banks outside their home countries, together with the development of the Eurozone-wide government and commercial bonds market and the continuous reduction in the "home bias" of financial asset holders were hailed as the common currency successes. In the opinion of many, these developments heralded the arrival of the Euro on the international scene as the equal (and perhaps, in the not so distant future, the successor) of the US dollar.

There were, indeed, the matters of concern. The sluggishness of the German economy (till 2006) was the major one. So was an increased international competition on some markets (sometimes referred to as the "impact of globalization"). It was felt that the "underperformance" of the major EU economy combined with the need to stay competitive with emerging markets may pose a threat (even if undefined) to the cherished "European" economic and social model. Finally, the Stability and Growth Pact (concluded in 1997 to provide a fiscal underpinning to the common currency arrangement) appeared to be under some pressure.

When the "problems" were recognized the effort was made to find remedies within the confines of the common currency. The German reforms of the labor markets and (to a degree) the welfare state (known as the Hartz IV and enacted in 2004) were successful. German economy re-acquired it dynamism (in the European scale and context) in 2006, mostly via an increased flexibility and global competitiveness. The globalization impact was to be addressed by adopting the so called Lisbon Agenda (March 2000 – please do not confuse with the Lisbon Treaty of 2009). This agenda aimed at "making the EU the most competitive and dynamic knowledge-driven economy by 2010". (Euractiv, 2004.) Finally, the SGP was revised (practically, watered down) in 2005.

Nevertheless, one has to distinguish between the "problems being addressed" and the "problems being solved". Whereas the German Hartz IV reforms were undoubtedly successful for Germany, the Lisbon Agenda failed and with the onset of the ongoing crisis was for all practical purposes abandoned. Revised SGP was the subject of controversy from its inception, but it mitigated tensions and incipient conflicts.

Given the above outlined dynamics – including its political and institutional elements – how did it happen that the Euro, successful in its first 11 years, is today often doubted and many analysts question its survival in its current form? To answer this question, let us look at the actual interplay of economic dynamics, institutions and politics during the first decade of the Euro's existence.

II. Economic Dynamics

The first effect of the common currency was the convergence of the nominal interest rates. This result is understandable as long as markets consider the Eurozone an area where risks between different asset issuers (member countries) are very similar. Arbitrage then imposes an uniform return on the assets of the same currency denomination and (perceived) very similar risk properties.

Inflation remained close (but often above) the ECB's target rate. However, within this overall number the persistent differences between the North and the Mediterranean littoral remained. This phenomenon requires more research, however one may surmise that the goods arbitrage remained imperfect in the spatially separated markets, supporting the price setting inertia (a tradition of higher inflation) in the South (the Mediterranean littoral countries).

The combination of those two phenomena resulted in the diverging real interest rates – the Southern (Mediterranean) ones being significantly less than the Northern ones. This, indeed, increased the "Southern" demand for credit, accelerating the economic growth and hence increasing the tax receipts. Spain and Ireland run large budget surpluses, reducing significantly their debt to GDP ratios. Italy achieved a primary surplus. After violating SGP criteria at the beginning of the 2000's, Portugal achieved a budgetary stability. Only Greece remained a significant public finance problem, but it was not known at the time (even if suspicions existed).

The increase in credit was financed by the domestic banks which in turn obtained resources on the interbank markets – i.e. basically by tapping the "Northern" savings. Statistically, this phenomenon appeared as the capital inflow – i.e. the current account deficits.

However, this dynamics had important effects which remained unnoticed (or noticed but ignored) at the time. Most of the capital inflow financed the increase in consumption, especially in housing and related consumer durables. Given the generally lower consumption and the lower quality of the housing stock of the "Southern" countries, this kind of behavior may be sociologically and psychologically understandable, nevertheless…. Capital inflows maintained the domestic demand, a significant part of which fell on the non-tradeables sector. Combined with the labor markets rigidities, this tended to increase both employment and wages. However, the growth was mostly in the low productivity sectors (construction and services). Hence the unit labor costs (ULC) increased and the REERs based on ULC tended to appreciate. Simultaneously the Hartz IV reforms in Germany led to the (statistically observed) wage restraint and increases in productivity – i.e. the German ULC based REER tended to depreciate. These two phenomena led to the increase of the competitiveness gap between the "North" and "South". Moreover, the capital inflow induced demand (and wage and credit) expansion in the South tended to perpetuate

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the inflation and hence the real interest rate differentials. This prolonged the just described processes and led to increased "North-South" divergencies.

III. REER's Determination – In Lieu of a Model

There is no generally accepted model which would formulate the determination of the REER's (or even a bilateral real exchange rate) in the context of an economic dynamics.

Recent studies (Akmal, et al. 2012, Combes et al. 2010, Mirdala, 2010) analyzed the real exchange rates (for developing and transition countries) as the function of economic fundamentals, even if the actual choice of relevant variables differed.

In this analysis we follow this approach, with the choice of the relevant economic fundamentals cum explanatory variables guided by the discussion of the Eurozone's economic dynamics above.

Eurostat reports two types of the real effective exchange rates – one based on the unit labor costs (ULC), other based on consumer prices. In our analysis we concentrate on the ULC based variable, which, in our opinion, better reflects the main interest of this paper – the competitiveness.

Real effective exchange rate (REER) is the weighted average of the bilateral exchange rates with major trading partners, with trade volumes as weights. Bilateral real exchange rate based on the ULC is the product of the nominal exchange rate and the ratio of the unit labor costs measures. Eurostat calculates the REER's for the individual countries as indexes. In their approach an increase in the relevant index indicates REER appreciation. Decrease then indicates (the real) depreciation.

Consequently, in cross-country comparisons, higher (and/or increasing) REER indicates the loss of competitiveness and vice versa.

"Fundamental" variables used in the empirical analysis are: debt to GDP ratio (Debt), unemployment (Unemp), current account to GDP ratio (CUGDP), net foreign investments to GDP ratio (NFIGDP), labor productivity per person (LPP), total labor costs (TLC) and the credit to non-financial institutions outstanding to GDP ratio (CRGDP).

This choice reflects the need to include both financial and non-financial variables and the impact of both public and private sector. (It should be noted that the choice was constrained by both the availability of variables and the need for consistency).

The debt variable (DEBT) reflects the impact of the public expenditures on the aggregate demand and hence on both the income and GDP dynamics. If the GDP impact dominates the income effect (labor costs) the ULC decline and the competitiveness improves – and vice versa. (I.e. the estimated sign can be either positive or negative.) The debt to GDP ratio was preferred to the net surplus to GDP ratio because the latter is rather unstable and volatile in the quarterly observations.

The unemployment variable (UNEMP) effects both overall labor expenditures and GDP as well. Here, if the GDP effect (negative) dominates the ULC increases and competitiveness declines and vice versa. (Again, the estimated sign can be either positive or negative).

The current account to GDP ratio (CUGDP) reflects the impact of capital flows (current account is the negative of net capital inflows) on domestic demand – hence both the labor costs and the GDP. The net impact can be again either positive or negative, depending on the relative roles of GDP and labor costs.

The net foreign investments to GDP variable (NFIGDP) most likely reflect the impact of the changing domestic savings – investment nexus.

An increase in the labor productivity per person (LPP) should reduce the unit labor costs and hence to result in a real depreciation (decline in REER). However, in the context of European economic structure it is possible that in some countries the productivity increases result in higher wages and more leisure (i.e. relatively less GDP). It is then possible that ULC actually increase, resulting in REER appreciation.

An increase in total labor costs (TLC) implies higher ULC and hence the REER appreciation.

Finally, the total credit to nonfinancial institutions as a share of GDP (CRGDP) variable reflects the impact of the private expenditures on the aggregate demand and hence on both the income and GDP dynamics. Its impact on REER is similar to the debt variable discussed above.

IV. Estimation and Results

The extensive interdependencies and feedbacks between the variables would suggest the VAR methodology as the appropriate estimation technique. However, given the quarterly frequency of variables (REER's are reported only quarterly), the potentially significant contemporaneous effects between variables cannot be excluded ex ante. That, indeed, renders the VAR approach infeasible. Hence the single equation approach was selected, specifying the REER as the function of the above elaborated variables (eq.1).

$$REER = \alpha 0 + \alpha 1\ Trend + \alpha 2\ DEBT + \alpha 3\ UNEMP + \alpha 4\ CUGDP + \alpha 5\ NFIGDP + \alpha 6\ LPP + \alpha 7\ TLC + \alpha 8\ CRGDP \quad (1)$$

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The feasibility of this approach was confirmed by testing all variables for stationarity – all variables for all estimated countries were found either stationary or trend stationary.

The adjusted form of eq.1 was applied (individually) to data for 12 Eurozone countries (Austria, Belgium, Germany, Spain, Finland, France, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal). (Remaining 5 countries – Slovenia, Slovakia, Malta, Greek Cyprus and Estonia – joined the Eurozone to late to provide enough data for an empirical analysis.) The data used are in the quarterly frequency, spanning the 1999:Q1 to 2012:Q2 period (the data available at the time of writing). For the each country, the REER was specified as the function of the constant, trend, 3 own lags and the contemporaneous value and two lags of the each explanatory variable.

The STWISE procedure from the RATS software was used to perform the estimation. This procedure evaluates the estimated coefficients on the cross-recursive basis and provides the result which includes the statistically significant variables only. Using the SUMMARIZE utility of RATS, the summary values and significance levels (over all observations found statistically significant by the STWISE procedure for each variable) were estimated for all explanatory variables specified above.

The results are reported in Table 1. The lack of uniformity across the countries is to be expected, however, some results are somewhat surprising, given the prevailing conventional wisdom.

Debt variable displays the positive coefficient (i.e. an increase in the debt to GDP ratio tends to appreciate REER) for Austria, Germany, Finland and Luxembourg, whereas the negative coefficient (an increase in debt to GDP ratio tends to depreciate REER) is estimated for Spain, Ireland, Italy and Netherlands. This indicates that in the latter countries an increase in public expenditures increases GDP faster than the wage bill, which tends to increase macroeconomic competitiveness. In all other countries the public debt to GDP ratio does not affect the competitiveness – the result of some significance especially for the Greece and Portugal.

Unemployment variable is negative for Belgium, Spain, Finland, France, Greece, Netherlands and Portugal, positive for Austria and no impact for Germany, Ireland, Italy and Luxembourg.

Table 1 : Estimates for the REER's based on the ULC

Variable	Con	Trend	RXULC	Debt	Unemp	CUGDP	NFIGDP	LPP	TLC	CRGDP
Country										
AT			0.966	0.023	0.170			0.007		
			(74.69)	(1.41)	(1.33)			(0.52)		
			1	2				0 2		
BE			0.924		-0.124	-0.033	0.004	0.097	-0.017	
			(35.76)		(1.47)	(1.96)	(2.20)	(3.84)	(2.83)	
			1 2		2	1	1 2	0 to 2	2	
DE			0.877	0.047		-0.108	-0.006			0.111
			(30.7)	(2.04)		(2.75)	(1.29)			(4.44)
			1 2	1			0 to 2			
ES			0.929	-0.59	-0.130			0.122		
			(29.6)	(2.57)	(4.12)			(2.94)		
			1 to 3		1			2		
FI			1.007	0.143	-0.872	0.067		0.008	0.026	-0.105
			(28.02)	(4.54)	(3.58)	(3.25)		(0.45)	(2.03)	(4.10)
			1 2	0 to 2	0 1	2		0 1	0 1	1
FR			1.009		-0.201		0.010			0.018
			(100.9)		(2.42)		(2.93)			(2.11)
			1 to 3		0 1		2			2
GR		-0.123	0.787		-0.20			0.222		0.067
		(5.15)	(22.05)		(3.32)			(6.79)		(2.10)
			1 3		0 2			0 2		
IE			0.880	-0.040			0.003	0.105		0.029
			(32.21)	(4.45)			(1.67)	(4.31)		3.48)
			1 2	0 2			0 2	2		
IT	60.16		0.729	-0.074		-0.45	-0.018	-0.285	0.061	-0.103
	(8.79)		(18.98)	(5.95)		(6.66)	(3.67)	(6.40)	(6.66)	(4.69)
			1	2		0 1	2		0 1	1
LU	21.78		0.78	0.080		0.036		-0.076	0.063	
	(3.86)		(17.54)	(2.23)		(1.70)		(2.07)	(4.27)	

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			1 2			0 to 2		0 2	0 2	
NL	68.59	0.135	0.817	-0.117	-0.048	-0.098		-0.436		
	5.44)	5.28)	(14.68)	(5.72)	(0.36)	(3.42)		(5.23)		
			1 3	0 2	1 2	2				
PT			1.023		-0.114			-0.022	0.007	
			(38.95)		(3.68)			(0.82)	(1.80)	
			1 2					0 1	1	

Note : For each country, the numbers in parenthesis in the line below the estimated coefficients are the relevant t-statistics. On the line before that are the lags included in the reported number.

Negative sign indicates that an increase in unemployment affect wage bill relatively more than output – i.e. the recession (an increase in unemployment) increases competitiveness. This result is not entirely unexpected, but it raises a question of the competitiveness dynamics if (or when) the economic growth and employment are restored.

An improvement in the current account to GDP ratio reduces the REER (i.e. it improves the competitiveness) in Belgium, Germany, Italy and Netherlands, increases REER in Finland and Luxembourg and has no impact in the rest of the countries. Indeed, some may argue that this result reflects the reverse causality – from REER to current account. However, the role of the lagged current account observations puts doubt on this argument. Alternatively, we may surmise that the current account improvements reflect the rise of domestic savings relative to domestic investments. That put a damper on the domestic demand, reducing the wage bill relative to GDP and hence reducing (depreciating) the REER. The observations for Finland and Luxembourg then may reflect the shift from domestic demand to exports, which may increase the labor income relative to GDP.

An improvement in net foreign investments to GDP positions improves the competitiveness (reduction in REER) in Germany and Italy, reduces it in Belgium, France and Ireland and leaves the other countries unaffected. Here the explanation probably lays in the causality behind the net foreign investment dynamics. The lack of domestic profitable opportunities may induce an increase in investments abroad, reducing the domestic demand for labor and the wage bill relative to GDP – hence the decline in REER. Alternatively, the raising domestic labor costs may induce the shift of investments abroad, reducing the GDP relative to labor and hence increasing the REER.

The impact of the increases in the labor productivity per person increases REER (i.e. reduces the competitiveness) in Austria, Belgium, Spain, Finland and Ireland, but reduces the REER (i.e. improve the competitiveness) in Italy, Luxembourg, Netherlands and Portugal. No impact is indicated for Germany and France. Indeed, we would expect an increase in productivity to improve the competitiveness. The positive coefficients then may reflect the peculiarities of the labor market (and public policy) functioning. In particular, it would indicate that the productivity gains are dissipated in higher wages and (probably) the reduced work hours reflected then in a lower GDP.

The total labor costs impact is positive for Finland, Italy, Luxembourg and Portugal, negative for Belgium and neutral (i.e. zero) for all other countries. This is indeed to be expected – an increase in the total labor costs should have a negative (or, at best, the neutral) impact on the competitiveness in the globalized world economy. The estimate for Belgium is an anomaly, probably to be explained by the special characteristics of the Belgium labor markets.

Finally, the total credit to nonfinancial institutions as a share of GDP variable has positive coefficients for Germany, France, Greece and Ireland, negative coefficients for Finland and Italy and zero coefficients for the rest. The positive coefficients (REER appreciation) imply that domestic credit expansion affects wages more than GDP (i.e. credit is more likely for households rather than productive investments). and indeed, the vice versa.

V. Conclusion

The discussion above indicates that REERs for the Eurozone countries are influenced by the widely differering variables. Not all variables considered influence individual REERs and the impact of the same variables is often in opposite direction for different individual countries. The only variable with the common impact (its increase reduces REER – hence it improves the competitiveness) is unemployment.

The implication of this finding is that the current stabilization policies of a fiscal restraint may improve the competitiveness via rising unemployment – which is probably behind the recent competitiveness "improvements" in the Mediterranean littoral countries (especially Greece, but Spain and Portugal as well). Debt reduction per se improves competitiveness in Spain, Ireland and Italy, but has no measurable impact for Greece and Portugal.

The other side of the coin is: what happens if (and when) the growth returns and the unemployment declines. Will the competitiveness divergencies return? And if so, what will be the impact on the long run stability and convergence on the Eurozone itself?

It appears that the structural changes basically across the board, of the sort which channels the

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improvements in productivity and the current account and the credit expansion (i.e. the basic elements of restored growth and employment) into the reduction of the unit labor costs, are absolutely necessary to address the competitiveness divergence issue.

It should always be kept in mind that unless the diverging competitiveness is addressed on the medium to long term basis, the Eurozone in its current configuration is unlikely to survive the next electoral cycle.

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