



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

Does Math Support Euro Survival?

Lawrence Goodman

December 5, 2011

Persistent pressure in both sovereign debt markets and funding spreads in Europe naturally raises questions regarding the risk of a serious currency crisis and sustainability of the euro.

A quantitative approach to evaluate the relative competitiveness of nations participating in the euro is essential for gauging whether the unified currency can survive. **Our view is “yes” – the euro can survive.** However, membership should be restructured to ease constraints on growth.

Based on CFS currency valuation models for eleven of the legacy currencies of nations that joined the euro¹, nine euro countries have maintained their competitiveness despite the use of the single currency and surrendering control of exchange rate policy. In contrast, Greece and Portugal remain serious outliers. Their implicit currencies require serious economic adjustment or issuance of a new drachma and escudo.

Euro Components: CFS Synthetic Currency Valuations

CFS synthetically developed real effective currencies for eleven major nations within the euro.² Real exchange rate movements and currency valuations for individual euro nations help answer three fundamental questions.³

- Did member nation exchange rates enter the euro at an appropriate level?
- Since entry into the euro, did the unified rate hinder or help international competitiveness and growth?
- To what extent are euro members threatened by relatively overvalued currencies – or near levels consistent with currency crises in emerging market economies?

Only Greece and Portugal Have Overvalued Implicit Currencies

The overwhelming majority of euro member nations studied in the CFS analysis entered the single currency at an initial exchange rate that maintained export competitiveness vis-à-vis the rest of the world (see Figure 1 – light blue bars).⁴ So it appears that the European officials did an admirable job at the outset. Perhaps, the German experience earlier in the decade - fusing the Ost mark at a highly overvalued rate with the Deutsche mark - served as a lesson to avoid coincident with euro creation.⁵

¹Austrian schilling (ATS), Belgian franc (BEF), Finnish markka (FIM), French franc (FRF), Deutsche mark (DEM), Greek drachma (GRD), Irish pound (IEP), Italian lira (ITL), Dutch guilder (NLG), Portuguese escudo (PTE), and Spanish peseta (ESP).

²CFS real effective exchange rate data are available at www.CenterforFinancialStability.org/euro.php.

³Goodman, Lawrence and Peter Pauly, “Equilibrium Properties of the European Monetary System” – University of Pennsylvania, Economic Department Working Paper, December 1986.

⁴The world in this case is represented by 48 nations.

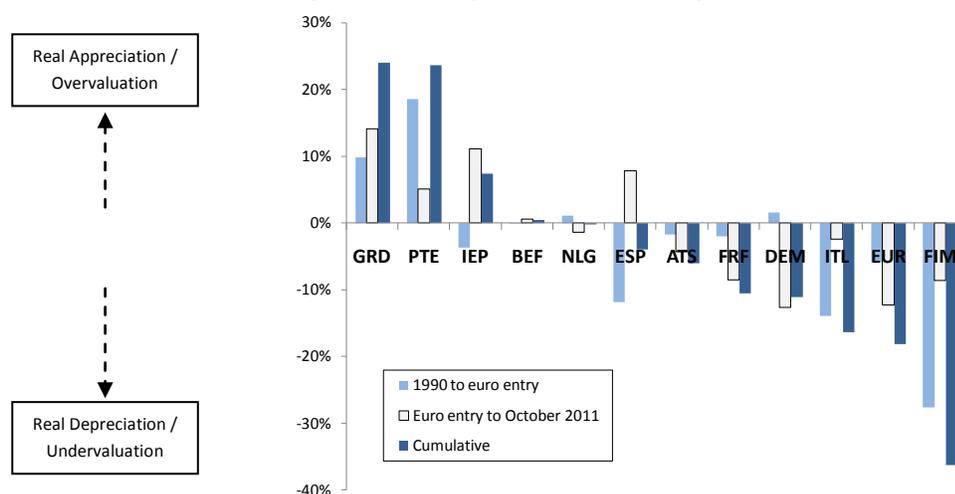
⁵Hunt, Jennifer, “The Economics of German Reunification” – McGill University and NBER, February 2006.



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

Figure 1. Component Currency Strains in the Euro



Note: The CFS real exchange rates incorporate 48 nations with calculations from January 1990 to October 2011.

Source: International Financial Statistics, Direction of Trade Statistics, and Center for Financial Stability.

Only Greece and Portugal entered the euro at a rate where large valuation imbalances existed at the time of entry.⁶ The Greek drachma (GRD) appreciated by 10% from 1990 to euro entry, whereas the Portuguese escudo (PTE) appreciated by 19%. In contrast, the remainder of the euro component currencies studied appreciated by less than 2% or actually depreciated during the same period.

From euro entry to the present, most member nations surprisingly maintained competitiveness relative to the rest of the world (see Figure 1 - white bars). However, Greece, Portugal, Ireland, and Spain actually experienced a profound loss of competitiveness, as evidenced by the real appreciation of their respective currencies.

Greece and Portugal suffered a serious loss of competitiveness over the entire period from 1990 to 2011 (see Figure 1 – dark blue bars). Overall exchange rate competitiveness deteriorated by 24% in the case of Greece and 24% for Portugal. While Ireland clearly demonstrated a loss of competitiveness, the real appreciation of the synthetic Irish pound is less than 10% over the entire period and well within the range of real currency appreciation that can readily be resolved through adjustment.

The Case of Germany

Recently, many have highlighted disproportionate gains in Germany competitiveness versus the rest of the euro member nations. **This is certainly the case, as the Deutsche mark (DEM) is the third most competitive currency among the eleven individual currencies studied** (see Figure 2). However, the overall competitiveness of individual nations relative to the entire world of trading partner nations (48 in our models) is far more relevant (see Figure 1). In other words, a slight undervaluation of the euro benefits the entire set of participating nations. To be sure, Germany benefited from the creation of the euro. However, most of the other nations within the region retained their competitiveness vis-à-vis the rest of the world.

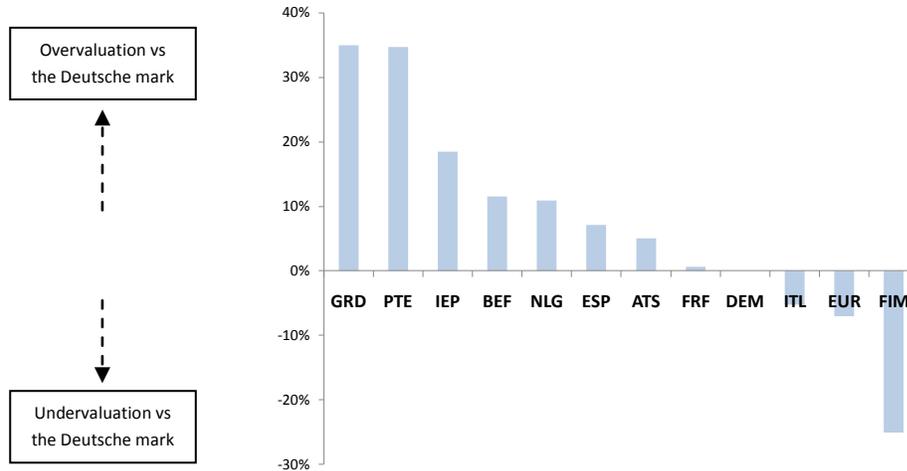
⁶ Greece entered the euro with a currency fixing as of June 2000, whereas Portugal and the other nine countries in the CFS model were entered with fixings as of December 1998.



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

Figure 2. Currency Strains in the Euro versus the Deutsche Mark



Note: The CFS real exchange rates incorporate 48 nations with calculations stretching from January 1990 to October 2011.

Source: International Financial Statistics, Direction of Trade Statistics, and Center for Financial Stability.

The Case of Italy

The future of the euro now in many ways depends on economic and debt management plans in Italy. Based on our synthetic valuation of the Italian lira (ITL), use of the euro in Italy actually preserves competitiveness vis-à-vis the rest of the world (see Figure 1) and Germany (see Figure 2). So, there is no economic benefit for a shift in currency policy for Italy. **Italy currently faces solely a debt crisis.**

Conclusions

- The effect on the relative competitiveness of individual nations from surrendering currency policy and entering the euro was more benign than we originally expected.
- Nonetheless, currency valuations based on a synthetically created Greek drachma and Portuguese escudo suggest flexibility via a break from the single currency would remove impediments to growth.
- Going forward, events in Italy will prove critical. The valuation of the Italian lira is currently competitive according to our model.
- Membership restructuring would help European nations ultimately achieve higher growth as well as ensure long-term viability of the euro.

The math suggests that the euro can survive. However, European officials must think beyond simply identifying a wall of financial resources to engineer sovereign bailouts and prop financial institutions.⁷ Failures to diagnose the crisis,⁸ resolve the debt overhang in Italy, and reorganize euro membership could unravel into an unneeded and unnecessary currency crisis.

⁷ Goodman, Lawrence, "Math for Europe: Lessons from Greece" - Center for Financial Stability, October 4, 2011.

⁸ Goodman, Lawrence, "Solving the Greek Crisis" - Center for Financial Stability, June 24, 2011.



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

With thanks to Jeff van den Noort for extensive use of technology and computer programming in developing CFS models and Robin Lumsdaine and Bruce Tuckman for comments.

**CFS real effective exchange rate data
for synthetic euro component currencies
are available at:**

www.CenterforFinancialStability.org/euro.php

The Center for Financial Stability (CFS) is a private, nonprofit institution focusing on global finance and markets. Its research is nonpartisan. This publication reflects the judgments and recommendations of the author(s). They do not necessarily represent the views of Members of the Advisory Board or Trustees, whose involvement in no way should be interpreted as an endorsement of the report by either themselves or the organizations with which they are affiliated.