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THE IMPACT OF THE ADOPTION OF THE EURO: EVIDENCE FROM PORTUGAL

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ABSTRACT

The purpose of this paper is to analyze the impact of the adoption of the Euro on trade within the Euro-zone, in particular on how it specifically affects the Iberian Peninsula, more specifically the country of Portugal. The literature on monetary unions has argued that there are benefits and costs for those countries in entering a monetary union and adopting a single currency other than their own and who give up their monetary policy. The primary benefits from following this course of action are the uncertainties associated with exchange rate fluctuations and the elimination of transaction costs. Other benefits include 1) a single European market, 2) a single financial market, which benefits both investors and savers, 3) political integration, which benefits the entire process of integration, and 4) practical benefits, such as facilitating travel within the Euro area. Included among the costs are the loss of seignorage and the loss of an independent monetary policy

LITERATURE REVIEW

There has been the belief that trade is dampened by exchange rate volatility. However, it is not until recently that some empirical evidence has been provided that give credence to this view. Belanger, et.al. (1992) and Frankel and Wei (1993) found the relationship between trade and exchange rates to be statistically significant. Brada and Mendez (1998) did not find the expected results. In a more recent study on the neutrality of exchange rate fluctuations, Bonitsis (2005) found “no long-term effects of the exchange rate on any of the macroeconomic parameters.”(p.18)

Rose (2000), using cross-sectional data, focused his study not on the effect of exchange rates but on the effect of the adoption of a common currency. He concluded that countries with a common currency would have a three-fold increase in trade as compared to countries having different currencies. Glick and Rose (2002) utilizing time series panel data found reduced the three-fold findings of Rose (2000) to about one-third of that amount. Meliz (2001)’s findings concluded that a monetary union would only have a two-fold increase instead of the three-fold increase indicated by Rose (2000). Rose and Van Wincoop (2001) addressed the issue of monetary unions between countries with existing trading relationships and found that the impact on trade was less than other studies (around 59%) but still significant. Nardis and Vicarelli (2003) estimated the impact on trade of the EMU countries and found that “the euro adoption has had a positive but not exorbitant impact on trade.

The primary focus of the studies cited above has been to study the effect of a monetary union on a particular region, i.e. the EMU instead of the impact on a particular country. It is the purpose of this study to analyze the impact of the Euro adoption on Portugal.

HYPOTHESIS AND DATA SET

The purpose of this study is to measure the impact on trade of the adoption of a common currency (Euro) on Portugal. A model explaining the determination of trade levels will be constructed taking into account the adoption of the Euro. The hypothesis to be tested is that the adoption of the Euro has had a positive and significant impact on trade. The alternative hypothesis is whether the Euro has not had a significant impact on trade.

As to the kind of impact that can be expected, the level of trade may be reduced in the short run. In the long run, it is quite possible that trade could increase. Another important impact is that the impact on trade could be negative, but the overall impact on other important economic variables (GDP, employment, inflation) could be positive. This study will also address this issue.

Portugal provides a good case study for our purpose. First there is ample economic statistics available, such as the *Instituto Nacional de Estatística*.

BACKGROUND

According to the US Department of State (2005), it appears that Portugal's entry in the European Union (EU) has helped the country obtain an increase in trade and improvement in its infrastructure through the influx of funds from the EU. This has helped Portugal in achieving a stable economic growth. Portugal was able to exceed the average annual growth rates of its EU counterparts. Since 2002 due to a slowdown in economic growth, Portugal has fallen behind the EU. Comparing Portugal's GDP per capita to the EU-15 average, it was only 70.9% of the average and it is forecast to be 65.1% in 2005.

As a condition of entry into the EMU, Portugal had to reduce its budget deficit and achieve structural reforms. Among the benefits of entry into the EMU was exchange rate stability, a reduction in inflation, and reduced interest rates. A result of the lower interest rates was a reduction in the cost of fiscal debt and meeting its fiscal goals. Large current and capital account deficits had created a "serious external imbalance" by 2001. With a budget deficit equaling 4.2% of GDP, Portugal unable to meet the Eurozone's Stability and Growth Pact budget deficit target of 3%. This target was achieved in 2002 and 2003 with creative adjustments. It has been projected that the structural budget deficit will be 4.9% of GDP for 2004. The budget for 2005 projected a deficit greater than the 3% target. In addition, it would appear that the 60% limit on public debt has also not been met.

There was a 1.3% decline in the economy in 2003. The Portuguese economy had shown some improvement in 2004. This improvement was forecast to continue the rest of 2005. The projected growth rate for 2005 stands at 2.2%. The Portuguese government introduced personal and corporate tax reductions, as well as reforms in its labor laws. It hopes that these changes will promote greater economic growth and recovery.

THE MODEL

It is important to address the following questions: "How well does the adoption of the Euro explain the impact on Portuguese trade?" and "Is this impact statistically significant?" In order to answer these questions it is important to specify a model or models that incorporate most of the determinants of trade as well as the adoption of a monetary union. The model allows us to construct a model for the major determinants of trade, such as exchange rate volatility, the presence or absence of free trade agreements, GDP, factor endowments, and the presence of a common currency. The model which is based on the Nardis and Vicarelli Model is specified below:

$$(1) \text{EXP} = a + b_1 \text{GDP} + b_2 \text{EURO} + b_3 \text{FE} + b_4 \text{VOL}$$

Where

EXP represents the countries net exports.

EURO represents a dummy variable having value of 1 when the Euro was adopted and 0 when there is no presence of the Euro.

VOL represents exchange rate volatility of the Euro.

GDP is the gross domestic product of Portugal.

FE: represents factor endowments proxied by capital formation.

The model was also modified to consider the impact of the adoption of the Euro on Portugal's imports. The model is specified below:

$$(2) \text{IMP} = a + b_1 \text{GDP} + b_2 \text{EURO} + b_3 \text{FE} + b_4 \text{VOL}$$

Where

IMP represents the country's net imports.

The variables GDP, EXP, IMP, FE, and VOL were transformed to logarithmic data. These transformations are "often used as a means of removing growth over time of the variance of the data" (Pindyck and Rubenfield, 1991, p. 545)

THE DATA

Quarterly data was obtained from the Instituto Nacional de Estatística's database INFOLINE. The period selected was from 1995 to 2004, or a total of 40 observations. This period was chosen since it includes the time period prior to Portugal's signing of the Maastricht Treaty (1991) and Portugal's formal adoption of the Euro (1999).

EMPIRICAL ANALYSIS

The results for Equation 1 are provided below:

$$\text{LnEXPORTS} = -1.47 + 0.869 \text{LnGDP} + 0.183 \text{LnFE} - 0.0103 \text{EURO} + 0.0432 \text{LnVOL}$$

Table 1. Empirical Results for Exports

Predictor	Coefficient	St. Dev.	t-values	P
Constant	-1.4674	0.615	-2.39	0.023
LnGDP	0.86866	0.09887	8.79	0
LnFE	0.1825	0.1034	1.77	0.086
Euro	-0.01028	0.02344	-0.44	0.664
LnVOL	0.04316	0.07394	0.58	0.563

$$S = 0.03167 \quad R\text{-Sq} = 97.3\% \quad R\text{-Sq}(\text{adj}) = 97.0\%$$

$$F = 314.23$$

The results for the above equation provide some interesting findings. As expected, the sign for the variable EURO is negative and statistically insignificant. Furthermore, the variables GDP and appear to be statistically significant. However, VOL does not appear to be statistically significant.

The results for Equation 2 are provided below:

$$\text{LnIMPORTS} = -0.767 + 0.348 \text{LnGDP} + 0.728 \text{LnFE} + 0.0214 \text{EURO} + 0.109 \text{LnVOL}$$

Table 2. Empirical Results for Imports

Predictor	Coefficient	St. Dev.	t-values	P
Constant	-7661	0.5646	-1.36	0.183
LnGDP	0.34827	0.09077	3.84	0

LnFE	0.72786	0.09493	7.67	0
Euro	0.02143	0.02152	1	0.326
LnVOL	0.10887	0.06789	1.6	0.118

S = 0.02908 R-Sq = 98.1% R-Sq(adj) = 97.9%
F= 452.39

It appears that the adoption of the EURO as its common currency has had a positive and insignificant impact on Portuguese imports. However, it appears that the adoption of the Euro has had a positive impact on Spain's imports. In both equations factor endowments (FE) and GDP have had a positive and significant impact on trade as expected. In addition, it would appear that exchange rate volatility has also had a positive albeit insignificant impact on Portuguese imports and exports. The latter appears to support the findings of Brada and Mendez (1998) and Bonitsis (2005).

SUMMARY AND CONCLUSION

As indicated above, the results of this study provide interesting findings. It appears that the entering of Portugal into the European Monetary Union has been beneficial to Portugal as would have been expected. The findings also appear to support De Nardis and Vicarelli (2003) "the euro adoption has had a positive but not exorbitant impact on trade. However, further research in the area should provide additional useful information.

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