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Exchange Rate Volatility and Foreign Trade: The case for Cyprus and Croatia

Dimitrios Serenis[a]*, Nicholas Tsounis[b]

[a] Lecturer, Technological Institute of Western Macedonia, Department of International Trade, Kastoria 52100, Greece

[b] Professor, Technological Institute of Western Macedonia, Department of International Trade, Kastoria 52100, Greece; Adjunct faculty, Hellenic Open University

Abstract

This paper examines the effect of exchange rate volatility for a set of two countries, Croatia and Cyprus on sectoral exports during the period of 1990: q1-2012:q1. It is claimed by some researchers that exchange rate volatility causes a reduction on the overall level of trade. Empirical researchers often utilize the standard deviation of the moving average of the logarithm of the exchange rate as a measure of exchange rate fluctuation. In this study we propose a new measure for volatility. Overall our results have suggested significant negative effects from volatility on exports for one country in our sample.

Keywords: Exports; sectoral exports; E.U.; Exchange Rate Volatility

1.1 Introduction

The relationship between exchange rate volatility and export flows has been studied in a large number of theoretical and empirical papers. The main notion suggested by some theoretical models, is that a rise in exchange rate volatility increases uncertainty of profits on contracts denominated in foreign currency and force risk averse agents redirect their activity to the lower risk home market. Other models suggest that higher

* Corresponding author. Tel.:302467023229.
*E-mail address:*d.serenis@kastoria.teikoz.gr.

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levels of exchange rate movements offer greater opportunity for profit and therefore might lead to an increase on exports. Alternatively some researchers have suggested since it is possible to offset potential unexpected movements of the exchange rate by investing at the forward market causing producers to be unaffected by movements of the exchange rate. These different ranges of results have been supported by a large variety of empirical studies causing the effects of exchange rate volatility on exports to be one of the most controversial topics of international trade.

This paper aims to model the effects of exchange rate volatility for two countries for which empirical evidence is both limited and ambiguous and to utilize a new measure of volatility which captures unexpected movements of the exchange rate.

The remainder of this paper will be organized as follows: First, the existing literature is analyzed; second, various measurement issues of exchange rate volatility are discussed; third, the data are presented; fourth, the methodological framework is also discussed; fifth, the results of the utilized statistical tests, the estimated equations and an analysis of the main empirical findings are discussed. Finally the last section addresses the issue of policy implications, and presents a brief summary as well as the main collusions.

2.1 Literature review

The literature on the issue is quite large. Both theoretical as well as empirical studies provide ambiguous effects of volatility on exports. An extensive review of both theoretical and empirical literature is well surveyed in Makenzie, 1999. However in this section the main arguments are survived with an emphasis on key aspects pertaining to this study. Early empirical work, utilizing the OLS methodology, favored the negative hypothesis Clark, 1973 as well as an insignificant relationship between export quantity and volatility Hooper and Kohlagen, 1978. Hoper and Kohlhagen, 1978 investigated bilateral and multilateral trade among developed countries using the standard error of nominal exchange rate fluctuations as their volatility measure.

In the 1980's the empirical evidence continues to be mixed and often differ with samples and estimation methods. Therefore, there is no consistent pattern when the same method is applied to different countries. While many suggest that the exchange rate uncertainties does depress trade Thursby and Thursby, 1987 others provide evidence that exchange rate uncertainties affect international trade positively Mckenzie and Brooks, 1997. In an attempt to explain these different ranges of results some researchers have turned to the measure of exchange rate volatility. Cushman, 1983 used the moving average of the real exchange rate as his volatility measure and found a negative relationship between volatility and exports. In his 1988 study, Cushman added the absolute difference between spot, forward and current rates as an alternative measure of volatility and found mixed effects of volatility on exports. Akahtar and Hilton, 1984 concluded that exchange rate uncertainty is detrimental to the international trade. De Grauwe, 1988 captured the ambiguity of the debate by modelling a producer who must decide between selling in the domestic or the foreign market. By providing some basic assumptions his model assumes that the only source affecting the exporter's behaviour is the local currency price of exports as well as his risk preferences. In his model exchange rate is measured as the percentage change of export quantity as a measure of volatility. Following De Grauwe's study Peree and Steinher, 1989 proposed the average absolute difference between the previous forward rate and the current spot rate as better indictor of exchange rate volatility to bilateral exports.

Even though new empirical statistical techniques are applied in the 1990's ambiguity of the estimated relationships continues to dominate the empirical literature. Several authors used the ARCH-GARCH method in order to model and measure exchange rate volatility Kroner and Lastrapes, 1993; Pozo, 1991. Others