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Financial integration in small Islands: The case of Cyprus

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ABSTRACT

The following paper assesses the degree to which two small island economies, the Republic of Cyprus (RC) and the Turkish Republic of Northern Cyprus (TRNC), are financially integrated with their respective 'motherlands' of Greece and Turkey. Specifically, we investigate whether there is a long-run relationship between the RC and Greece and between the TRNC and Turkey, in terms of inflation, interest rates, money supply, and foreign direct investment (FDI). The paper contributes to the literature by examining financial integration in the unique case of Cyprus, where two separate, small economies each operate in a monetary union with their respective mainland partners. The results of our analysis indicate the strong integration of the financial markets of the TRNC and Turkey, and of the RC and Greece. We also demonstrate that financial-market indicators in the TRNC and the RC are largely driven by mainland-partner economies, further advancing the literature on financial integration.

1. Introduction

The financial integration of two economies is indicated where the market indicators of each are driven by a common stochastic trend, and where these indicators are cointegrated. That is, if a given financial indicator in both economies is driven by a stochastic trend in one of the two economies, we can conclude that the two economies are financially integrated. Furthermore, in a bivariate vector autoregressive (VAR) system of two variables, financial integration implies that a given financial indicator should be weakly endogenous in one economy and weakly exogenous in the other.[1] Applying this framework to the unique island setting of Cyprus, we analyze two examples of the cointegration of financial indicators: between Greece and the Republic of Cyprus (RC), and between Turkey and the Turkish Republic of Northern Cyprus (TRNC). The financial indicators used in our study are inflation, interest rates, money supply, and foreign direct investment (FDI).

For the last half century, Cyprus has suffered from problems arising from fundamental differences between two ethnically and religiously distinct populations (Okumus, Altinay & Arasli, 2005). Clashes between these two populations from the 1950s led to Turkey's intervention in 1974, resulting in the de facto division of the island between Greek-Cypriots in the south and Turkish-Cypriots in the north (Sonmez & Apostolopoulos, 2000). The Turkish intervention in 1974 was followed by the imposition of an international economic embargo on Turkish-Cypriots, resulting in stark differences in rates of development between the north and

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[1] Cointegration of two variables implies Granger causality in at least one direction. There will be a common stochastic trend driving two variables in a bivariate vector error correction model (VECM). In our case, if the financial indicator of the mainland economy is weakly exogenous and the same indicator in the island economy is weakly endogenous, then this can be interpreted as the financial indicator in the island economy being driven by the mainland economy.

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south of the island.[2] By 1978, per capita income in the RC was approximately twice that in the TRNC. Following the accession of the RC to the European Union (EU) in 2004 Greek-Cypriots enjoyed still greater economic prosperity, with RC per capita income rising to $26,000 in 2012 from $4000 in 1978—a significantly greater rate of increase than that realized in the TRNC.

Our study contributes to the literature on financial integration by examining two economic pairs located in the East Mediterranean, analyzing long-run (cointegration) relationships with particular emphasis on economic and political milestones. We also empirically test whether the business cycles of each pair of economies are driven by a single or a synchronized regime, using Markov switching vector autoregressive (MS-VAR) models. Our analysis confirms that the financial indicators selected, i.e. inflation, interest rates, money supply, and FDI, are indeed cointegrated, implying that these are driven by a stochastic trend common to a given pair. Furthermore, we find that the financial indicators are weakly endogenous in the RC and the TRNC, and weakly exogenous in their respective mainland partners, i.e. Greece and Turkey. This research therefore demonstrates that the economies of the RC and the TRNC are financially integrated with those of Greece and Turkey, respectively.

Finally, we test short-run business-cycle synchronization by estimating bivariate MS-VAR models for each pair, using data series on inflation, interest rates, money supply, and FDI. Our empirical results indicate that the business cycles of each pair follow perfectly synchronized regime-switching processes. More specifically, our results suggest that the regime-switching processes in one economy are driven by the regime-switching processes in the other, indicating that short-run business cycles in the RC and TRNC economies are also driven by business cycles in their respective mainland partners.

Our work convincingly demonstrates the financial integration of these economic pairs, in a study that is both timely and relevant in the context of the most recent global economic crisis and the particular problems faced by Mediterranean euro-zone member states.

The outline of the paper is as follows. Section 2 presents a review of the recent literature on financial integration, with particular attention to the two economies extant in Cyprus, along with those of Turkey and Greece. Section 3 presents common and distinguishing factors affecting the island and mainland economies, as well as stylized facts about the RC and TRNC economies. Section 4 provides an overview of the data and results of the empirical analysis. Section 5 concludes with some policy implications of findings.

2. Literature review

The following section reviews the literature on financial integration, with a particular focus on the two small economies of Cyprus and their respective mainland partners. The two main populations groups in Cyprus—Greek-Cypriots and Turkish-Cypriots—are bound to their mainland partners by close cultural, religious and economic ties (Kliot & Mansfield, 1997). The de facto division of the island in 1974 and the subsequent international economic embargo on Turkey and the TRNC further strengthened ties between the two island economies and their respective mainland partners. Balcilar, Kutan, and Yaya (2016) tested the dependency theory in the economic partnerships of RC/Greece and TRNC/Turkey, using per capita real GDP. Their findings confirmed a patron/periphery relationship in the pairs' economic development. This paper seeks to extend that research, using financial indicators to examine the integration of the two pairs.

Most of the literature on integration focuses on a geographical area or region, or on a group of economies. For instance, Morana (2007) examined the impact of financial integration on stock market co-movements in the G7 countries. Kim, Kim, and Choi (2015) investigated the degree of integration of Asian-Pacific stock markets. Lee and Jeong (2016) examined the stock market interactions between the ASEAN Economic Community and the stock markets of China and the United States. Olivero and Madak (2013) studied financial integration and international business-cycle transmission of European Union member states. The authors showed that as EU countries become more financially integrated, they tend to decouple from US business cycles. Gan (2014) and Shin and Sohn (2006) analyzed the precise form and degree of financial integration in Asian countries. Kim and Lee (2012) differentiated between financial and real integration in East Asian countries, suggesting that financial integration increases after an economic crisis but lags real integration.

Another strand of research has examined the impact of integration on economic growth and volatility. Kose, Prasad, and Terrones (2006) showed that financial integration weakens the negative relationship between volatility and economic growth. Evans and Hnatkovska (2007) also examined macroeconomic volatility and financial integration, demonstrating a non-linear relationship, which suggests that greater financial integration initially, leads to higher volatility in consumption, which subsides as integration proceeds still further. Kang, McIver, and Yoon (2016) investigated volatility transmission between Brazilian, Russian, Indian, Chinese, and South African (BRICS) stock markets and two commodity markets, namely, the gold and oil futures markets. Yang and Liu (2016) studied the interlinkages among financial development, interest rate liberalization, and macroeconomic volatility in 56 emerging and developed economies and found that both financial development and interest rate liberalization can help reduce macroeconomic volatility and absorb the negative impact of external shocks.

Ozturk and Volkan (2015) analyzed the degree to which the liberalization of MENA-region stock markets contributed to financial contagion in the form of volatility spillovers. Khalifa, Hammoudeh, and Otranto (2014) examined volatility transmission patterns in the stock markets of the Gulf Cooperation Council (GCC) and international markets, including the oil markets. Their results show strong interdependence between oil and both the Kuwait and Abu Dhabi stock markets. Kumar (2015) studied the risk of spillover effects between GIPSI (Greece, Ireland, Portugal, Spain, and Italy) stock markets and those of Egypt, Saudi Arabia, and Turkey,

[2] Embargos on weapon sales, military aid and credits were also imposed on Turkey by the U.S. from September 19, 1974 to September 26, 1978.