Journal of Banking & Finance 37 (2013) 3639–3653

Contents lists available at SciVerse ScienceDirect

Journal of Banking & Finance

journal homepage: www.elsevier.com/locate/jbf

Have the GIPSI settled down? Breaks and multivariate stochastic volatility models for, and not against, the European financial integration

Bartosz Gębka [a,1], Michail Karoglou [b,*]

[a] Newcastle University Business School, University of Newcastle upon Tyne, 5 Barrack Road, Newcastle upon Tyne NE1 4SE, United Kingdom
[b] Aston Business School, Aston University, Aston Triangle, Birmingham B4 7ET, United Kingdom

ARTICLE INFO

Article history:
Received 31 October 2012
Accepted 22 April 2013
Available online 11 May 2013

JEL classification:
C22
C32
C58
F36
G01
G15

Keywords:
European integration
EMU
Financial spillovers
Break tests
Stochastic volatility models

ABSTRACT

We investigate the integration of the European peripheral financial markets with Germany, France, and the UK using a combination of tests for structural breaks and return correlations derived from several multivariate stochastic volatility models. Our findings suggest that financial integration intensified in anticipation of the Euro, further strengthened by the EMU inception, and amplified in response to the 2007/2008 financial crisis. Hence, no evidence is found of decoupling of the equity markets in more troubled European countries from the core. Interestingly, the UK, despite staying outside the EMU, is not worse integrated with the GIPSI than Germany or France.

© 2013 Elsevier B.V. All rights reserved.

1. Introduction

As the financial meltdown of 2007/2008 translated into real economic problems, two distinctive groups of countries emerged within the Eurozone: those able to weather the shocks to their financial systems and those failing or at best struggling to prevent the collapse of their banking systems and national creditworthiness without outside help, and which pose an indirect systemic risk to the former. This latter group consists mainly of Greece, Italy, Portugal, Spain and Ireland, hence the acronym GIPSI, which endeavours to replace the more pejorative PIIGS that was in common use before mainly amongst financial market practitioners. Our paper investigates the time-varying nature of the financial integration as measured by the respective stock-market correlations of the core equity markets in Europe with that part of the European periphery which is at the heart of the recent financial crisis.

Following the inception of the Economic and Monetary Union (EMU) and the introduction of the EURO in 1999 (2001 in Greece), several studies demonstrated a positive impact of the common currency on stock market integration within the Eurozone: correlations between equity returns have generally been found to have increased (Kim et al., 2005; Baele and Inghelbrecht, 2009; Rua and Nunes, 2009; Savva, 2009; Baele and Inghelbrecht, 2010; Büttner and Hayo, 2011) and their volatility to have declined (Kim et al., 2005; Savva, 2009; Savva et al., 2009). However, it is actually quite fascinating that several key controversies regarding the nature of the European financial integration process remain unaddressed, three of which are within the scope of our study.

First, it is not clear that the increased integration was sustainable; several studies show that some relationships between the EMU countries became stronger immediately after the introduction of the Euro but loosened up in the most recent periods (e.g., Yang et al., 2003; Bley, 2009). Second, the debate is still ongoing as to whether it was the inception of the EMU in 1999 or its anticipated effects prior to that date which triggered the European integration; many studies find market comovements to have intensified in the mid-1990s already (e.g., Kim et al., 2005; Hardouvelis et al., 2006;

* Corresponding author. Tel.: +44 (0)121 204 3338.
E-mail addresses: b.t.gebka@ncl.ac.uk (B. Gębka), m.karoglou@aston.ac.uk (M. Karoglou).
[1] Tel.: +44 (0)191 208 1578.

0378-4266/$ - see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jbankfin.2013.04.035

Savva, 2009; Baele and Inghelbrecht, 2010; Asgharian and Nossman, 2011), while some authors go even further to suggest that by the end of that decade most, if not all, of the convergence was completed (Hardouvelis et al., 2006) and that EU membership was far more important than the EMU (Bekaert et al., 2012). Third, especially relevant to the UK and other EU members remaining outside the Eurozone, and directly related to the previous point, the verdict is still out as to whether one has to adopt the Euro to benefit from increased integration with the EMU countries.[2]

Moreover, it has recently become quite evident that one cannot talk about the European integration without taking also into account the impact of the financial crisis which started in 2007. On the one hand, as economic conditions across the EMU became more heterogeneous, one would expect that the national equity markets drifted apart, too. On the other hand, stock markets are largely globalised in terms of the origin of both investors and listed companies, as well as with regard to the companies' markets for both inputs and outputs. Therefore, the idiosyncratic national events might not weight too much on equity markets' dynamics. Furthermore, correlations across markets are widely known to be higher in times of crises (e.g., King and Wadhwani, 1990; Lee and Kim, 1993; Calvo and Reihart, 1996). As a result, the impact of the recent crisis on the integration of equity markets in Europe is quite ambiguous: there might have been a decoupling of the GIPSI from the rest of the Eurozone, or correlations across all EMU countries could have increased.

With regard to the ongoing discussions about the "two-speed Europe" and the future of the Euro, the underlying questions of our paper are: (i) whether or not, in terms of stock market integration, the GIPSI are really the outcasts of the Eurozone; and (ii) if they are, when did they actually become as such. Only once answers to these questions have been established will the 'hows' and 'whys' that are currently debated in the popular press and academic literature have a solid platform upon which some meaningful interpretation vis-à-vis the real-world can be drawn.

To this aim, and in line with the main strand of the literature, we employ the correlations between index returns as an indicator of stock market integration which in turn is expected to reflect the state of the more general albeit vague notion of financial integration. The popularity of this indicator can be attributed not only to the fact that it is key for the implementation of diversification decisions but also because it is intuitively straightforward to accept that as the level of integration rises so will the correlation values (e.g., Bekaert et al., 2009). However, given that changes in correlations might not signal changes in the intensity of linkages between countries but rather result from changes in either the volatility in one of the countries or in the common factor, or even from the (unaccounted for) simultaneity in causality (Forbes and Rigobon, 2002; Billio and Pelizzon, 2003; Rigobon, 2003; Corsetti et al., 2005), the use of raw correlations could well be severely misleading. For that reason, we propose a two-step framework in which (i) structural changes or severe albeit latent non-linearities that manifest or, at the very least, can be captured as breaks in the dynamics of stock market returns and/or their respective volatilities are first identified; and (ii) based on the joint subsamples that these breaks identify, several multivariate stochastic volatility (MSV) models, that may or may not allow for one-sided volatility spillovers, are used to obtain estimates of the time-varying correlations. In this way, we robustify our results not only against the presence of country-specific breaks in the mean and/or volatility dynamics of the underlying returns but also to the possibility of volatility spillovers and daily correlation changes.

This paper's contributions to the literature are as follows. On methodological grounds, we propose to combine a battery of tests for structural breaks with the stochastic volatility (SV) models. Furthermore, unlike most of the existing studies, SV rather than GARCH-type approach is employed to obtain correlations estimates. Empirically, we utilize a long sample to assess the timing, magnitude, and sustainability of the impact of Euro on financial integration in Europe, and how the crisis of 2007–2008 affected this process, in an attempt to reconcile the conflicting findings reported in the existing literature. We also investigate whether the troubled Eurozone periphery decoupled from the main financial markets as a result of divergence in economic and fiscal performance.

To preview our main results, we find a positive impact of the EMU on financial market integration between GIPSI and the European core, with correlations higher (and increasing) and their volatilities lower following the introduction of the EURO. This process of tightening links was initiated but not fully accomplished in anticipation of the benefits of the EMU, and did not fade off in the latest period. The financial turmoil of 2007/2008 did not cause a split between the European core and the GIPSI; rather, correlations between markets became stronger and most of their volatilities declined following the outbreak of the crisis. Hence, in terms of financial market integration, the GIPSI should not be seen as European outcasts. However, there is substantial heterogeneity in terms of financial integration dynamics across both the GIPSI and the core countries. Lastly, membership in the EMU does not seem to be necessary for strengthening the links with the financial markets of the Eurozone, as increased integration can also be observed for the UK, a country outside the EMU.

The remainder of this paper is organised as follows. Section 2 reviews briefly some literature on the impact of the EMU on financial integration in Europe. Section 3 presents the data and Section 4 describes the methodology. Section 5 discusses the results; and finally Section 6 contains our concluding remarks.

2. Literature review

The impact of the EMU on financial market integration in Europe has been, and continues to be, the subject of many studies. In general, measures of correlation in stock index returns between the EMU countries, typically as implied by various conditionally heteroskedatic (GARCH-type) structures, were shown to have increased (e.g., Kim et al., 2005; Baele and Inghelbrecht, 2009; Rua and Nunes, 2009; Savva, 2009; Baele and Inghelbrecht, 2010; Büttner and Hayo, 2011). Also, the EMU seems to have a 'calming' impact on the volatility of cross-market linkages, as volatilities in correlations are reported to have declined in the post-euro era (e.g., Savva, 2009; Savva et al., 2009; Kim et al., 2005; with the latter noting that this effect is most pronounced in Portugal, Ireland, the Netherlands, and Greece). Similar studies based on different measures of integration have more or less painted the same picture (Fratzscher, 2002; Morana and Betratti, 2002; Yang et al., 2003; Bartram et al., 2007; Bley, 2009; Mylonidis and Kollias, 2010).

The question of whether the EMU resulted in increased integration and whether this effect was permanent is however only one of the issues that are addressed by the relevant literature. Other issues include (i) the origin of integrating sources; (ii) the timing of the integration process; and (iii) whether staying outside the EMU hampers integration with the equity markets of the Eurozone.

With respect to (i) Bekaert et al. (2009) find that increasing correlations across Europe are more likely due to the increasing

[2] Yang et al. (2003) and Hardouvelis et al. (2006) find that the UK is left behind with respect to integration, whereas Kim et al. (2005), Bartram et al. (2007) and Baele and Inghelbrecht (2010) show in contrast an increased integration of London with the Eurozone. On the other hand, Greece does not seem to have been affected by its late EMU entry (Kim et al., 2005).

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات