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# Journal of Multinational Financial Management

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## Financial integration and portfolio investments to emerging Balkan equity markets

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### ARTICLE INFO

#### Article history:

Received 27 February 2009

Accepted 14 December 2010

Available online 29 December 2010

#### JEL classification:

C51

G11

G15

F36

O16

#### Keywords:

Market comovements

Dynamic cointegration

Causality effects

Portfolio diversification

Balkan equity markets

### ABSTRACT

The study investigates the risk and return profile of international portfolios allocated by investors to major Balkan equity markets, namely Romania, Bulgaria, Croatia, Turkey, Cyprus and Greece against developed markets, Germany and the US. An error-correction vector autoregressive framework models financial integration and investigates causality effects and cointegration vectors, depicting short- and long-run dynamic linkages. The empirical findings support the presence of two cointegration vectors, indicating a stationary long-run relationship. Both domestic and external forces affect equity market behavior, leading to a long-run equilibrium. These findings are important for international asset allocation, since long-run comovements imply that risk diversification and attainment of superior portfolio returns in the Balkan equity markets may be limited for international investors, although short-run benefits may be potentially feasible in arbitrage mispricings.

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### 1. Introduction

The fifth European Union (EU) enlargement phase (January 2007) creates a dynamic and unique economic landscape in Euroland. The efficient economic integration of the newcoming Member States with the developed mature economies has critical implications for the long-term growth prospects of the Eurozone and particularly for the Balkan and South-Eastern European economies. The Balkan

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**Table 1**  
Foreign direct investment inflows (USD mln.)<sup>a</sup>.

	2000	2001	2002	2003	2004	2005–2009 <sup>b</sup>
Balkans <sup>c</sup>	3617	4461	4215	8531	9934	7070
Central Europe <sup>d</sup>	19,289	16,548	21,994	10,142	14,671	16,870
Baltics	1179	1120	1600	1370	2489	1560

Source: National statistics; IMF.

<sup>a</sup> FDI inflows refer to the change in inward direct investment liabilities (new equity investment, reinvested earnings and intra-company loans minus any disinvestment/decrease in FDI liabilities).

<sup>b</sup> Annual average estimation.

<sup>c</sup> Bulgaria, Romania, Croatia, Albania, FYROM, Serbia and Montenegro, Bosnia and Herzegovina.

<sup>d</sup> Czech Republic, Hungary, Poland, Slovakia, Slovenia.

capital markets can support the convergence process by facilitating investment fund mobility and portfolio allocation to the corporate sector.

International portfolio diversification can lead to efficient asset allocation and reduce investment risk. However, in integrated markets, assets associated with similar levels of risk are anticipated to have similar levels of return. The presence of common trends between Balkan and mature equity markets may indicate limited portfolio gains from diversification because the presence of common factors limits the amount of independent variation. Cointegrated markets exhibit comovements and a stable long-run behavior, although potential short-run profits should not be ruled out. High correlations alone are not sufficient to ensure long-run performance, as common long-term trends in prices are not modelled (Alexander, 2001). Depending on their level of cointegration, the Balkan equity markets can offer profitable opportunities to international investors' diversified portfolios. Long-run equity market comovements can be associated to a number of reasons, including economic ties and policy coordination, financial innovations and market deregulation, interest rate movements or financial crises and contagion effects (e.g. Chan et al., 1997; Gelos and Sahay, 2000; Chen et al., 2002; Ratanapakorn and Sharma, 2002; Samitas et al., 2007; Syriopoulos, 2004, 2006, 2007).

The motivation for this study derives from the growing economic performance of the Balkans economies over the last years, in terms of income per capita, international competitiveness and foreign direct investment (FDI) allocation (Kekic, 2005). To access EU, the Balkan countries have promoted major reform policies, including macroeconomic stabilization, market liberalization, restructuring and privatizing state-owned corporations (IMF, 2005). However, despite these developments, empirical studies focusing on the assessment of the Balkan equity markets' risk–return profile remain limited. Past financial research in dynamic portfolio allocation, market linkages and cointegrated trends has concentrated predominantly on mature equity markets; a range of empirical findings, however, has been rather inconsistent.

The purpose of this study is to expand empirical research on the pattern of dynamic comovements and linkages between Balkan and international mature equity markets, exploring market reaction to external shocks and assessing potential portfolio diversification benefits. This exercise is considered timely and interesting, since the participation of the Balkan economies in the EU has been associated with substantial amounts in FDIs (Table 1). International investors prefer fund allocation to markets that exhibit a stable economic environment, greater openness to trade and a smooth transition path (Clausing and Dorobantu, 2005).

A carefully selected sample of new, old and prospective EU members has been selected for the study; namely, Romania, Bulgaria, Cyprus, Greece, Turkey and Croatia. These emerging equity markets are examined and compared against representative mature markets, Germany and the US. Different equity market patterns are analyzed, potential dynamic linkages and interdependencies are assessed and cointegrating vectors and lead-lag relationships are investigated. The presence of any cointegrating vector in the emerging Balkan equity markets would justify possible comovements between the Balkan and developed equity markets. An eight-dimensional vector error correction model (VECM) is then employed to test for the temporal causal dynamics in the Granger framework and to gain insight into lead-lag relationships of the sample markets. The dynamic structure of international market integration based on innovation accounting is also studied in order to iden-

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