

# International portfolio diversification: Is there a role for the Middle East and North Africa?

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## Abstract

We examine the issue of possible portfolio diversification benefits into seven Middle East and North African (MENA) stock markets. We construct international portfolios in dollars and local currencies. Ex ante weights are obtained by plugging five optimization models and two risk measures into a rolling block-bootstrap methodology. This allows us to derive 48 monthly rebalanced ex post portfolio returns. We analyze the out-of-sample performance based on Sharpe and Sortino ratios and the Jobson–Korkie statistic. Our results highlight outstanding diversification benefits in the MENA region, both in dollar and local currencies. Overall, we show that these under-estimated, under-investigated markets could attract more portfolio flows in the future.

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## 1. Introduction

International financial theory highlights the positive impact of market segmentation on international portfolio value. By spreading risks among different countries, investors can minimize the negative effects of market volatility and ultimately yield increased long-term returns. However, the growing presence of co-movements among developed and emerging financial markets is now

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well documented. Considering the recent currency crises and macroeconomic imbalances experienced in many emerging markets of East Asia, Latin America and Eastern Europe, investors might have to consider other emerging markets, such as those of the Middle East and North African (MENA) region.

Having undergone macrostabilization during the 1990s, these countries are indeed in the process of developing their stock markets through waves of privatization and regulatory improvements. These financial development policies have started to yield significant results: taken as a percentage of GDP, market capitalization in the MENA (31%) is now higher than in Latin America (24%) and Eastern Europe (26%). This trend is accompanied by policies aiming at attracting foreign investors. All of these countries have implemented ADR's during the 1990s. However, this region is still the world's smallest recipient of portfolio investment: according to the Mediterranean Economic Research Forum (ERF, 2004), foreign capital only represents 0.75% of the region's GDP—compared with an average of 4.2% for emerging countries. Not surprisingly, recent empirical studies have underlined the region's segmentation from world's financial markets (Lagoarde-Segot and Lucey, 2007). This paradoxical situation, where successful financial reforms have not yet resulted in international financial integration, might give rise to significant portfolio diversification opportunities in the MENA region.

The purpose of this paper is therefore to investigate the presence of portfolio diversification benefits in seven MENA markets: Morocco, Tunisia, Egypt, Jordan, Lebanon, Turkey and Israel. To our knowledge, this paper is the first attempt to formally capture the performance of portfolio investment in the region. Controlling for currency risk, we construct portfolios both in local currencies and in dollars over the 1998–2006 period. We use a rolling block-bootstrap methodology based on five optimization models stemming from modern portfolio theory. Following Gilmore et al. (2005) and Stevenson (2000), we also compute optimal portfolios based on an asymmetric risk measurement, the lower partial moment, which controls for the bias implied by identifying risk with standard deviation when stock returns are characterized by non-normality. We then compare the ex post performance of the constructed portfolios based on Sharpe and Sortino ratios through the Jobson–Korkie pairwise tests for the equality of performance ratios.

Our results highlight the presence of outstanding potential diversification benefits in the MENA region, whether transactions are denominated in local currencies or in dollars. The allocation of portfolio weights is well-balanced among countries. In most cases, the minimum variance portfolio seems to be the most promising optimization technique. Overall, we show that these under-estimated, under-investigated markets should attract more portfolio flows in the future. The remainder of the paper is structured as follows: Section 2 situates our contribution with current contexts. Section 3 is a brief presentation of the MENA markets. Section 4 presents the data and the methodology we employed. Section 5 presents our results and Section 6 draws together our conclusions.

## **2. Research background**

Two main factors explain the attractiveness of international diversification for portfolio managers. First, the correlation between the returns of the securities that make up a portfolio is crucial in determining the associated level of risk. Generally, the lower the correlation between securities, the lower the portfolio risk, and risk-averse investors tend to select securities with low correlation (Markowitz, 1959). Second, the correlation between domestic and foreign returns is expected to be lower than between purely domestic securities. This is due to the monetary, fiscal and industrial policies varying from country to country, which add up to differing industrial composition

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