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Macroeconomic risks and REITs returns: A comparative analysis

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A B S T R A C T

We study the relationship between the excess returns of REITs and volatilities of macroeconomic factors in developing markets (Bulgaria and South Africa) and a ‘benchmark’ developed market (USA). As expected, our results generally indicate that conditional volatilities of macroeconomic risks, extracted through the GARCH (1,1) process, are time-varying. GARCH coefficients are largely significant for excess returns and retained principal components implying conditional time-varying volatility. We use the GMM to examine the linkage between volatilities of macroeconomic variables and REITs returns. The general result here is that macroeconomic risk cannot explain excess returns on REITs. However, we document a positive relationship between variability in REITs returns and the real economy for the US. US REITs portfolio managers and investors should be wary of fluctuations in these variables as they may accentuate volatility in REITs returns.

1. Introduction

Real Estate Investment Trusts (REITs), a category of liquid securities that permit investors to access and participate in the relatively illiquid immovable property markets without having to trade in physical assets, have gained strong appeal amongst investors arguably as a result of their favorable tax treatment¹ and auxiliary opportunities for global diversification. Unlike other listed real estate firms which commonly resell real estate assets post-development, REITs acquire and/or develop real estate with the objective of operating them as part of their investment portfolio. Because of the interest that they have generated in recent years, the interaction of REITs’ risk-return dynamics and various macroeconomic factors has attracted the attention of researchers, market analysts and the investing community in general.

For instance, a recent Bloomberg report² suggests that a recovering economy and low interest rates since the end of the recession have contributed to increasing yields of REITs in the US; consequently, higher interest rates can make REIT dividend yields less attractive in comparison to other securities such as bonds. Similarly, the effects of some of these variables on REITs returns have been empirically investigated in various markets with variables such as the industrial production growth, output growth, inflation, interest rates and term structure being found to be important sources of systematic risk that directly affect real estate returns, particularly equity REITs, in some early studies (e.g., Chan et al., 1990; McCue and Kling, 1994).

In particular, Payne (2003) investigates the impact of unexpected changes in several macroeconomic variables on the risk premium of equity REITs, mortgage REITs and hybrid REITs in the US. The study finds that unanticipated changes to inflation and

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default risk are insignificant across all types of REITs; mortgage and hybrid REITs are negatively affected by industrial growth and the federal funds rate; and equity and hybrid REITs are affected by the term structure. Ooi and Liow (2004) investigate the risk-adjusted performance of property stocks in emerging markets of Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand and report results indicating that the risk-adjusted performance of real-estate assets is determined predominantly by macroeconomic factors.

The real economy and its business cycles has also been the subject of investigation of studies trying to understand the factors that drive REITs returns. For instance, Laopodis (2009) investigates the interaction of REITs, the stock market and the real economy in the US market for the period 1971–2007 and finds that REITs display similar characteristics to the movements in industrial production growth, implying that changes in policies that impact the real economy affect the returns on real estate stocks. The other business cycle indicator that has attracted researchers’ attention is the interest rate, with many studies (e.g., Ling and Naranjo, 1997; Liow et al., 2006; Ito, 2013) having supported the view that the interest rate factor is significant in REITs pricing. Brooks and Tsolacos (2001) investigate the proportion in variations of property returns that are attributable to interest rates and interest rate spreads in the UK market. They find a significant relationship between long-term interest rates and real estate stock returns although real estate return variations appear not to be driven by long-term interest rates, short-term interest rates and the interest rate spread. On their part, Liow et al. (2006), employing conditional volatility of the prime lending interest rate as a proxy for interest rate changes, find different effects on returns in different Asian-Pacific REITs markets.

Studies of the relationship between REITs returns and inflation (e.g., Chan et al., 1990; Chatrath and Liang, 1998) have not, however, documented an unequivocal relationship. For instance, Payne (2003) finds that unexpected shocks to inflation have an insignificant impact on excess returns on REITs while, in contrast, Liow et al. (2006) finds that the conditional volatility of unexpected inflation is significant in explaining variations in listed real estate returns in some Asian-Pacific markets, although the direction of the effect varies by country.

Under the purchasing power parity principle, exchange rates should adjust to reflect inflation differentials across countries, implying that the exchange rate should not be separately priced in asset returns. Should there be deviations from the purchasing power parity, however, the exchange rate risk, to the extent that it is borne by the investor, is priced in asset returns (see e.g. Kodongo and Ojah, 2014). In their study of the role of exchange rate exposure in the European real estate markets, Thomas and Lee (2006) document results suggesting that differences in portfolio compositions of investors in various countries were reduced by the introduction of a single-currency: prior to the introduction of the single-currency, investors needed to incorporate foreign exchange rate risk expectations into international investment strategies unless they were fully hedged or were using an exchange rate overlay program; however, the foreign exchange rate risk premium appears to have been eliminated with the single currency in European markets.

Based on the notion that emerging economies’ real estate markets offer better returns than developed economies’ real estate markets, Addae-Dapaah and Loh (2005) examines the advantages and disadvantages of holding real estate asset portfolios of emerging economies relative to those of developed markets with the exchange rate as the underlying risk. The study finds that although exchange rate volatility generally has an adverse impact on international investment risk and return, the difference in impact between emerging markets and advanced markets is not statistically significant. In the long-term, relative to developed economies, emerging markets real estate returns are more susceptible to currency fluctuations and provide higher returns at any given currency risk level than corresponding portfolios in developed markets.

Some recent studies (e.g., Liow et al., 2006; Xiao et al., 2014) have focused on the nexus between macroeconomic risks and REITs expected risk premia. They generally find evidence that REITs risk premia are time varying and dynamically linked to the macroeconomic risks. For example, Xiao et al. (2014) finds that market risk does not fully account for all the expected returns of REITs; rather, the conditional covariances between expected REIT portfolio returns with shifts in unexpected macroeconomic conditions such as inflation and oil prices are negatively related to REITs expected returns, implying that these risk factors are priced. The trio however fails to find a similar relationship for default spread and term spread.

The growing implementation of REITs in developing countries connotes increasing importance of the real estate market in developing economies. Yet, the nexus between macroeconomic risk factors and REITs has not been researched extensively in developing countries largely because REITs are a recent phenomenon in these economies. Our work contributes to this literature by examining two developing REITs markets, South Africa and Australia, relative to the more advanced and large USA REITs market. As Table 1 shows, South Africa is possibly the largest REITs market in the developing world; although older, the Bulgarian market is a relatively small. However, because we are unable to obtain data for the other developing REITs markets of a historical span long enough to be useful for the kind of analysis at hand, we investigate only these two. To put our results to perspective, we perform a comparative analysis with the US REITs market, the largest in the world.

Our paper is similar in focus and style to the work of Liow et al. (2006) who find that expected risk premia and conditional volatilities of the risk premia on property stocks are time-varying and are dynamically linked to the conditional volatilities of macroeconomic risks. Because developing economies have, for a long time, provided investors with opportunities for international portfolio diversification, which is based on the principle of low correlations in business cycles of different economies, a clear

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3 Developing financial markets are characterised by relatively high returns and low correlations of returns with advanced markets which makes them potentially attractive for international portfolio diversification. However, developing financial markets also tend to be characterised by large fluctuations in returns which casts doubt on the accuracy of valuation of investment opportunities that they offer (see e.g. Kodongo and Ojah, 2014).

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