Consumption, wealth, stock and housing returns: Evidence from emerging markets

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ABSTRACT

We test the predictive ability of the transitory deviations of consumption from its common trend with aggregate wealth and labour income, *cay*, for both future equity and housing risk premia in emerging market economies. Using quarterly data for 31 markets, our country-level evidence shows that forecasting power of *cay* vis-à-vis stock returns is high for Brazil, China, Colombia, Israel, Korea, Latvia and Malaysia. As for housing returns, the empirical evidence suggests that financial and housing assets are perceived as complements in the case of Chile, Russia, South Africa and Thailand, and as substitutes in Argentina, Brazil, Hong Kong, Indonesia, Korea, Malaysia, Mexico and Taiwan. Using a panel econometric framework, we find that the cross-country heterogeneity observed in asset return predictability does not accrue to regional location, but can be attributed to differences in the degree of equity market development and in the level of income.

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1. Introduction

The predictability of stock returns is largely documented in the empirical finance literature (Fama and French, 1988; Campbell and Shiller, 1988). It is also well known that the relationship between

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wealth and macroeconomic aggregates provides relevant information about future equity risk premium and its counter-cyclical pattern (Lettau and Ludvigson, 2001; Sousa, 2010a).

At the onset of the sovereign debt crisis, some pieces of research have started to investigate the determinants of government bond risk premium (Sousa, 2012a).[1] More specifically, important efforts have been made while trying to link the behaviour of bond yields to macro-financial indicators (Afonso and Sousa, 2011; Sousa, 2010b).

However, research on the predictability of housing returns remains rather limited.[2] This is somewhat surprising, especially in view of the fact that housing represents the most valuable asset in portfolios from which households derive flows of direct utility and collateral services (Banks et al., 2004).[3]

Against this background, the current work tries to provide a direct assessment of housing return predictability in a portfolio setting. More specifically, we rely on the seminal paper of Lettau and Ludvigson (2001), who show that the transitory deviation of consumption from its equilibrium relationship with asset wealth and labour income, *cay*, predicts the equity risk premium. Then, we extend the framework of Caporale and Sousa (2011) to a set of emerging market economies. It is widely recognized that equity risk premium in emerging market economies is higher than in industrialized countries. Thus, we test whether the consumption–wealth ratio conveys relevant information not only about future stock returns, but also about future housing returns.[4] Moreover, we consider both time-series models and panel econometric specifications, and relate asset return predictability to a set of country characteristics. These are the main contributions of the current paper to the existing literature.

Using quarterly data for a set of 31 emerging market countries, the country-level empirical evidence shows that *cay* forecasts real stock returns. For instance, it predicts 20% (Malaysia), 22% (Israel and Latvia), 23% (China), 25% (Colombia), 39% (Brazil), and 46% (Korea) of the variations in real stock returns over the next four quarters.

In the case of housing returns, *cay* forecast 23% (Indonesia), 24% (Brazil and Chile), 30% (Argentina), 38% (South Africa) and 47% (Mexico) of the variations in real housing returns at the four quarter-ahead horizon. Additionally, we find that *cay* has a positive coefficient in the forecasting regressions for Chile, Russia, South Africa and Thailand, hence corroborating complementarity between housing and financial assets; and a negative coefficient in the predictive models for Argentina, Brazil, Hong Kong, Indonesia, Korea, Malaysia, Mexico and Taiwan, therefore implying substitution between the two assets' categories.

When we consider a panel econometric framework, the empirical evidence shows that regional location does not explain the cross-country heterogeneity that we observe in stock return predictability, but helps to describe the differences observed in the predictability of housing risk premium in European emerging markets and, to some extent, in Asian emerging market economies. Additionally, when we split the sample by the level of financial development and the level of income of the countries, we conclude that *cay* does not account for the variation observed in equity risk premium, but provides a good characterization of the future dynamics of housing returns.

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[1] For an assessment of contagion effects during the 2007-2009 financial crisis, see also Chevapatrakul and Tee (2014) and Luchtenberg and Vu (2015).

[2] As pointed out by Ghysels et al. (2013), forecasting regressions for real estate prices have typically relied on predictors such as lagged returns (Linneman, 1986; Rayburn et al., 1987; Case and Shiller, 1989; Kuo, 1996; Schindler, 2013), the housing price to income ratio or the housing rent to housing price ratio (Hamilton and Schwab, 1985; Geltner and Mei, 1995; Gallin, 2008; Campbell et al., 2009), and property or region-specific determinants, such as construction costs, income or population (Case and Shiller, 1990; Abraham and Hendershott, 1996).

[3] There is a body of literature relating asset portfolio decisions with housing investments (Ross and Zisler, 1991; Flavin and Yamashita, 2002; Cauley et al., 2007; Becker and Shabani, 2010; Lustig and Van Nieuwerburgh, 2005; Piazzesi et al., 2007; MacKinnon and Al Zaman, 2009; Plazzi et al., 2010; Caporale and Sousa, 2011; Sousa, 2012b; Armada and Sousa, 2012).

[4] Some recent studies have assessed the behaviour of financial markets in emerging markets. For instance, Donadelli and Persha (2014) investigate the contribution of each industrial stock market to emerging market equity risk premia using industry-level data. Jamaani and Roca (2014) show that the Gulf Cooperation Council (GCC) stock markets are not weak-form efficient, but Mobarek and Fiorante (2014) find that the equity markets of Brazil, Russia, India and China (BRIC) are weak-form efficient. Chkili and Nguyen (2014) link stock market returns with exchange rate movements using data for the BRICS countries. Boubaker et al. (2014) show the existence of over-reaction to news in the Egyptian stock exchange market.