### **ARTICLE IN PRESS**

J. Int. Financ. Markets Inst. Money xxx (2016) xxx-xxx



Contents lists available at ScienceDirect

# Journal of International Financial Markets, Institutions & Money

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



# Institutional investors' allocation to emerging markets: A panel approach to asset demand

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#### ARTICLE INFO

Article history: Received 14 February 2016 Accepted 20 November 2016 Available online xxxx

JEL codes: F30 G23

G11

Keywords:
Asset demand
Emerging markets
Insurance companies
Pension funds
Institutional investors
Panel ARDL
Search for yield

#### ABSTRACT

This study assesses the factors driving insurance companies and pension funds' portfolio allocation to emerging market assets. By making use of the Emerging Portfolio Fund Research database, it estimates asset demand equations for emerging markets' equities and bonds for insurance companies and pension funds from advanced countries. These are estimated by using recent advances in the literature on panel autoregressive distributed lag models. Two key results emerge: firstly, consistent with 'search for yield' investment behaviour, weaker balance sheet conditions, measured by the lower funding level of pension funds, positively affect the asset allocation to emerging markets. Secondly, the accumulation of reserves by emerging markets is a significant attractor of foreign institutional investment.

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#### 1. Introduction

The determinants of portfolio investment in emerging markets (EMs) have been subject to intense scrutiny. At the macroeconomic level, the origins of this scrutiny can be traced back to Calvo et al. (1993), which was the first study to point out the key role of external 'push' factors such as US interest rates in explaining the contemporaneous surge in capital flows to EMs as opposed to country-specific 'pull' factors. The empirical investigation into the relative importance of push and pull factors produced a vast literature in the 1990s, which confirmed the importance of global factors, but also found some role for domestic fundamentals in driving capital flows to EMs.

In the aftermath of the 2008 global financial crisis, much focus was placed on the role of global risk appetite as a driver of cross-border flows. Several studies have found that risk appetite shifts, often driven by liquidity provision and the monetary policy stance of major central banks, explain much of the movement in the asset prices of EMs (González-Rozada and Yeyati, 2008; Özatay, 2009; Ciarlone et al., 2009) as well as the capital flows to such countries (Fratzscher, 2012; Rey, 2013; Ahmed and Zlate, 2014). Low interest rates and ample liquidity have induced investors to display 'search for yield' behaviour by expanding cross-border investment (Shin, 2013).

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http://dx.doi.org/10.1016/j.intfin.2016.11.009

1042-4431/© 2016 Published by Elsevier B.V.

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<sup>&</sup>lt;sup>1</sup> For example, Fernández-Arias (1996) and Chuhan et al. (1998).

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While the literature is generally concerned with the overall dynamics of financial investments in EMs, this study focuses on insurance companies and pension funds (ICPFs). These institutions are large players in global financial markets that have modified the portfolio composition substantially over the past decade, away from domestic equities towards international and externally managed assets. Furthermore, they have become increasingly important as drivers of flows to EMs, especially following the global financial crisis, as their allocations to EM bonds and equities have risen substantially (Miyajima and Shim, 2014; IMF, 2014, 2016). Understanding their behaviour is therefore crucial for addressing financial stability in EMs.

This study contributes to the analysis of capital flows to EMs by focusing on the role of two additional determinants of ICPFs' asset allocations. The first are their balance sheet conditions, represented by the aggregate funding levels of advanced countries' pension funds. ICPFs' portfolio choices, in addition to standard factors such as returns, may be affected by the conditions of their balance sheets. In fact, there is evidence that ICPFs, in the present conditions of extremely low interest rates, may be 'searching for yield' to achieve sufficient returns to meet their long-term obligations (Boubaker et al., 2015; Tran et al., 2015; OECD, 2015; Becker and Ivashina, 2015; IMF, 2016), a search that may be more pressing when liabilities grow larger than assets (i.e. when funding ratios or solvency requirements deteriorate). This study thus investigates whether lower funding levels are associated with higher allocation to EMs at the macro level, in line with the 'search for yield' explanation.

The second determinant is the level of foreign exchange reserves (FXR). The financial integration of EMs in the past decade has been accompanied by the substantial accumulation of FXR by these countries; according to the World Bank's World Development Indicators report for 2014, EMs² collectively hold about USD 6.5 trillion of FXR, with China holding about 60%, Brazil, India, Russia, and South Korea about 5% each, and the remaining 20% split across the other countries. FXR may work as a country's stock of systemic 'collateral' that EMs provide to foreign investors (Dooley et al., 2004, 2014; Qian and Steiner, 2014): foreign lenders can then indirectly 'claim' FXR as EMs' central banks intervene by selling them in FX markets when substantial capital outflows occur. Higher reserves therefore signal a stronger collateral and a higher capability of EMs to intervene in FX markets. This study thus examines the role of FXR as a key pull factor: the higher the level of FXR, the safer EMs are perceived to be and therefore the more attractive they are to foreign investors.

The significance of these two factors is the key contribution of this study. Demand for EM assets by ICPFs is negatively related to funding levels, thus characterising the 'search for yield' behaviour of ICPFs related to their balance sheet conditions as well as the ability of EMs to reduce their currency risk by providing FXR as collateral. These findings point out the importance of looking at these additional factors to better understand the patterns of portfolio flows given the crucial importance of ICPFs. A second related contribution of this study is its methodological design, particularly its use of asset demand equations. Rather than capital flows, the study estimates demand for EM assets from advanced countries' ICPFs. This approach is effective at clearly drawing out the links between the macroeconomic phenomenon of international portfolio investment and its micro-level driver, namely the asset allocation of investors. This study also contributes to the existing asset demand equations literature in two ways. Firstly, it adopts a panel approach. In this regard, new estimators are proposed for panel autoregressive distributed lag (ARDL) models that take into account the possibility of cross-sectional dependence (CSD) and parameter heterogeneity. Secondly, it applies this approach to the issue of international portfolio choice specifically and demand for EM assets in particular.

The rest of the paper is structured as follows. Section 2 discusses the evolution of ICPFs' presence in EMs and describes the link between their balance sheet conditions and portfolio allocation. Section 3 describes the asset demand approach and its application to the issue of international portfolio investment in EMs. Section 4 describes the data and variables. Section 5 describes the tests and discusses the model specification. Section 6 presents the estimation results, including some robustness checks. Section 7 interprets these results and offers possible implications. Section 8 concludes.

#### 2. Insurance companies and pension funds' balance sheet and emerging markets

ICPFs are large players in financial markets. As shown in Fig. 1, at the end of 2014, they collectively owned about USD 45 trillion, about 60% of global GDP or 30% of total world bonds and stocks outstanding. The figure also shows that ICPFs are highly concentrated across countries: the United States, the United Kingdom, and Japan account for just under 80% of total ICPF assets, a figure that has changed little over the past 15 years.

Over the same period, however, ICPFs have seen important changes in their asset allocations. As shown in Fig. 2, they have broadened the geographical scope of their investments by investing a larger proportion of their wealth in foreign assets. Furthermore, their portfolios have become more diversified in terms of asset classes. In OECD countries, on average, ICPFs have reduced their direct allocation to equities in favour of indirect holdings of assets through external funds.

Over the same period, EMs have become increasingly integrated into the global financial system.<sup>3</sup> The trends of internationalisation and increasing allocation to funds of ICPFs are at least partially responsible for these developments. As shown in Fig. 3, allocations to EMs' bonds and equities by ICPFs' channelled through funds have grown substantially, from 0.17% at the turn of the century to about 1.85% in the third quarter of 2013.<sup>4</sup> While these allocations may appear small, they translate into

<sup>&</sup>lt;sup>2</sup> The EMs in this study are Argentina, Brazil, Chile, China, Colombia, Czech Republic, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

<sup>&</sup>lt;sup>3</sup> See, for example, Lane et al. (2007).

<sup>&</sup>lt;sup>4</sup> These figures are calculated from the Emerging Portfolio Research Fund database. More details on this database and its usage in this study are discussed in Section 4.

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