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Portfolio choice, behavioral preferences and equity home bias☆

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Abstract

We provide a plausible explanation of aggregate portfolio behavior, in a framework where economic agents have behavioral (*narrow framing*) preferences. The representative agent derives utility not only from consumption (standard models) but also from risky financial wealth fluctuations. Moreover, the investor frames the stock market risk narrowly and has loss averse preferences. We numerically solve, for the foreign equity share, a simple model of international portfolio choice, providing a possible explanation for the equity home bias puzzle. Only economic agents able to process correctly information deriving from stock markets exploit the diversification opportunities provided by international financial markets.

JEL classification: G11; G12; G15

Keywords: Portfolio choice; Behavioral finance; Equity home bias

1. Introduction

Recently, many contributions have emphasized that standard CRRA preferences have different problems in explaining some stock market puzzles[1] and at the same time, behavioral theories have increasingly gained credit as an alternative explanation to these puzzles. In particular, some

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[1] See Mehra and Prescott (1985) (equity premium puzzle), French and Poterba (1991) (equity home bias puzzle) and Mankiw and Zeldes (1991) and Haliassos and Bertaut (1995) (stock market participation puzzle). For complete surveys see Kocherlakota (1996) and Campbell (2000, 2003).

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recent papers[2] propose that people are loss averse over changes in the value of their stock market holdings. The basic idea is that, even if stock market risk is just one of many risks that determine their overall wealth risk, people still get utility directly from stock market fluctuations (*narrow framing*) and are more sensitive to losses than to gains (*loss aversion*). Christelis, Jappelli and Padula (2006) argue that individuals' cognitive abilities may strongly affect investors' financial choices, pointing out that cognitive ability is closely related to the ability to process information. In fact, evidence from psychology shows that poor cognitive skills are associated with low ability of processing information (Spaniol & Bayen, 2005): cognitive skills act as an additional constraint that optimizing individuals face when making their financial decisions.

In order to illustrate one of the possible applications of behavioral preferences, we focus on the so-called *equity home bias puzzle*. Standard portfolio theory (mean/variance and consumption-based asset pricing models) states that it would be optimal for investors to hold a large fraction of their equity portfolio invested in foreign stocks[3]; but available empirical evidence is at odds with this theoretical prediction, showing that the most important components of household equity portfolios are domestic stocks: most countries hold a small share of foreign stocks in their equity portfolios. In particular, French and Poterba (1991) and Tesar and Werner (1995) estimated the percentage of aggregate stock market wealth invested in domestic equities in the beginning of the 1990s to have been well above 90% for U.S. and Japan,[4] and around 80% for U.K. and Germany.[5] During the 1990s the foreign equity participation by US investors has increased: Tesar and Werner (1998) show that in 1996 only around 10% of total U.S. equity holdings was invested abroad. But this level, if compared with what theoretical models predict, is too low.

In the asset pricing/macroeconomics literature, many and different explanations have been provided about this puzzle. Lewis (1999) offers an extensive survey of potential explanations, ranging from the possibility for domestic stocks to better hedge home risks than foreign stocks, the presence of non-tradable consumption goods, diversification costs exceeding the gains, the effects of uncertainty about the economic environment and the role of measurement errors in the data. But Lewis concludes that "*overall, equity home bias in portfolio levels remains a puzzle*". In other words, economists agree about the fact that, at the moment, no explanation is conclusive and fully satisfactory.

In this paper, exploiting a behavioral finance based-approach,[6] we argue that people with poor capabilities of processing information do not diversify their financial investments. And it is reasonable to suppose that, among individuals with poor capabilities of processing information, we find in particular people with a low level of education, while those with a higher level of education (an undergraduate degree or more) have higher capabilities. With this rationale in mind, we numerically solve a simple dynamic model of international portfolio choice, providing a possible explanation for the equity home bias puzzle. Barberis et al. (2006) solve a similar model finding numerically the parameter values for which an agent with a recursive utility function that

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[2] Benartzi and Thaler (1995), Barberis, Huang and Santos (2001), Barberis and Huang (2001, 2004), Barberis and Huang (2007), Barberis, Huang and Thaler (2006).

[3] See the seminal contributions by Levy and Sarnat (1970), Solnik (1974) and French and Poterba (1991); for recent exhaustive review articles see Lewis (1999) and Obstfeld and Rogoff (2000).

[4] 94% for U.S. and 98% for Japan (French & Poterba, 1991).

[5] This phenomenon in financial asset holdings, as documented by Golub (1990) and Tesar and Werner (1995), is also present in the bond market.

[6] For a complete survey of behavioral finance contributions see Barberis and Thaler (2003); for a review specifically focused on aggregate stock market behavior see Stracca (2002a).