Journal of Corporate Finance 18 (2012) 1065–1087

Contents lists available at SciVerse ScienceDirect

Journal of Corporate Finance

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

Who *times* the foreign exchange market? Corporate speculation and CEO characteristics☆

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ARTICLE INFO

Article history:
Received 10 December 2011
Received in revised form 16 July 2012
Accepted 17 July 2012
Available online 24 July 2012

JEL classification:
G30

Keywords:
Behavioral corporate finance
CEO characteristics
Speculation
Risk management

ABSTRACT

This paper shows that managers' personal beliefs and individual characteristics explain a large share of the substantial time-variation of derivative use beyond firm, industry, and market fundamentals. We construct a panel data set of foreign currency derivative holdings and currency exposures for U.S. non-financial firms. We use a novel approach to build a firm-specific foreign exchange return. We find that managers adjust derivatives notional amounts in response to past foreign exchange returns, as if they were forming views on future currency prices. We then construct an empirical measure of speculative behavior for each firm to investigate the profile of the speculator. Firms where the CEO holds an MBA degree, is younger, and has less previous working experience speculate more. These results are consistent with overconfident managers taking more risk.

1. Introduction

Managers are acknowledged to have their own style when taking corporate decisions. Personal characteristics of CEOs are empirically important determinants of a large range of corporate variables, like the firm investment policy (Malmendier and Tate, 2005), acquisition or diversification decisions, dividend policy, interest coverage, cost-cutting policy (Bertrand and Schoar, 2003), and capital structure decisions (Malmendier et al., 2011). The behavioral approaches to corporate finance offer a useful complement to the other paradigms in the field in explaining some corporate policies (see Baker et al., 2005, for a survey). However, there are still a number of unexplored research questions. One of these is to what extent the corporate risk management policies of non-financial firms departs from textbook hedging. More specifically, do managers select the amount of derivatives according to some optimal hedging policy, or are they just taking *active* views, which reflect their personal preferences, attitudes, or skills?

In this paper, we study to what extent CEO personal beliefs and individual characteristics explain the time-series variation of foreign currency derivatives beyond industry, firm, and market fundamentals. A growing theoretical literature in behavioral finance shows that

☆ This paper was started while the first author was visiting the Department of Finance of the Wharton School, whose hospitality is gratefully acknowledged. We thank an anonymous referee, Jeffry Netter (the Editor), Tim Adam, Gregory Brown, Luca Erzegovesi, Michael Faulkender, Chris Geczy, John Graham, Robin Greenwood, Terry Odean, Loriana Pelizzon, Alberto Pozzolo, Manju Puri, Pascal St-Amour, Olivier Scaillet, Enrique Schroth, Norman Schuerhoff, René Stulz, Jeff Wurgler, and conference or seminar participants at the annual meeting of the American Finance Association Boston 2006, Cass Business School, University of Lausanne, University of Trento for helpful comments. We are especially indebted to Cathy Schrand for extensive discussions. We also thank George Allayannis for kindly providing data on operational hedging. Maria Alva, Richard Evers, George Gatopolous, Madina Kukenova, and Martijn Reekers provided valuable research assistance.

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0929-1199/$ – see front matter
doi:10.1016/j.jcorpfin.2012.07.004

several biases, like overconfidence, representativeness and narrow framing, could induce investors and managers to incorporate their views into their financial decision making. In the context of corporate risk management, some survey evidence indicates that indeed managers frequently incorporate their views when they determine the firm's derivative holdings.[1] It is not feasible to measure behavioral biases directly, but we observe managers personal characteristics that the literature has linked in general to the attitude toward risk and specifically to overconfidence.

Our empirical analysis builds on three crucial pieces of information that we obtain mostly through hand-collected data from a variety of sources. First, we construct a panel of large U.S. non-financial firms for 6 years that includes hand-collected information on currency derivative holdings. For the firms in our sample, managing foreign currency risk is a crucial corporate activity since the majority of them sells abroad more than 35% of the total sales.[2] Second, we build a firm-specific foreign exchange return by using geographical information on the foreign sales of each firm. This variable is important to capture active views on the foreign exchange market, whenever managers predict currency returns using past information on the exchange rate. Finally, we merge the panel on firm variables with hand-collected data on personal CEO characteristics.

We document a substantial time-series variation in currency derivative holdings. The annual average change in notional amounts is 56%, and 63% of the firms in our sample change their derivative position at least by 30% every year. We find that currency derivative holdings respond to the past dynamics of the foreign exchange rate, after controlling for a set of alternative hedging measures, different currency exposure proxies, firm fixed effects, and other time-varying firm characteristics.

This evidence is hard to reconcile with derivatives being exclusively managed according to an optimal hedging policy. Rather, this evidence is consistent with managers adjusting derivative holdings over time according to active views, which could be explained by the behavioral finance literature with the representativeness, narrow framing and overconfidence biases.

To investigate the role of CEO's beliefs and personal characteristics for corporate risk management, we construct an empirical measure of speculation obtained as the variation of derivative holdings that is not explained by fundamentals. We then use our proxy of speculation to test the hypotheses that personal manager characteristics positively correlated with overconfidence, such as young age, short experience, and an MBA degree, lead to more speculation. After controlling for the riskiness of the business environment, we obtain the striking result that manager personal characteristics increase the explanatory power for our proxy of speculation by about 50% with respect to firm and industry variables. Specifically, firms where the CEO is younger, holds an MBA degree, and has less working experience display a larger empirical measure of speculation.

The most intriguing result of our paper is the positive and highly significant effect of managers holding an MBA degree on speculation. We investigate whether this finding is related to the overconfidence bias or to an information advantage using several empirical exercises. First, we look at *non*-MBA managers with a solid training in finance and find that they do not exhibit the same behavior. This is an indication that MBAs are unlikely to speculate because of superior finance information. Second, we construct a proxy to measure whether the deviations from fundamental hedging are successful. We find consistent evidence that deviations are not profitable and MBA managers seem to be, if anything, even worse performers than the rest of the sample. Finally, we test the predictions of the Gervais and Odean (2001) model of overconfidence. Consistent with their theory, we find that an MBA degree only matters for speculation when managers have less experience and early success.

Our paper contributes to the literature by answering three related questions: *whether* managers *time* the foreign exchange market, *how* they do it and, most importantly, *who* they are. Along the first dimension (*whether*), we show that managers of large corporations *time* the foreign exchange market in adjusting currency hedging, thus adding to the extant evidence on equity and debt market timing (e.g., Baker and Wurgler, 2002; Baker et al., 2003; Faulkender, 2005; Graham and Harvey, 2001). To identify the *timing* behavior, it is crucial to use the time-series dimension. Our paper is, to our knowledge, the first in the corporate risk management literature to use a panel data of firms with information on currency derivatives notional amounts for a broad range of industries over 6 years.[3] The focus of our paper on a large sample of firms across industries implies data limitations that can only be avoided by concentrating on specific single industries, such as the gold-mining sector. However, our approach to all sectors has the potential to deliver more general results. Furthermore, managers of large non-financial firms are unlikely to have superior knowledge of currency price dynamics in the same way managers of gold-mining firms have of gold prices. In this sense, we complement to the literature focusing on single industries, such as Brown et al. (2006).

On the second aspect of our contribution (*how*), we document that managers use the past information in foreign exchange returns when *timing* the currency market. So far, the data limitation of observing only the total notional amount of derivatives, rather than an amount broken down by currency, was preventing a compelling empirical analysis. Our novel approach of constructing a *firm-specific* foreign exchange rate allows us to overcome this limitation.

On the third and most important aspect of our contribution (*who*): manager personal characteristics have strong explanatory power over firm and industry characteristics. This striking finding is consistent with a growing literature on the importance of individual manager features in corporate decision making (e.g., Bertrand and Schoar, 2003; Malmendier and Tate, 2005; Malmendier et al., 2011). Specifically, our results on age, educational background, and working experience, are all going in the direction that other papers have related to overconfidence (e.g., Barber and Odean, 2001; Gervais and Odean, 2001), or more generally to a risk-taking attitude (e.g., Kumar, 2005).

[1] The 1998 Wharton risk management survey (Bodnar, Hayt and Marston, 1998) indicated that 61% of responding firms state that views on the foreign exchange market alter the size of their hedges.

[2] There is evidence that corporate risk management has a significant impact on the value of the firm (e.g., Allayannis and Weston, 2001; Graham and Rogers, 2002). We can expect this effect to be potentially more relevant when foreign sales represent a substantial share of total sales, as in our sample.

[3] More generally, our panel methodology also improves over the traditional approach of using dichotomous variable for derivative users (e.g., Bartram et al., 2003; Geczy et al., 1997), as well as papers using only a cross-section of firms (e.g., Knopf et al., 2002).