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ELSEVIER Research in International Business and Finance 18 (2004) 205–216
RESEARCH IN INTERNATIONAL BUSINESS AND FINANCE
www.elsevier.com/locate/ribaf

Exchange rate exposure and foreign exchange derivatives: do ineffective hedgers modify future derivatives use?

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Received 23 September 2003; accepted 8 April 2004

Abstract

Recent studies examining the relationship between stock returns and exchange rate changes have provided evidence that the exchange rate exposure of non-financial companies is reduced by the use of foreign exchange derivatives. Building on such research, this study investigates whether past ineffective derivative hedging contributes to explaining future derivatives use. To the extent that companies monitor the effectiveness of their currency risk management practices, past ineffective hedgers can be expected to modify their future use of foreign exchange derivatives accordingly. In our study of 94 non-financial US multinationals, we provide evidence that the change in derivatives use from 1996–1998 to 1998–2000 can be explained in part by the ineffective hedging of currency risk in 1996–1998, controlling for variables associated with theories of optimal hedging. Additional analyses confirm that such primary results are robust to firm size, the level of foreign operations, and the use of derivatives to partially hedge currency risk. Our results imply that as exchange markets and risk management practices change, the use of derivatives to manage exchange rate risk also changes. Our contribution to this field of study is that we find evidence that past ineffective hedgers tend to increase their future use of FXDs.

Keywords: Exchange rate exposure; Foreign exchange derivatives; Ineffective hedgers

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0275-5319/$ – see front matter
doi:10.1016/j.ribaf.2004.04.001

1. Introduction and motivation

This paper examines the currency risk management practices of US multinationals. In particular, we investigate whether changes in the use of foreign exchange derivatives (FXDs) can be attributed in part to the past ineffectiveness of derivative hedges in reducing a company's exposure to changing exchange rates. Prior studies have examined the relationship between exchange rate changes and stock returns, and have provided weak evidence of such exposure to currency risk (Bodnar et al., 2002). In light of this evidence, recent research has investigated whether the currency risk management practices of non-financial companies are effective in reducing the firm value effects of exchange rate changes. Some studies have provided evidence of effective operational hedging (e.g., Pantzalis et al., 2001), while others have documented the effective use of FXDs in reducing currency risk (e.g., Allayannis and Ofek, 2001). However, no empirical study to date has examined whether the past ineffective use of these derivatives helps explain future changes in currency risk management practices. To the extent that companies are able to evaluate the effectiveness of their derivative hedging practices, we expect that past ineffective hedgers will modify their future use of FXDs accordingly.

Derivative securities are used not only for hedging but also for speculation and for price discovery (i.e., arbitrage). In total, the use of derivative securities has increased dramatically in recent years. As reported by the Bank of International Settlements (2003), the total notional amount of derivative securities in June 2003 was US$ 208 trillion, compared to US$ 56 trillion in 1995. This nearly four-fold increase in derivative securities use mirrors the recent transformation in risk management practices. The globalization of financial services, the improvements in information technology, the increased trading in financial markets securities, and the development of new derivative contracts are all cited by Dowd (1998) as changes in the economic environment that have helped transform how risk is managed. Dowd (1998) also notes that the increased instability of exchange rates, interest rates and equity prices are factors that have contributed to this transformation and the corresponding increased use of derivative securities.

Particular to the increased instability of exchange rates, the Bank of International Settlements (2003) also reports that the notional value of foreign exchange derivatives has increased from US$ 13.2 trillion in 1995 to US$ 22.2 trillion in 2003. Our study is motivated by this significant level of FXDs usage and the recent transformation of risk management practices in the corporate sector, and addresses a gap in the literature concerning the effective hedging of currency risk. We investigate if there is evidence of ineffective hedgers modifying their future use of FXDs.

2. Hypotheses and research method

Sample selection follows recent studies (see, e.g., Makar and Huffman, 2001) that use Jorion (1990) foreign involvement measure to identify companies more likely to be exposed to currency risk. In particular, our sample consists of 94 US multinationals operating in the manufacturing industry sectors (i.e., in the 2000–3999 SIC code range) during the 1994–2000 period, with at least 20 percent of their total sales in foreign markets and having