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Empirical evidence concerning incentives to hedge transaction and translation exposures

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Abstract

We investigate Swedish firms' use of financial hedges against foreign exchange exposure. Our survey data lets us distinguish between translation exposure and transaction exposure hedging. Survey responses indicate that over 50% of the sampled firms employ financial hedges, and that transaction exposure is more frequently hedged than is translation exposure. The likelihood of using financial hedges increases with firm size and exposure, and liquidity constraints are important in explaining transaction exposure hedging. Importantly, the existence of loan covenants accounts for translation exposure hedging, suggesting that firms hedge translation exposure to avoid violating loan covenants. © 2005 Elsevier B.V. All rights reserved.

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1. Introduction

Why widely held firms, whose owners have the ability to hold diversified portfolios of securities, elect to hedge their exposures is the subject of debate. Theoretical research has shown that risk-reduction efforts may enhance value if they reduce cash-flow variability, thus mitigating costs associated with market imperfections (see [Smith and Stulz, 1985](#); [Bessembinder, 1991](#); [Froot et al., 1993](#)).

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One important source of risk that is widely hedged is foreign exchange (FX) exposure (see, e.g. Bodnar et al., 1996, 1998; Berkman et al., 1997; Alkeback and Hagelin, 1999; Bodnar et al., 2003). Numerous studies have investigated whether firms' use of currency derivatives conforms to the predictions of theoretical research.¹ Mian (1996) examines the currency derivatives usage of a sample of US firms, finding that hedging exhibits economies of scale; however, Mian finds only weak support for theoretical models that seek to explain hedging activities. Like Mian (1996), Géczy et al. (1997) apply a dichotomous measure of currency derivatives use to a sample of US firms, and find that firms with extensive FX exposure and economies of scale are more likely to use currency derivatives. They also find that firms with less liquidity and greater growth opportunities (as measured by R&D expenses) are more likely to use currency derivatives. They interpret this as evidence that firms use currency derivatives to reduce cash-flow variation that might otherwise preclude their investing in valuable growth opportunities.

Graham and Rogers (2000) investigate 161 US firms and report that they hedge in response to expected financial distress costs, firm size, and investment opportunities. They also show that firms hedge to increase debt capacity, though not in response to convexities in tax schedules. Allayannis and Ofek (2001) analyze a sample of 378 US firms to uncover the characteristics associated with the adoption of particular levels of currency derivatives use. They corroborate the findings of Géczy et al. (1997) concerning the decision to use currency derivatives, and show that the degree of FX exposure is the only significant factor explaining the *notional value* of currency derivatives used. Bartram et al. (2004) examine a large sample of firms from 48 countries and find that firm-specific factors associated with derivatives use vary little from country to country. Lel (2004), like Bartram et al. (2004), examines a large sample of firms from various countries, finding that economies of scale, growth opportunities, and financial distress costs are the firm-specific determinants of FX exposure hedging. Brown (2001) studies an American manufacturing firm in depth, and somewhat surprisingly finds that management tends to focus on the impact of hedging on reported earnings rather than directly on cash flow.

Firms can also manage FX exposures through specific operational strategies, in addition to using financial hedges. Martin et al. (1999) find that changes in FX exposure are influenced by operational adjustments. Importantly, Allayannis et al. (2003) find that operational hedging is not an effective substitute for financial hedging, but that it may benefit shareholders when used in combination with financial hedging.

In addition to choosing among various hedging techniques, firms must also decide which type of FX exposure to hedge. FX exposure can be categorized as either economic exposure,²

¹ Nance et al. (1993), Dolde (1995), Berkman and Bradbury (1996), Gay and Nam (1998), and Guay (1999) analyze why firms use derivatives in hedging, but do not focus on any particular type of exposure. Tufano (1996) and Haushalter (2000) examine why firms use derivatives to hedge gold and oil price exposure, respectively.

² Economic exposure is usually broken into two components: the exposure of identifiable anticipated transactions and competitive exposure (the exposure of unidentifiable future cash flows). Our survey does not include hedging of competitive exposure using financial instruments, which could possibly bias our results. The reason for not investigating competitive exposure is that few firms tend to hedge this type of exposure with currency derivatives (see, e.g. Bodnar et al., 1996). Instead, the longer-termed competitive exposure is typically managed by operational techniques. From an examination of annual reports, it is suggested that this is also the case for Swedish firms. Firms may however use foreign-denominated debt for competitive exposure hedging, and for those firms that use

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