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Exchange rate exposure

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Abstract

In this paper we examine the relationship between exchange rate movements and firm value. We estimate the exchange rate exposure of publicly listed firms in a sample of eight (non-US) industrialized and emerging markets. We find that exchange rate movements do matter for a significant fraction of firms, though which firms are affected and the direction of exposure depends on the specific exchange rate and varies over time, suggesting that firms dynamically adjust their behavior in response to exchange rate risk. Exposure is correlated with firm size, multinational status, foreign sales, international assets, and competitiveness and trade at the industry level.

Keywords: Firm- and industry-level exposure; Exchange rate risk; Pass-through

JEL classification: F23; F31; G15

1. Introduction

It is widely believed that changes in exchange rates have important implications for financial decision-making and for the profitability of firms. One of the central

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motivations for the creation of the euro was to eliminate exchange rate risk to enable European firms to operate free from the uncertainties of changes in relative prices resulting from exchange rate movements. At the macro level, there is evidence that the creation of such currency unions results in a dramatic increase in bilateral trade (Frankel and Rose, 2002). But do changes in exchange rates have measurable effects on firms? The existing literature on the relationship between international stock prices (at the industry or firm level) and exchange rates finds only weak evidence of systematic exchange rate exposure (see Doidge et al., 2003; Griffin and Stulz, 2001 for two recent studies). This is particularly true in studies of US firm share values and exchange rates.[2]

The first objective of this paper is to document the extent of exchange rate exposure in a sample of eight (non-US) industrialized and developing countries over a relatively long time span (1980–1999) and over a broad sample of firms. We follow the literature in defining exchange rate exposure as a statistically significant (ex post) relationship between excess returns at the firm- or industry-level and foreign exchange returns. A key result from our analysis is the finding that exchange rate exposure matters for non-US firms. We find that for five of the eight countries in our sample over 20% of firms are exposed to weekly exchange rate movements and exposure at the industry level is generally much higher, with over 40% of industries exposed in Germany, Japan, the Netherlands and the UK.[3] We find that there is considerable heterogeneity in the extent of exposure across our sample of countries as well as large variation in the direction and magnitude of exposure. Our analysis suggests that exchange rate movements do matter for a significant fraction of firms, although which firms are affected and the direction of exposure depends on the specific exchange rate and varies over time.

Having established that there is a statistically significant relationship between profitability (as measured by stock returns) and the exchange rate, the second objective of the paper is to try to explain why some firms are exposed and others are not. We use the exposure coefficients estimated in the first part of the paper in a set of second-stage regressions to test three hypotheses about the factors that could explain exposure. The first hypothesis is that firm characteristics, namely firm size and its industry affiliation, are correlated with exposure. We find no evidence that exposure is concentrated in a particular sector, but we do find that small-, rather than large- and medium-sized firms, are more likely to be exposed. One rationale for this finding could be that larger firms have more access to mechanisms for hedging exposure than small firms, although data limitations do not allow us to test this conjecture directly.

Our second hypothesis is that firms engaged in international activities are more likely to be directly affected by changes in exchange rates. We conjecture that

[2] In a sample of US multinational corporations (which are assumed to be the firms most likely to be exposed) over the period 1971–1987 Jorion (1990) found that only 15 of 287 (5%) had significant exchange rate exposure. Amihud (1994) found no evidence of significant exchange rate exposure for a sample of the 32 largest US exporting firms over the period 1982–1988.

[3] Bodnar and Gentry (1993) test for exchange rate exposure at the industry level in the US, Japan and Canada. They find significant exposure in 11 of 39 US industries (28%) over the period 1979–1988.