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## Foreign exchange exposure of “domestic” corporations

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### A B S T R A C T

Unlike prior studies on foreign exchange risk that have focused on multinational companies, this paper documents that domestic companies face significant foreign exchange exposure. Indeed, we document that on average domestic company foreign exchange exposure is not significantly different from the exposures faced by multinational firms. As expected, the number of domestic firms with significant foreign exchange exposure increases with the exposure estimation horizon. More interestingly, the level of domestic firm exposure is significantly negatively related to firm size and asset turnover, and positively related to the market to book ratio and financial leverage. Our results have important implications for managers, policy makers, and accounting standards.

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## 1. Introduction

How exchange rate changes affect both national economies and the returns and cash flows of corporations has been the subject of much theoretical and empirical research in economics and finance. The fact that most, if not all, such studies in finance have used a sample of multinational corporations to test the nature and causes of foreign exchange exposure is not surprising. Such firms have cash flows and asset and liability values that are directly affected by exchange rate movements. Foreign exchange exposures for such firms affect not only the values of foreign operating cash flows, but also the foreign asset and liability values reported in consolidated financial statements. While earlier studies found mixed results regarding foreign exchange rate exposure, recent empirical

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evidence has demonstrated that many industries and corporations face significant exchange rate exposure. These mixed results regarding significant foreign exchange exposures have been attributed to multinational companies' ability to construct effective hedges against many foreign exchange risks using financial and operating procedures.

While not a subject of study in prior literature, perhaps surprisingly 'domestic' companies also face foreign exchange risk. Consider a chemical company located in West Virginia that converts coal into bulk chemicals. The company buys all of its inputs domestically and sells all of its output domestically also and deals only in US dollars. All of its inputs originate in the US and all of its output is bought and used in the US. It is usually argued that such a "domestic" company has no reason to hedge against currency risk. However, profits of this company are strongly and negatively correlated with the Japanese yen. As the yen rose, Japanese purchases of US coal increased and so did the US price of coal – with a resultant drop in profits for the chemical company. As this example illustrates, "domestic" companies can be exposed to currency risk through international competition in the markets for its inputs and/or its outputs. An alternative example is a regional retailer who purchases goods from a wholesaler located in the US, and not directly from manufacturers. The foreign exchange exposure the wholesaler experiences by dealing with foreign manufacturers can be passed through to their customers, the regional retailer. With increasing globalization of financial and product markets, ever larger numbers of domestic companies are likely to be exposed to foreign exchange risk as they increasingly compete indirectly with foreign firms and more directly with international firms based in their own domestic economy. However, the foreign exchange risk exposure of domestic companies has not been investigated in prior literature.

Due to the indirect nature of foreign exchange exposure for domestic companies, they are unlikely to engage in hedging activities (and are thus even more likely to have foreign exchange exposure). Indeed, accounting rules favor derivative-based hedges only against identifiable foreign exchange exposures, favoring multinational and other companies with direct international transactions. With the rising globalization of financial and product markets, domestic firms increasingly face foreign exchange risks not only through interest rate and financial markets, but also through product markets as their competitors, suppliers, and customers engage in cross-border transactions.

The purpose of this study is to measure and determine exchange rate exposure for a sample of domestic firms that have little or no discernable international transactions but may face indirect exposure to currency movements. A secondary goal of this study is to examine the determinants of any such foreign exchange exposure for domestic companies. We contend that the measured exposure for domestic corporations is likely to be significant and similar to what has been reported for multinational corporations. In an increasingly globalizing economy, domestic corporations, their suppliers, and their customers are not insulated from the effects of international economic cycles, currency movements, and global competition.

The findings of this study document significant foreign exchange exposures for domestic corporations. Indeed, on average, domestic firm exposure to foreign exchange risk is not significantly different from the exposures faced by multinational firms. We find the number of exposed domestic firms and their level of exposure increases with the time horizon used to estimate exposure. We also document that the level of domestic firm exposure is related negatively to firm size and asset turnover, and positively to the market to book ratio and financial leverage. These are important findings that are of interest to managers, accounting standard setters, and policy makers.

The next section reviews the nature and measurement of foreign exchange exposure, followed by the description of the data and research methods used in this study. Section 4 presents the empirical results followed by the concluding summary of the findings.

## **2. Nature and measurement of foreign exchange risks**

Prior literature focuses on the foreign exchange exposure of multinational companies. The theoretical literature investigating the nature of exposure to exchange rates includes Shapiro (1975), Aggarwal (1976), Heckman (1985), Flood and Lessard (1986), and Levi (1994). These studies identify deviations from parity conditions, errors in forecasting future cash flows, the degree of competition, and substitutability of factors of production as the primary factors in a multinational corporation's

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