Exchange rate exposure of developed and emerging markets: A review

Mohd Edil Abd Sukor
Department of Finance and Banking,
Faculty of Business and Accountancy,
University of Malaya,
Kuala Lumpur, Malaysia.

Abstract

Previous studies in the context of the US and other developed markets have tended to document weak relations between exchange rate changes and firms’ stock prices. However, when the issue is examined in the context of small and open emerging markets, a different scenario emerges. In such markets, there is an apparent variation in the magnitude and direction of exchange rate exposure on firm value. This paper adds to this area of research by explaining why such findings exist.

Key words: exchange rate, firm value, emerging market, open economy

JEL classification: F31, G15
1. Introduction

Exchange rate exposure can be defined broadly as the extent to which changes in exchange rates affect stock returns and thereby firm values (Bacha, Mohamad, Zain, and Rasid, 2013). Given the globalization of many industries, foreign exchange rate fluctuation has become a source of uncertainty for many corporations. Previous works that have examined this issue can be divided into two categories: a) studies that examine exchange rate exposure in the context of the US and other developed markets; and b) those that examine the exposure in the context of small and emerging markets. The literature indicates that exchange rate exposure can affect stock returns either by altering firms’ expected cash flows or the cost of capital used to discount these cash flows (Williamson, 2001; Bartram, Brown, and Minton, 2010). However, some researchers have suggested that the relation between exchange rate changes and firms’ stock prices is weak (Jorion, 1990; Griffin and Stulz, 2001; Dominguez and Tesar, 2006).

Since the results reported in the literature lead to different conclusions, this review article attempts to (a) document and update the literature on exchange rate exposure in global stock markets, (b) examine the extent to which economic/market differences influence exchange rate exposure, (c) identify potential determinants for exchange rate exposure, and (d) recommend how to select appropriate measures when dealing with exchange rate exposure in a research setting. This is important because, to my knowledge, there is no comprehensive discussion of these issues in the literature, and there has been little progress in disentangling the many different explanations of exchange rate exposure effect provided in the literature.

2. Studies on exchange rate exposure in the US and other developed markets

While some of the earliest works on corporate exposure to foreign exchange risk have been investigated in depth by Baron (1976), the study of Adler and Dumas (1984) is often cited as the seminal work on a firm’s exposure to currency risk. These authors were among the first to recognize that the idea of exposure to exchange risk is not intrinsically different from that of exposure to market risk. They define exchange rate exposure as the relationship between excess returns and the change in the exchange rate. They also point out that the concept of exposure is arbitrary in the sense that stock prices and exchange rates are jointly determined.

As for multinational companies, exchange rates are a major source of uncertainty. Jorion (1990) studies the exposure of US multinationals to foreign currency risk. He examined 287 companies from 1971 to 1987 and found that stock returns and the value of the dollar are positively related to the percentage of foreign operations of US multinationals. On the other hand, exposure without foreign operations does not appear to differ across domestic firms.
Based on this, he proposes that exchange rate exposure could be priced in an arbitrage pricing theory framework. Therefore, firms could reduce their cost of capital by currency hedging.

In using the standard Jorion (1990) model for estimating exposure, Ihrig and Prior (2005) examine whether the type of exchange rate used and size of the movement in the exchange rate matters in estimating the exchange rate exposure of US manufacturing firms. Based on a sample of US multinational and domestic firms, the authors found that different industries may have exposures only to specific exchange rates. This implies that the use of a trade-weighted index, as done in most early studies, may have underestimated the extent of exposure. They also found that firms’ stock returns may be affected differently in periods of crisis and non-crisis. Some firms have significant exposure only during crises, while others are affected during normal fluctuations in exchange rates.

Studies of exchange rate exposure for developed markets focus mostly on the US, which is one of the least open economies in the world. Therefore, one may expect that exchange rate exposure is more prevalent in other countries with more open economies. Since the Netherlands is one of the most open economies in the world, De Jong, Ligterink, and Macrae (2006) examine the firm-specific exposure of Dutch firms. During their study period from 1994 to 1998 they found that more than 50 per cent of the firms were significantly exposed to exchange rate risk. Their key finding is that a depreciating Dutch guilder benefited their sample firms. Thus, these firms would be net exporters. They also point out that the use of a trade-weighted currency index and the use of individual exchange rates are complementary. In the same paper, they discovered that firm size and the foreign sales ratio are positively related to exchange rate exposure.

In similar vein, Rees and Unni (2005) investigate the pre-Euro exposure to exchange rate changes of large firms in the UK, France, and Germany. Their finding is similar to that of Jong et al. (2006), whose study found that firms typically gain value when their local currency depreciates against the US dollar. Yet most UK firms gain when sterling depreciates against the dollar, but lose when it depreciates against the European Currency Unit (ECU). Clearly, the direction of trade and whether one is a net importer or exporter can explain whether the impact of exposure would be positive or negative. In the same paper, they also demonstrate that estimates of a firm’s exposure are sensitive to the returns-interval used in estimating them. The magnitude of exposure changes as the returns horizon increases. This result is consistent with the hypothesis that share prices adjust gradually to exchange rate movements.

A long-standing controversy exists concerning whether expected stock returns are affected by foreign exchange rates. Recent works by Kolari, Moorman, and Sorescu (2008) examined the relation between a cross-section of US stock returns and foreign exchange rates.
during the period 1973 to 2002. They found that US stocks with higher exchange rate exposure have lower returns than other stocks. This clearly implies a risk premium for higher exposure. Contrary to predictions of standard asset-pricing models, their results suggest that the relation between expected returns and foreign exchange exposure is non-linear. A possible explanation for this non-linearity is the expected returns are lower for firms with high idiosyncratic cash flow volatility. Within the framework of this non-linear relation, the authors found that the market price of foreign exchange risk is negative.

3. Studies on exchange rate exposure in an emerging market

Most empirical studies of exchange rate exposure have focused on the US and developed markets. Emerging markets’ exchange rate exposure differs from large and developed economies because of their differences in terms of size, participation in international trade and borrowing, and financial development. For this reason, one might expect evidence of exposure among emerging market firms to differ from that of firms in large and developed financial markets.

Parsley and Popper (2006) study firm-level exposure across 11 Asia-Pacific countries by comparing nine Asian countries to two reference countries, Australia and New Zealand. They found that many Asia-Pacific firms are exposed to foreign exchange rate risk, particularly to fluctuations in the value of the US dollar. Exposure among Asia-Pacific firms is significantly greater than that of firms in large Western industrialized economies. The paper also shows that exchange rate pegs appear to do little to alleviate this widespread exposure against currencies other than the peg. They conclude that the effect of foreign exchange exposure on firms varies from one market to another.

Having established that there is a statistically significant relationship between stock returns (profitability) and the exchange rate (Jorion, 1990), Dominguez and Tesar (2006) examined the extent of exchange rate exposure in a sample of eight (non-US) industrialized and developing countries during the period 1980 to 1999. They found that a significant proportion of their sample firms have exposure, which depends on the specific exchange rate and varies over time. Contrary to De Jong et al. (2006) and Rees and Unni (2005), they found that exposure is more prevalent in small firms and in firms engaged in international activities.

The rapid growth in market capitalization and the growing significance of the Asian share of world trade over the past few decades has positioned Asia among the leading global economic powers. In addition, the Asian economy is particularly well suited to investigating currency exposure issues, since it is a very open and active economy. This motivated Muller and Verschoor (2007) to look for evidence of foreign exchange risk exposure in Asian markets. Using a sample of 3,634 internationally active Asian firms for the period January 1993 to December 2003, they found significant exchange rate exposure of Asian firms. The
largest portion of this exposure was to the US dollar and the Japanese Yen. Contrary to De Jong et al. (2006), they report that a depreciation of the Asian currencies against foreign currencies has a net negative impact on stock returns. The extent to which Asian firms are exposed to foreign currency fluctuations varies with returns horizons. Short horizons such as weekly returns may underestimate exposure, whereas long ones such as three-month returns horizons, may overestimate them. They also found that profitable firms are significantly more exposed to exchange rate fluctuations than less profitable firms.

Chue and Cook (2008) estimated the impact of domestic exchange rate movements on stock market valuations of firms in 15 emerging markets over eight years, from 1999 to 2006. They found that depreciations tended to have a negative impact on emerging market stock returns in an earlier sub-period (1999 – 2002), a tendency that largely disappeared in a later period (2002 – 2006).

Unexpected fluctuations in foreign exchange rates have been an important concern to firms with international involvement since the introduction of the flexible exchange rate system. Fluctuations in the exchange rate appear to be more pronounced in highly inflationary developing economies. As Turkey has been experiencing chronic high inflation and rapid depreciation of its currency during the past few decades, Kiymaz (2003) studied the foreign exchange exposure of firms traded on the Istanbul Stock Exchange during the period January 1991 to December 1998. He shows that Turkish firms are highly exposed to foreign exchange risks. The degree of exposure varies, depending on the industries in which the firm operates. Certain sectors are subject to a much higher level of exposure, usually due to higher reliance on foreign trade and/or a greater presence of foreign competition. He also posits that post-crisis exposures tended to be lower than those of the pre-crisis period, suggesting that firms paid more attention to their foreign exchange exposures following the crisis.

In another paper, Phylaktis and Ravazzolo (2005) study the long-run and short-run dynamics between stock prices and exchange rates of Pacific Basin countries over the period 1980 to 1998. They also examine whether these links were affected by the existence of foreign exchange controls and by the Asian financial crisis of mid-1997. Their results suggest stock and foreign exchange markets are positively related and that the US stock market acts as a conduit for these links. They also found that foreign exchange restrictions are not an important determinant of the link between domestic stock and foreign exchange markets, on the one hand, and between domestic capital and world capital markets, on the other hand.

A recent study by Bacha et al. (2013) investigates the effect of exchange rate exposure in Malaysia for the period 1990 to 2005. They note that 71 percent of their 158 sample firms have significant exchange rate exposure. They also note that the exposure is time variant and dependent on the sector within which a firm operates. In similar vein, Varga (2012) shows a
strong exchange rate exposure on the 107 Taiwanese firms. He finds that Taiwanese firms lost money as a result of the domestic currency depreciating. He postulates that the result is driven mainly by the high level of Taiwan economic openness.

4. Conclusion

This paper reviews the impact of exchange rate exposure on firm value. Based on the many studies on developed and emerging stock markets mentioned, this paper finds that the level of exchange rate exposure varies across markets and level of economic openness. Studies in the context of the US and several developed markets show that the impact of exchange rate exposure on firm value is minimal. This study believes such findings should not be surprising, since these markets are among the least open economies and have a smaller proportion of foreign trade as a ratio of Gross Domestic Product (GDP). In contrast, exchange rate exposure among small and open emerging markets is much more widespread and of a much greater magnitude.

This paper proposes a few points about exchange rate exposure. First, firm-specific exposure varies depending on country, time, and industry sector. Second, the returns horizon chosen matters. Short horizons such as daily and weekly returns overestimate exposure, whereas long ones, such as quarterly returns, may underestimate them. Third, firm level and overall market exposures are different. Fourth, firms dynamically adjust their behavior in response to exchange rate risk. Finally, where emerging markets are concerned, the share values of most firms are negatively affected by home currency depreciation. In addition, since researchers have not yet investigated whether foreign exchange exposure is correctly priced in the market and whether it should be hedged, future researchers will have to wrestle with many related issues and investigate the pricing of exposure and its implications for the development of financial markets.

References


