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Currency devaluation and stock market response: An empirical analysis

Dilip K. Patro [a,1], John K. Wald [b,2], Yangru Wu [c,d,∗]

[a] *Office of the Comptroller of the Currency, 400 7th Street SW, Washington, DC 20219, USA*
[b] *College of Business, University of Texas at San Antonio, 1 UTSA Circle, San Antonio, TX 78249, USA*
[c] *Rutgers Business School-Newark & New Brunswick, Rutgers University, 1 Washington Park, Newark, NJ 07102, USA*
[d] *Chinese Academy of Finance and Development, Central University of Finance and Economics, China*

ABSTRACT

We study local stock market reaction to currency devaluation by a country's central bank. Devaluations appear to be anticipated by the local stock markets, and there are significant negative abnormal returns even one year prior to the announcement of the devaluation. A negative trend in stock returns persists for up to one quarter following the first announcement, and then becomes positive thereafter, suggesting a reversal. We explore whether changes in macroeconomic variables prior to currency devaluations are related to abnormal stock returns. We find that stock returns are significantly lower if the devaluation is larger and if the country is a developing nation. Furthermore, stock markets decline more around devaluations if reserves are lower, if the real exchange rate has depreciated over the prior years, if the capital account has declined, if the current account deficit has gone up, or if the country credit rating has deteriorated.

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∗ Corresponding author. Rutgers Business School-Newark & New Brunswick, Rutgers University, 1 Washington Park, Newark, NJ 07102, USA. Tel.: +1 973 353 1146.

E-mail addresses: Dilip.patro@occ.treas.gov (D.K. Patro), john.wald@utsa.edu (J.K. Wald), yangruwu@business.rutgers.edu (Y. Wu).

[1] Tel.: +1 202 649 5548.
[2] Tel.: +1 210 458 6324.

1. Introduction

Equilibrium models of international asset pricing (e.g., Adler and Dumas, 1983) suggest that deviations from purchasing power parity translate into currency risk for equity returns in global markets. For countries that follow a floating exchange rate system, this currency risk may be measured as the coefficient of the regression of the stock returns on the currency returns (Adler and Dumas, 1984; Jorion, 1990). However, for many countries that follow a fixed or managed floating exchange rate system, currency prices remain constant or in a very narrow band until the central bank announces a devaluation. Models of international asset pricing (e.g., Stulz, 1981; Adler and Dumas, 1984) predict that such devaluations will have a significant impact on asset prices, and to the extent that the real cash flows of the firms in these countries are affected by the devaluations, the security prices will also change. We empirically examine the impact of devaluation announcements on stock markets to see how these international asset pricing models, as well as models of devaluations, fit the data.

We have two objectives in this paper. First, we examine the reaction of stock markets around currency devaluations using daily returns and an event study framework. This analysis helps explain how international equity markets respond to such events. We use a sample of 125 devaluation events from 41 countries from 1979 to 2011. To ensure that the returns we observe around devaluations are not driven by normal market fluctuations, we estimate abnormal returns.

We find a significant equity market decline prior to and immediately after the announcement of a devaluation. On average the U.S. dollar value of the equity market drops by 3.76 percent 30 days before the devaluation was announced, and by 3.10 percent one day after the announcement is made. While abnormal returns on average continue to be negative for up to 30 trading days after the first announcement, they become positive thereafter, perhaps because of remedial efforts by central banks and international agencies.

Our second objective is to examine what economic variables explain the direction and magnitude of the stock market reaction around currency devaluations, motivated by the prior literature (e.g., Krugman, 1998; Kaminsky and Reinhart, 1999; Obstfeld, 1994; Corsetti et al., 1999). We use a number of macroeconomic variables to examine if they can explain the size of the stock market's decline upon the announcement of the devaluation. Our choice of variables is largely guided by Frankel and Rose (1996), who consider which macroeconomic variables are capable of predicting that a devaluation will occur.

Using windows around the devaluation announcements, we find that the amount of the devaluation and whether a country is a developing nation significantly impact the stock market's returns. However, other macroeconomic factors also help explain equity markets' reactions to a devaluation. Specifically, stock markets decline more around a devaluation if reserves are lower, if the real exchange rate has depreciated over the prior year, if the capital account has declined, if the current account deficit has gone up, or if the country credit rating has deteriorated. These findings have useful implications for central bankers as well as for international investors. Recently, there has been increased investment in what are termed 'frontier' markets, many of whom have fixed or pegged exchange rates. Our findings have implications for equity markets in these countries if the central bank announces a devaluation.

In related literature, Wilson et al. (2000) study the stock market reaction around the 1994 Mexican peso devaluation. Their findings suggest that investors did not anticipate the devaluation of the peso, and that the decline in the stock market was much more significant in dollar terms than in peso terms. Glen (2002) studies the stock market response to currency devaluation for a sample of 24 emerging markets using monthly returns and finds significant negative returns in the months before, but not after, the devaluation. A related literature studies the impact of devaluations on the real economy. For instance, Kim and Ying (2007) find that devaluations are expansionary in East Asian countries but not in Mexico or Chile. As stock markets forecast real economic activity, our study can also provide insight into how outputs react to devaluations across different countries.

Section 2 discusses our data and events. The empirical methodology is explained in Section 3. Section 4 provides an overview of the abnormal returns for equity markets around a currency devaluation. Section 5 presents a regression analysis of abnormal returns during currency devaluations using a number of macroeconomic variables primarily drawn from the existing literature, and Section 6 concludes.