Fire-sale FDI or business as usual?

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Abstract

Motivated by a set of stylized facts, we develop a model of cross-border mergers and acquisitions (M&As) to study foreign direct investment (FDI) in emerging markets. We compare acquisitions undertaken during financial crises – so-called fire-sale FDI – with acquisitions made during non-crisis periods to examine whether the outcomes differ in the ways predicted by the model. Foreign acquisitions are driven by two sources of value creation. First, acquisitions by a foreign firm relax the target’s credit constraint (i.e., a liquidity motive). Second, acquisitions exploit operational synergies between the target and the acquirer (i.e., a synergistic motive). During crises credit conditions tighten in the target economy and the liquidity motive dominates. The model predicts that during crisis relative to non-crisis periods, (1) the likelihood of foreign acquisitions is higher; (2) the proportion of foreign acquisitions in the same industry is lower; (3) the average size of ownership stakes is lower; and (4) the duration of acquisitions is lower (i.e., acquisition stakes are more likely to be flipped). We find support for (1) but not for the other three predictions. The results thus suggest that foreign acquisitions in emerging markets do not differ in these important ways between crisis and normal periods.

1. Introduction

Fire-sale foreign direct investment (FDI) is a term Krugman (2000) used to describe the surge in foreign acquisitions of Asian firms during the 1997–98 financial crisis at the same time that portfolio investors sold off their holdings of Asian assets. Krugman cited anecdotal evidence from the financial press that firms in distress due to the tightening of credit conditions, the sudden depreciation of the nominal exchange rate, and the rapid deterioration in domestic macroeconomic conditions were sold to foreign investors at discounted prices. The appropriate policy responses to such sales during financial crises depends on whether they create long-term gains for the host country from technological or operational synergies between the acquirers and the targets or whether the sales are a form of short-term liquidity provision. The existence of fire sales raises broader questions about the role that FDI plays in economies disrupted by aggregate financial shocks.

Definitional evidence of the impact of fire-sale episodes in emerging markets economies (EMEs), however, has proven elusive for several reasons. Asset prices are hard to predict even at the best of times, so tests of fire sales based on asset valuations during financial crises in EMEs are problematic. The surge in foreign investment during EME crises also coincided with a broader and more long lasting global wave of cross-border acquisitions (see Moeller et al., 2005) and a substantial increase in domestic mergers in emerging markets. While the volume of foreign acquisitions during the Asian crisis seems impressive relative to the pre-crisis level of activity, it is less dramatic when viewed against the backdrop of the increase in M&A activity during that period across the globe.

In order to address the empirical challenges of evaluating the characteristics of crisis-time FDI, we proceed in three steps. First, we document...
some key empirical features of foreign M&A activity in emerging markets over an extended period of time. We label these features as “business as usual”. Second, we develop a theoretical model of FDI that captures these benchmark features. Third, we use the model to guide an empirical investigation of the differences between fire-sale FDI and business as usual using a large data set of foreign and domestic acquisitions in emerging markets. Overall, our findings indicate that even though fire sales may have occurred during emerging market financial crises, as documented by contemporary journalistic accounts and academic papers such as Aguiar and Gopinath (2005), they did not differ significantly along certain important dimensions from business as usual.

Our theoretical model of FDI synthesizes the two principal models of fire-sale FDI proposed by Aguiar and Gopinath (2005) and Acharya et al. (2011). As in Aguiar and Gopinath (2005), we model crises as periods of illiquidity in financial markets. Foreign firms have an advantage in the market for corporate control in that they do not face financial constraints and operate the target firm more efficiently than a domestic firm based in an emerging market. We extend Aguiar and Gopinath’s framework to allow for differences in payoffs to synergistic acquisitions (i.e., those involving acquirers and targets in the same industry) and non-synergistic acquisitions. We also extend the model to consider what fraction of the target firm is bought and the conditions under which acquired targets may be resold, or flipped.

The model not only nests these two existing models of fire-sale FDI, but it also captures the “business as usual” characteristics of foreign M&A activity in emerging markets during the years 1990–2007. The stylized facts we document suggest that while the number of foreign acquisitions in emerging markets varies across time, business as usual is characterized by a preponderance of synergistic acquisitions (63% of foreign acquisitions are synergistic), a large share of partial foreign ownership stakes (53% of foreign acquisitions result in partial ownership upon completion), and low divestiture rates (about 7% of major foreign acquisitions are flipped). The model thus provides a benchmark to examine how foreign acquisitions differ in these three dimensions between crisis and non-crisis periods and enables us to test these predictions empirically.

The main insight provided by the model is that there are two sources of surplus from foreign acquisitions—the efficiency gains due to operational synergies (OS) and the valuation gains associated with the relaxation of the target firm’s liquidity constraint (LC). These two sources of surplus provide foreign acquirers incentives to purchase targets in emerging-market economies both during normal times and during financial crises. The more a target firm is credit constrained, the larger LC is relative to OS. Thus, the relative importance of each source of surplus in the aggregate depends on the proportion of domestic firms in the economy that are credit constrained. During normal times target firms are less liquidity constrained, so most foreign acquisitions are motivated by OS. However, LC can become a relatively more important motive in the aggregate during financial crises because of an abundance of liquidity-constrained target firms. Under these circumstances, it is possible that the proportion of non-synergistic acquisitions, which are driven primarily by LC, increases, and even acquiring firms that do not have large operational synergies with the target acquire distressed firms. In our model, acquisitions with higher operational synergies are characterized by higher ownership stakes and lower divestiture rates. The model therefore predicts that foreign acquisitions during crisis episodes are on average characterized by smaller ownership stakes and higher subsequent divestiture rates.

We test the model’s implications using data from 30,000 foreign and domestic acquisitions in sixteen emerging markets between 1990 and 2007. The data set is well-suited for testing the predictions of a model of fire-sale FDI. First, it contains a broad cross-section of countries, which permits us to examine whether there are regional differences in the effects of crises on FDI. The focus of other papers that have looked at this question was a sample of Asian countries affected by the 1997–98 Asian financial crises (e.g., Aguiar and Gopinath, 2005; Acharya et al., 2011). The longer time period spanned by our data set enables us to examine whether their conclusions regarding the importance of fire-sale FDI are sensitive to lower frequency trends in foreign acquisition activity in emerging markets. In other words, it gives us a clear empirical benchmark of what constitutes business as usual in the market for corporate control in EMES. Finally, the data set includes foreign acquisitions that are flipped, which enables us to test whether the duration of foreign acquisitions made during crisis periods are different. To the best of our knowledge, this paper is the first one to analyze the ownership dynamics of emerging-market acquisitions during crises for such a broad cross-section of countries.

The paper has four key findings. First, we confirm in our larger sample the finding in Aguiar and Gopinath (2005) that the proportion of foreign acquisitions increases during crises. The results indicate that a crisis is associated with a 30% increase in the probability of a foreign acquisition of a typical target relative to the non-crisis mean. While the probability of a foreign acquisition increases during crises, the evidence in favor of the other effects of fire-sale FDI is weak. The second prediction of the model is that because foreign firms are liquidity constrained during crises, there is a proportional increase in non-synergistic acquisitions driven primarily by the undervaluation of targets due to financial distress relative to synergistic acquisitions. If same-industry acquisitions are taken as the proxy for matches based on operational synergies, there is little evidence of a decline in such matches during financial crises. Third, the model predicts that the average size of the ownership stake acquired by foreign firms decreases during financial crises because non-synergistic acquirers buy smaller stakes on average. We find only weak evidence of such a systematic change in foreign ownership stakes between crisis and non-crisis periods. Although ownership stakes by foreign acquirers decrease on average by about 1 percentage point, the effect is neither economically nor statistically significant.

The fourth result concerns the duration of crisis–time matches. The theory suggests that foreign acquisitions that occur during crises are more likely to be divested or flipped than those that occur during regular times. Intuitively, among the matches between foreign acquirers and domestic targets that occur during crises, the ones less driven by synergies are the ones that are likely to be divested. Because a larger proportion of such non-synergistic matches are predicted to occur during crisis periods, the crisis cohort is more likely to be subject to divestitures. We find little evidence for this hypothesis. During non-crisis periods, synergistic acquisitions exhibit lower flipping rates than non-synergistic acquisitions. During crises, however, the rates at which synergistic and non-synergistic acquisitions are flipped are not statistically different. Our results on flipping differ from those reported in Acharya et al. (2011). In a smaller sample of transactions, they find evidence of flipping and an increase in the size of controlling stakes during crises. Overall, there is no strong evidence of flipping in the data.

The conclusions of the empirical analysis are broadly robust to alternative empirical specifications, the use of alternative definitions of crises, and the exclusion of macroeconomic covariates. Taken together, our findings show that while there was a surge in foreign acquisitions during crises, the effect is neither economically nor statistically significant.

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5 See also Shleifer and Vishny (1992), Shleifer and Vishny (1997), Pulvino (1998), and Campbell et al. (2011) for empirical and theoretical analyses of fire sales in closed economies.

6 We also consider cases where foreign acquiring firms are less efficient than domestic ones.

7 Rossi and Volpin (2004) and Erel et al. (2012) also study the determinants of cross-border M&As. In contrast to these two papers, however, we focus on the industry composition, size, and divestiture process of foreign acquisitions in emerging markets.

8 Although several papers have examined acquisitions and subsequent divestitures in the United States (Ravenscraft and Scherer, 1991; Kaplan and Weisbach, 1992; Bergh, 1997; Ang and Mauck, 2011), few have focused on the prevalence of this phenomenon in emerging markets. One exception is Holan and Toulan (2006), who look at divestitures by foreign companies in Argentina between 1990 and 2002.
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