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The impact of ADR activity on stock market liquidity: Evidence from Latin America

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ABSTRACT

This paper examines the impact of ADR activity on liquidity of four major Latin American stock markets. We construct a measure of ADR activity in U.S. markets for a sample of ADRs trading during January 2003–December 2010, which is subsequent to the financial liberalization episodes and currency crises that shocked emerging markets in the 1990s. The sample lists 164 depositary receipt programs (Levels I, II, and III): 16 from Argentina, 81 from Brazil, 19 from Chile, and 48 from Mexico. Using System GMM methods to handle the potential effects from stock market development on economic growth and ADR issuance, we find that higher ADR turnover in U.S. markets has positive effects on domestic market turnover, particularly for issuance of exchange-listed (Levels II and III) ADRs. This positive relationship is not a statistical artifact created by the global financial crisis of 2008.

1. Introduction

This paper examines the impact of American Depositary Receipt (ADR) activity on the liquidity of four Latin American stock markets (Argentina, Brazil, Chile and Mexico) during the period 2003–2010. ADRs are negotiable instruments issued in the U.S., in dollars, but they represent ownership of foreign equities. ADRs offer U.S. investors familiar trade, clearance and settlement procedures in addition to competitive foreign-exchange rates on currency conversions for dividends and other cash distributions. More importantly, an ADR investment offers U.S. investors international diversification benefits as pointed out by Officer and Hoffmeister (1987), Wahab and Khandwala (1993), Choi and Kim (2000), Alaganar and Bhar (2001), and Arnold, Nail, and Nixon (2004).

These benefits help explain the consistent rise in U.S. investment in ADRs from Latin America since 2003, except for a major contraction associated with the global financial crisis of 2008. The role of ADRs as convenient vehicles for U.S. investors seeking to hold foreign equity is particularly important in Latin America. For instance, according to the U.S. Treasury International Capital system, 56% of U.S. holdings of Latin American equity, in 2007, were in the form of ADRs. This percentage is significantly higher than any other region in the world—Europe and Africa (20%) and Asia (14%). In addition, as reviewed by Karolyi (1998, 2006), ADRs also benefit their respective issuers because they offer an expanded shareholder base, higher liquidity, higher global visibility, and a lower cost of capital. Despite the documented benefits of flourishing U.S. investment in ADRs from Latin America and the relative macroeconomic stability in Latin American economies, De la Torre and Schmukler (2007) find that Latin American stock markets are smaller and less active than similar developing economies. The disparity between still flourishing ADR activity and dampened stock market conditions in Latin America generates the following question: Has growth in ADR activity inhibited the development of Latin American stock markets?

The empirical evidence for earlier periods is mixed. Fernandes (2009) finds that despite the negative effects of ADR issuance on the liquidity of domestic stocks, the net impact of ADR issuance is positive, particularly for firms whose returns are highly correlated to those of the cross-listing firm. Moel (2001) and Levine and Schmukler (2007) find, however, that ADR growth is detrimental to the development of the domestic stock market, while Karolyi (2004) suggests that ADR activity does not hurt or benefit stock market development: it is an outcome of poor domestic conditions. These mixed results reflect the dual outcomes associated with ADR growth. On the one hand, ADR activity increases the liquidity, visibility and shareholder base of issuing firms, with the

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potential to boost interest and confidence in the remaining domestic market stocks, thus spurring development. On the other hand, these potential benefits must be balanced against the costs of cross-listing, particularly the migration of trade from the domestic to the foreign market. Trade migration to the foreign market leads to a deterioration of local market operations causing more domestic firms to seek opportunities in foreign markets, further inhibiting development at home, other things the same.

This paper contributes to the existing literature in the following ways. First, the analysis measures ADR activity with data from the ADR trading in the United States. Most existing literature measures ADR activity using data from the domestic market, but this approach is limited. Specifically, the traditional approach can overstate the importance of the ADR segment if the ADRs are dormant in U.S. markets (typically ADRs trading over- the- counter (OTC)) and understate the importance of the ADR segment for those ADRs for which the majority of trading has shifted to the U.S. (exchange-listed issues). By measuring U.S. trading activity, we update the quantification of ADR liquidity in four stock markets: Argentina, Brazil, Chile and Mexico. Second, this study distinguishes between types of ADRs (exchange listed issues versus OTC issues) with an additional distinction for exchange listed issues into Level II (straight cross-listings) and Level III (capital raising issues). Since Level III ADRs are typically issued by large, high-growth firms, as documented by Boubakri, Cosset, and Samet (2010), they can have a different impact on stock market development than ADRs aimed primarily at broadening the shareholder base. Third, this study incorporates dynamic panel data models to examine the relationship between ADR activity and stock market liquidity. Claessens, Klingbiel, and Schmukler (2006), for example, suggest that countries with better fundamentals allow for more internationalization. ADR activity may simultaneously affect and be an outcome of stock market development, which can be better handled by dynamic panel data models than static panels.

Using system generalized method of moments (SGMM) for firm-level data of 164 major Latin American ADRs between January 2003 and December 2010, the results indicate a positive impact on stock market turnover (measured by the value of shares traded scaled by market capitalization, as explained below) that arises as the turnover of the ADR segment trading in the United States increases. This finding suggests that failing to account for the ADR segment's activity in the foreign market provides an incomplete picture of the role of ADR activity in domestic stock market development. Furthermore, we find that the positive effects of ADR activity on domestic market turnover arise primarily from the issuance of exchange-listed ADRs. Our results show a positive and statistically significant relationship between ADR turnover and market turnover for ADRs of Levels II and III but not for Level I ADRs. Finally, our results show that turbulence in financial markets during the peak of the global financial crisis impacted the relationship between ADR activity and market liquidity. However, the positive relationship between ADR turnover in U.S. markets and the turnover of Latin American markets is not a statistical artifact driven by the effects of the crisis.

The remainder of this paper is organized as follows: Section 2 reviews the related literature. Section 3 describes the sample and measures employed. Section 4 details the methodology while Section 5 presents the empirical results. Section 6 concludes.

2. Related literature

Because ADR issues increase the international exposure of domestic firms, they can potentially impact the stock market. As discussed by Karolyi (2006), ADR activity can influence stock market development in one of two ways. First, if cross-listings act as market liberalization events, firms that cross-list attract global attention and bring increased visibility, credibility and enhanced liquidity to other local market stocks. Consequently, local financial intermediaries feel competitive pressure from global markets and begin improving the efficiency of trading systems, through greater transparency and more stringent disclosure requirements. Ultimately, this leads to integration with global markets, resulting in higher economic development and growth. Alternatively, if cross-listings divert trading away from the local market they negatively impact the market's quality. In this case, the benefits of cross-listing accrue only to the large, cross-listing firms which enjoy greater visibility and enhanced liquidity but their strictly domestic peers suffer as the local stock market deteriorates.

The existing evidence offers mixed results on the effects of international cross-listing on local stock market development. Fernandes (2009), for example, documents that despite the negative effects of trade migration, the net impact of ADR issuance, particularly (but not limited to) a country's first ADR issue, is positive with spillover effects for other domestic firms. This suggests that ADR issuance acts as a firm-level liberalization effect: the positive spillover effects arise from improved risk sharing and accrue primarily to domestic firms whose returns are highly correlated with the cross-listing firm. However, Moel (2001) finds mixed results with respect to the impact of ADR issues on stock market development using annual data for a sample of 28 countries during the period 1988–1997. The results for three aspects of stock market development (liquidity, growth, and openness) suggest that ADRs negatively affect liquidity and growth but they increase disclosure and openness. The negative impact of ADR growth is higher for Africa and Latin America. Karolyi (2004) extends this analysis using monthly, firm-level data for twelve emerging markets and considers four measures of stock market activity: market capitalization, number of listed companies, turnover, and capital flows. His results suggest that ADR growth increases cross-border capital flows and stock market development, but only large, cross-listing firms reap the benefits. The remainder of the market (firms that do not issue ADRs) deteriorates. Levine and Schmukler (2007) adopt a different approach by examining the impact of internationalization (including ADR issues, cross-listing on a foreign exchange, and issuing capital abroad) on the domestic stock market activity of 55 countries. Their findings indicate that internationalization is negatively related to the turnover of domestic firms due to several factors, including trade migration to international financial markets.

The empirical evidence on the impact of ADR activity on domestic stock market development is inconclusive. One important limitation of the approaches above is that internationalization is treated as exogenous to stock market development. Yet exogeneity is highly unlikely since internationalization and stock market development are not independent processes. While the level of internationalization may impact stock market development, it is also a consequence of different levels of development. For instance, Claessens et al. (2006) use annual data for 78 countries during the period 1984–2000 and find that countries with better economic fundamentals have greater stock market development and more internationalization.

3. The sample

We begin the sample construction with the listing of ADR programs (only Levels I, II, and III, active and terminated) from Argentina, Brazil, Chile and Mexico available from *DataStream*