

# A stock market boom during a financial crisis? ADRs and capital outflows in Argentina

Michael Melvin\*

*Department of Economics, Arizona State University, Tempe, AZ 85287-3806, USA*

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## Abstract

The surprising Argentine stock market boom during a financial crisis is explained as a result of investors using the stock market to circumvent cash withdrawal restrictions and capital controls and shift funds out of Argentina and into the United States.

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## 1. Introduction

From late 2001 to early 2002, the Argentine economy experienced a crisis of massive proportions. Ultimately, it led to the end of the peso peg against the dollar, drastic foreign exchange and capital controls, a nationwide bank closure, and the largest debt default in history. Yet in the face of economic disarray and social unrest, the Argentine stock market experienced a boom. Between the end of November, 2001, prior to the first announcement of restrictions on financial transactions, and March 25, 2002, when extensive capital controls were imposed, the Argentine stock market experienced a dramatic rise of more than 217% as measured by the Merval index.

The Argentine experience stands in sharp contrast to other recent financial crises. If one examines the stock market performance of other countries in the immediate months involving crises, one finds the following *fall* in stock market indexes: Mexico (December, 1994–February, 1995), 53.5%; Korea (July, 1997–November, 1997) 47.0%; Malaysia (July, 1997–January, 1998) 52.0%; and Thailand (July, 1997–December, 1998) 33.8%. Yet the Argentine market more than doubled in the early

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\*Tel.: +1-480-965-6860, fax: +1-480-965-0748.

*E-mail address:* [mmelvin@asu.edu](mailto:mmelvin@asu.edu) (M. Melvin).

months of the crisis of 2001–2002. This paper analyzes the rise in Argentine stock prices as a result of investors using the stock market to circumvent cash withdrawal restrictions at banks and shift funds out of Argentina (and pesos) into the United States (and dollars).

## **2. The role of U.S.-listed securities in the stock market boom**

Our task is not to explain the root causes of the Argentine crisis but, rather, a particularly striking feature associated with the crisis. For this reason, we do not discuss likely causal events contributing to the breakdown of the one-to-one parity between the peso and the dollar and the dramatic events of late 2001 and early 2002.<sup>1</sup> Fig. 1 illustrates the time path of the Merval stock market index value from the beginning of 2001 until late April, 2002. It is seen that the Argentine stock market was steadily falling over 2001 from its high on January 23, 2001 to its low at the end of November, 2001. Over this period, the index fell by more than 60%. Then following the weekend of December 1 and 2, 2001 when the government announced the first wave of financial market restrictions, the stock market started to rise. The Merval index more than doubled in value from the end of November, 2001 until the end of March, 2002. Our focus is on this period of stock market boom in the midst of the financial and social crisis in Argentina. The flat spots in the index illustrate market closings that occurred from December 21–December 27, 2001 and January 7 to January 16, 2002.

With the first wave of restrictions on withdrawals from Argentine bank deposits and limitations on international capital outflows, the stock market started to rise. While cash withdrawals were limited at banks, one could use deposits to buy stocks. So purchases of stocks provided a venue for recovering frozen deposits. But not all stocks were equally favored. An analysis of the share prices in Argentina and in the U.S. suggests that the primary motive for the big movements in the Argentine stock market was the purchase of Argentine shares of firms that are listed on U.S. securities markets. One could buy shares of the underlying firm in Argentina using pesos and then have a bank or broker convert the Argentine shares into that firm's depository receipts (ADRs) traded in the United States in dollars. One could then sell the U.S.-traded shares for dollars and deposit the dollars in the United States.

There are 25 Argentine firms listed as ADRs in the United States. Of these, 11 are private placements available only to qualified institutional buyers. Three are listed on the NASDAQ and 11 are listed on the New York Stock Exchange (NYSE). The NYSE-listed firms include the 'bellwether' Argentine ADRs: Telecom Argentina, Banco Frances, and Perez Companac.

To examine the relationship between ADRs and the underlying Argentine shares, data were taken from Datastream on the daily closing price of the Argentine firms listed on the New York Stock Exchange (NYSE) that are frequently traded. Fig. 2 displays the daily deviation of the price of shares in Argentina from the peso value of the ADR price in the U.S. for the three most heavily-traded firms. The deviation between the closing home market prices and the ADR prices was computed by converting ADR prices into pesos using the daily peso/dollar exchange rate taken from Datastream and dividing by the multiple of Argentine shares the ADR represents. Each firm in Fig. 2 illustrates a similar phenomenon. Before December, 2001 the share prices in Argentina and the ADR prices moved closely together. Fig. 2 shows that prior to December, 2001, the deviation between the Argentine and ADR price fluctuated around zero. Then in December, 2001, the deviation started to

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<sup>1</sup>Melvin (2002) and Auguste et al. (2002) provide a chronology of events associated with the equity market.

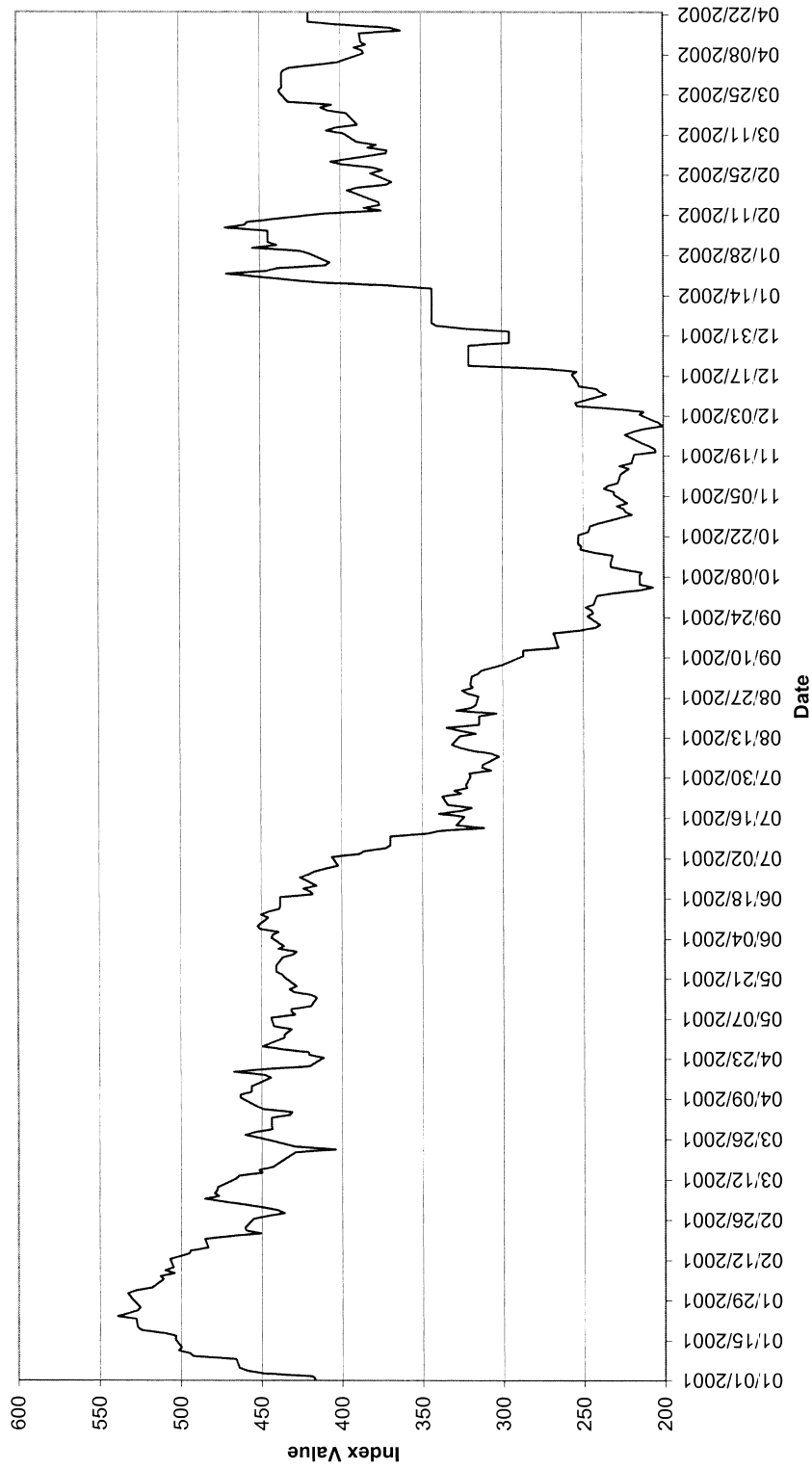


Fig. 1. Merval stock market index.

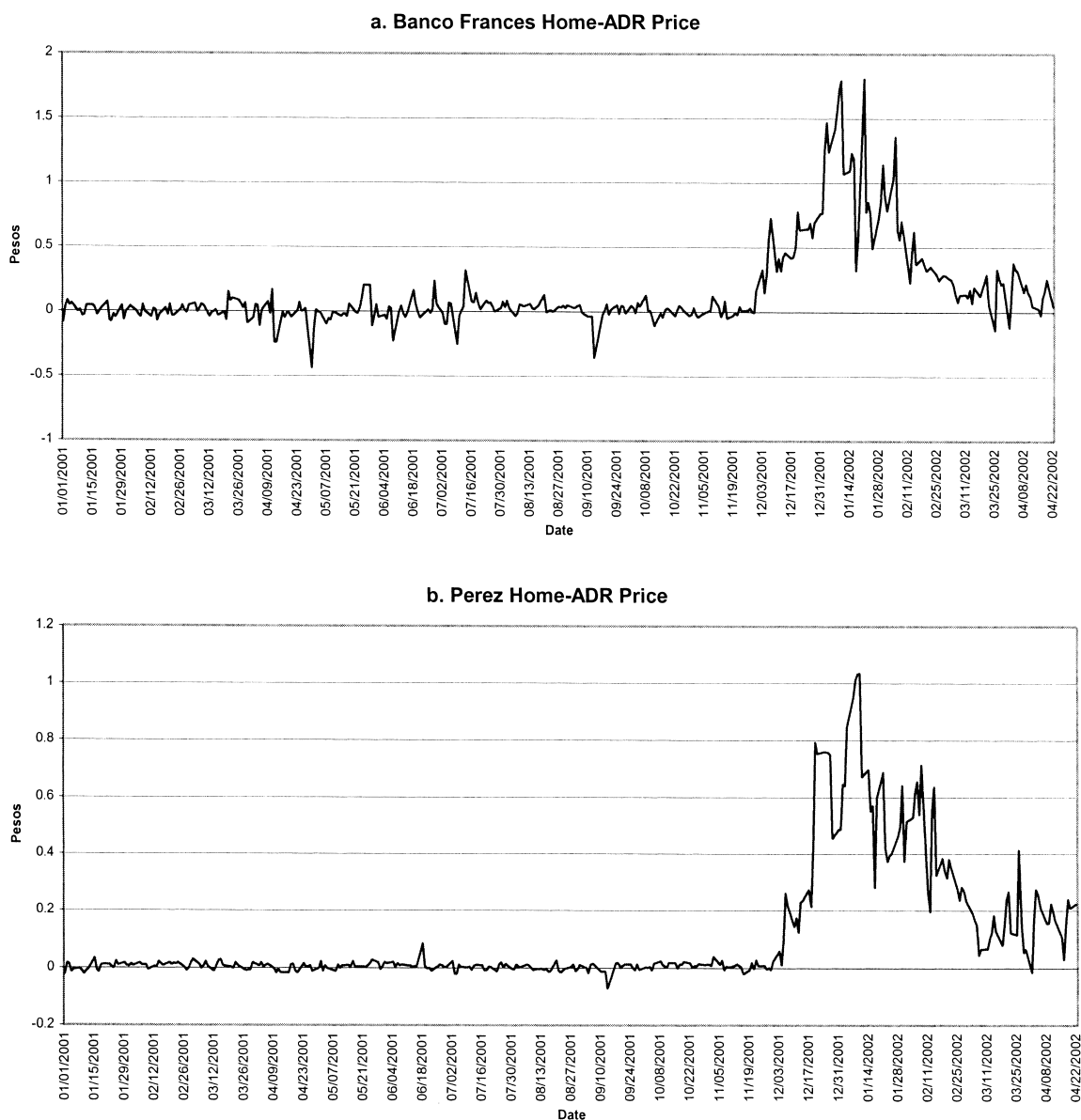


Fig. 2. Deviation between Argentine share price and ADR price (in pesos) of three top traded firms: (a) Banco Frances home-ADR price; (b) Perez home-ADR price; (c) Telecom Argentina home-ADR price.

widen. The home peso price of shares grew substantially at the same time that the ADR price was stagnant. Fig. 3 shows the share prices in New York for the ADRs of the three most heavily traded firms, Banco Frances (BFR), Perez Companc (PC), and Telecom Argentina (TEO). Note that all three ADRs were sinking in value throughout the 2001–2002 period. The deviation between the ADR price in New York and the price in Argentina does not reflect a failure of arbitrage pressures, but rather a

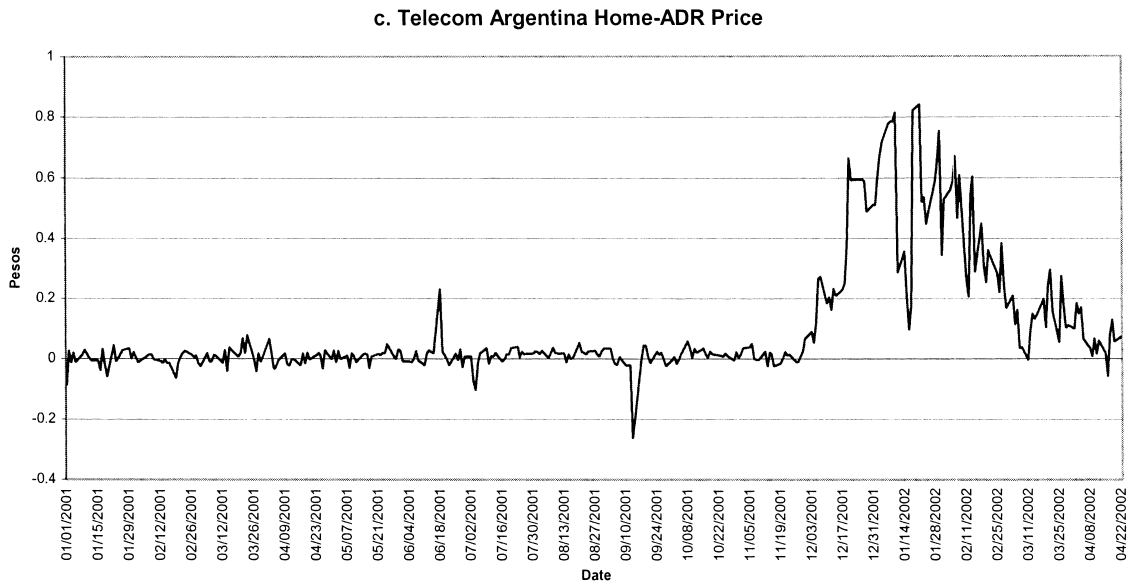


Fig. 2. (continued)

premium on local market shares due to the capital controls and the value the market placed on control avoidance.

### 3. The value of capital controls avoidance

If the ADR reflects the fundamental value of the firm, then the deviation between the price in Argentina and the price in New York reflects the value of capital controls avoidance to investors desiring to move wealth out of Argentina. Melvin (2002) provides a simple rational valuation model of stock prices that formalizes the argument. The price in New York reflects fundamental values and the ADR prices of Argentine firms were generally falling throughout the period of 2001 and 2002, including the financial crisis period.<sup>2</sup> The price increase in Argentina over the ADR serves as an empirical measure of the value of capital control avoidance via international cross-listing conversions. This premium should reflect the expected capital loss associated with peso investments in Argentina.<sup>3</sup>

Table 1 presents data on the value of capital control avoidance as implied by the deviation of the home market price from the peso value of the ADR price for the Argentine firms listed on the NYSE and which are traded with regularity. To find the days of peak value of capital controls avoidance, days where the stock market was closed in Argentina are omitted. Otherwise, the Argentine closing price would reflect stale data from the last day the market was open and the results would be meaningless. For each firm, the two trading days with the largest deviation of the Argentine price

<sup>2</sup>In addition to the visual evidence presented in Fig. 3, this is also supported by the decline in the Bank of New York ADR index for Argentina.

<sup>3</sup>The idea of deviations between ADR and underlying share prices incorporating a premium for capital controls was addressed in unpublished work by Levy-Yeyati and Schmukler (1999).

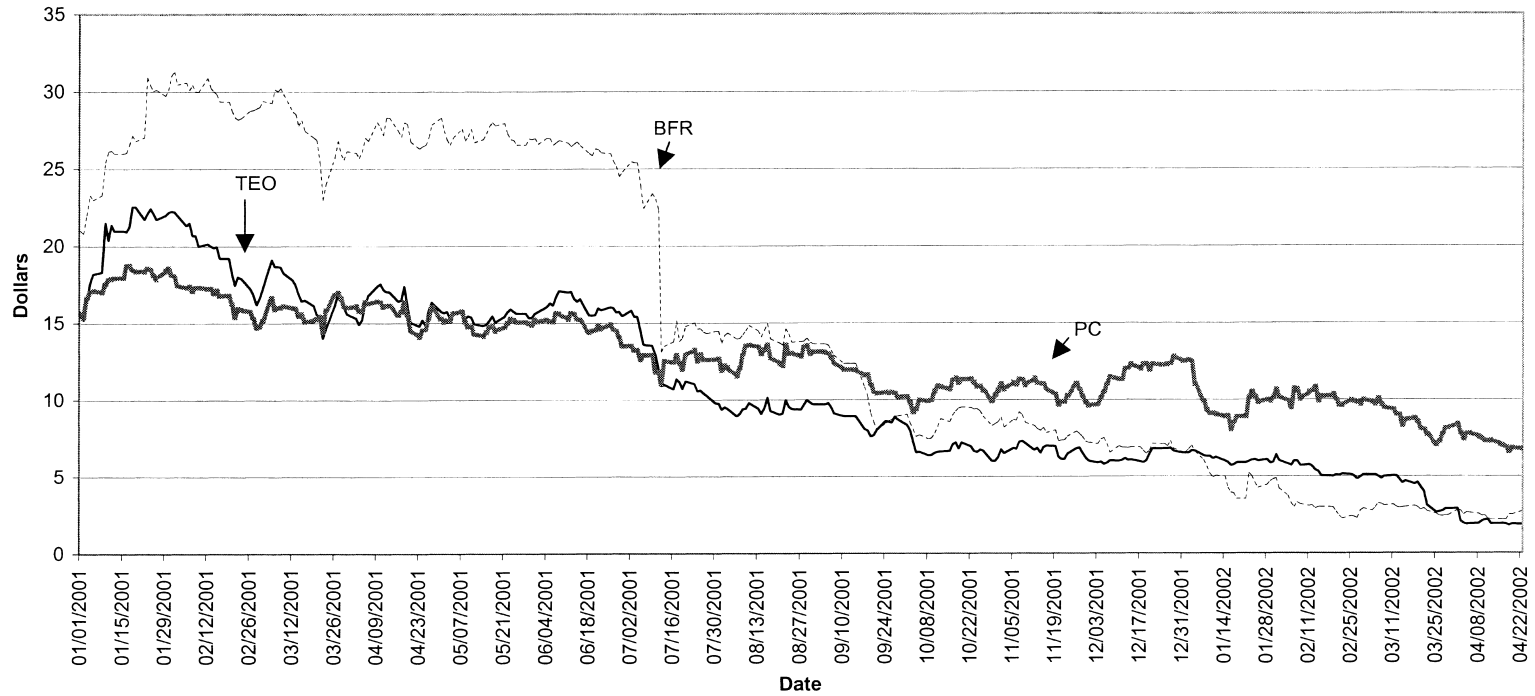


Fig. 3. ADR price in New York of Banco Frances (BFR), Perez Companc (PC), and Telecom Argentina (TEO).

from the ADR price are identified by the largest deviation as a percentage of the Argentine share price. The table lists these percentage deviations along with the peso values of the deviations on these 2 days. In addition, the table presents the mean percentage deviation and the mean peso value of the deviation for the crisis period of December 3, 2001 to March 25, 2002, the latter date being the day when ADR conversions were prohibited.

Table 1 indicates that the maximum percentage deviation ranges from 26.2% for IRSA to 45.2% for Banco Frances. The maximum peso value of the deviation ranges from AGS 0.20 for MetroGas to AGS 1.81 for Banco Frances. The average value of the percentage deviation over the crisis period ranges from 8.3% for MetroGas to 20.0% for Perez Companc. The average peso value of the deviation ranges from AGS 0.07 for MetroGas to AGS 0.62 for Siderca. These are substantial deviations from the ‘law of one price’, which is generally seen to hold for ADRs and the underlying home-market shares.

It is interesting to note that the days of peak premium over the ADR price are found to be most frequently Thursday, January 3 and Friday, January 4, 2002. This is coincident with new President Duhalde’s ascension to office and his announcement that the peg with the dollar would be broken. Perhaps more importantly for the timing of the value of capital controls avoidance is that the Argentine financial markets were closed on Monday, January 7 and they remained closed for 9 business days. The high value of capital controls avoidance as registered by the premium paid for Argentine shares above ADR values on Thursday and Friday, January 3 and 4, is consistent with some investors anticipating the market closure and inability to trade any financial assets in Argentina for an extended time while the peso was devalued. The fact that December 20, 2001 was the day of second

Table 1  
The value of capital controls avoidance

Firm	Peak value			Average value	
	Date	Percent (%)	Pesos	Percent (%)	Pesos
Banco Frances	1/21	45.2	1.81	19.5	0.51
	1/3	38.6	1.47		
IRSA	1/3	26.2	0.21	13.4	0.12
	1/4	24.0	0.19		
MetroGas	2/14	33.9	0.20	8.3	0.07
	12/20	25.3	0.17		
Perez Companc	1/4	43.6	0.85	20.0	0.41
	12/20	40.0	0.79		
Siderca	1/3	40.3	1.08	18.8	0.62
	1/4	39.3	1.10		
Telecom Argentina	1/4	35.0	0.71	17.3	0.38
	1/3	33.4	0.67		
Telefonica de Argentina	1/30	28.0	0.78	8.7	0.21
	2/13	26.4	0.71		
Transportadora de Gas	1/4	36.8	0.57	18.0	0.26
	12/20	36.5	0.50		

highest home-market share premiums for three firms indicates a similar phenomenon, as Argentine financial markets were also closed from December 21 through December 27, although no peso devaluation occurred. Given the 40% devaluation on January 11 and the later continuing depreciation of the peso, those who moved from pesos into dollars before the trading halt announced on Sunday, January 6, would have found the equity market premium they paid worthwhile in an ex post sense.

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