

## FX impact of cross-border M&A

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- Globalisation has led to a steady increase in the number of cross-border M&A activities, and so these deals are increasingly discussed in the FX market. However, since M&A activity is still measured in billions of dollars per month, as compared with the trillion-plus a day traded in the FX market, it is not clear what impact these deals actually have in practice.
- Using a large sample of past M&A deals, we find that these deals do indeed have an impact on exchange rates, causing, on average, a 1% appreciation of the target nation currency relative to the acquirer. We also find that such currency moves can be predicted using publicly available data.
- From our results, we construct an M&A currency pressure indicator that can be used to help interpret and predict currency moves due to M&A.

### Introduction

With globalisation leading to a steady increase in cross-border M&A activity, the latest deals have become a common topic of discussion in the FX market. However, cross-border M&A flows are still only in the billions of dollars per month, compared with FX turnover estimated at \$1.5tr per day and so, despite the interest they generate, it is not clear whether these flows are indeed significant in practice.

#### Number of cross-border M&A, 1982-1994

	1982	1988	1994
UK-US	58	177	180
Euro-area <sup>1</sup> -US	26	67	256

<sup>1</sup> France, Italy, Germany. Source: Vasconcellos (1998).

This research note aims to answer three key questions:

1. Does M&A have a significant impact on currencies?
2. Can this impact be predicted using public information available at the time?
3. If there is an impact, how can information on M&A activity best be summarised?

Despite the interest these deals create in the FX market, there are no previous studies to draw on to analyse this question. Economists seem more interested in the economic motivation for M&A (see for example Kang [1993] and Vasconcellos [1998]), rather than their impact.

### Estimating the impact of M&A

Although the aim is simple, studying the impact of cross-border M&A activity on currencies is often complicated by the intricate financing structure of such deals. We use an event study method (see, for example, Campbell, Lo and MacKinlay [1997]) with which we test whether the returns to holding the target nation's currency relative to that of the acquirer where cross-border M&A deals have been announced is significantly different from zero. By averaging over a large number of similar deals, it can be determined if there is a consistent excess return.

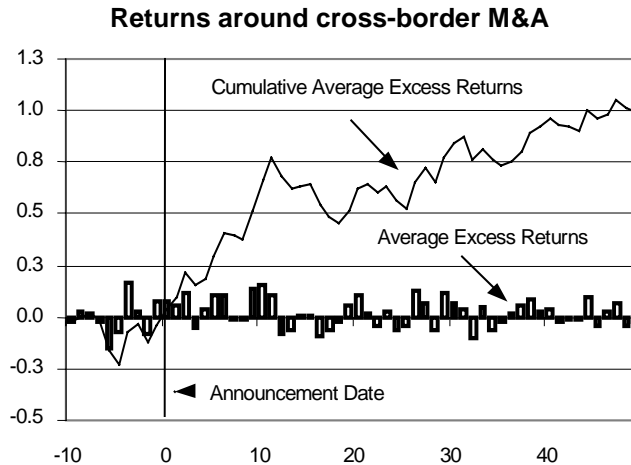
The first step to estimating excess returns is to construct a sample of deals to analyse. Our sample is based on information published in the IFR DataBase and includes all transactions that took place in 1997-99 and that are greater than US\$400m. For simplicity, we concentrate on a subset of possible country pairs: US-euro area, US-UK, US-Canada and US-Japan. The table illustrates some sample statistics.

**Cross-border M&A sample**  
(Transactions 1997-99, >US\$400m)

	Avg size in US\$ m	Number
US-Euro area	4,076	38
US-UK	9,855	33
US-Canada	3,140	19
US-Japan	3,128	7

The graph below shows the key result from our event study. Taking an equally weighted average of all the deals in our sample, we construct average daily excess returns, and the cumulate of those excess returns over a period starting 10 days before an M&A deal is announced until 50 days after.

As the chart shows, our results seem to support the hypothesis that M&A does have a significant impact. In particular, the period shortly after a deal is announced shows a strong upward movement in the target nation's currency (relative to the acquirer's currency). This strengthening seems to persist, such that, 50 days after the announcement, the target nation's currency, on average, has appreciated by 1% relative to the acquirers (ie, is 1% stronger than the forward rate 10 days before the announcement would have predicted).



The next task is to measure whether such a rise is statistically significant over the time period. For event studies, the J-statistic is used to assess the significance of the returns:

$$J_1 = \left( \frac{\overline{CAR}}{\sigma^2} \right)^{1/2} \sim N(0,1)$$

$$\overline{CAR} = \frac{1}{N} \sum_{i=1}^N ExCumReturns_i$$

The  $J_1$  statistic follows a standard normal distribution.  $N$  is the total number of cross-country transactions being analysed, while  $\sigma$  is variance of the cumulated average returns. Furthermore,  $ExCumReturns_i$  represent the cumulative average excess return at each moment in the 60-day window. Therefore, the  $J_1$  statistic aggregates across countries, but not across time.<sup>1</sup>

<sup>1</sup> The results are based on simple averages of returns without taking into account the size of the deal. One reason for using the simple average is that the  $J_1$  statistic is not appropriate for weighted-averages.

### Significance tests for M&A impact

Days from announcement	Cumulative returns	J1 Stat	Prob not 0
-10	-0.033	-0.06	0.48
0	0.025	0.05	0.52
5	0.308	0.76	0.78
10	0.671	1.28	0.90
20	0.653	1.37	0.91
30	0.862	1.81	0.97
50	1.006	2.46	0.99

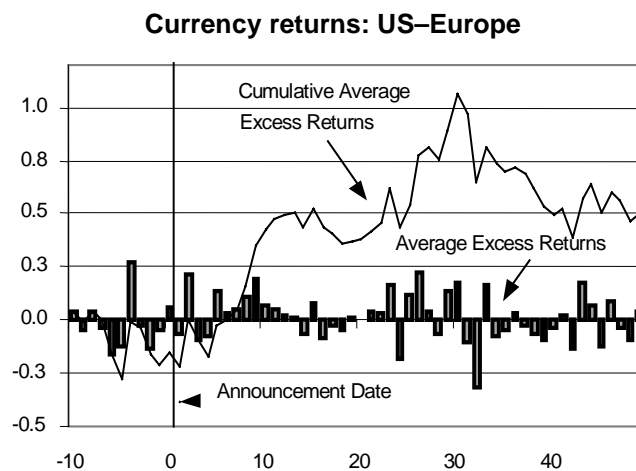
The table above indicates that our result is statistically significant. With this key result, we go on to analyse four detailed aspects of M&A:

1. *Individual country experience.* Does the M&A impact on currencies differ across countries?
2. *M&A-financed through stock swaps.* Do M&A deals that do not involve cash influence currencies?
3. *M&A from a third currency perspective.* Is the rise in the target currency relative to the acquirer currency also a rise relative to a third currency, or does the acquirer's currency fall too?
4. *Deal Size effects.* Do large deals have a larger currency impact?

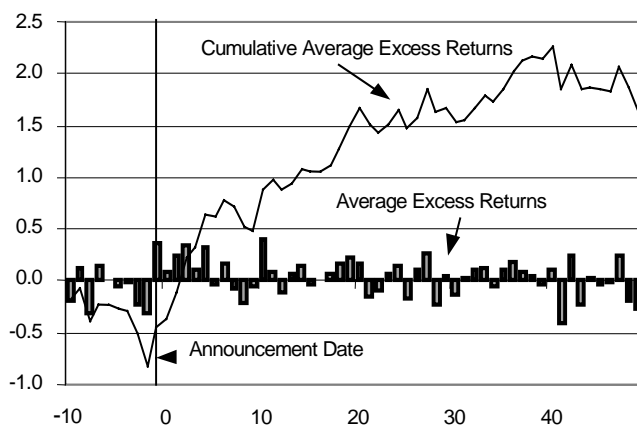
#### Individual country experiences

The graphs below show individual country profiles. As can be seen, for the following country couplings, US–euro area, US–UK and US–Canada, the pattern of cumulated excess returns is similar to the average. Only in Japan's case is the profile of returns different. Instead of showing an initial rise followed by a levelling in cumulative returns after the announcement of an M&A deal, there is much more volatility in returns. However, this results probably simply reflect our small sample of US-Japan deals (only seven were recorded).

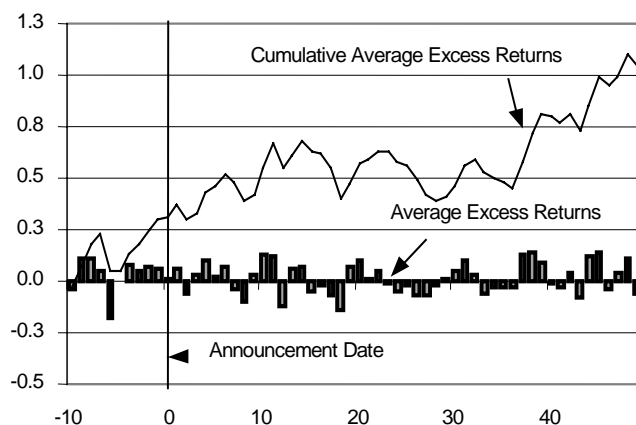
Another interpretation, however, is that M&A deals have less impact the larger the countries involved. Certainly, our results for the euro area display lower returns than in the cases of the UK and Canada. Unfortunately, our sample is too small to test this proposition rigorously, but it does seem intuitively plausible.



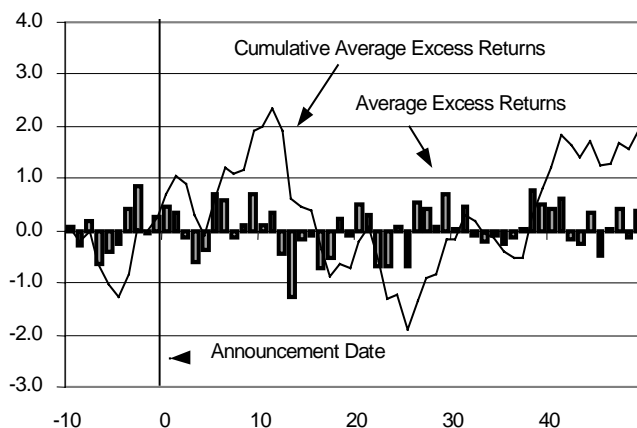
### Currency returns: US-Canada



### Currency returns: US-UK



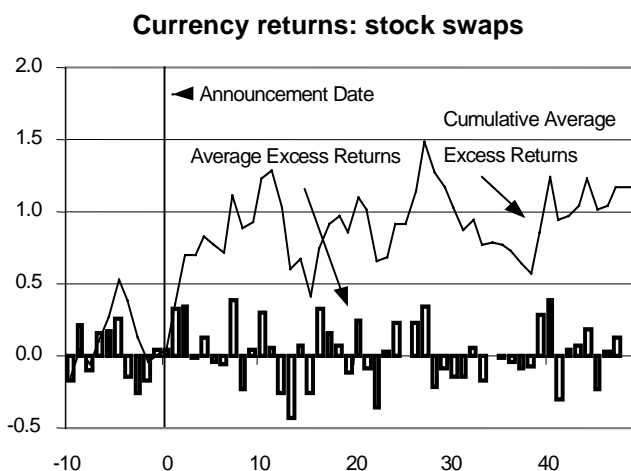
### Currency returns: US-Japan



### Stock swaps and M&A activity

Although the analysis so far has included M&A deals financed through stock swaps, many argue that it is the cash element of an M&A deal (ie, the acquirer's need to buy FX to pay for the target) that influences the currency. What sets stock swaps apart from other ways of financing M&A activity is that there should be no foreign exchange transaction between the countries involved in the M&A.

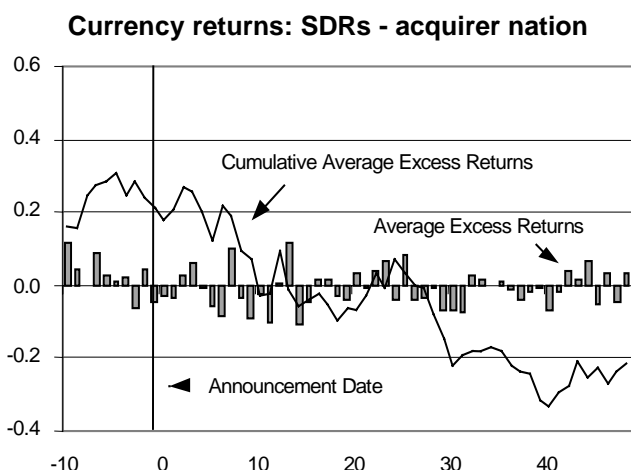
Therefore, *a priori*, we expected no consistent pattern of either average or cumulative average excess returns. However, by looking at the evidence of the seven M&A deals financed via stock swaps in our sample, we were surprised to find that indeed cumulative positive excess returns are present (although not statistically significant).



### M&A from a third-currency perspective

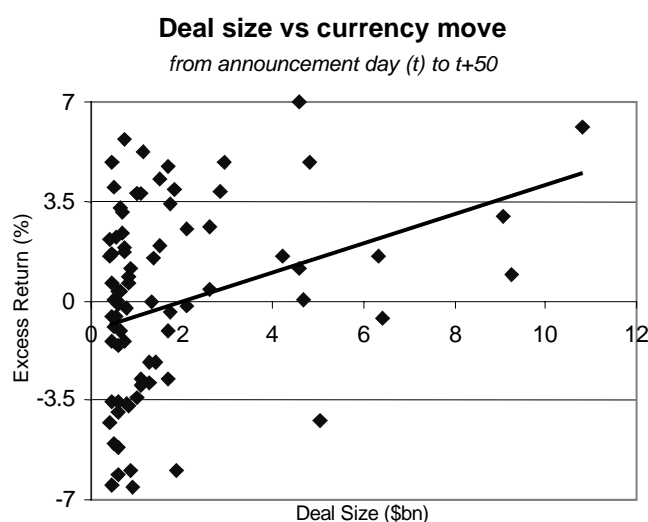
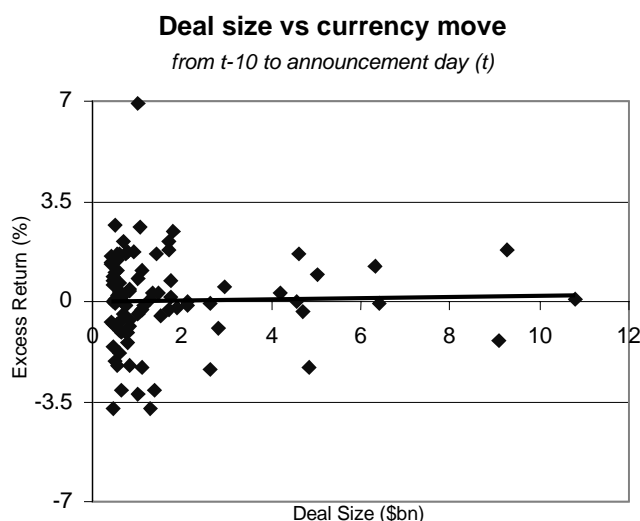
While our results show how the target nation currency rises relative to the acquirer, it is not clear which of those currencies is actually causing that excess return. Is the target currency going up or the acquirer's going down?

The chart below shows the acquirer's currency relative to SDRs. It indicates negative returns of about 0.5% from announcement day to 50 days post-announcement. Comparing this result with our 1% return on target relative to acquirer indicates that, from a third-currency perspective, an M&A deal results in equal and opposite moves in the target and acquirer currency.



### Deal size effects

While the results so far indicate a significant impact of M&A deals on currencies, the event study framework does not give an indication of how this effect changes with deal size. The two scatter plots below show the relationship between deal size and currency impact for two distinct periods. The first looks at the period from 10 days before announcement day to announcement day to see if there is a significant pre-announcement day effect for larger deals. The second chart compares deal size with currency impact for the full post-announcement period (announcement day to 50 days after).



The results of this comparison are fairly encouraging. They show little pre-announcement effect even for big deals, but a fairly clear relationship between deal size and currency impact over the post-announcement period. Roughly speaking, in our sample, every \$1 billion has a 0.5% impact. However, separate results for three mega-deals (>\$25 billion) show that the currency impact does seem to peak at about 5%

### An indicator of the impact of M&A activity

Using our results, we have constructed a simple indicator of M&A activity that can be used to help interpret and predict currency moves. The indicator keeps track of recent deals and gives an estimate of currency pressure in percentage basis points that those deals put on the currency. Following our third country results, we give a negative value to an acquirer nation and positive to a target. The table below shows recent coefficients for this indicator.

**Currency pressure coefficients for \$6bn deal**

Days from announcement	<20	<50
Coefficients for target	0.03	0.01
Coefficients for acquirer	-0.01	-0.01

These coefficients represent the expected daily return of being long of the target nation currency when a deal averaging US\$5.8bn is announced. Following the results on deal size, when constructing this indicator we give a larger weight to larger deals (though with a cutoff for “mega-deals”).

Given that our results for individual countries implied – but did not prove – that an M&A deal of a given size has a smaller impact the larger the countries involved, we also present a GDP-weighted version of our indicator.

### M&A currency pressure indicator – 6 July 1999

(% bp per day)

Country	Unweighted	GDP-weighted
Australia	0.34	4.94
Canada	0.48	4.55
Chile	0.16	12.22
Czech Republic	0.10	10.47
Denmark	-0.17	-5.60
Euro	-1.25	-1.08
Greece	-0.75	-33.02
Norway	0.41	14.60
Poland	0.07	2.72
Singapore	0.08	4.20
South Korea	0.14	1.66
Sweden	0.18	4.22
Switzerland	-0.52	-9.34
United Kingdom	1.15	5.25
United States	-0.41	-0.30

### Conclusion

As well as confirming the widely held market belief that cross-border M&A activity does influence exchange rates, our analysis shows:

1. The appreciation tends to occur after the public announcement of the deal and so does not rely on inside information.
2. Statistical tests confirm that this excess return is statistically significant (at the 99% level) and so is probably not just a quirk of our data.
3. Separate tests on deals that do not involve cash (ie, stock swaps) indicate that these too have a currency impact.
4. From a third-currency perspective, currency moves around M&A tend to lead to a fall in the acquirer currency and a rise in the target currency of equal size.

Using our results, we are now in a position to monitor M&A effects on currencies which are clearly an important supplement to standard economic analysis.

### References

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G M Vasconcellos, R J Kish, 1998: “Cross-border mergers and acquisitions: the European–US experience,” *Journal of Multinational Financial Management*, 8, p431-450.