Currency Market Reactions to Good and Bad News During the Asian Crisis

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There is considerable disagreement among analysts about the extent to which the spread of the Asian crisis was based on reasonable changes in expectations about fundamentals versus pure contagion effects resulting from imperfections in the behavior of currency and financial markets. In this paper we focus specifically on the behavior of the foreign exchange market for five Asian countries. We find little support for the hypothesis that the Asian currency crisis was dominated by panic in the markets such that investors and speculators reacted much more strongly to bad than to good news. While the strongest reactions were to home news, there were also a number of significant cross effects. Almost all of these were of the same sign, suggesting that investors typically assumed that what was good for one country was good for all. Again, there was no systematic evidence of stronger reactions to bad than to good news. The markets may have overreacted in general, pushing currencies below the levels justified by the fundamentals, but, if so, this did not undercut the markets ability to respond to good as well as bad news, nor do these responses appear to have been systematically smaller to good than to bad news. The symptoms of the blind panic that has so often been alleged do not appear in the data.

Keywords: Currency market reactions, Asian crisis, Contagion effects

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I. Introduction

The recent rash of international financial crises has generated considerable interest in the behavior of international currency and financial markets, with the economist's traditional theory of efficient speculative behavior becoming increasingly challenged by views of rational or irrational herding effects, momentum trading, and excessive swings between optimistic and pessimistic moods in markets. There is considerable disagreement among analysts about the extent to which the spread of the Asian crisis was based on reasonable changes in expectations about fundamentals versus pure contagion effects resulting from imperfections in the behavior of currency and financial markets.[1]

One popular view is that international investors and currency traders selectively filter information based on their basic moods or outlooks of optimism and pessimism. Such "confirmation bias" has been found in many aspects of human behavior.[2] Thus it is certainly a plausible hypothesis. For currency markets the implication is that in good times bad news will be heavily discounted relative to good news, while during crises or other times of pessimistic views, bad news will be weighted more heavily than good news.

Recent studies by Kaminsky and Schmukler (1999) and Baig and Goldfajn (1999) find some evidence of such asymmetric responses. Kaminsky and Schmukler test this hypothesis during the Asian crises for the days of largest changes in the dollar value of a set of nine Asian stock markets. They find a sizably stronger reaction to bad than to good news. Baig and Goldfajn look separately at the reactions of stock markets and exchange rates for five major crisis countries. In this paper we focus specifically on the behavior of the foreign exchange market for the same five countries. Our methodology is similar to Baig and Goldfajn but we use an expanded set of news events. Our time period (from July 1997 to April 1998) also differs slightly from Baig and Goldfajn's (from July 1997 to May

[1]Compare, for example, Furman and Stiglitz (1998), Radalet and Sachs (1998) and Willett (2000).

[2]For discussion and reference to the literature on herding and other possible imperfection in the behavior of financial markets, see Kaminsky and Schmukler (1999), Kim and Wei (1999) and Willett (2000).

1998). Baig and Goldfajn find significant effects of bad news for all five countries, but significant effects of good news for only three. In our sample, however, we find significant effects of both good and bad news for all countries. Furthermore we find no systematic pattern of higher coefficients for bad than good news.

The rest of this paper is organized as follows: Section II summarizes the chronicles of the Asian crisis. Section III discusses the data sets and methodology incorporating dummy variables for bad and good news. Section IV interprets the tests and discusses the evidence. Section V concludes.

II. A Brief Overview of the Asian Crisis Chronicle[3]

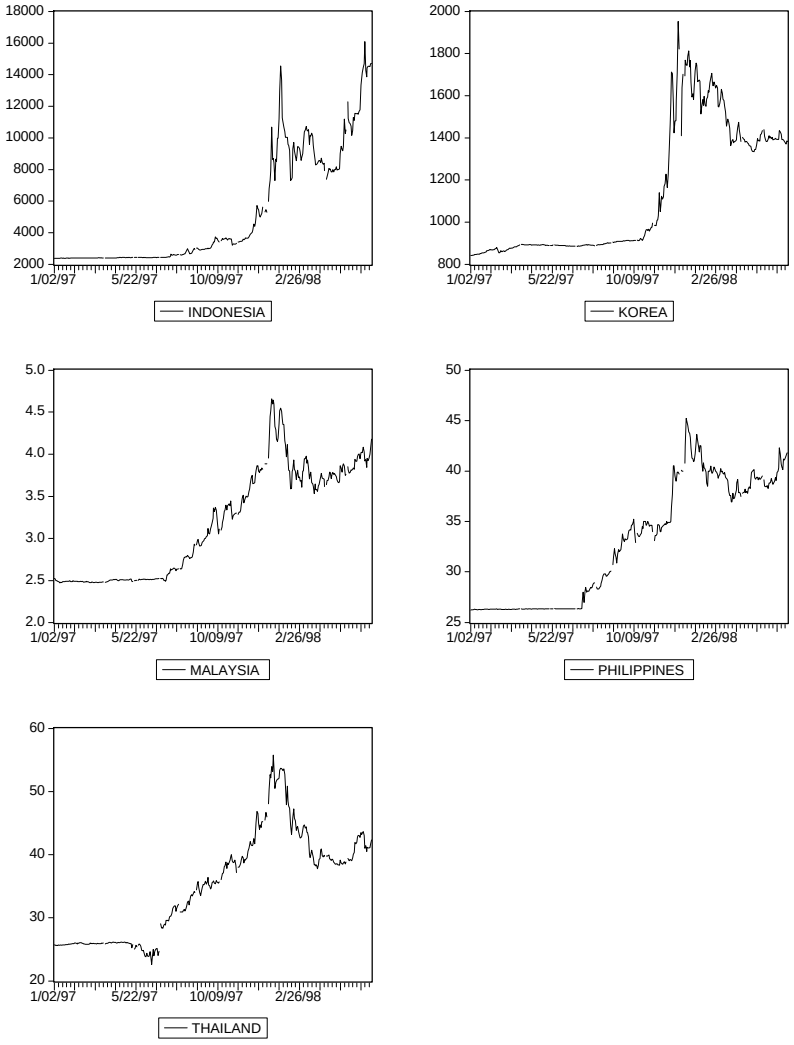
Figure 1 plots the daily exchange rates in the five major Asian crises countries during the crisis period from January 1997 to June 1998.

During 1997 the pressures on the Thai baht increased as Thailand's largest finance company failed on May 23. Around the same time, Thailand's finance minister, Amnuay Viravan, who was strongly against devaluing the baht, resigned on June 19. On July 2, right after the announcement of "no devaluation" by the Prime Minister on June 30, the Bank of Thailand announced a floating system of the baht and called on the International Monetary Fund for assistance.

As the Thai baht's depreciation began to affect ASEAN currencies, other South East Asian countries abandoned their currency defenses and adopted more flexible exchange rate policies. The Philippines allowed a wider float range for the peso against the dollar on July 11, and Indonesia widened its rupiah trading band on July 11 and started to float the rupiah on August 14. Also, Malaysia announced the abandonment of its defense of the ringgit on July 14.

By August 1997, the absence of strong steady policy responses by the governments of the crisis countries was contributing to greater uncertainty for investors. Some statements of political leaders further provoked the uncertainty and concern in the capital

[3]For more detailed reviews see Goldstein (1998), Pempel (1999) and Willett (2000).



Sources: Pacific Exchange Rate Service at Univ. of British Columbia

FIGURE 1

EXCHANGE RATES MOVEMENT DURING THE ASIAN CRISIS PERIOD
(JAN 97 - JUNE 98)

market. For example, after Malaysian Prime Minister Mahathir bitterly attacked "rogue speculators," the Malaysian ringgit fell further.

In October 1997, the devaluation of the Taiwan dollar further scared investors in Asian markets. Because of the high linkage and similarity between Taiwan and Hong Kong, the devaluation of the Taiwan dollar created doubt about whether the Hong Kong dollar peg to the U.S. dollar would be changed. Consequently, on October 23, one week after the devaluation of the Taiwan dollar, the Hong Kong Hang Seng stock market index fell by 30 percent, more severely than the 1987 crash.

At this point, international investors started to reassess the situation in Korea where several of the largest conglomerates went into financial turmoil after Hanbo Steel company collapsed in January. The Korean government delayed the decision to handle the financial trouble of Kia Motor Group until October 22. Along with the presidential election campaign, former president Kim Young-Sam was bitterly attacked by the opposition party for the suspicious connection between his son and the collapsed Hanbo Steel company. The government failed to pass the Financial Reform Bill on November 18 because of the opposition party's rejection, which further lowered confidence in capital markets. Also, in November, global investors became frightened by the news that international rating agencies were downgrading Korea's foreign debt which was estimated at more than $100 billion, with short-term debt estimated at 80% of the total. Consequently, the Korean government announced on November 21 that it would seek an IMF rescue package. In addition, Japan's troubled financial sector aggravated the crisis in Korea. For example, Japan's fourth-largest brokerage, Yamaichi Securities, announced that it would shut down on November 24. The Finance and Economy Ministry in Korea reported that Japanese banks withdrew about 8 billion dollars of the 14 billion dollars withdrawn by foreign banks during October and November 1997.

On January 6 of 1998, the Indonesian government announced an expansionary budget, which violated the terms of their IMF program. This led the rupiah to collapse to more than 10,000 from about 7000 within two days. By late-January 1998, the Asian financial crisis had began to calm down as the U.S. pledged to pressure international commercial banks to roll over Korea's short term debt. On January 16 of 1998, Korea and international banks

completed the agreement to roll over much of the short-term debt. The Indonesia rupiah seemed to start to rally after the news that the Indonesian government signed the second agreement to accept IMF reform program on January 15, 1998. Indonesia announced new reforms on January 27 designed to restore confidence in its banking sector, guaranteeing commercial bank obligations and allowing overseas investment in local banks. However, political instability and riots, and Indonesian president Suharto's plan to implement a Currency Board system, made the crisis persist longer in Indonesia than in other Asian emerging economies.

III. Data and Methodology

We construct dummy variables for important news of fundamentals and policy changes during the Asian financial crisis period, following the methodology used in Kaminsky and Schmukler (1999) and Baig and Goldfajin (1999). We use daily data on changes in exchange rates against the US dollar in the crisis-affected countries as the dependent variable. The source of daily exchange rate data is the 'Pacific Exchange Rate Service' at the University of British Columbia. In addition to dummy variables, following Baig and Goldfajn, the Yen/Dollar exchange rate and U.S. Stock Market Index (daily NYSE) were included as explanatory variables to account for common external shocks in currency markets.

The sources of market news are "Chronology of the Asian Currency Crisis and its Global Contagion" from the Roubini's Asian crisis web site, and "Chronology of the Asian Economic Crisis" from the web site of the University of Virginia, in which collected information from several news sources (Reuters, Wall Street Journal, New York Times, CNNfn, Financial Times, Bloomberg, *etc.*) have been documented.[4] We also collected news from newspaper summaries prepared by Asia Pulse, and we checked the appendix in Baig and Goldfajn (1999)'s paper and Kaminsky and Schmukler (1999)'s paper. Compared with the sample of news reports used in Baig and Goldfajn (1999), from July 1997 to April 1998 seventy four additional or different news reports are used in this paper.[5]

[4]See http://www.stern.nyu.edu/~nroubini/asia, and http://www.people.virginia.edu/~teb7c/asianchronology.

[5]The chronology of the daily news releases used for dummy variables is

We classify the daily news releases according to the country of origin, and according to the categories of bad news and good news. For news already included in Baig and Goldfajn (1999) or Kaminsky and Schmukler (1999)'s paper, we followed their coding of good and bad news. For additional news events included in this paper, we followed the criteria delineated by Baig and Goldfajn: We classified as good news, reports of financial aid agreements, credible economic reforms, the upgrade of credit ratings, the removal of capital controls, good economic indicators (such as lower inflation rate, rising stock market index, trade surplus *etc.*), news forecasting a better economic outlook and political stability: We classified as bad news, reports indicating conflicts with international organizations, financial troubles or bankruptcies of firms, non-credible economic reforms, the downgrade of credit ratings, the imposition of capital controls, worse than expected economic indicators (such as higher inflation rate, crashing stock market index, *etc.*), and political instability. Where the effects seemed to likely to be unclear we excluded the event.

Under the hypothesis of herding panic, investors may show significantly asymmetric responses to "bad news" and "good news" about fundamentals as the crisis goes on. To test this hypothesis, we estimate the following regression:

$$EX_t^i = \alpha^0 + \alpha^i GN_t^i + \beta^i BN_t^i + \gamma^i FN_t + \varepsilon_t^i \quad (1)$$

where EX is the change of daily exchange rates, GN^i is a dummy variable for domestic "good news," BN^i is a dummy variable for domestic "bad news," and FN are other economic variables, specifically the U.S. stock market index and Yen/US dollars. These dummy variables take a value of 1 for good news or for bad news, and zero if there is no news of that type during a specific day.

Our initial analysis is only for news about the home country. However, for questions of herding behavior and contagion we might expect there to be more asymmetry in the response in the home currency to news about other countries in the region. Thus we extended the analysis to test for these effects. We ran the following regression

available from the authors on request.

$$EX_t^i = \alpha^0 + \alpha^i GN_t^i + \beta^i BN_t^i + \sum_{j=1}^{n-1} \alpha_{gn}^j GN_t^j + \sum_{j=1}^{n-1} \beta_{gn}^j BN_t^j + \gamma^i FN_t + \varepsilon_t^i \quad (2)$$

where GN^j is a dummy variable for foreign "good news," and BN^j is a dummy variable for foreign "bad news." According to our data set, for only 68 out of 209 days there were neither domestic own news nor foreign news that could be classified as clearly good or bad.

IV. Tests

Our findings differ from those of Baig and Goldfajn in several respects. As reported in Table 1, we do not find significant effects for the control variables (the US stock market index and the Dollar/Yen exchange rate) as they did but we do find significant effects of both good news and bad news for all five countries. These results are not sensitive to using either the stock market or exchange rate variable as the only control. Furthermore we do not find any systematic pattern of differences in the size of the coefficients on bad versus good news. The good news coefficient is higher than for bad news for Indonesia, Thailand, and Malaysia, and lower for Korea and the Philippines. The only case of substantial difference in the coefficients is for the Philippines, where the bad news coefficient is almost three times as large as for good news, and this is the only case where the differences is statistically significant.[6] Across countries, the estimated coefficients are remarkably similar in size, typically being in the range of 0.01 to 0.02, with the exception of Indonesia where the coefficients for both good and bad news are substantially higher. This ordering is consistent with our qualitative assessment that there was more big news concerning Indonesia.

There were two cases where good and bad news arrive together in the data set. One case is for Korea on December 24, 1997 and the other is for Indonesia on January 15, 1998. Despite the possibility that there could be no change in the currency value since two types of news are already reflected, the Korea won

[6]The Wald test statistic for differences in the coefficients is 4.99. This is significant at the five percent level. None of the other differences are close to conventional levels of significance.

TABLE 1

REGRESSION RESULTS: IMPACT OF DOMESTIC NEWS

	Korea	Philippines	Thailand	Indonesia	Malaysia
Constant	0.001	0.002	0.002	0.003	0.001
	(0.48)	(1.73)*	(1.30)	(0.87)	(0.86)
Good News	-0.020	-0.007	-0.023	-0.050	-0.019
	(-2.66)**	(-1.82)*	(-4.44)**	(-4.75)**	(-3.26)**
Bad News	0.026	0.019	0.016	0.047	0.015
	(3.43)**	(3.53)**	(3.32)**	(5.38)**	(3.77)**
Japanese Yen / US Dollar	-0.007	-0.101	-0.199	0.324	-0.113
	(-0.02)	(-0.69)	(-1.11)	(0.76)	(-0.67)
US Stock Market Index	-0.166	-0.121	-0.057	-0.436	-0.195
	(-0.72)	(-1.16)	(-0.45)	(-1.40)	(-1.62)
Adjusted R^2	0.08	0.07	0.14	0.24	0.10
F-Statistic	5.41	4.59	8.77	15.93	6.44
Number of Observations	194	194	194	194	194
Number of Good News Days	27	16	14	21	10
Number of Bad News Days	22	9	19	34	21

Notes: (1) Regression Method: OLS
Dependent Variable: Change in Nominal Exchange Rate
(2) *t* statistics are in parenthesis. * denotes 10% significance level, ** denotes 5% significance level.

appreciated and the Indonesia rupiah depreciated. This seems to be because the importance of one type of the news dominated that of the other type of the news. For this reason, we used 0, 1, 2, 3 scheme instead of 0 or 1 dummy variables for the news, where 0 is no news, 1 is not much important, 2 is normally important, and 3 is very important. As reported in table 2, we still find the consistent pattern of home country news effects although the coefficients for good and bad news declined in all five countries.

The addition of the foreign news variables reported in table 3 does not substantially alter the pattern of home country news effects. The main difference is that the coefficient for good news in the Philippines falls by roughly half and loses its significance.

TABLE 2

REGRESSION RESULTS: IMPACT OF DOMESTIC NEWS (0, 1, 2, 3 SCHEME)

	Korea	Philippines	Thailand	Indonesia	Malaysia
Constant	0.001	0.002	0.002	0.002	0.001
	(0.49)	(1.69)	(1.36)	(0.57)	(1.08)
Good News	-0.006	-0.005	-0.010	-0.014	-0.007
	(-1.80)*	(-2.04)**	(-4.20)**	(-3.09)**	(-2.05)**
Bad News	0.008	0.013	0.006	0.022	0.006
	(2.60)**	(4.19)**	(2.54)**	(5.27)**	(2.65)**
Japanese Yen / US Dollar	0.026	-0.099	-0.214	0.227	-0.127
	(0.08)	(-0.69)	(-1.18)	(0.51)	(-0.73)
US Stock Market Index	-0.217	-0.116	-0.032	-0.705	-0.205
	(-0.92)	(-1.13)	(-0.25)	(-2.21)**	(-1.65)*
Adjusted R^2	0.04	0.10	0.11	0.18	0.05
F-Statistic	2.90	6.12	6.82	11.78	3.61
Number of Observations	194	194	194	194	194
Number of Good News Days	27	16	14	21	10
Number of Bad News Days	22	9	19	34	21

Notes: (1) Regression Method: OLS
Dependent Variable: Change in Nominal Exchange Rate
(2) *t* statistics are in parenthesis. * denotes 10% significance level, ** denotes 5% significance level.

We find considerable evidence of significant home country effects of news about other countries in the region. Of 20 possible cases we find foreign news to be significant in 12. As we would expect the coefficients on foreign news are generally much lower than the coefficients on home country news. The exceptions are the effects of good news in Indonesia on the Malaysian ringgit, the effects of good news in Korea on the Indonesia rupiah, and the effects of bad news in Malaysia on the Philippines peso. Again, there is no systemic pattern of bad news being more frequently significant or having larger coefficients than good news. Indeed, of the fourteen cross effects estimated to be significant, nine are for good news. The only country with more significant cross effects for bad than good news is Malaysia, with effects of good news on Thailand and

TABLE 3

REGRESSION RESULTS: IMPACT OF FOREIGN NEWS

	Korea	Philippines	Thailand	Indonesia	Malaysia
Constant	0.003	-0.002	0.002	0.000	0.004
	(0.81)	(1.60)	(1.06)	(0.15)	(2.26)**
Korea					
Good News	-0.017	-0.007	0.003	0.024	-0.006
	(-2.19)**	(-2.04)**	(0.83)	(2.40)**	(-1.70)*
Bad News	0.025	-0.003	-0.002	-0.006	-0.003
	(3.32)**	(-0.92)	(-0.46)	(-0.65)	(-0.93)
Philippines					
Good News	-0.006	-0.004	0.003	-0.005	-0.000
	(-0.72)	(-0.94)	(0.67)	(-0.40)	(-0.10)
Bad News	-0.015	0.019	0.003	-0.002	0.001
	(-1.26)	(3.81)**	(0.42)	(0.11)	(0.22)
Thailand					
Good News	-0.004	-0.011	-0.022	-0.029	-0.013
	(-0.44)	(-2.91)**	(-4.54)**	(-2.37)**	(-2.90)**
Bad News	-0.001	0.000	0.015	0.015	0.006
	(0.13)	(0.06)	(3.05)**	(1.30)	(1.36)
Indonesia					
Good News	-0.012	-0.007	-0.017	-0.048	-0.021
	(-1.59)	(-2.18)**	(-4.21)**	(-4.73)**	(-5.72)**
Bad News	-0.006	0.007	0.008	0.043	0.010
	(-0.96)	(2.77)**	(2.37)**	(4.97)**	(3.09)**
Malaysia					
Good News	0.011	-0.007	-0.015	-0.012	-0.017
	(0.96)	(-1.42)	(-2.50)**	(-0.82)	(-3.19)**
Bad News	0.013	0.011	0.006	0.026	0.010
	(1.63)	(3.20)**	(1.48)	(2.43)**	(2.74)**
US Stock Market Index	-0.119	-0.049	0.028	-0.523	-0.063
	(-0.51)	(-0.51)	(0.23)	(-1.73)*	(-0.58)
Japanese Yen / US Dollar	-0.066	-0.154	-0.187	0.545	-0.142
	(0.20)	(-1.13)	(-1.10)	(1.29)	(-0.93)
Adjusted R^2	0.09	0.22	0.25	0.29	0.29
F-Statistic	2.62	5.52	6.40	7.65	7.69
Number of Observations	194	194	194	194	194

Notes: (1) Regression Method: OLS
Dependent Variable: Change in Nominal Exchange Rate
(2) *t* statistics are in parenthesis. * denotes 10% significance level, ** denotes 5% significance level.

bad news on the Philippines and Indonesia. With the single exception of the effects of good news in Korea on Malaysia, all of the significant coefficients had the same sign for the cross effects as for the home effect. This is consistent with the view that many investors looked at the region as a whole so that good news for one country was frequently taken as good news for all. The exception to this pattern is Korea which was little affected by news in the other four countries. This independence was asymmetric, however, with news in Korea frequently having effects on the other four. Again, however there is no systematic pattern of larger effects from bad than from good news.

V. Conclusion

In coding the news into good and bad none of the studies to date (including ours) has tried to take account of the likely importance of events reported. Thus in a small sample it is quite possible that there could be sizable differences between the average importance of the good and bad news for some countries. Despite this possibility, however, we find little support for the hypothesis that the Asian currency crisis was dominated by panic in the markets such that investors and speculators reacted much more strongly to bad than to good news. As would be expected domestic news has bigger effects on the home country than on others, but we do find a good deal of evidence of significant cross effects. These are almost always of the same sign, suggesting that investors viewed these countries as a group with good or bad news for one being good or bad for all. On this score, however, Korea appears to have been seen as more independent. Again, there is no systematic evidence of stronger reactions to bad than to good news.

The markets may have overreacted in general, pushing currencies below the levels justified by the fundamentals, but, if so, this did not undercut the markets ability to respond to good as well as bad news, nor do these responses appear to have been systematically smaller to good than to bad news. The symptoms of the blind panic that has so often been alleged do not appear in the data.[7]

[7]A telling point that more than financial market panic was at work was there strong speculative pressure against the Korean won did not start until several months after the fall of the Thai baht.

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