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Macro News and Exchange Rates in the BRICS

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1 Introduction

The effects of macroeconomic news on exchange rates have been analysed in numerous recent studies: since FX markets are always open, the immediate impact of news can be more easily investigated than in the case of other financial markets. Either daily (Galati and Ho, 2001, etc.) or high-frequency data have been used (Andersen et al., 2007, etc.), and the results rationalised on the basis of different models of exchange rate determination, such as the monetary or the portfolio balance model (e.g., Balduzzi et al., 2001). Most of the available evidence concerns the developed economies, and typically considers only mean spillovers; one of the few exceptions is the study by Egert and Kocenda (2014), who focused on the CEECs and estimated GARCH models. Interestingly, some papers have considered investor psychology and linked media pessimism to low investor sentiment (Tetlock, 2007). Further, as highlighted by Birz and Lott (2011), the effects of news (surprises) could depend on their interpretation by the press, as reflected by newspaper headlines read by agents.

2 The model

We represent the first and second moments of the BRICS exchange rate returns (vis-a-vis the US dollar and the euro respectively) and macro news (as reported by newspapers in the form of headlines) using a VAR-GARCH(1,1) process. In its most general specification the model takes the following form:

$$\mathbf{x}_{\mu} = \alpha + \beta \mathbf{x}_{\mu -}$$

3 Empirical Analysis

We use daily data (from Bloomberg) on the exchange rates vis-a-vis the US dollar and the

that the signs on cross-market volatilities cannot be determined). It appears that domestic news volatility has an impact on exchange rate volatility in the Brazilian, Russian, Indian and Chinese case; volatility spillovers are also found from eurozone news in the cases of Brazil, India and South Africa, and from US news in the case of China ($_{31} = -0\,001$). Furthermore, there is evidence that the 2008 crisis affected the causality-in-variance dynamics. In particular, during the crisis domestic news volatility have started having effects in the case of the Russian ($_{31} = -0\,369$) as well as the Indian exchange rate ($_{31} = 0\,208$) vis-a-vis the US dollar. Stronger news volatility effects are found in the cases of the Brazilian, Indian and South African exchange rates vis-a-vis the euro.

4 Conclusions

This paper has examined the effects of newspaper headlines on the exchange rates vis-a-vis both the US dollar and the euro for the currencies of the BRICS using daily data over the period 03/1/2000-12/5/2013. The increasingly important role of these countries in the world economy as a result of their rapidly growing share in global trade and the lack of previous empirical evidence concerning them specifi

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TABLE 1: Estimated VAR-GARCH(1,1) model. Ex rate vis-a-vis the US dollar and the euro

	Brazil		Russia		India		China		S. Africa	
	Dollar	Euro	Dollar	Euro	Dollar	Euro	Dollar	Euro	Dollar	Euro
					Conditional Mean Equation					
1	0 151 (0Z005)	0 041 (0Z583)	−0 001 (0Z933)	0 058 (0Z037)	−0 018 (0Z239)	0 061 (0Z164)	0 018 (0Z000)	−0 003 (0Z898)	−0 054 (0Z527)	−0 074 (0Z369)
2	0 471 (0Z000)	0 472 (0Z000)	0 472 (0Z000)	0 473 (0Z000)	0 464 (0Z000)	0 456 (0Z000)	0 431 (0Z000)	0 441 (0Z000)	0 468 (0Z000)	0 473 (0Z000)
3	0 457 (0Z000)	0 451 (0Z000)	0 446 (0Z000)	0 449 (0Z000)	0 459 (0Z000)	0 453 (0Z000)	0 451 (0Z000)	0 462 (0Z000)	0 443 (0Z000)	0 447 (0Z000)
11	−0 051 (0Z000)	−0 061 (0Z000)	0 083 (0Z000)	0 001 (0Z949)	0 035 (0Z044)	−0 013 (0Z495)	−0 153 (0Z000)	−0 024 (0Z199)	−0 005 (0Z761)	0 010 (0Z649)
12	0 153 (0Z013)			0 097 (0Z041)			0 008 (0Z102)			
12						0 367 (0Z001)				
13	−0 232 (0Z009)			−0 188 (0Z000)						
13	−0 211 (0Z050)					−0 398 (0Z001)	−0 135 (0Z001)			−0 215 (0Z021)
					Conditional Variance Equation					
11	0 131 (0Z000)	0 225 (0Z000)	0 024 (0Z000)	0 041 (0Z000)	0 029 (0Z000)	0 083 (0Z000)	0 000 (0Z000)	0 028 (0Z001)	0 156 (0Z000)	0 141 (0Z000)
22	0 006 (0Z034)	0 011 (0Z007)	0 009 (0Z000)	0 009 (0Z000)	0 009 (0Z000)	0 007 (0Z000)	0 002 (0Z000)	0 005 (0Z000)	−0 001 (0Z000)	−0 001 (0Z000)
33	0 008 (0Z001)	0 003 (0Z001)	0 002 (0Z000)	0 004 (0Z000)	0 001 (0Z000)	0 004 (0Z000)	0 006 (0Z000)	−0 005 (0Z000)	0 006 (0Z002)	0 007 (0Z003)
11	0 929 (0Z000)	0 901 (0Z000)	−0 951 (0Z000)	0 957 (0Z000)	−0 943 (0Z000)	−0 968 (0Z000)	0 831 (0Z000)	0 985 (0Z000)	0 951 (0Z000)	−0 954 (0Z000)
21							0 004 (0Z000)			
21										
22	0 986 (0Z000)	0 985 (0Z000)	0 990 (0Z000)	0 990 (0Z000)	0 987 (0Z000)	0 985 (0Z000)	0 991 (0Z000)	0 989 (0Z000)	0 994 (0Z000)	−0 994 (0Z000)
31			−0 088 (0Z047)				0 001 (0Z029)			
31										0 911 (0Z013)
33	0 995 (0Z000)	0 991 (0Z000)	0 995 (0Z000)	0 992 (0Z000)	0 995 (0Z000)	0 991 (0Z000)	0 995 (0Z000)	0 992 (0Z000)	0 995 (0Z000)	0 991 (0Z000)
11	0 346 (0Z000)	0 348 (0Z000)	0 306 (0Z000)	0 285 (0Z000)	0 341 (0Z000)	0 206 (0Z000)	0 333 (0Z000)	0 161 (0Z000)	0 274 (0Z000)	0 259 (0Z000)
21		0 313 (0Z037)	0 051 (0Z038)	−0 101 (0Z044)		0 143 (0Z009)	0 001 (0Z007)			
21			−0 369 (0Z000)							
22	0 154 (0Z000)	0 155 (0Z000)	0 127 (0Z000)	0 126 (0Z000)	0 151 (0Z000)	0 161 (0Z000)	−0 121 (0Z000)	0 134 (0Z000)	0 097 (0Z000)	0 099 (0Z000)
31		−0 375 (0Z008)				0 125 (0Z001)	−0 001 (0Z000)			0 234 (0Z044)
31		−0 401 (0Z046)			0 208 (0Z040	018040080411484186380380	001 (04)	74352322915	5179850	0848 (00)	75(0)

Note: P-values are calculated using the quasi-maximum likelihood method of Bollerslev and Wooldridge (1992), which is robust to the distribution of the underlying residuals. Parameters not statistically significant at the 5% level are not reported. LB and LB^2 are the Ljung-Box test (1978) of significance of autocorrelations of ten lags in the standardized and standardized squared residuals respectively. The parameters $_{12}$ and $_{13}$ measure the Granger causality effect of domestic and USA (Euro area) news on exchange rates respectively, . $_{21}$ and $_{31}$ measure the causality in variance effect. The effect of the 2008 financial crises on exchange rates is measured by ($_{12}$ + $_{12}$) and ($_{13}$ + $_{13}$) whereas ($_{21}$ + $_{21}$) and ($_{31}$ + $_{31}$) capture the effect on exchange rate return volatilities. The covariance stationarity condition is satisfied by all the estimated models, all the eigenvalues of $_{11}$ $_{11}$ + $_{11}$ $_{11}$ being less than one in modulus.