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Investor reactions to news: an analysis of the euro-dollar exchange rate

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INVESTOR REACTIONS TO NEWS: 
AN ANALYSIS OF THE EURO-DOLLAR EXCHANGE RATE

Henriëtte Prast* and Marc de Vor**

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Abstract

This paper investigates whether the fall in the euro-dollar exchange rate in the course of 2000 can be partly attributed to asymmetric reactions by investors to economic and political news. We have studied the daily euro-dollar exchange rate changes recorded from 1 April 2000 to the first co-ordinated exchange rate intervention on 22 September 2000, regressing these changes on economic and political news items about the US and the euro area. The paper suggests that investors’ response to news about the US differs from that to news about the euro area. Specifically, the exchange rate did not respond to economic news about the euro area, whereas it did to US economic news. There are indications that the opposite holds true in respect of political news. Moreover, the paper shows a difference in the magnitude in the reaction to ‘good’ and ‘bad’ news items, which may suggest some additional news filtering by investors (cognitive dissonance). These asymmetric reaction pattern may explain at least partly why, contrary to what exchange rate theory would predict, the recovery of the economy in the euro area in the course of 2000 was not followed by an appreciation of the euro vis-à-vis the dollar. Importantly, given the relevance of political euro area news to investors, politicians and central bankers face the challenge to convince market participants of the viability of EMU.

Key words: behavioural finance, information filtering and exchange rates.

JEL codes: D83, F31 and G14.

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1 Introduction

It has been argued, both by public authorities and in academic circles, that the fall of the exchange rate of the euro vis-à-vis the US dollar in the course of 2000 was difficult to explain on the basis of economic fundamentals only. Especially when the economic growth differential between the US and the euro area started to narrow in the second quarter of 2000, it was suggested by, for example, Welteke [2000], Wellink [2000] and De Grauwe [2000] that investor sentiments might account at least partly for the weakening of the euro (see Figure 1 for the euro-dollar exchange rate since 1 January 1999). The aim of this paper is to assess this issue empirically. In particular, it will be investigated whether the exchange rate movement in response to news about the US differed from that to news about the euro area. To this end, we have studied the daily euro-dollar exchange rate changes recorded from 1 April 2000 to the first co-ordinated exchange rate intervention on 22 September 2000, regressing these changes on economic and political news about the US and the euro area. In addition, we have assessed whether the exchange rate reacted differently to good and bad news.

Our findings suggest that investors in foreign exchange markets do not react alike, indeed, to news about the US and the euro area. In fact, the exchange rate did not respond to economic news about the euro area, whereas it did to US economic news. This may explain at least partly why, contrary to what exchange rate theory would predict, the recovery of the economy in the euro area in the course of 2000 was not followed by an appreciation of the euro vis-à-vis the dollar. For political news – basically referring to statements by central bankers and politicians about monetary and exchange rate policy – there are indications that the opposite holds true. This asymmetric reaction pattern may be related to the ECB not having an established reputation yet, and investors being focussed on the political, rather than the economic viability of the Economic and Monetary Union (EMU).

The paper is structured as follows. The next section briefly describes a few phenomena in asset markets where asymmetric reactions to news and investor sentiments may have played a role. In section 3 the method and data of our empirical analysis are outlined. Section 4 presents the results, and section 5 provides a sensitivity analysis. The conclusions are summarised in section 6.

2 Examples of news filtering

In general, economic theory assumes that agents gather, process and interpret information in a rational way. While this assumption is no doubt useful for building models of market behaviour,
economists – as e.g. North [1990] has pointed out – can enhance their understanding of many phenomena by allowing for other behavioural aspects in their models. Both theoretical research and empirical evidence by cognitive psychologists on the processing of information has shown that individuals exhibit a bias in processing information. Festinger [1957] was the first to develop a theory of cognitive dissonance, which states that information is selected in order to make it correspond to the opinion already held by individuals. According to Kindleberger [1996], cognitive dissonance is an important source of herding in financial markets. Recently, the hypothesis that news filtering may play a role in explaining price movements in financial markets has been the subject of a number of empirical studies. Thus, Ayrer, Upper and Werner [2001] find that during the boom on the stock market in late 1999 and early 2000, new-economy stocks in Germany reacted more strongly to positive news than did old-economy equity, whereas there were no discernible effects in the reaction to negative news. During the period of declining prices after March 2000, however, it was the reaction to negative news that was more pronounced for new-economy stocks than for old-economy stocks, while no significant difference in the reaction to positive news was found. Similar research by Keijer and Prast [2001] also shows that the hype in technology shares on the Amsterdam Stock Exchange (AEX) was at least partly due to a biased reaction by investors to news about the IT sector. They find that the increase in IT-prices following good news about this sector was significantly larger than the decrease in case of unfavourable news releases.

Another example is related to the performance of newcomers on the Amsterdam stock market. Research covering the period 1983-1999 indicates that from the third year after their initial
public offering, the performance of newcomers on the Amsterdam stock market, measured in terms of their share prices, trails that of established firms, and that in the fifth year the difference amounts to 30% [Bosveld and Venneman, 2000]. Further analysis shows that from the first year after their introduction, growth figures and profits of newcomers declined. This is not reflected in the stock prices, however, until the third year. Hence, investors show a long lag in their reaction to bad news about newcomers, something the researchers are unable to explain.

Kaminsky and Schmukler [1999], finally, in an attempt to account for the twenty largest one-day swings in stock prices in nine Asian countries during 1997 and 1998, found that some of these swings cannot be explained by economic or political news only. Their evidence indicates that with the deepening of the crisis stock prices overreact, as investors react more strongly to bad news than to good news. They suggest that bad news in periods of crisis may increase uncertainty and promote herd behaviour.²

3 Method and data

The impact of news on exchange rates has been the subject of extensive research, although most studies concentrate on announcements of US macroeconomic data [Edison, 1996]. More recently, studies have been undertaken to analyse the effects of economic news released in the UK, Germany and Australia [Clare and Courtenay, 2000]. Our approach differs in a number of respects as we include statements by central bankers and politicians, as well as political events, as explanatory variables. Moreover, by distinguishing between good and bad news, we assess to what extent investors filter information. Specifically, it will be verified whether they have an a priori, perhaps irrational, dislike for the euro, which would make them react more strongly to bad news than to good news about the euro area. The approach used in this paper is similar to the one undertaken by Kaminsky and Schmukler [1999; see previous section]. In order to test the hypothesis of potentially biased response to news, we have studied the daily effect on the euro-dollar exchange rate of news in the period from 1 April 2000 until the co-ordinated exchange-rate intervention on 22 September 2000. From the second quarter of 2000 the economic growth differential between the US and the euro area narrowed (see Figure 2), and increasingly positive euro area news was released.

We have used the electronic real time news of the Dutch financial newspaper ‘Het Financieele Dagblad’ as source of information. It has been verified that this information is consistent with alternative news sources such as Bloomberg. Included in the analysis are the relevant news items released during the 24 hours before the ECB fixing euro (2.15 PM European Standard Time).
The relevant economic news variables include three categories: real economic variables (economic growth, industrial production, (un)employment rates, confidence indicators, trade deficits, budget deficits and changes in the fields of taxes and social security systems), inflation, and statements by central bankers and politicians about monetary and exchange rate policy. For reasons of symmetry, only news items referring to the euro area as a whole and/or to the three largest countries – Germany, France and Italy – have been taken into account. Likewise, news items referring to single US states have not been taken into account.

Table 1 summarises the data set. The narrowing growth differential between the US and the euro area is broadly reflected in the numbers of favourable and unfavourable news items about the real economy and inflation in both economic areas: regarding the euro area, there were more favourable news items about the real economy than unfavourable ones, whereas inflation news was on balance unfavourable. The opposite pattern is observed for the US. Table 1 also shows that there were more statements about the euro-dollar exchange rate from euro area officials than from US officials. This is partly related to the fact that the euro area, being composed of 11 countries in this period, simply numbers more central bankers and politicians that may express their opinions about the exchange rate. Moreover, the decline of the euro itself has often prompted euro area officials to address the exchange rate issue on a frequent basis.

It should be emphasised that these news items may be thought of as reflecting changes in fundamentals. Relevant information is incorporated into market prices; hence an analysis of daily exchange rate changes should concentrate on the new information releases in the interval between the previous and the current exchange rate. Obviously, there may be intra-day movements in response to news, but we have confined our analysis to daily figures.

Figure 2 Gross domestic product
Percentage change on previous corresponding period

![GDP Chart](chart.png)

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Where possible, the announcements of news figures are compared with consensus forecasts by market participants. An unexpected increase in real economic activity is assumed to be good news, whereas inflation figures exceeding market expectations are classified as unfavourable. Statements by central bankers hinting at future interest rate increases are classified as favourable. Statements by politicians interfering with monetary policy are categorised as unfavourable, because it is generally assumed that independent central banks have more credibility in safeguarding the internal and external value of their currencies. This applies especially to the euro area, where the Eurosystem decides on monetary policy for an area currently covering twelve countries, all with their own governments.

4 Results

What news affects daily exchange rate movements?

To examine the impact of economic news and statements/political events on the euro-dollar exchange rate, we have run a regression of the changes in the euro-dollar exchange rate on the news variables mentioned above. The news categories are transformed into separate dummy variables. The regression equation is:

\[
(1) \ (E_t - E_{t-1})/E_{t-1} = \alpha + \beta_i D_{i,t} + \epsilon_t.
\]

\[(i = 1,2,\ldots,6)\]
where \((E_t - E_{t-1})/E_{t-1}\) is the percentage change in the euro-dollar exchange rate between t-1 (2.15 PM) and t (2.15 PM). \(D_i\) (i = 1…7) represent dummy variables reflecting news about, respectively, the euro area real economy, euro area inflation, and political news concerning the euro area, the US real economy, US inflation and political news concerning the US in the same period. We have also run regressions including official interest rate changes by the ECB and the Fed as separate news variables, but these explanatory variables did not turn out to be significant. This may be because they were mostly anticipated by market participants, and hence incorporated into the exchange rate. Moreover, there were but a few official interest changes. Each dummy variable takes a value of +1 if the relevant news is favourable, –1 if it is unfavourable, and 0 if there was no news. For example, the ‘real economy’ variable takes the value +1 if the release suggests a better outlook for the real economy, -1 if the outlook is worse and 0 otherwise.

Our approach implies that all news items are considered equally important, as we have proceeded from the assumption that the press, in selecting items worth publishing as news, applies a selection mechanism based on the importance of new information. Our method enables us to include news that is not of a quantitative nature. Indeed, it is generally acknowledged that messages by central bankers and politicians influence market behaviour even if they do not contain figures. Moreover, it should be borne in mind that our focus is not so much on the elasticity of the exchange rate in respect of, say, a change in the trade balance, as on whether the reaction pattern of investors depends on the news item being about the euro area or the US. However, on the account of the uniform weighting of events the dummy approach involves a measurement error, resulting in a downward bias of the coefficients, and implying an increase in the standard error. Therefore, the analysis may lead to an underestimation of the importance of the explanatory variables.4

Table 2 gives the regression results of Equation 1. As is clear, all coefficients, except those for euro area inflation news, have signs that are in accordance with intuition. Thus, good news about the real economy of the euro area and favourable statements have a positive effect on the euro-dollar exchange rate, whereas the coefficients of US dummies in these different categories have a minus sign. Furthermore, the effect of news about the real economy of the euro area is not significant, whereas that of real economic US news is, with a 99% confidence level. In addition, statements regarding the euro area are significant (at a 99% confidence level), whereas those regarding the US are not. Finally, the constant has a negative sign, suggesting a downward trend in the exchange rate, but it is not significant.
The finding that US economic news has a significant impact illustrates the dominance of the US economy on foreign exchange markets. Furthermore, the sensitivity of the euro to statements may be related to the ECB not having an established reputation yet, and to investors looking for a pattern in ECB monetary policy. Moreover, they may regard political rather than economic circumstances as a relevant factor for monetary developments and stability in the euro area. In their eyes, these factors are not that important in the US.

Do investors react differently to good and bad news?

We now turn to the question whether there is evidence that the fall of the euro exchange rate during the second and third quarters of 2000 can be explained in part by an asymmetric reaction to good and bad news, which in turn might be attributed to the tendency to reduce cognitive dissonance. We assume that the investors’ framework of reference, to use Festinger’s terminology, about the euro area is unfavourable compared with that about the US economy. The reason for this unfavourable framework may be market participants’ fear of political interference with the ECB’s monetary policy. Also, investors may have doubts about the feasibility of a monetary union without a political or fiscal union, as well as concerns about the eastward expansion of the EU. Given this assumption, the theory of cognitive dissonance predicts that market participants filter news in a biased way,

Table 2 Regression results of equation (1)

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent change in euro-dollar exchange rate †</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.10</td>
</tr>
<tr>
<td>Real economy, euro area</td>
<td>0.05</td>
</tr>
<tr>
<td>Real economy, US</td>
<td>-0.32 ***</td>
</tr>
<tr>
<td>Inflation, euro area</td>
<td>-0.04</td>
</tr>
<tr>
<td>Inflation, US</td>
<td>0.13</td>
</tr>
<tr>
<td>Statements/political events, euro area</td>
<td>0.33 ***</td>
</tr>
<tr>
<td>Statements/political events, US</td>
<td>-0.29</td>
</tr>
</tbody>
</table>

| Number of observations | 124 | D-W statistic | 2.02 |
| Method                 | OLS | F-statistic   | 2.62 |
| R²                     | 0.12 |
| Adjusted R²            | 0.07 |

Note: *** indicates significance at 99% confidence level.
† Dollar per euro.
paying more attention to bad than to good news about the euro area, whereas news about the US 
economy is treated in the opposite way. To assess whether this may be the case, we split up the news 
releases into good and bad information, and constructed good (bad) news dummies taking on a value 
of 1 if there is good news, -1 if there is bad news and 0 if there is no news in that particular area. We 
ran the following regression:

\[
\frac{(E_t - E_{t-1})}{E_{t-1}} = \alpha + \beta_1 GEA^e_t + \beta_2 BEA^e_t + \beta_3 GUS^e_t + \beta_4 BUS^e_t + \beta_5 GEA^p_t + \beta_6 BEA^p_t + \beta_7 GUS^p_t + \beta_8 BUS^p_t + \epsilon_t,
\]

where \( (E_t - E_{t-1})/E_{t-1} \) is the percentage change in the euro-dollar exchange rate between t-1 (2.15 PM) and t (2.15 PM), where GEA and GUS are dummies for good news about the euro area and the US, respectively, and BEA and BUS dummy variables reflecting bad news about these respective 
areas. The superscript e indicates economic news; the superscript p indicates political news. Being 
far from significant in Equation 1, inflation news and the no news dummy were left out. Regression 
results not shown here indicate that inclusion of those variables would not have altered our 
conclusions.

From Table 3 several conclusions can be drawn. First, it is obvious that investors do not 
react differently to good and bad economic news about the euro area: neither good nor bad economic 
news has a significant effect on the exchange rate. Second, both good and bad economic news about 
the US affects the exchange rate significantly, if a 90% confidence level is accepted. The positive 
reaction of the euro to bad economic US news about equals the negative reaction to good economic 
US news. Third, favourable statements about the euro area and the US have a significant effect on 
the euro-dollar exchange rate, whereas the influence of unfavourable statements is not significant.

Summarising, the results confirm the asymmetry in investors’ response to news, in the sense 
that the nature of the reaction depends on where the news comes from. This outcome may explain 
why the upswing of the business cycle in the euro area starting in the first half of 2001 did not have 
the hoped-for effect on the euro. It also indicates that those who argued that the fall of the euro could 
hardly be explained by economic fundamentals were right. In addition, we have found a difference 
in the magnitude of the reaction to good and bad political news, which may imply some news 
filtering by investors.
5 Sensitivity analysis

In the previous section, we arrived at some conclusions about asymmetries in investor reactions to news on the basis of a regression analysis of daily exchange rate changes, where the explanatory variables were dummies reflecting news about economic and political fundamentals. It could be argued that, in addition to daily news, there are fundamental factors influencing exchange rates that are not reflected in news releases. In fact, our regression analysis explains no more than a fraction of the daily exchange rate movements.

The purpose of this section is to verify whether introduction of variables other than those found in news releases fundamentally changes the results. We have run regressions again using the dummies introduced in the previous section, but adding several control variables, such as the short-term and long-term interest rate differential between the US and euro area, the future euro-dollar exchange rate, and the difference in movement between the euro stock market index and Standard & Poor’s US stock market index. These variables can be regarded as proxies for differences between the economic outlook for the euro area and that for the US. For example, long-term interest rates can be regarded as an indication of the expectations about future short-term interest rates and

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Dependent variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.14</td>
<td>-0.86</td>
<td></td>
</tr>
<tr>
<td>Good economic news, euro area</td>
<td>0.10</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Bad economic news, euro area</td>
<td>-0.05</td>
<td>-0.27</td>
<td></td>
</tr>
<tr>
<td>Good economic news, US</td>
<td>-0.30 *</td>
<td>-1.70</td>
<td></td>
</tr>
<tr>
<td>Bad economic news, US</td>
<td>0.33 *</td>
<td>1.83</td>
<td></td>
</tr>
<tr>
<td>Good statements/political events, euro area</td>
<td>0.42 **</td>
<td>2.23</td>
<td></td>
</tr>
<tr>
<td>Bad statements/political events, euro area</td>
<td>-0.25</td>
<td>-1.37</td>
<td></td>
</tr>
<tr>
<td>Good statements/political events, US</td>
<td>-1.54 *</td>
<td>-1.94</td>
<td></td>
</tr>
<tr>
<td>Bad statements/political events, US</td>
<td>-0.01</td>
<td>-0.04</td>
<td></td>
</tr>
</tbody>
</table>

Note: * indicates statistical significance at a 90% confidence level; ** indicates significance at a 95% confidence level.

$^1$ Dollar per euro.
inflation, whereas the forward exchange rate reflects market expectations about exchange rates and interest rate differentials. Stock market developments might also be regarded as leading indicators.

In interpreting the outcomes it should be borne in mind that, reflecting market expectations, these variables might be subject to biases in information gathering and interpretation. Hence, if biased filtering is a phenomenon to be reckoned with, these expectations might be biased as well. Moreover, it is likely that at least some of them – notably, the forward exchange rate – depend on such news variables as we use to explain the spot exchange rate (multicollinearity).

The regression results of our sensitivity analysis are presented in Table 4. Inclusion of the variables mentioned above does not fundamentally change the results. Both the long-term interest rate differential (Table 4, column b) and the future euro-dollar exchange rate (column d) account for much of the change of the euro-dollar exchange rate, whereas the difference in stock market indices (column 4a) and the short-term interest rate differential (column 4e) is non-significant. Clearly, the future euro-dollar exchange rate enhances the explanatory value of the regression substantially: the R-squared rises to about 0.57. This is not surprising, as it merely reflects that the spot and future exchange rate both depend to a large degree on identical third factors. Economic news about the US, good or bad, is significant at a 90% confidence level when the difference in the stock market indices (column a) or the differences between short-term and long-term interest rates (column b and e) are included. Favourable policy news about the euro area remains significant at a 95% confidence level in these three columns, whereas economic news about the euro area continues to be insignificant. Combining the long-term interest rate differential and the future euro-dollar exchange rate (column c) weakens the results in the sense that only bad economic US news and good policy news about the euro area are significant at a 90% confidence level. When the future euro-dollar exchange rate is added without any other control variable (column d), none of the news categories is significant. As stated above, this result may not be of much use, as it is due to the aforementioned problem of multicollinearity.

6 Conclusion

In this paper we studied the reactions of the euro-dollar exchange rate to economic and political news about the euro area and the US. Our aim was to assess whether the changes in the exchange rate can be attributed partly to biased information filtering by market participants. Given the nature of the data set, the results should be interpreted with caution. Nonetheless, it appears that there are asymmetries in the reaction pattern to news. Investors focus on political news and central bank statements as far as the euro area is concerned, whereas they pay less attention to economic news.
For news about the US our analysis suggests that the opposite holds: economic news is important, political news is less so. The asymmetry of this pattern may explain why the narrowing of the economic growth differential between the US and the euro area starting in the first half of 2001 did not cause the euro to appreciate. Investors simply ignored the relatively positive economic news releases about the euro area.

We have also found some difference in magnitude in the reaction to good and bad news. However, investors do not seem to close their eyes to favourable euro news while welcoming good US news. Rather, they seem to be concerned with the viability of EMU and with the credibility of ECB monetary policy. This may in turn be related to the historical fact that monetary unions without political union did not survive.7 Obviously, for the markets the proof of the pudding is in the eating, and market participants need more reassurance that EMU is viable. Politicians and central bankers in the euro area are now faced with the challenge to convince market participants of the viability of monetary union without political union, about the independence of the ECB and about the quality of monetary management in the euro area.

Table 4 Sensitivity analysis

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>4a</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>4b</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>4c</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>4d</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>4e</th>
<th>Coefficient</th>
<th>t-Statistic</th>
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</thead>
<tbody>
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<td>Constant</td>
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<td>-0.24</td>
<td>-0.89</td>
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<td>-0.03</td>
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<td></td>
<td>-0.11</td>
<td>-0.22</td>
<td></td>
</tr>
<tr>
<td>Good economic news, euro area</td>
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<td>0.39</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
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<td>-0.02</td>
<td>0.16</td>
<td></td>
<td>0.10</td>
<td>0.60</td>
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</tr>
<tr>
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<td>-0.19</td>
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<td>-0.15</td>
<td>-1.06</td>
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<td>-0.37</td>
<td></td>
<td>-0.05</td>
<td>-0.27</td>
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</tr>
<tr>
<td>Good economic news, US</td>
<td>-0.30</td>
<td>* -1.62</td>
<td></td>
<td>-0.30</td>
<td>* -1.65</td>
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<td>-1.44</td>
<td></td>
<td>-0.20</td>
<td>-1.59</td>
<td></td>
<td>-0.30</td>
<td>* -1.68</td>
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</tr>
<tr>
<td>Bad economic news, US</td>
<td>0.41</td>
<td>** 2.23</td>
<td></td>
<td>0.34</td>
<td>* 1.86</td>
<td></td>
<td>0.24</td>
<td>1.88</td>
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<td>0.20</td>
<td>1.55</td>
<td></td>
<td>0.31</td>
<td>** 1.82</td>
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</tr>
<tr>
<td>Good statements/political events, euro area</td>
<td>0.46</td>
<td>** 2.42</td>
<td></td>
<td>0.44</td>
<td>** 2.27</td>
<td></td>
<td>0.24</td>
<td>1.80</td>
<td></td>
<td>0.18</td>
<td>1.34</td>
<td></td>
<td>0.42</td>
<td>** 2.22</td>
<td></td>
</tr>
<tr>
<td>Bad statements/political events, euro area</td>
<td>-0.29</td>
<td>-1.60</td>
<td></td>
<td>-0.21</td>
<td>-1.17</td>
<td></td>
<td>-0.09</td>
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<tr>
<td>Good statements/political events, US</td>
<td>-1.52</td>
<td>** -1.92</td>
<td></td>
<td>-1.72</td>
<td>** -2.18</td>
<td></td>
<td>-0.45</td>
<td>-0.78</td>
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<td>-1.54</td>
<td>-1.92</td>
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<tr>
<td>Bad statements/political events, US</td>
<td>0.08</td>
<td>0.19</td>
<td></td>
<td>0.10</td>
<td>0.27</td>
<td></td>
<td>0.16</td>
<td>0.60</td>
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<td>-0.01</td>
<td>-0.03</td>
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<td>Euro Stoxx/S&amp;P500 Composite</td>
<td>-0.09</td>
<td>-1.50</td>
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<tr>
<td>Ecart 10 year bonds US/Germany</td>
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<tr>
<td>Future AEX euro/dollar</td>
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<td></td>
<td></td>
<td>0.82</td>
<td>** 2.05</td>
<td>0.26</td>
<td>0.88</td>
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<tr>
<td>Ecart 3-month euribor/US T-Bills</td>
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<td></td>
<td>0.77</td>
<td>*** 10.40</td>
<td>0.75</td>
<td>10.74</td>
<td>-0.02</td>
<td>0.05</td>
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Note: * indicates statistical significance at a 90% confidence level; ** indicates significance at a 95% confidence level, *** indicates significance at a 99% confidence level.
References


Het Financieele Dagblad, various issues, January 1, 1999 – August 19, 2000


NOTES

1 In fact, behavioural finance theory uses insights from cognitive psychology to build theoretical models of investor behaviour that explain observed phenomena which do not seem to fit in completely with conventional rational expectations theory. See, e.g., Barberis, N., A. Shleifer and R. Vishny [1998].

2 In an earlier paper, we used the approach of Kaminsky and Schmukler to study the largest movements in the exchange rate of the euro versus the US dollar from 1 January 1999 through 22 September 2000 [Prast and De Vor, 2001]. Our main conclusions on the basis of those data are that on the days of large movements the impact of news about the US real economy on the exchange rate is significant, whereas the impact of news about the real economy of the euro area is not. Moreover, our analysis indicated that investors react to good inflation news in the euro area by turning away from the euro, possibly because market participants regard such inflation figures as indicative of the ECB’s policy not to increase the official interest rate in the near future. This effect was not found for inflation news about the United States, however. Our interpretation was that investors are still searching for a pattern in the ECB’s monetary policy.

3 It may be argued that any statement by a central banker should be interpreted as a hint at future interest rate policy. However, such may not be the case in all instances, because central bankers also tend to give pep talks and issue warnings, as is confirmed by their press secretaries.

4 In general, measurement errors can substantially alter the properties of the estimated regression parameters. Specifically, least-squares estimates of the regression parameters will be biased and inconsistent, the degree of bias and inconsistency being related to the variance of the measurement error. An evaluation of the estimates of the regression parameters in the limit as the sample gets large, may show that the presence of the measurement error – as is the case in our dummy analysis – leads to an underestimate of the true regression parameters if ordinary least-squares techniques are used (see, for example, Pindyck and Rubinfeld, 1991, pp. 159-161).

5 As far as economic growth figures are concerned, no daily figures are available. We have used monthly data and divided them by the number of working days. This variable did not turn out to be significant, however.

6 For an analysis on the term structure and on market expectations, see Mishkin [1990] and Söderlind and Svensson [1997], respectively.

7 See Vanthoor, W.F.V. [1996], who discusses the German-Austrian Monetary Union (1857-1867), the Latin Monetary Union (1865-1926), which included France, Italy, Belgium, Switzerland and later Greece, and the Scandinavian Monetary Union (1873-1931). These unions are similar to EMU in that there was no political integration. An important difference with EMU was, however, that the countries had maintained their own currencies, a situation more or less similar to the transition period between January 1, 1999, and the final moment of changeover in 2002. It was therefore less costly for those monetary unions to fall apart.