The Effects of Announcements of Leading and Sentiments Indicators on Euro Area Financial Markets

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Abstract

We quantify the effect of announcements of the Purchasing Manager's Index and the Consumer Confidence Indicator on Euro Area financial markets. We consider the effects on stock market returns and sovereign bond yields for Germany, France, Italy and Spain, and on the Euro exchange rate, for the period between 2003 and 2014. All financial markets are affected by the Purchasing Manager's Index announcements, in particular by negative announcements during the Euro Area crisis. Consumer confidence impacted financial markets before the crisis.

Keywords: Macroeconomic announcements, leading indicators, sentiments indicators, European financial markets, bond market, stock market, exchange rate market.

JEL Codes: G14, G10, F4.

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1. Introduction

Do announcements of economic indicators affect financial market returns? This question is posed in many papers that attempt to understand the relation between economic variables and financial markets. Financial markets reflect investors' expectations regarding the evolution of specific firms or industries but also regarding the future general conditions of the economy. The announcement of macroeconomic indicators plays a role in forming these expectations.

We study the effect of the announcement of two economic indicators: the Purchasing Managers' Index and the consumer confidence indicator. These indicators are of special importance to investors because they anticipate the short-term evolution of the economic environment of a country. Several papers study the impact of announcements of different economic indicators; however, to the best of our knowledge, few studies focus on leading or sentiment indicators, and none do it for countries in the Euro Area.

As shown by Nelson (1976), one of the main problems in measuring the effects of economic indicators on financial markets is that both sets of data are solely available at different frequencies. Although financial data can be obtained for daily, hourly or multi-minute intervals, macroeconomic indicators are produced by ministries or statistical agencies and released once a month or once a quarter. This has led to different means by which the relation between economic and financial variables has been studied. One strand of the literature, i.e., Chen, Roll and Ross (1986) or Cutler, Poterba and Summers (1989), uses monthly measures of stock returns on which the different macroeconomic variables are regressed. Another strand focuses on event studies: using daily or higher frequency data to measure the impact of macroeconomic announcements on financial markets in the precise moment in which they occur. This

allows us to test whether the releases of certain economic indicators transmit new information to investors and impact financial prices.

The second method has been applied in several papers. Using daily US data, Pearce and Roley (1985) study the impact of monetary, inflation and real economy announcements. The researchers find that surprises in money supply and the discount rate announcements significantly affect stock returns; however, among the non-monetary variables, they only find surprises in the producer price index to have a negative and significant effect on stock returns in a 2-year subsample of their dataset. Hardouvelis (1987) identifies surprises in free reserve announcements as the monetary announcement with the strongest impact on stock returns. The researcher also finds that stock returns respond to announcements of personal income, trade deficit and unemployment. Flannery and Protopapadakis (2002) find stronger evidence for inflation surprises, both in the consumer and producer price index, that significantly reduce stock returns. Bernanke and Kuttner (2005) report a strong reaction in the stock market to changes in the target of the federal funds rate. More recent studies use high frequency data in 5-minute intervals, such as Huang (2007), who studies US stock and bond markets, and Andersen, Bollerslev, Diebold and Vega (2007), who also incorporate foreign exchange markets and include German and British financial markets. Both find that announcements generate jumps in asset prices, which are particularly strong for bond markets. Chen and Gau (2010) study the euro/US dollar and Japanese yen/US dollar markets and find that announcements have a larger impact on futures than on spot markets (particularly the announcements of GDP, employment and durable goods orders). Paiardini (2014) studies the effect of announcements of 68 indicators on Italian bond market between 2004 and 2006, and finds that 25 of them affect affects prices within 20 minutes of the announcements.

Macroeconomic announcements also affect other characteristics of financial markets. Jones, Lamont and Lumsdaine (1998) study volatility in bond markets, which is significantly boosted on the days of producer price index or employment announcements. Bomfim (2003) focuses on monetary policy and stock markets. The researcher finds that there is low volatility preceding scheduled meetings of the Federal Open Market Committee, whereas it increases when there are surprises in the actual interest rate decisions. Rangel (2011) finds that the effect of monetary policy and employment surprises on the stock market volatility is short-lived, whereas the effect of an inflation surprise is more persistent. Other papers study bond-stock market correlations, which are important for capital allocation decisions (see Christiansen and Ranaldo 2007; Yang, Zhou and Wang 2009; Schopen and Missong 2011).

A more recent trend has been the study of the announcements of sovereign bond rating changes. Downgrades are associated with lower stock returns (Ferreira and Gama 2007; Hooper, Hume and Kim 2008), increased bond yields and CDS spreads (Afonso, Furceri and Gomes 2012) and increments in volatility in both bond and stock markets (Afonso, Gomes and Taamouti 2013). Upgrades are not significant in many cases or produce an effect with a much lower magnitude.

There are two contributions of this paper to the existing literature. First, although most of the previous papers study the US financial markets, we focus on the stock, bond and foreign exchange markets of four European countries: Germany, France, Italy and Spain. The second contribution is the economic indicators we study. In contrast to most of the previous literature that focuses on monetary or real macroeconomic indicators, we study the effect of the announcements of leading indicators, indicators that anticipate the evolution of the economy. We chose the Purchasing Managers' Index and the Consumer Confidence Indicator. The Purchasing Managers' Index (PMI) is a leading

indicator for the supply side of a country. The index is composed of the information completed by manufacturing and service firms in monthly surveys in which they inform of their current level of output, new orders from customers, the quantity of purchases and suppliers' delivery times. The PMI provides information regarding the countries' current and expected level of business activity and is a good indicator to forecast upcoming expansions or recessions. Conversely, we chose the Consumer Confidence Indicator delineated by the European Commission that reflects people's expectations regarding the general economic situation and their personal finances over the following months. Because these expectations will determine consumers' future decisions, this is a leading indicator for the demand side of the economy. Recent macroeconomic literature has indeed signalled the importance of people's sentiment and expectations on the evolution of the economy. Several papers, such as those by Beaudry and Portier (2006) and La'O and Angeletos (2013), show that agents' expectations can be self-fulfilling and can drive real economic activity and business cycle fluctuations.

Our main purpose is to determine whether the release of these leading indicators affects European financial markets. We focus on stock, bond and foreign exchange (Euro/US Dollar and Euro/GB Pound) markets for the 2003 to 2014 period. We also test other properties of the announcements: whether the effects of positive or negative announcements are symmetric, or if the significance and magnitude of the effects has changed from the period before the financial crisis to subsequent years.

We find that stock, bond and foreign exchange markets are affected by the announcements of the selected indicators, particularly by the PMI announcements. Markets that experience the greatest impact are the stock markets in the four countries, and these are particularly impacted by negative surprises in the PMI announcement. The effect on bond markets is of a lower magnitude and is symmetric. The impact of the

PMI in most financial markets became significant after the beginning of the crisis in 2008, whereas before, investors were more reactive to the consumer confidence indicator announcement, which was negatively related to stock returns.

2. Data

The indicator we chose for the supply side of the economy is the Purchasing Managers' Index (PMI), produced by Markit Economics. This monthly survey-based indicator provides information on the stage of the business cycle that the manufacturing and service sectors of a country encounter. The company gathers variables that signal whether the country is experiencing a period of economic growth or slowdown. The index includes measures of the level of output, new orders from clients, and the employment or quantity of purchases, which reflect the pace of economic growth; measures of backlogs and suppliers' delivery time, which reflect demand and supply imbalances; and measures of input and output prices. The advantage of the PMI is that it is released earlier than other official indicators such as the industrial production index or the consumer and producer price indices. The PMI is individually produced for different economic sectors of many countries in the world, and here, we focus on the manufacturing and services sectors of the Eurozone aggregate. The announcements occur according to the following schedule: manufacturing PMI is released a couple of days in advance of the services PMI, and both announcements are released at 10:00 CET. Since June 2007, a preliminary indicator of both PMIs has been released approximately one or two weeks ahead of the final announcement. In this case, preliminary indicators for both sectors occur on the same day, at 10:00.

The Consumer Confidence Indicator measures how consumers, the demand side of the economy, expect their personal and general economic situation to evolve. We chose the confidence indicator published by the Directorate of Economic and Financial

Affairs of the European Commission, which includes measures of the financial and general situation, unemployment and savings expected for the next 12 months. The European Commission gathers data from all 28 countries in the European Union and calculates individual consumer confidence indicators for each. However, we decided to study the announcements of the indicator for the Euro Area as a whole only because it is the most publicized and accessible, included in most investors' macroeconomic announcements agendas, and it can consequently have a higher impact in stock and bond markets. Every month a "Flash" or advanced Consumer Confidence Indicator is released at 16:00, and the final value is released a week later at 11.00 CET.

In addition to the data of the released values, to calculate the impact of the announcements, we also measure previous market expectations on these values. We use the average forecast of the Bloomberg survey, which is completed by independent analysts and institutions. All information regarding the total number of announcements and the first and last observations for each PMI and the Consumer Confidence Indicator is recorded in Table A1 in the Appendix, and the sources of all data are listed in the Data Appendix.

Regarding the financial data, we study stock, sovereign bond and foreign exchange markets using daily data for the period between January 1st, 2000, and March 24th, 2015. For the stock markets, we use the main market indices of each of the countries: DAX 30 for Germany, CAC 40 for France, FTSE MIB for Italy and IBEX 35 for Spain. We use closing prices to calculate stock returns. Regarding the bond markets, we use the daily yields of the 10-year sovereign bonds of each country. We use the 10-year bond because its yield, which is very sensitive to news, is commonly used to calculate the risk premium of a country. Finally, we use the daily Euro/US Dollar and Euro/GB Pound exchange rates.

3. Methodology

Our methodology to quantify the effect of the announcements has been widely used. We first consider that investors form their own expectations regarding the future and trade accordingly. Their expectations have previously been included in the prices before the announcement occurs. To measure the surprise that announcements cause, we need to include the difference between the actual released value and the investors' expectations. The released value can be over, under or in accordance with previous expectations, and that is what we call a positive surprise or good news, a negative surprise or bad news, or no news. In accordance with Andersen, Bollerslev, Diebold and Vega's (2007) "standardized news", we set the formula that defines surprises:

$$Surprise_t^i = \frac{Actual\ Value_t^i - Expected\ Value_t^i}{\hat{\sigma}^i}, \qquad i \in [PMI, CC] \tag{1}$$

where the surprises of each indicator *i* on every release day *t* are divided by their sample standard deviation. The use of standardized news allows us to better compare the coefficients associated with each indicator because they measure the effect in the markets of a standard deviation surprise.

We include two surprise variables: one for the PMI (supply side) and one for the Consumer Confidence announcements (demand side). For the Consumer Confidence variable, we simply use all of its historical surprises. For the PMI, we merge the surprises of both the manufacturing and services PMIs into a single variable.

We then run the following regression for each of the countries' stock and sovereign bond markets and the two foreign exchange markets:

$$R_t = \alpha + \beta^{PMI} Surprise_t^{PMI} + \beta^{CC} Surprise_t^{CC} + Controls_t + \varepsilon_t \tag{2}$$

where R_t represents, depending on the case, stock market returns at day *t*, calculated as $100 \cdot \log(p_t/p_{t-1})$; for the first difference in bond yields at day *t*, $\text{yield}_t - \text{yield}_{t-1}$; or for the foreign exchange market returns at day *t*, $100 \cdot \log(rate_t/rate_{t-1})$. β^i is the coefficient associated with the standard deviation surprise of each indicator *i*, and the controls we use in all regressions are year and month dummy variables.

In Section 5, we check for additional effects, for which we introduce modifications to Equation (2). We first test whether the magnitude of investors' reaction to announcements is different for positive and negative surprises. For this, we split the variable "surprise" of each indicator into two new variables, one called "positive surprise", which includes all announcements in which the actual value of an indicator exceeds previous market expectations, and the other called "negative surprise" that collects all announcements for which the actual value was lower than expected.

We then study whether there has been a change in investors' reaction to announcements after the crisis that began in 2008. A detailed explanation of the reasons of the change in sign in the relation between macroeconomic announcements and stock returns during expansionary and contractionary periods is well documented in McQueen and Roley (1993). We split our dataset into the periods before and after October 8th, 2008. We chose that specific reference date because it was the day in which, after several years of continuous increments in the interest rate, the European Central Bank decided for the first time to reduce it by 50 basis points.

4. Results

Table 1 shows the estimated impact of the two announcements on stock markets. There is strong evidence that PMI announcements affect stock markets in the expected direction in all four countries, particularly in Italy and France, where a standard

deviation surprise causes stock returns to increase by 0.40 and 0.38 percentage points. In Germany and Spain, the increase is 0.33 and 0.24 points.

For sovereign bond yields (Table 2), PMI announcements have an impact in every country except for Italy. The effect, although still highly significant, is now of a much lower magnitude than over stock market returns. A positive surprise causes bond yields to increase by approximately 0.01 percentage points in Germany, Spain and France. Because PMI provides information on the rhythm of the activity of firms in the Eurozone, a positive announcement on a given day may induce investors to focus their investments more on the stock market (which is more firm-related), rather than on the bond market; this explains the large increments on stock returns on days with positive surprises and the slight, but highly significant increase in bond yields.

We also notice from both tables that the announcement of the consumer confidence indicator has no effect on any of the markets and countries. Contrary to recent macroeconomic literature that emphasizes how people's expectations drive real economy fluctuations, we do not find the same evidence for their impact on financial markets. However, it appears reasonable that investors react more to supply-side announcements. First, PMI informs of real, measurable variables such as the level of output or business activity, or new purchases and orders, which will ultimately affect the real profits of the firms and the economic growth of a country. It is likely that because the PMI surveys are completed by the purchasing managers of firms, who have a more informed perspective, this also motivates investors to track PMI announcements. Conversely, the Consumer Confidence Indicator is based on more subjective and general perceptions of regular consumers.

Table 1

Impact of announcements on Stock Returns

Announcement	Germany Stock Returns	France Stock Returns	Italy Stock Returns	Spain Stock Returns
PMI	0.327	0.382	0.404	0.243
	[3.19]***	[3.84]***	[3.97]***	[2.41]**
Consumer Confidence	-0.034	-0.050	-0.043	-0.048
	[-0.37]	[-0.55]	[-0.47]	[-0.52]
R^2	0.008	0.007	0.007	0.004
Number of obs.	5560	5560	5560	5560

*, **, and *** represent significance at the 10%, 5%, and 1% level, respectively. T-statistics in square brackets. Year and month dummies are included as controls.

Table 2

Impact of announcements on Bond Yields

Announcement	Germany Bond Yield	France Bond Yield	Italy Bond Yield	Spain Bond Yield
PMI	0.013	0.010	0.006	0.011
	[4.47]***	[3.42]***	[1.39]	[2.70]***
Consumer Confidence	-0.003	-0.004	-0.005	-0.003
	[-1.12]	[-1.39]	[-1.29]	[-0.76]
R^2	0.008	0.007	0.006	0.005
Number of obs.	5560	5560	5560	5560

*, **, and *** represent significance at the 10%, 5%, and 1% level, respectively. T-statistics in square brackets. Year and month dummies are included as controls.

Table 3

Impact of announcements on Exchange Rate Returns

Announcement	Euro / US Dollar	Euro / GB Pound
PMI	0.042	0.076
	[0.98]	[2.24]**
Consumer Confidence	-0.021	-0.007
	[-0.54]	[-0.24]
R^2	0.005	0.006
Number of obs.	5560	5560

*, **, and *** represent significance at the 10%, 5%, and 1% level, respectively. T-statistics in square brackets. Year and month dummies are included as controls.

Regarding the two currency markets, seen in Table 3, we again find that only the PMI announcement has a positive impact over the euro, but only against the British pound. A positive surprise appreciates the euro by 0.08 percentage points.

The R^2 of the models is not very high; however, we are not attempting to find a model to explain stock returns, bond yields, or exchange rates. Our interest lies solely in the effects of certain announcements on certain particular release dates.

5. Additional results

- *Do positive and negative surprises have the same effect?*

We study the possibility that investors provide more importance to news when they receive a positive or a negative surprise. For the cases in which we identified the impact of certain announcements, we can observe whether this impact was driven by announcements above or under investors' expectations (refer to tables A2, A3 and A4 in the Appendix.)

For the stock market, the PMI impact on returns is exclusively driven by negative surprises in the four countries. Because we are now omitting all non-significant positive surprises, the impact on stock returns is larger (at least doubling the magnitude of the impact obtained previously): a negative PMI surprise at its announcement drags returns by as much as 0.86 percentage points in Italy, 0.76 in France, 0.75 in Germany and 0.58 in Spain. A similar effect takes place in the case of the exchange rate between the euro and the British pound in which only negative surprises in the Eurozone PMI depreciate the euro by 0.11 percentage points, although in this case, the increase in the coefficient is less than double. Consistent with much previous literature, we find that investors react stronger to negative surprises than they do to positive, at least for stock markets and the particular case of the euro/pound market.

In contrast, in sovereign bond markets, the impact of PMI announcements appears to be more symmetric: both positive and negative surprises affect the bond yields by the same amount. Therefore, the magnitude of the coefficients remains the same as it was in the joint regression: in Germany, France and Spain, positive surprises increase bond yields by approximately 0.01 percentage points, and negative surprises decrease these by the same amount.

By this division, we are also able to identify the impact of an announcement that had previously been non-significant in all regressions: the consumer confidence indicator, which now affects the German and French bond yields. The German case is a suitable example to show that when both positive and negative announcements produce a reaction of the same direction in the yield (both positive and negative surprises reduce it by approximately 0.01 percentage points), we are solely able to observe the effects when we include separate coefficients. If we include all surprises in the same variable, as we did in the main results, the coefficient averages to zero and becomes non-significant. Furthermore, in France, only positive surprises of the consumer confidence affect bond yields, decreasing these by 0.01 points.

- *Response before and after the crisis*

We now test whether the effect of announcements on financial markets changed after the beginning of the crisis in October 2008 because many previous papers suggest that macroeconomic announcements impact investors' reactions differently, depending on the economic context (expansions vs. recessions) in which they occur.

What is apparent first is that the announcements of the consumer confidence indicator have a significant effect on the stock markets of all four countries for the period before the crisis and that this effect is negatively related to stock returns. A

positive surprise led to stock return decreases with magnitudes ranging from -0.46 percentage points in France to -0.36 percentage points in Spain. Consumer confidence also had an impact on German and French bond markets in which yields decreased by approximately 0.01 points with positive surprises. McQueen and Roley (1993) were the first to explain that during expansionary business cycles, the negative impact on the stock market of higher than expected news of real economic activity was explained by investors' fear that an overheating economy would make the Federal Reserve implement restrictive policies and increase interest rates. We can state that this statement is true not only for announcements of real economic variables but also for confidence announcements; in addition, we can also confirm that their explanation remains valid because during this first period between 2003 (our first data for the Consumer Confidence Indicator) and October 8th, 2008, the ECB had been gradually increasing the interest rate in the euro area.

Conversely, McQueen and Roley's paper also showed that a positive surprise of the same type of announcement during a recession had a positive effect on stock returns because they are now considered to be good news pointing to the end of the recession. However, we do not find strong evidence of this because after 2008, although consumer confidence announcements have a positive sign, none are significant. We find that rather than a change of sign in investors' reaction to a specific announcement, what changes is the type of indicators to which they react; after 2008, they start to care more regarding PMI announcements. All of the PMI effects that we found in the main results for stock and bond markets are primarily driven by the second period. The sole exception is the market for the euro/British pound exchange in which PMI surprises are significant solely during the first period.

6. Conclusions

We show that the announcements of several economic leading indicators affect the financial markets of several Eurozone countries. We chose a supply-side and a demand-side leading indicator, the Purchasing Managers' Index and the European Commission Consumer Confidence Indicator, and study a sample of stock, bond and foreign exchange market returns for the period between 2003 and 2014. The results show that the supply-side indicator has a strong impact in financial markets, particularly on stock markets. A standard positive surprise on the day of the PMI announcement increases stock returns in the four countries we focus on by as much as 0.40 and 0.38 percentage points in Italy and France. The effect on bond and foreign exchange markets is of a lower magnitude but still highly significant. A positive surprise increases bond yields by approximately 0.01 percentage points in Germany, Spain and France and appreciates the euro by 0.1 percentage points against the British pound.

PMI may be more influential than the Consumer Confidence Indicator because PMI content originates from the surveys completed by informed managers on more objective variables that are more closely related to firms' performance and the pace of activity growth. This may induce investors to maintain closer track of the announcements, whereas the Consumer Confidence Indicator is based on more subjective perceptions of regular citizens.

Additional results show that the impact of PMI announcements on stock markets and the euro is driven by the set of negative surprises, that is, when the announced value is less than expected by the markets. Solely considering negative surprises, the impact of an announcement on stock markets increases its magnitude by more than double. Furthermore, the impact of PMI surprises in bond markets appears symmetric, and both positive and negative surprises have an impact of 0.01 percentage points.

We also show that investors' reaction to economic sentiment announcements changed from the years before and after the crisis in 2008. The significance of PMI announcements started only after the beginning of the recession was more evident, at the end of 2008. During the previous periods, the Consumer Confidence Indicator had been the relevant announcement, particularly for stock markets, which experienced decreases in returns upon positive surprises by approximately -0.4 percentage points. This finding supports the theory that investors react negatively to positive surprises on economic announcements during periods of economic expansion because of the fear of the Central Bank's implementation of restrictive monetary policies.

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8. Appendix

Table A1

Number of observations for each announcement

Name	Start date	Number of announcements	End date
PMI manufacturing Eurozone	01/04/2006	196	16/12/2014
PMI services Eurozone	05/04/2006	195	16/12/2014
Consumer Confidence Indicator	31/01/2003	194	22/12/2014

Table A2

Impact of positive / negative announcements on Stock Returns

Announcement	Germany Stock Returns	France Stock Returns	Italy Stock Returns	Spain Stock Returns
PMI +	-0.178	-0.064	-0.130	-0.166
	[-1.16]	[-0.43]	[-0.85]	[-1.10]
PMI -	0.749	0.762	0.859	0.584
	[5.37]***	[5.62]***	[6.20]***	[4.25]***
Consumer Confidence +	-0.055	-0.140	-0.145	-0.055
	[-0.43]	[-1.12]	[.1.14]	[-0.44]
Consumer Confidence -	-0.003	0.060	0.082	-0.034
	[-0.02]	[0.45]	[0.60]	[-0.25]
R^2	0.0112	0.0100	0.0119	0.0068
Number of obs.	5560	5560	5560	5560

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Table A3

Impact of positive / negative announcements on Bond Yields

Announcement	Germany Bond Yield	France Bond Yield	Italy Bond Yield	Spain Bond Yield
PMI +	0.014	0.011	0.006	0.013
	[3.13]***	[2.60]***	[0.94]	[2.04]**
PMI -	0.013	0.009	0.005	0.010
	[3.36]***	[2.36]**	[0.94]	[1.69]*
Consumer Confidence +	-0.012	-0.010	-0.001	0.001
	[-3.38]***	[-2.76]***	[-0.25]	[0.10]
Consumer Confidence -	0.008	0.004	-0.009	-0.007
	[1.98]**	[0.93]	[-1.61]	[-1.21]
R^2	0.0106	0.0084	0.0065	0.0056
Number of obs.	5560	5560	5560	5560

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Table A4

Impact of positive / negative announcements on Exchange Rate Returns

Announcement	EURUSD	EURGBP
PMI +	-0.021 [-0.33]	0.036 [0.72]
PMI -	0.096 [1.64]	0.112 [2.43]**
Consumer Confidence +	-0.039 [-0.73]	-0.045 [-1.08]
Consumer Confidence -	0.001 [0.01]	0.037 [0.82]
R^2	0.0054	0.0070
Number of obs.	5560	5560

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Table A5

Impact on Stock Returns before and after 8 October 2008

Announcement	Germany Stock Returns	France Stock Returns	Italy Stock Returns	Spain Stock Returns
Before 8 October 2008				
PMI	-0.030 [-0.14]	0.161 [0.79]	0.116 [0.65]	0.257 [1.35]
Consumer Confidence	-0.404 [-2.45]**	-0.462 [-3.01]***	-0.429 [-3.17]***	-0.363 [-2.52]**
R^2	0.0099	0.009	0.0117	0.0088
Number of obs.	3201	3201	3201	3201
After 8 October 2008				
PMI	0.530 [3.76]***	0.443 [3.74]***	0.482 [3.50]***	0.234 [1.82]*
Consumer Confidence	0.146 [1.31]	0.152 [1.31]	0.140 [1.05]	0.097 [0.77]
R^2	0.0115	0.01	0.0102	0.0060
Number of obs.	2359	2359	2359	2359

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Table A6
Impact on Bond Yields before and after 8 October 2008

Announcement	Germany Bond Yield	France Bond Yield	Italy Bond Yield	Spain Bond Yield
Before 8 October 2008				
PMI	0.008 [1.52]	0.008 [1.41]	0.007 [1.22]	0.008 [1.43]
Consumer Confidence	-0.011 [-2.75]***	-0.008 [-1.86]*	0.001 [0.25]	-0.004 [-0.90]
R^2	0.0077	0.0058	0.0047	0.0053
Number of obs.	3201	3201	3201	3201
After 8 October 2008				
PMI	0.014 [3.78]***	0.010 [2.85]***	0.005 [0.90]	0.013 [1.91]*
Consumer Confidence	0.001 [0.30]	-0.002 [-0.46]	-0.008 [-1.29]	-0.003 [-0.45]
R^2	0.0128	0.0133	0.0093	0.0076
Number of obs.	2359	2359	2359	2359

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Table A7
Impact on Exchange Rate Returns before and after 8 October 2008

Announcement	Euro / US Dollar	Euro / GB Pound
Before 8 October 2008		
PMI	0.053 [0.61]	0.174 [2.69]***
Consumer Confidence	-0.037 [-0.57]	0.079 [1.63]
R^2	0.0065	0.0077
Number of obs.	3201	3201
After 8 October 2008		
PMI	0.039 [0.77]	0.056 [1.31]
Consumer Confidence	-0.013 [-0.25]	-0.044 [-1.06]
R^2	0.006	0.0146
Number of obs.	2359	2359

*, **, *** significance at 10%, 5%, 1%. T-statistics in square brackets. Year and month dummies are included as controls.

Data

Source: Bloomberg.

Sovereign bonds: GDBR10, GFRN10, GBTPGR10, GSPG10YR

Stock markets: DAX, CAC, FTSEMIB, IBEX

Foreign exchange market: EURUSD, GBPEUR

PMIs: PMITMEZ, PMITSEZ

Consumer Confidence Indicator: EUCCEMU