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ABSTRACT

Spread the News: How the Crisis Affected the Impact of News on the European Sovereign Bond Markets*

We investigate how "news" affected domestic interest spreads vis-à-vis Germany and how it propagated to other countries during the recent crisis period, thereby distinguishing between the so-called GIIPS countries and other European countries. We make original use of the Eurointelligence newsflash to construct news variables based on the amount of news that is released on a country on a given date. We find that more news on average raises the domestic interest spread of GIIPS countries since September 2009. In addition, we find that it leads to an increase in the interest spreads of other GIIPS countries. The magnitude of the news effects is related to cross-border bank holdings. A split of news into bad and good news shows that the upward pressure on domestic and foreign interest spreads is driven by bad news. We also find spill-overs of bad news from GIIPS countries onto non-GIIPS countries. However, the magnitude of these spill-overs is substantially smaller than that to other GIIPS countries.

JEL Classification: E62, G01, G12, G15, H61 and H62
Keywords: co-movement, euro-intelligence, giips, interest rate spreads, new variables, non-giips and spill-overs

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1. Introduction

The European sovereign debt market has been in a continuous crisis since the new Greek government in the fall of 2009 announced that the deficit for that year would turn out to be much higher than originally predicted. Since the announcement yields on Greek public debt have steadily risen, in spite of repeated promises of further austerity. The turbulence in the Greek debt market subsequently spread to other countries as well. This has led to a first rescue package for Greece and the instalment of a crisis mechanism with funds from the EU (the European Financial Stabilisation Mechanism, EFSM) and other euro-zone countries (European Financial Stability Facility, EFSF). However, the relief that followed these measures was only short-lived. After an initial fall, bond yields started creeping up again, while capital market access became impaired. A second rescue package was negotiated with Greece in the summer of 2011, but only ratified at the beginning of 2012. Meanwhile, Ireland and Portugal have also received rescue packages. The debt crisis also inspired a wave of new European legislation to deal with fiscal profligacy and macro-economic imbalances. However, so far, these European measures have proven ineffective in solving the crisis.

In this paper, we explore co-movements among interest spreads vis-à-vis Germany on European public debt and spill-overs in response to macroeconomic and financial news. We extract our news variables from the newsflash of Eurointelligence, which is an independent internet-based service providing daily morning news briefings of the European media for readers with an interest in euro area news. Founded in 2007 as a simple daily platform for debate and commentary on news for the euro area (with a focus on macroeconomics, politics and macro-finance) Eurointelligence witnessed a spectacular rise in readership, from just a few hundreds to 4000 daily visitors.[1] Although the Eurointelligence is widely read by the most influential policy makers and experts in the private sector, we do not expect it to be the main source of information of investors. However, we consider it as a compact and consistent form of information provision that captures the main daily economic, financial and political concerns. To the best of our knowledge, this way of using the newsflash is new. We focus in particular on the GIIPS countries (Greece, Ireland, Italy, Portugal and Spain) over the period since mid-2007. However, we also compare our analysis for these countries with that of a set

[1] With the outbreak of the financial crisis in August 2007 and an increasing general interest in financial and macroeconomic issues concerning the euro area, Eurointelligence became extremely popular. In 2010 its website attracted 636.000 visitors (Eurointelligence, 2012).

of other European countries and make a comparison between sub-samples where we split the full sample at September 2009.

Our results are the following. We find that more news about a country, as measured by the number of times a GIIPS country is mentioned in the newsflash, drives up the interest rate spread of the country. In addition, we find spill-overs of the news concerning the country onto other GIIPS countries related to the value of the financial claims of the banking sector of the other countries on the country under consideration.[2] By contrast, interacting news with the intensity of cross-border trade linkages does not yield significant results, thereby indicating that investors view banking sector linkages among countries as particularly important. In other words, our analysis can be viewed as rationalising the spill-overs across sovereign debt markets on the basis of cross-border stakes of the banking sectors. We establish the robustness of the aforementioned news effects for variations on our baseline regressions. We also establish that, not surprisingly, the news effects are concentrated in the second half of our sample period, i.e. the period September 2009 – February 2012. Further, while most of the attention during the past couple of years has focussed on the GIIPS countries, we also find spill-overs from the GIIPS to several non-GIIPS European countries (except Germany). However, while those spill-overs are in the same direction, they are smaller in size. Finally, when we split our news variable into bad and good news, we show that the domestic and cross-border effects of news are confined to bad news. This is the case both for the spill-overs from GIIPS to other GIIPS countries and the spill-overs from GIIPS to non-GIIPS countries.

This paper connects to different, sometimes overlapping, strands in the literature. First, and foremost, our work relates to the literature that investigates whether news has an impact on financial markets. Examples are Andersen, *et al.* (2003, 2007) and Fleming and Remolona (1999), who study the (almost) immediate impact of U.S. macro-economic news releases on the bond, foreign exchange and stock market. Kaminsky and Schmukler (1999) use data from the Asian crisis to investigate the impact of news on stock markets. Other works are Baig and Goldfajn (1999) and Albuquerque and Vega (2009). However, closest in spirit to our work is Aizenman *et al.* (2012) who explore the spill-overs of the recent global and euro-zone debt crisis on regions of developing countries. Unlike us, they use an event study approach, while, like us, they distinguish the effects of bad and good news. However, they use different news sources, while their news measure does not measure its intensity. Second, there is a substantial literature on contagion and co-movements in financial markets. An overview is

[2] Several recent papers have studied the role of (internationally-operating) banks in the transmission of the economic and financial crisis of 2008 and 2009. See for example Ongena *et al.* (2012).

given in Pericoli and Sbracia (2003). More recent work is due to Bekaert *et al.* (2011). Co-movements may be caused by interdependence as a result of fundamental and financial cross-country linkages. While there exists no unique definition, contagion generally refers to some form of discontinuity in the cross-border relation among financial markets as a result of a crisis. A third strand of relevant literature explores the role of trade and financial linkages among countries in the contagion of currency crises – see, for example, Eichengreen *et al.* (1996), Van Rijckeghem and Weder (2001) and Albuquerque *et al.* (2011). The final relevant strand is the recent literature dealing with European bond markets. Examples of contributions to this literature are Beber *et al.* (2009), Favero *et al.* (2010), Bhanot *et al.* (2011), De Santis (2012), Kallestrup *et al.* (2012) and Ang and Longstaff (2012). These contributions mostly deal with the effects of credit risk and liquidity on yields or yield spreads. A notable exception to this final strand of the literature, which is closer in spirit to our paper, is Mohl and Sondermann (2012). They construct a dataset scanning thousands of news agency reports (from Bloomberg, Dow Jones Newswire, Market News International and Reuters) for statements of European politicians about "restructuring", "bailout" and the "EFSF" and test their effects on the European bond market. They find that the intensity of these statements impacted bond spreads of the GIIPS vis-à-vis Germany during the period between May 2010 and June 2011.

The main innovations of this paper relative to the above literature are the following. We use an up-to-date sample period of daily yield data up until the end of February 2012. We have a novel news dataset that identifies the most important news on economic, financial, political and institutional developments in Europe. This news variable is not merely a dummy, but it also measures the 'amount' or 'intensity' of the news by the length (number of words) of the news items as well as by the number of times a particular word and country is mentioned on each given day.[3] We also split this news variable into a "bad' and "good" news variable (analogous to Baig and Goldfajn, 1999, who split news on the Asian crisis in bad and good news dummies) and test for asymmetric reactions. Finally, we model the interaction of the news variable with economic and financial integration variables.

The remainder of this article is structured as follows. In Section 2 we set out the empirical model, while in Section 3 we describe the data that we use in this paper. Section 4 presents our baseline empirical results and some robustness checks on those results. In

[3] Our use of news variables is related to the "narrative approach", employed by, for example, Romer and Romer (2010) and Ramey (2011) that is used to investigate the effects of fiscal shocks on the macro-economy.

Section 5 we investigate the role of our news variable when it is split into bad and good news. Finally, Section 6 concludes the main body of the paper.

2. The empirical model

We use the following model in the spirit of Bekaert *et al.* (2011) for our GIIPS countries:

$$\Delta yspr_{it} = c_i + \rho \Delta yspr_{i,t-1} + \delta CONTR_t + \alpha COMNEWS_t + \beta NEWS_{it} + \gamma \sum_{j \neq i} INT_{ijt} \times NEWS_{jt} + \varepsilon_{it}, \quad (1)$$

where $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$ is the change in the end-of-day spread on the public debt of country i relative to the German public debt. Here, $yspr_{it} = r_{it} - r_{GE,t}$, where r_{it} is the (annualized) yield on country i's debt and $r_{GE,t}$ is the (annualized) yield on the German debt. We allow for different maturities (five and ten years), but do not make this explicit in the notation. Further, c_i is a fixed effect to control for unobserved country effects. The variable $CONTR_t$ contains a set of control variables that drive changes in all yield spreads. It includes the (log) change of the VIX index, which is based on the implied volatility of S&P 500 stock market index options, and the change in the dollar-euro exchange rate. The VIX serves as a global risk factor (e.g. De Santis, 2012),[4] while the dollar-euro rate may serve as a regional aggregate risk factor – more uncertainty in Europe or a worse investment climate more generally in Europe would drive investors out of euro-denominated assets. $CONTR_t$ also includes the change in the U.S. and German yields and the change in the ECB main refinancing rate. The U.S. interest rate is one of the variables reflecting conditions in the U.S. or even the world economy and asset markets, while the German yield reflects those conditions for the German economy. Unanticipated changes in the main refinancing rate capture a change in the economic outlook for the euro-area as perceived by the ECB, which may affect euro-zone interest spreads.

$COMNEWS_t$ is a vector containing some "common news" variables. Further, $NEWS_{it}$ ($NEWS_{jt}$) is some "news" variable relating to country i (country j). These variables are intended to capture the amount of "turbulence" surrounding country i's public debt in the

[4] Following Favero *et al.* (2010), as an additional measure of the global risk factor, we also tried the U.S. corporate Baa-Aaa spread, which is available in the FRED database of the Federal Reserve Bank of St. Louis. However, this measure, probably due to its high correlation with the VIX index (correlation coefficient = 0.80), turns out to be statistically insignificant and, hence, we do not include it among our explanatory variables.

financial markets. The construction of these variables is explained in detail in the next section. Finally, INT_{ijt} is a potentially time-varying variable that is interacted with the news variable for country j and ε_{it} is a disturbance term.

The regression framework in (1) makes a useful distinction between co-movements of interest spreads among countries as a result of common news factors, which are captured by the term involving $COMNEWS_t$, and cross-border spill-overs of the country-specific news as captured by the term $\gamma \sum_{j \neq i} INT_{ijt} \times NEWS_{jt}$, where the sum runs over the *other* GIIPS countries than country i. Importantly, we allow for the degree of spill-over to depend on the degree to which countries are "linked" to each other, as captured by the variable INT_{ijt}. In particular, INT_{ijt} can be based on exports from i to j or financial claims of i's banks on j, as described below. Notice that, if both β and γ are estimated positively then, for given INT_{ijt}, the co-movement of interest spreads between countries i and j increases when the news intensity in country j increases.

3. The data

We obtain our data from several major sources. The sample period runs from July 12, 2007 until February 29, 2012. Hence, it covers a period during which European sovereign debt markets were relatively tranquil and the recent period of turbulence that started with the Greek government's admission in the fall of 2009 that the deficit for that year would turn out to be substantially higher than originally predicted. End-of-day debt interest rates, the VIX index and the dollar-euro exchange rate are obtained from Bloomberg. We use "on the run" debt yields, i.e. yields on the latest issue at the indicated maturity.[5] We have five and ten-year interest rates for Austria, Belgium, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, the United Kingdom and the United States. We divide the set of countries into the following groups. The first group are the countries that experienced severe

[5] Obviously, the maturity of the series shrinks until a new issue is made. Hence, only at issuance date the actual maturity of the series is equal to the indicated maturity of five or ten years. The alternative would have been to take artificial yield series constructed from an interpolation of the yield curve estimated for each day. However, as we prefer to use actually observed data we use the "on the run" yields. Only in the case of Ireland, there are some gaps in the "on the run" yields (see Appendix A for details). We fill those gaps with constructed yields (directly available from Bloomberg) at the indicated maturities, which are obtained from yield curve estimates based on those maturities for which observations do exist. While for given maturity the levels of "on the run" yields and constructed yields tend to differ, changes in the two types of yields are highly correlated. In our empirical analysis we use changes.

problems during the debt crisis and were (partly) excluded or in danger of being excluded from the capital market. These countries are the GIIPS, formed by Greece, Ireland, Italy and Portugal and Spain. The second group of countries is formed by Austria, Belgium, France, Netherlands, Sweden and the United Kingdom. This group, which we henceforth refer to as the non-GIIPS, did not get into serious trouble in the sovereign debt markets, although Belgium and France saw their interest rates rise at some occasions. However, during most of the crisis the general sentiment has been that these countries were safe.

Data on aggregate financial claims by foreign banks on a country are taken from the website of the Bank for International Settlements (2012).[6] We use Table 9B, which reports the sum of the financial claims on the government, the banking sector and non-financial firms held by the foreign banks that report their positions. The claims "cover contractual lending by the head office and all its branches and subsidiaries on a worldwide consolidated basis, i.e. net of inter-office accounts". While our analysis concerns public debt returns, it is clear that the short-run correlations of the returns on private financial-sector debt and public debt are high. Indeed, if the likelihood of a sovereign default increases, this also raises the likelihood that private debt will not be fully serviced, as the value of the public sector guarantees to the private sector falls. Foreign banks are classified by the country in which they reside. These data are reported on a quarterly basis and on an immediate borrower basis.[7] Our third data source is formed by the Direction of Trade Statistics (2012) of the IMF. These are monthly bilateral exports in millions of dollars from one country to the other. We linearly interpolate the monthly export data and quarterly bank holdings data to daily data.[8]

The final source of data, which needs most discussion, is the Eurointelligence (2012) website. The website contains a daily newsflash that consists of a set of major news statements, most of them pertaining to the economic and financial news in Europe or political events that might affect European economies. Throughout the sample period, the entire newsflash has been compiled by the same team, ensuring consistency of reporting of the news

[6] See http://www.bis.org/statistics/consstats.htm.

[7] This implies that the variable aggregates the direct financial claims on the foreign country and not the eventual claims, which may be different, for example because of the use of derivatives. Hence, a reporting bank is not necessarily the one who runs the eventual risk associated with a loan. The alternative would have been to use ultimate risk data. However, the average (across all country pairs) correlation between the two measures is 0.94. A priori it is not obvious which measure would be the most appropriate for our purposes, because it is the market's perception of the cross-border linkages that is relevant for the spill-overs and the market may pay more attention to immediate than to ultimate borrower data.

[8] The precise way in which the interpolation is done does not matter. We have also done our baseline regressions assuming that cross-border bank holdings were constant over the quarter, with no changes in the results (see Additional Appendix). Since such abrupt changes in positions at the start of each new quarter are not plausible, below we report our estimations for the linear interpolation, which is a more realistic approximation to the process of changes in bank holdings.

on different countries and over time. The formats of the statements on different countries are always similar. We use the newsflash to define a number of daily variables. The first set of variables is formed by the common news variables, captured by the variable $COMNEWS_t$ in equation (1). The variable $WORDS_t$ is the number of words of which the newsflash consists on that specific day. The idea behind including $WORDS_t$ is that co-movements and spill-overs across countries may be linked to the amount of relevant news, which in turn we expect to increase in the length of the newsflash. Hence, the variable $WORDS_t$ does not take a stand on which news would specifically influence bond yields. Each day a substantial number of smaller and larger facts take place and a priori it is hard to determine the specific events that have the largest effect on bond yields. Eurointelligence does not appear in the weekends, on official holidays and the periods when the constructors are absent (presumably for their own holidays). On those dates $WORDS_t = 0$ and, hence, these dates are excluded from our sample. We also define the variable $MINISTER_t$, which is the number of times the word "Minister" is used in the newsflash on a given day, the idea being that this variable acts as a proxy for the amount of political news or activity of politicians in the media. The variable $DEFAULT_t$ is the number of times the word "default" is mentioned. It is intended to proxy for the fear of debt default in the euro-zone governments.

The second set of variables based on Eurointelligence is the country-specific news variables captured by $NEWS_{it}$ and $NEWS_{jt}$ in Equation (1). More specifically we define $NEWS_{GR,t}$ as the number of times the words "Greece" or "Greek" are mentioned, $NEWS_{IR,t}$ as the number of times the words "Ireland" or "Irish" are mentioned, $NEWS_{IT,t}$ as the number of times the words "Italy" or "Italian" are mentioned, $NEWS_{PT,t}$ as the number of times the words "Portugal" or "Portuguese" are mentioned, and, finally, $NEWS_{SP,t}$ as the number of times the words "Spain" or "Spanish" are mentioned. These variables are intended to serve as proxies for the amount of economic, financial and political turbulence associated with the specific country under consideration.

The limitation of $NEWS_{GR,t}$ and the corresponding variable for the other countries is that it lumps all the news together, irrespective of whether this is good news, bad news or news that is irrelevant from the perspective of the public budget. We would expect that irrelevant news should not have any effect on debt interest rates, while a priori it may well be the case that bad and good news have different effects on both the own-country interest rate and other countries' interest rates. Therefore, we also define the variables $NEWS\_BAD_{GR,t}$ and $NEWS\_GOOD_{GR,t}$ (and analogous variables for Ireland, Italy, Portugal and Spain), which measure the number of times "Greece" or "Greek" is mentioned in connection with bad news,

respectively good news. By "bad news" ("good news") we mean news that we expect to lead to a tightening (relaxation) of the government's inter-temporal budget constraint or news that we expect to lead to a rise (fall) in the interest rate. Hence, bad news concerns mostly negative news about the resources available to the government, the sustainability of the public finances or the confidence of the financial markets in the country's public debt, while goods news mostly concerns positive news about these aspects. Examples of bad news are high deficit (forecasts), negative output developments, *etc*. Instances when it is a priori not clear whether news is positive or negative or when news can reasonably be considered as irrelevant for the debt yields, are not counted. Hence, $NEWS\_BAD_{GR,t} + NEWS\_GOOD_{GR,t} \leq NEWS_{GR,t}$.

To give an example of our classification into bad, good or no news, consider the daily news briefing on September 9, 2010. It contains, among others, the following statements "*IMF downgrades* ***Italy****'s growth outlook for 2011, and says the country is still lacking competitiveness;", "Elena Salgado announces relaxed debt rules for* ***Spain****'s provinces;",* and "***Greece****, meanwhile, has a new and much enlarged cabinet;"*. These statements lead to the following changes in our counting: $NEWS_{IT,t}$ and $NEWS\_BAD_{IT,t}$ both increase by 1, $NEWS_{SP,t}$ and $NEWS\_BAD_{SP,t}$ both increase by 1, $NEWS_{GR,t}$ increases by 1, while $NEWS\_BAD_{GR,t}$ does not change. Appendix B contains examples of what type of news is classified as bad or good. The list is not exhaustive, though it covers most cases. Importantly, to ensure as much consistency as possible, the classification into bad and good news was always done by the same person (the first author).

Table 1 reports for the full sample period and two sub-sample periods the total number of times a country is mentioned, the number of times it is mentioned in connection to bad news, the number of times it is mentioned in connection to good news and the number of times we were not sufficiently confident to classify the observation or when the observation was of obvious irrelevance for the public budget. Not surprisingly in view of the fact that the debt crisis was sparked in the fall of 2009, we see that the overwhelming majority of counts is during the second sub-period and that the amount of bad news is larger than the amount of good news by a factor three, four or even more. This is the case for both sub-periods.

To assess the potential problem of multi-collinearity among the right-hand side variables, the Additional Appendix reports the cross-country correlations for $NEWS_{it}$, $NEWS\_BAD_{it}$ and $NEWS\_GOOD_{it}$. These correlations are mostly positive, but rather small. In absolute value the far majority are below 0.10. The maximum correlations are 0.26 for the correlation between $NEWS_{IR}$ and $NEWS_{PT}$, 0.20 for the correlation between $NEWS\_BAD_{IR}$ and $NEWS\_BAD_{PT}$, and 0.13 for the correlation between $NEWS\_GOOD_{IT}$ and $NEWS\_GOOD_{SP}$.

Finally, the Additional Appendix reports for each country the correlation between the bad and good news variable. Except for Spain, these are all positive. The maximum correlation is 0.22 for Greece. The others are around 0.10 or less in absolute value. Bad and good news that are related to each other will often be reported on different days. For example, an announcement of more austerity, which is classified as good news, may be followed later by protests and social unrest, which is classified as bad news. In this case, the danger of multi-collinearity is not present, because it is the contemporaneous values of the two news variables that are included as explanatory variables.

We conclude this section by noting that the Eurointelligence newsflash is constructed and published early in the morning before financial markets in Europe open and generally deals with news released the day before, implying that the published news can be taken as exogenous and that there is no need to instrument the variables constructed from the newsflash.[9] In fact, if we discover an effect of our news variables on yield spread changes then that is all the more remarkable as we are not exactly looking at the consequences of news in real time. If anything, we could expect our results to form a lower bound on the real-time news effects.

4. Empirical results

4.1. Baseline regressions

In Table 2 we report our baseline regressions for the five and ten-year change in the yield spread with $DEFAULT_t$, $MINISTER_t$ and $WORDS_t$ as common news variables (elements of the vector $COMNEWS_t$ in equation (1)) and $NEWS_{it}$ as country-specific news variable. The set of controls consists of the change in the German bond yield $\Delta y_{GE,t}$, the change in the U.S. bond yield $\Delta y_{US,t}$, the logarithmic change in the VIX index ΔVIX_t, the logarithmic change in the dollar-euro rate $\Delta EXRATE_t$ and the change in the main refinancing rate set by the ECB ΔMRR_t. The exchange rate is defined as the number of dollars to be paid for one euro. The

[9] We exclude instances in which the words "this morning" are combined with mention of market movements, as references to this morning's market development might introduce simultaneity bias. This concerns only a very small number of cases, around 15 of all observations in which a country is mentioned. Further, to see whether movements in spreads have an effect on news reporting itself, we ran a panel regression of our news variable on the lagged spread, which turned out to be far from significant for both maturities (see the Additional Appendix).

maturities of the left- and right-hand variables, where relevant, are chosen to be the same. That is, in the regression for the change in the five-year yield spread, we include changes in the five-year German and U.S. yields. In order to allow for lagged responses we include also lagged values of all the controls.

Column (1) contains a baseline regression that does not yet allow for cross-border spill-overs. We first discuss the role of the control variables, after which we turn to discussing the role of our main variables of interest. The lagged change in the yield spread $\Delta yspr_{i,t-1}$ is significant with a coefficient of around 0.09, indicating that news takes some time to be fully reflected in bond yields. The contemporaneous movement in the German interest rate $\Delta r_{GE,t}$ exerts a strongly negative effect on the change in the yield spread of country *i*, while also the lagged change in the German interest rate exerts a negative, though in absolute value smaller and less significant, effect. The sum of the coefficients on $\Delta r_{GE,t}$ and $\Delta r_{GE,t-1}$ is not too far from unity, indicating that changes in the German interest rate have quantitatively rather minor effects on changes in the interest rate of country *i* (as is easily seen by rewriting the regression equation such that the dependent variable is the change in the interest rate of country *i* instead of the change in the yield spread). There is a positive co-movement with the contemporaneous change in the US interest rate. A potential explanation is that a portfolio shift away from U.S. bonds, which raises the U.S. interest rate, partly materialises as an increased demand for German bonds, which widens the spread of the GIIPS countries with Germany. The current change in the VIX index also affects the spread positively, suggesting that a general global increase in uncertainty leads to a decline in the demand for GIIPS bonds relative to that for German bonds. The one-period lagged values of the U.S. interest rate and the VIX index do not affect the spreads. Both the contemporaneous and the lagged change in the dollar-euro exchange rate exert a strong negative effect, although this is only significant for the lagged change in the exchange rate. A negative coefficient indicates that if the number of dollars paid for one euro rises then the yield spread has a tendency to fall. Apparently, a rise in the value of the euro makes investment in GIIPS countries' debt more attractive relative to investment in German debt. As far as the main refinancing rate is concerned, both its current and its lagged change do not enter significantly in the regression, possibly because changes in the main refinancing rate tend to be anticipated by the market already quite long before they actually take place.

None of the "common news" variables $DEFAULT_t$, $MINISTER_t$ and $WORDS_t$ is statistically significant, although the coefficient on $MINISTER_t$ is very close to significance.

However, the country-specific news variable $NEWS_{it}$ turns out to be highly significant, indicating that more news about a country raises its interest spread relative to Germany. The mean of $NEWS_{it}$ is 0.43, while its standard deviation is 1.03. Hence, a one-standard deviation increase in $NEWS_{it}$ raises the change in the interest spread by roughly two basis points.

In Columns (2) – (4) of Table 2 we explore the presence of cross-border spill-overs of the country-specific news variable captured by the term $\gamma \sum_{j \neq i} INT_{ijt} \times NEWS_{jt}$ in equation (1). We consider three interaction variables, namely the sum of the news variables of the other countries ($NEWS\_EQ_{t,j \neq i} \equiv \sum_{j \neq i} NEWS_{jt}$, so that INT_{ijt} = 1 for all *i*, *j* and *t*), the news variables of the other countries multiplied by $INT_{ijt} = EXP_{ijt}$, which measures exports from *i* to *j* as a share of *i*'s GDP ($NEWS\_EXP_{t,j \neq i} \equiv \sum_{j \neq i} EXP_{ijt} \times NEWS_{jt}$), and the news variables of the other countries multiplied by $INT_{ijt} = BH_{ijt}$, which measures the aggregate financial claims by banks of country *i* on country *j* as a share of *i*'s GDP ($NEWS\_BH_{t,j \neq i} \equiv \sum_{j \neq i} BH_{ijt} \times NEWS_{jt}$). For a given realisation of the news variable in some other GIIPS country *j*, the impact of the interaction variables $NEWS\_EXP_{t,j \neq i}$ and $NEWS\_BH_{t,j \neq i}$ is proportional to the GDP share of country *i*'s exports to country *j*, respectively the financial claims of *i*'s banks on country *j* as a fraction of *i*'s GDP.[10]

Neither $NEWS\_EQ_{t,j \neq i}$ nor $NEWS\_EXP_{t,j \neq i}$ are significant. However, variable $NEWS\_BH_{t,j \neq i}$ exerts a highly significant positive effect, suggesting the presence of a news spill-over effect on other GIIPS countries when news is related to cross-border bank holdings in other countries. The mean of $NEWS\_BH_{t,j \neq i}$ is 0.066 and its standard deviation is 0.137. Hence, an increase in $NEWS\_BH_{t,j \neq i}$ by one standard deviation raises the change in the interest spread of other GIIPS countries by slightly more than one basis point. This effect seems rather modest. However, another way to assess the size of the news effect is to consider the difference between no news in the other countries, i.e. $NEWS\_BH_{t,j \neq i} = 0$, and the maximum in-sample value for $NEWS\_BH_{t,j \neq i}$ (1.45, recorded for Ireland on June 15, 2010), which produces a spread rise of 12 basis points. In Column (5) we drop the domestic news effect variable $NEWS_{it}$. The coefficient on $MINISTER_t$ increases by just enough to become significant at the 10% level, while the spill-over variable $NEWS\_BH_{t,j \neq i}$ remains highly

[10] This way of defining interaction variables is analogous to Aizenman *et al.* (2012).

significant with a coefficient of similar size as before. The coefficients on the control variables in the expanded regressions in Columns (2) – (5) are essentially identical to those in Column (1) and will not be discussed further.

Columns (6) – (10) of Table 2 report in an analogous way the estimation results for the change in the spread on the ten-year bonds. Since estimates of the coefficients on the controls are qualitatively, and in many cases also quantitatively, similar to those for the five-year regression we will not comment further on these. The coefficient on $MINISTER_t$ is always positive, but never significant. Also the other common news variables are never significant. As before, $NEWS_{it}$ is always positive and highly significant. However, the size of its coefficient is quite a bit smaller than for the five-year maturity regressions. As far as the spill-over variables are concerned, $NEWS\_BH_{t,j\neq i}$ is significant at the 10% level, while the other two spill-over variables remain far from significance. However, compared to the five-year regression the coefficient on $NEWS\_BH_{t,j\neq i}$ drops by roughly one half. Hence, also for the ten-year regression, the results suggest that the effects of more news in one country spill over more strongly to another country if the latter country's banks hold more financial claims on the other country. In Column (10) we drop $NEWS_{it}$. However, this leaves the coefficient on $NEWS\_BH_{t,j\neq i}$ essentially unchanged.

Summarising, for five- and ten-year bonds we have found that domestic news exerts an upward pressure on domestic interest spreads via the variable $NEWS_{it}$, as well as an upward cross-border effect on interest spreads of other GIIPS countries via the variable $NEWS\_BH_{t,j\neq i}$. Hence, our results indicate that cross-country banking linkages are important for the transmission of new effects across borders.

4.2. Robustness

In this section we explore the robustness of the baseline regression in various directions. In Table 3 we present some variations on the baseline regressions in Table 2. In Columns (1) and (2) we estimate the specifications of Columns (4) and (9) of Table 2 using Generalised Least Squares (GLS) weighted for heteroscedasticity and contemporaneous correlation. To save space, we do not report the estimates of the controls, but focus on our variables of interest. The coefficient on $NEWS_{it}$ is still significant, though only at the 10% level and it becomes substantially smaller in size. However, the coefficient on $NEWS\_BH_{t,j\neq i}$ is only marginally

affected in size and remains highly significant. We see the same pattern for the ten-year regression. In Columns (3) and (4) we use instrumental variables and drop the changes in the U.S. interest rate to use them as instruments for the contemporaneous change in the German interest rate. Compared to the corresponding baselines in Table 2 (in Columns (4) and (9)), the results for $NEWS_{it}$ and $NEWS\_BH_{t,j\neq i}$ are very similar both for the five and ten-year regression.

An objection to our approach might be that we pool the data forcing the coefficients on the independent variables to be identical across countries (e.g. see Favero *et al.,* 2010, and Favero and Missale, 2012). Given that the data on the news variable are limited, we follow an intermediate route and allow the coefficients on all variables except for $NEWS_{it}$ and $NEWS\_BH_{t,j\neq i}$ to be country specific. In Columns (5) and (6) of Table 3 we report the estimates for the coefficients on these news variables for this relaxed specification. While the size of the estimated coefficient on $NEWS_{it}$ falls, it remains significant at the 5% level for both maturities. The estimated coefficient on $NEWS\_BH_{t,j\neq i}$ also remains significant in both cases and its size even increases somewhat (compare to Columns (4) and (9) in Table 2).

In Table 4 we explore the robustness of the baseline regression by dropping one country at a time from the regression. We do this both for the five-year and the ten-year regression. To facilitate the comparisons we repeat the baseline results in the first column of the table. The idea behind this variant is to show that the results are not entirely driven by the inclusion of a specific country in our sample. For both maturities, if we drop Greece, the adjusted R^2 rises substantially, indicating that the variance in the errors is relatively large for Greece. Also, in both cases $NEWS_{it}$ loses significance, indicating that a significant domestic effect of this variable is only present for Greece and not for the other countries. Further, the coefficient on $NEWS\_BH_{t,j\neq i}$ increases for both maturities when Greece is dropped, suggesting that the spill-overs from other countries onto Greece are smaller than from Greece onto other countries. The coefficient on $NEWS\_BH_{t,j\neq i}$ is always significant, and sometimes highly so, except for the ten-year maturity regression when Ireland or Portugal are excluded, suggesting that these countries are relatively strongly affected by news from other GIIPS.

As a final robustness check we also added German news to our baseline regression specifications. However, German news does not enter significantly and, therefore, we report the results only in the Additional Appendix.[11] A likely explanation for the lack of a role for

[11] The same is the case when we make the split between bad and good news for Germany below.

German news is that it is generally hard to classify German news as specifically relevant for the GIIPS countries under consideration. Another potential explanation may be that German news affects both the German and the GIIPS interest rates in the same direction, implying that there is little movement left in the spreads. However, in regressions for GIIPS yields (rather than spreads), while dropping the German interest rate from the right-hand side, German news is far from significant and, hence, this explanation does not seem relevant.

4.3. Split in sample period

The current debt crisis was sparked by the, at the time new, Greek government's revelation in the fall of 2009 of a much higher deficit than projected earlier. The revelation followed a lingering dissatisfaction of other countries about the lack of openness about the state of Greece's public finances by the previous government. While during the first half of our sample period countries suffered from the world-wide economic and financial crisis, there was no Eurozone debt crisis yet, and it may well be the case that the events surrounding Greece have fundamentally changed the relationships that we are trying to unveil. Therefore, in this sub-section we split our sample period to investigate how the different crises affected the impact of news on spreads during different periods in our sample.

Table 5 reports the results of four regressions: in Columns (1) and (2) we report our baseline five- and ten-year regressions for the period July 12, 2007 – August 31, 2009, while in Columns (3) and (4) we repeat those regressions for the period September 1, 2009 – February 29, 2012. Clearly, the results that we found for the full sample are driven by those in the second sub-sample. This is the case for the control variables as well as our news variables. As far as the control variables are concerned, we see that the coefficient on the first lag of the spread is substantially larger during the first sub-period, when it is highly significant, than during the second sub-period, when it is insignificant.

The response to the German interest rate changes rather dramatically going from the first to the second sub-period. While the coefficient on the contemporaneous change in the German interest rate is in all instances negative and highly significant, its size increases dramatically in absolute terms from well below one to substantially above one. Rewriting the model, interest rate changes for the GIIPS and Germany move into the same direction during the first sub-period, while they tend to move into opposite directions during the second sub-period, indicating that investors tend to move out of GIIPS into German bonds as circumstances deteriorate, and vice versa. This suggests that the German interest rate may

react to GIIPS news during the second sub-period. However, estimating the regression equation for this period while dropping the U.S. interest rate and using it as an instrument for the German interest rate does not change the results (see Additional Appendix). The change in neither the U.S. interest rate nor its lag enters significantly in any of the regressions.

As far the change in the VIX index is concerned, only its first lag is significant in the five-year regression for the first sub-period. In particular, the contemporaneous change in the VIX index is no longer significant during the second sub-period, which is likely to be the result of a lack of precision of the coefficient estimates. This also likely hampers the estimation of the coefficients on the change in the exchange rate and its lag. The contemporaneous change in the exchange rate is never significant, while its lag is always significantly negative. However, the coefficient on its lag, which increases ten-fold in absolute size going from the first to the second sub-period, is also much less precisely estimated during the second sub-period and, hence, the gain in significance is only limited. Finally, it is interesting to note that the contemporaneous change in the main refinancing rate enters with a significant and rather large coefficient (on the order of 0.40 – 0.45) during the second sub-period, while this variable played no role in the full sample estimates.

As far as the news variables are concerned, we observe that during the first sub-period all news variables, and in particular $NEWS_{it}$ and $NEWS\_BH_{t,j\neq i}$ are insignificant, while during the second period these two variables are significant again for both maturities, as they were for the full sample. While the coefficient on $NEWS_{it}$ is essentially unaffected compared to the full sample, the coefficient on $NEWS\_BH_{t,j\neq i}$ increases by roughly 50% for both maturities, while its significance increases to 5% for the ten-year regression. In other words, the responses to the news variables differ substantially between the two sub-periods. There may be at least two reasons for this finding. First, the amount of news in the first sub-period is too small to draw reliable conclusions. Second, it may be that investors' reactions to news have substantially changed during the second sub-period. In view of the fact that the responses to our control variables have changed rather dramatically between the two sub-periods, we consider the latter explanation the more likely one.

The Additional Appendix reports the estimates for our standard specification estimated over the entire sample period, but allowing for different coefficients on each variable between the two sub-periods. That is, we interact the coefficient on each variable with a dummy that takes on a value of 1 (0) for the first (second) sub-period and another dummy that takes on a value of 0 (1) for the first (second) sub-period. This allows us to formally test whether the

coefficients on our variables of interest differ between the two sub-periods. The F-test that the coefficients on $NEWS_{it}$ and $NEWS\_BH_{t,j\neq i}$ are jointly equal for the two sub-samples is rejected at the 1% level for the five-year regression and at the 5% level for the ten-year regression.

4.4. The non-GIIPS

In this sub-section we explore whether the same empirical relationships that we found for the GIIPS countries also hold for the non-GIIPS countries. In particular, we want to see how news in the GIIPS countries may have affected also the other countries in the sample. Table 6 reports the results for the full sample period and the two sub-sample periods. We first discuss the results for the full sample period. Comparing these results to those in Columns (9) and (14) in Table 3, we see that the non-GIIPS react less vigorously to some of the control variables: in the various specifications the coefficient on the change in the German interest rate has become much smaller in absolute value, although it remains highly significant and retains its sign. The coefficient on its lag is no longer significant. Also the reaction to the contemporaneous change in the U.S. interest rate has become substantially smaller in size. It is still significant for the full sample and second sub-sample regressions. The change in the VIX index and its lag are no longer significant in any of the specifications, while the change in the main refinancing rate is only significant still in one instance. The change in the exchange rate is significant for the full sample and the second sub-sample, although the size of the coefficient in this case is substantially smaller (in absolute value) than for the GIIPS.

Of the common news variables, the coefficient on $DEFAULT_t$ is positive and significant for the five-year regression for the full sample and the first sub-sample, while the coefficient on $MINISTER_t$ is positive and significant in the second sub-sample for both maturities, suggesting that if there is more political news, this raises the spreads of the non-GIIPS relative to Germany. We have not included the variable $NEWS_{it}$, because we want to focus on news spill-overs from the GIIPS onto the non-GIIPS countries.

The spill-over variable, now defined as $NEWS\_BH_{t,j\in GIIPS} \equiv \sum_{j\in GIIPS} BH_{ijt} \times NEWS_{jt}$, where the BH_{ijt} are the bank holdings by the non-GIIPS countries *i* in the GIIPS countries *j* as a share of GDP of the non-GIIPS countries, is positive and significant for the full sample for both maturities and for the second sub-sample, while, as expected, it is insignificant for the first sub-sample. However, comparing the results in Table 6 with those in Table 5, we see that

in all cases where they are significant, the size of the spill-overs from the GIIPS countries to the non-GIIPS countries is substantially smaller than the size of the spill-overs from the GIIPS to the other GIIPS countries. For example, for the full-sample five-year regression, for a given change to the spill-over variable, the effect on the non-GIIPS' spreads is about one-fifth of that on the other GIIPS' spreads. For the ten-year regression, the effect is about one-third.

What explains these results for the non-GIIPS, which are generally considered as safe by investors and have mostly followed austere policies?[12] Most likely is that, in their desire to seek safety after bad news hits a GIIPS country, investors prefer German above non-GIIPS debt thereby creating an increase in the interest differential between our non-GIIPS countries and Germany. One should realize that the magnitude of the spill-overs to non-GIIPS countries can be small in some instances. For example, for Sweden, the maximum value of our interaction variable is only 0.084, against 1.45 for Ireland and 1.39 for Portugal. Hence, switching from the minimum (zero) to the maximum in-sample value of the variable produces a spread rise of much less than 1 basis point for Sweden. Because Belgium and France came in a few instances under some pressure from the financial markets we have also explored whether dropping these countries changes the results for the non-GIIPS sample. The results reported in the Additional Appendix show that that is not the case.

The Additional Appendix also reports the results of a regression in which we include both the GIIPS and the non-GIIPS countries and allow the coefficient of our interaction variable to differ for the two groups of countries,[13] while the coefficients on the control variables are forced to be the same. We find that the null hypothesis of equal coefficients of that the coefficients on the interaction variable are the same for the GIIPS and the non-GIIPS countries rejects at the 0.86% level for the five-year regression and the 11.2% level for the ten-year regression.

[12] As described, for example, in Bergman (2011) for the case of Sweden.

[13] For the GIIPS countries the interaction variable is $NEWS\_BH_{t,j \neq i}$ constructed from all the other GIIPS countries and for the non-GIIPS countries it is $NEWS\_BH_{t,j \in GIIPS}$ constructed from all the GIIPS countries in our sample.

5. Split into "bad" and "good" news

Our news variable $NEWS_{it}$ so far does not discriminate between "bad" and "good" news. However, it may well be the case that bad news has different spill-over effects on other countries than good news. Therefore, in the following we will distinguish between bad and good news as classified along the lines described in Section 3. In addition to $NEWS\_BAD_{it}$ and $NEWS\_GOOD_{it}$, the numbers of times the name of country *i* is mentioned in connection with bad, respectively good, news, we define

$$NEWSBAD\_BH_{t,j\neq i} \equiv \sum_{j\notin i} BH_{ijt} \times NEWS\_BAD_{jt} ,$$

$$NEWSGOOD\_BH_{t,j\neq i} \equiv \sum_{j\notin i} BH_{ijt} \times NEWS\_GOOD_{jt} ,$$

$$NEWSBAD\_BH_{t,j\in GIIPS} \equiv \sum_{j\in GIIPS} BH_{ijt} \times NEWS\_BAD_{jt} ,$$

$$\text{and } NEWSGOOD\_BH_{t,j\in GIIPS} \equiv \sum_{j\in GIIPS} BH_{ijt} \times NEWS\_GOOD_{jt} .$$

Table 7 reports the results for the GIIPS countries.[14] We report the results for the five and ten-year regressions for the full sample period and the two sub-sample periods. Clearly, for the GIIPS the split into bad and good events matters: $NEWS\_GOOD_{it}$ always enters with a negative sign (as might be expected), but is only significant for the five-year regression for the first sub-period. $NEWS\_BAD_{it}$ is positive and highly significant for the full sample period and the second sub-sample. The difference in the results for $NEWS\_GOOD_{it}$ and $NEWS\_BAD_{it}$ suggests that the split has largely been done correctly. Further, $NEWSGOOD\_BH_{t,j\neq i}$ is never significant, while $NEWSBAD\_BH_{t,j\neq i}$ is significant and positive for the full sample period and the second sub-sample. Compared to the case without the split into bad and good news, Columns (4) and (9) of Table 2 for the full sample and Columns (3) and (4) of Table 5 for the second sub-period, the size of the coefficients of $NEWS\_BAD_{it}$ and $NEWSBAD\_BH_{t,j\neq i}$ increases rather substantially when compared with the coefficients of $NEWS_{it}$ and $NEWS\_BH_{t,j\neq i}$. A shift from the minimum to the maximum in-sample value of the spill-over variable $NEWSBAD\_BH_{t,j\neq i}$ now produces an increase in the other GIIPS countries' spread by 28 basis points. Taken together, the results suggest that only bad news produces an

[14] Again, we also conducted an instrumental variables estimation in which we instrument the German interest rate with the U.S. interest rate. The results are essentially the same as those described below and can be found in the Additional Appendix.

increase in the yield spread, and it does so in particular during the crisis period that starts in the fall of 2009, while news spill-overs onto other countries are also only associated with bad news. However, some care is warranted in drawing this conclusion. First, the amount of good news is substantially smaller than the amount of bad news. Moreover, we find it harder to unambiguously pinpoint news as good, than to unambiguously pinpoint news as bad. In the latter case, we have thrown out any news that is not obviously bad. This is not necessarily the case for good news. To give an example, reassurances by politicians about austerity and adherence to reforms, which are recorded as good news, may not be considered credible. Both factors make it harder to establish a relationship between the amount of good news and changes in interest spreads. Finally, there may exist a fundamental difference in the transmission of the effects of bad and good news across borders. Bad news in one country may induce investors to assess the situation of other GIIPS countries as worse, while the opposite is not the case for good news.

Table 8 reports the estimates for changes in the yield spreads of the non-GIIPS countries. Again, there is evidence of spill-overs of bad news from the GIIPS countries onto the non-GIIPS countries during the second sub-period. There is no spill-over of good news, nor do we see any spill-overs during the first sub-period. Further, we see that the coefficient on $NEWSBAD\_BH_{t,j\neq i}$, whenever it is significant, exceeds that on $NEWS\_BH_{t,j\neq i}$ as reported in Table 6. Hence, qualitatively the results of spill-overs for the non-GIIPS are strongly in line with the results for the GIIPS countries. However, the size of the spill-overs remains substantially smaller.

6. Conclusion

In this paper we have explored how ‘news’ affects domestic interest spreads in the euro-zone and how it propagates to other countries during the recent crisis period. To this end, we have distinguished between the so-called GIIPS countries and other countries. Part of the originality of this paper concerns the use of the Eurointelligence newsflash to construct “news variables” based on the amount of news that is released on a country on a given date. We have explored in detail the five and ten-year public debt market and found that more news on average raises the domestic interest spread of GIIPS countries since the fall of 2009. In addition, we find that more news in one GIIPS country leads to an increase in the interest

spreads of other GIIPS countries. The magnitude of the spill-overs is strongly related to the size of the cross-border bank holdings. A split of news into bad and good news shows that the upward pressure on domestic and foreign interest spreads is driven by bad news and that the effects are confined to the second sub-sample period, i.e. the public debt crisis period that started in the fall of 2009. Many of the results for the GIIPS countries carry over to the non-GIIPS countries: we also find spill-overs from GIIPS to non-GIIPS countries and those spill-overs are again confined to bad news during the second sub-period. However, the spill-overs from GIIPS countries to other GIIPS countries are substantially larger than the spill-overs from GIIPS to non-GIIPS countries.

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Appendix:

A: Further details on the data

A.1. Gaps in "on the run" yields on Irish debt

The gaps in the "on the run" yields on Irish debt are the following. For five-year debt, we do not have July 12, 2007 – October 25, 2007 and January 20, 2010 – February 3, 2011. For ten-year debt, we do not have July 12, 2007 – October 25, 2007 and October 12, 2011 – February 29, 2012. The gaps were filled with the artificially constructed yields obtained through interpolation of the daily yield curve, as described in Footnote 6 of the main text.

B. Examples of bad and good news for the GIIPS countries

Political news relating to polls, which party has the upper-hand in the political arena, election results and the like are not classified as either good or bad. News about short-selling constraints is also considered as neutral.

By "bad news" ("good news") we mean news that we expect to lead to a tightening (relaxation) of the government's inter-temporal budget constraint or news that we expect to lead to a rise (fall) in the interest rate. Hence, bad news concerns mostly negative news about the resources available to

the government, the sustainability of the public finances or the confidence of the financial markets in the country's public debt, while goods news mostly concerns positive news about these aspects.

Examples of bad news are:

- News of social unrest such as popular protests and strikes.
- News about reduced popular support for austerity.
- News indicating relaxed commitment to budgetary targets.
- News about political disagreements over (economic) policy, or any other type of disagreement that is mentioned (unless it is obviously of no relevance).
- Negative macroeconomic news (negative figures or projections of economic activity, negative (projections of) budgetary figures, rising inflation, and the like).
- News about rising debt yields.
- News about disappointing auctions (for example, in terms of excess demand and yield outcomes).
- News about increased need for financial help or bail out.
- News about increases in spending and reductions in public revenues or plans to do so.
- Calls for leaving the Euro-zone.
- Mention of / deliberations about exit from Euro-zone.
- Negative statements (for example, by foreign politicians) about the country.
- News about downgrades by credit agencies, being put on watch or of a negative outlook.
- News about the need for banks to capitalize.
- News about the need to give support to sub-national governments.
- The country or its policies being a danger for the euro-zone/Europe/European Union.
- News about failure to reform the economy.
- Mention of increased need for private sector involvement.
- Mention of (increasing) risk of default.
- Mention of debt restructuring.
- News about difficulties in private sector involvement negotiations.
- Mention of need for further economic restructuring.
- Foreign developments that make aid (to Greece) more difficult.
- Calls from the media calls to not support financial help to GIIPS.
- Information on rising poverty levels.
- Reproaches of irresponsible debates in problem countries.

- Problems and uncertainties about debt swap (in Greece) – this raises market uncertainty.
- Disagreement about enlarging bail-out funds (in connection with the country concerned).
- Problems with getting fiscal compact approved (in connection with the country concerned).
- News that a referendum will be held on the fiscal compact.
- Fall in stock markets (as a predictor of lower growth and investment).

Examples of good news are:

- Plans to reign in public spending, raise (tax) revenues or introduce new taxes.
- Announcements of budgetary tightening or austerity.
- Positive assurances by politicians or policymakers.
- (Agreement on) guarantees or bail-out provided by ECB.
- Agreement on programs with international institutions (IMF, EC).
- Approvals of the budget.
- Pressure exerted by international organizations (ECB, IMF, European Commission) or Germany on a country to reform or to be more austere.
- Rejections by international organizations of relaxation deficit targets.

While assurances by politicians or policymakers are often unreliable, we cannot objectively distinguish between reliable and unreliable assurances and, therefore, we count all assurances as good news.

Tables

Table 1: Summary statistics of news counts

	Total	Bad	Good	Unclassified
	Full sample period			
Greece	1094	626	161	307
Ireland	453	244	68	141
Italy	353	179	51	123
Portugal	299	175	66	58
Spain	452	287	64	101
	July 12, 2007 – August 31, 2009			
Greece	33	21	1	11
Ireland	93	33	10	50
Italy	102	45	9	48
Portugal	3	2	0	1
Spain	104	72	8	24
	September 1, 2009 – February 29, 2012			
Greece	1061	605	160	296
Ireland	360	211	58	91
Italy	251	134	42	75
Portugal	296	173	66	57
Spain	348	215	56	77

Note: For Greece we counted the number of times the words "Greece" and "Greek(s)" occurred, for Ireland the number of times the words "Ireland" and "Irish" occurred, etcetera.

Table 2: Baseline regressions for changes in yield spreads

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$									
	5-year debt					10-year debt				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$DEFAULT_t$	-0.0098	-0.012	-0.010	-0.011	-0.0069	-0.0030	-0.0050	-0.0033	-0.0037	-0.0013
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.0089)	(0.0093)	(0.0089)	(0.0090)	(0.0090)
$MINISTER_t$	0.017	0.016	0.017*	0.016	0.017*	0.0069	0.0065	0.0071	0.0069	0.0075
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.0065)	(0.0064)	(0.0065)	(0.0065)	(0.0065)
$WORDS_t$	.00001	-.00003	-.00001	-.00002	.00010	.00001	-.00005	-.00001	-.00001	0.00005
	(.00010)	(.00014)	(.00010)	(.00010)	(.00011)	(.00006)	(.00009)	(.00006)	(.00006)	(.00007)
$NEWS_{it}$	0.022***	0.023***	0.023***	0.023***		0.013***	0.013***	0.013***	0.013***	
	(0.0087)	(0.0088)	(0.0087)	(0.0087)		(0.0043)	(0.0044)	(0.0043)	(0.0043)	
$NEWS\_EQ_{t,j\neq i}$		0.0022					0.0025			
		(0.0036)					(0.0024)			
$NEWS\_EXP_{t,j\neq i}$			0.0017					0.0010		
			(0.0014)					(0.0010)		
$NEWS\_BH_{t,j\neq i}$				0.084***	0.077***				0.041*	0.037*
				(0.030)	(0.029)				(0.023)	(0.022)
$\Delta yspr_{i,t-1}$	0.091	0.091	0.091	0.090	0.096	0.096	0.096	0.096	0.096	0.10
	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)	(0.067)	(0.067)	(0.067)	(0.067)	(0.067)
$\Delta r_{GE,t}$	-0.97***	-0.97***	-0.98***	-0.97***	-0.98***	-0.90***	-0.90***	-0.90***	-0.91***	-0.91***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
$\Delta r_{GE,t-1}$	-0.26**	-0.26**	-0.26**	-0.26**	-0.26**	-0.17*	-0.17*	-0.17*	-0.17*	-0.17*
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.099)	(0.099)	(0.099)	(0.099)	(0.10)
$\Delta r_{US,t}$	0.16*	0.16*	0.17*	0.17*	0.16*	0.12*	0.12*	0.12*	0.12*	0.12*
	(0.089)	(0.090)	(0.090)	(0.090)	(0.090)	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)
$\Delta r_{US,t-1}$	-0.028	-0.028	-0.025	-0.024	-0.026	-0.0016	-.00048	0.00025	0.00043	0.0014
	(0.077)	(0.077)	(0.077)	(0.077)	(0.078)	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)
ΔVIX_t	0.34*	0.34*	0.34*	0.34*	0.33*	0.22	0.22	0.22	0.22	0.22
	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
ΔVIX_{t-1}	-0.17	-0.17	-0.17	-0.17	-0.17	-0.11	-0.11	-0.11	-0.11	-0.11
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
$\Delta EXRATE_t$	-1.32	-1.30	-1.31	-1.30	-1.36	-1.11*	-1.09*	-1.11*	-1.10*	-1.13*
	(0.90)	(0.90)	(0.90)	(0.90)	(0.90)	(0.61)	(0.61)	(0.61)	(0.61)	(0.61)
$\Delta EXRATE_{-1}$	-2.75***	-2.73***	-2.73***	-2.71***	-2.74***	-1.75**	-1.73**	-1.74**	-1.73**	-1.75**
	(1.01)	(1.01)	(1.01)	(1.01)	(1.01)	(0.74)	(0.74)	(0.74)	(0.74)	(0.75)
ΔMRR_t	0.075	0.073	0.073	0.071	0.076	0.043	0.041	0.042	0.041	0.044
	(0.065)	(0.064)	(0.064)	(0.065)	(0.066)	(0.047)	(0.047)	(0.047)	(0.047)	(0.048)
ΔMRR_{t-1}	-0.054	-0.054	-0.050	-0.049	-0.049	-0.059	-0.059	-0.057	-0.056	-0.057
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.046)	(0.044)	(0.045)	(0.045)	(0.048)
R^2-adjusted	0.092	0.092	0.092	0.093	0.087	0.12	0.12	0.12	0.12	0.11
DW	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11

Notes: (i) Interest spreads are expressed in percent per annum. (ii) Estimation method: pooled least squares. (iii) Sample period July 12, 2007 – February 29, 2012. (iv) Countries included: Greece, Ireland, Italy, Portugal and Spain. (v) Number of (balanced) observations is 5450. (v) White cross-section standard errors and covariance. (vii) Maturity of independent variables (where relevant) always corresponds with that of the dependent variable. (viii) Country-specific fixed effects are included.

Table 3: Variations on the baseline

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$					
	GLS		IV		Relax homogeneity	
	5-year	10 year	5-year	10 year	5-year	10 year
	(1)	(2)	(3)	(4)	(5)	(6)
$DEFAULT_t$	-0.0032 (0.0062)	-0.0036 (0.0046)	-0.014 (0.013)	-0.0052 (0.0089)		
$MINISTER_t$	0.0083 (0.0053)	0.0047 (0.0042)	0.015 (0.010)	0.0064 (0.0065)		
$WORDS_t$	-.00004 (.00006)	-.00002 (.00005)	-.00001 (.00010)	-.00001 (.00006)		
$NEWS_{it}$	0.0067* (0.0037)	0.0048* (0.0028)	0.023*** (0.0087)	0.013*** (0.0043)	0.018** (0.0083)	0.0087** (0.0043)
$NEWS\_BH_{t,j\neq i}$	0.085*** (0.026)	0.044** (0.019)	0.083*** (0.030)	0.040* (0.023)	0.098*** (0.029)	0.053** (0.022)
R^2-adjusted	0.18	0.22	0.09	0.11	0.12	0.14
DW	2.07	2.23	2.10	2.11	2.09	2.10

Notes: (i) Estimation method: pooled least squares, unless indicated otherwise. (ii) See Notes to Table 2. In Columns (5) and (6) we relax the assumption that the coefficients on the lagged dependent, the controls and common news variables are identical across countries.

Table 4: Dropping one country at a time

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$					
	(a) 5-year regression					
Country excluded	None	Greece	Ireland	Italy	Portugal	Spain
$NEWS_{it}$	0.023*** (0.0087)	0.0027 (0.0044)	0.028*** (0.010)	0.024** (0.0096)	0.024** (0.0093)	0.025*** (0.0098)
$NEWS\_BH_{t,j\neq i}$	0.084*** (0.030)	0.099*** (0.028)	0.099** (0.045)	0.080*** (0.030)	0.053* (0.028)	0.084*** (0.031)
R^2-adjusted	0.09	0.16	0.09	0.09	0.09	0.09
DW	2.10	2.08	2.09	2.10	2.09	2.10
	(b) 10-year regression					
Country excluded	None	Greece	Ireland	Italy	Portugal	Spain
$NEWS_{it}$	0.013*** (0.0043)	0.0013 (0.0033)	0.016*** (0.0049)	0.013*** (0.0047)	0.014*** (0.0045)	0.014*** (0.0047)
$NEWS\_BH_{t,j\neq i}$	0.041* (0.023)	0.051** (0.021)	0.048 (0.033)	0.039* (0.023)	0.027 (0.019)	0.040* (0.024)
R^2-adjusted	0.12	0.20	0.11	0.11	0.12	0.11
DW	2.11	2.04	2.11	2.11	2.12	2.11

Notes: (i) See *Notes* to Table 2.

Table 5: Split of sample period

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$			
Sub-sample period	July12, 2007 – August 31, 2009		September 1, 2009 – February 29, 2012	
	5-year	10 year	5-year	10 year
	(1)	(2)	(3)	(4)
$DEFAULT_t$	0.0062	0.0015	-0.010	-0.00019
	(0.0048)	(0.0047)	(0.015)	(0.011)
$MINISTER_t$	-0.0022	-0.0020	0.018	0.0060
	(0.0032)	(0.0036)	(0.013)	(0.0083)
$WORDS_t$	.00010	.00004	-.00004	-.00002
	(.00009)	(.00011)	(.00014)	(.00009)
$NEWS_{it}$	-0.0013	-0.00029	0.023**	0.012**
	(0.0015)	(0.0015)	(0.0098)	(0.0048)
$NEWS\_BH_{t,j\neq i}$	-0.010	-0.0016	0.13***	0.066**
	(0.0074)	(0.0081)	(0.041))	(0.033)
$\Delta yspr_{i,t-1}$	0.37***	0.30***	0.081	0.086
	(0.048)	(0.043)	(0.063)	(0.069)
$\Delta r_{GE,t}$	-0.16***	-0.25***	-1.68***	-1.42***
	(0.027)	(0.040)	(0.22)	(0.19)
$\Delta r_{GE,t-1}$	-0.011	-0.015	-0.38	-0.26
	(0.029)	(0.037)	(0.25)	(0.19)
$\Delta r_{US,t}$	-0.012	-0.016	0.17	0.24
	(0.017)	(0.023)	(0.19)	(0.15)
$\Delta r_{US,t-1}$	0.0021	-0.0070	-0.17	-0.073
	(0.019)	(0.026)	(0.16)	(0.12)
ΔVIX_t	-0.0063	0.0031	0.49	0.33
	(0.021)	(0.022)	(0.37)	(0.26)
ΔVIX_{t-1}	0.037*	0.035	-0.33	-0.27
	(0.022)	(0.023)	(0.33)	(0.24)
$\Delta EXRATE_t$	0.0084	-0.050	-1.46	-1.41
	(0.17)	(0.19)	(2.37)	(1.63)
$\Delta EXRATE_{-1}$	-0.40**	-0.33	-4.38**	-3.12**
	(0.19)	(0.21)	(2.17)	(1.54)
ΔMRR_t	-0.0083	-0.0053	0.45*	0.41*
	(0.021)	(0.014)	(0.25)	(0.17)
ΔMRR_{t-1}	-0.041	-0.071***	-0.23	0.22
	(0.026)	(0.023)	(0.46)	(0.18)
R^2-adjusted	0.24	0.25	0.13	0.16
DW	2.03	1.98	2.09	2.11

Notes: (i) See *Notes* to Table 2.

Table 6: Baseline regressions for non-GIIPS

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$					
	Full sample period		July 12, 2007 – August 31, 2009		September 1, 2009 – February 29, 2012	
	5-year	10-year	5-year	10-year	5-year	10-year
$DEFAULT_t$	0.0025*	0.0017	0.0058**	0.0023	0.0025	0.0020
	(0.0015)	(0.0013)	(0.0025)	(0.0016)	(0.0017)	(0.0015)
$MINISTER_t$	0.0022	0.0014	-0.0015	-0.0021	0.0029*	0.0024*
	(0.0014)	(0.0012)	(0.0018)	(0.0017)	(0.0016)	(0.0014)
$WORDS_t$	-.00000	-.00001	.00000	.00001	-.00000	-.00002
	(.00002)	(.00002)	(.00006)	(.00005)	(.00002)	(.00002)
$NEWS\_BH_{t,j \in GIIPS}$	0.017**	0.015**	-0.00047	0.0068	0.028**	0.019*
	(0.0081)	(0.0072)	(0.0068)	(0.0068)	(0.012)	(0.011)
$\Delta yspr_{i,t-1}$	0.15***	0.098**	0.013	0.029	0.20***	0.13**
	(0.048)	(0.045)	(0.031)	(0.045)	(0.064)	(0.059)
$\Delta r_{GE,t}$	-0.30***	-0.27***	-0.15***	-0.14***	-0.43***	-0.37***
	(0.027)	(0.022)	(0.018)	(0.022)	(0.045)	(0.033)
$\Delta r_{GE,t-1}$	0.014	-0.0034	-0.0027	-0.014	0.044	0.0082
	(0.020)	(0.019)	(0.017)	(0.019)	(0.037)	(0.035)
$\Delta r_{US,t}$	0.050***	0.031***	0.021*	0.014	0.063***	0.037**
	(0.014)	(0.012)	(0.011)	(0.011)	(0.024)	(0.019)
$\Delta r_{US,t-1}$	0.031**	0.022	0.021*	-0.0027	0.030	0.034
	(0.013)	(0.014)	(0.011)	(0.015)	(0.026)	(0.023)
ΔVIX_t	0.013	0.0097	-0.0085	-0.0060	0.0060	0.0071
	(0.013)	(0.011)	(0.014)	(0.014)	(0.019)	(0.016)
ΔVIX_{t-1}	0.0069	-0.0025	0.025*	0.0051	0.016	0.0049
	(0.013)	(0.011)	(0.015)	(0.015)	(0.019)	(0.018)
$\Delta EXRATE_t$	-0.34***	-0.26***	0.15	0.15	-0.69***	-0.56***
	(0.12)	(0.099)	(0.11)	(0.11)	(0.20)	(0.15)
$\Delta EXRATE_{t-1}$	-0.15	-0.17*	-0.030	-0.16	-0.080	-0.082
	(0.11)	(0.093)	(0.11)	(0.12)	(0.19)	(0.14)
ΔMRR_t	0.0093	0.013	0.016	0.026***	-0.047	-0.046
	(0.015)	(0.013)	(0.011)	(0.0086)	(0.069)	(0.048)
ΔMRR_{t-1}	0.0029	-0.014	0.0050	-0.0048	-0.014	-0.029
	(0.018)	(0.015)	(0.0090)	(0.0080)	(0.11)	(0.11)
R^2-adjusted	0.16	0.14	0.06	0.07	0.25	0.21
DW	2.04	2.04	1.99	1.93	2.04	2.06

Notes: (i) See *Notes* to Table 2.

Table 7: Regressions for GIIPS with split into bad and good news

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$					
	Full sample period		July 12, 2007 – August 31, 2009		September 1, 2009 – February 29, 2012	
	5-year	10-year	5-year	10-year	5-year	10-year
$DEFAULT_t$	-0.011 (0.013)	-0.0038 (0.0088)	0.0060 (0.0049)	0.0014 (0.0047)	-0.0096 (0.015)	-0.00030 (0.011)
$MINISTER_t$	0.019* (0.010)	0.0080 (0.0066)	-0.0020 (0.0032)	-0.0020 (0.0036)	0.021* (0.013)	0.0074 (0.0083)
$WORDS_t$	.00005 (.00010)	.00001 (.00006)	.00010 (.00010)	.00004 (.00011)	.00003 (.00014)	.00001 (.00008)
$NEWS\_BAD_{it}$	0.034*** (0.010)	0.019*** (0.0058)	-0.0011 (0.0023)	-.00035 (0.0023)	0.034*** (0.011)	0.019*** (0.0065)
$NEWS\_GOOD_{it}$	-0.044 (0.042)	-0.0094 (0.024)	-0.012** (0.0058)	-0.0077 (0.0071)	-0.048 (0.044)	-0.012 (0.025)
$NEWSBAD\_BH_{t,j\neq i}$	0.12*** (0.042)	0.068** (0.032)	-0.0014 (0.0096)	-0.0037 (0.0097)	0.19*** (0.056)	0.11** (0.044)
$NEWSGOOD\_BH_{t,j\neq i}$	0.019 (0.087)	-0.021 (0.079)	-0.045 (0.035)	0.011 (0.050)	0.090 (0.12)	-0.011 (0.10)
R^2-adjusted	0.096	0.12	0.24	0.25	0.14	0.16
DW	2.10	2.10	2.02	1.98	2.09	2.10

Notes: (i) See *Notes* to Table 2.

Table 8: Regressions for non-GIIPS with split into bad and good news

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$					
	Full sample period		July 12, 2007 – August 31, 2009		September 1, 2009 – February 29, 2012	
	5-year	10-year	5-year	10-year	5-year	10-year
$DEFAULT_t$	0.0024* (0.0015)	0.0017 (0.0013)	0.0057** (0.0025)	0.0022 (0.0016)	0.0024 (0.0017)	0.0020 (0.0015)
$MINISTER_t$	0.0023* (0.0014)	0.0015 (0.0012)	-0.0013 (0.0018)	-0.0019 (0.0017)	0.0030* (0.0016)	0.0025* (0.0014)
$WORDS_t$	-.00000 (.00002)	-.00001 (.00002)	.00000 (.00006)	.00001 (.00005)	-.00000 (.00002)	-.00002 (.00002)
$NEWSBAD\_BH_{t,j\in GIIPS}$	0.025** (0.012)	0.026** (0.010)	0.0068 (0.0084)	0.020* (0.011)	0.038** (0.016)	0.031** (0.014)
$NEWSGOOD\_BH_{t,j\in GIIPS}$	0.020 (0.034)	-0.0059 (0.029)	-0.033 (0.034)	-0.040 (0.037)	0.038 (0.044)	-0.0017 (0.036)
R^2-adjusted	0.16	0.14	0.06	0.07	0.25	0.21
DW	2.03	2.04	1.99	1.93	2.04	2.06

Notes: (i) See *Notes* to Table 2.

Additional Appendix:

A. Correlations among news variables

Table A.1: Correlations for total number of times a country is mentioned

	$NEWS_{GR}$	$NEWS_{IR}$	$NEWS_{IT}$	$NEWS_{PT}$	$NEWS_{SP}$
$NEWS_{GR}$	1.00	0.034	0.095	0.18	0.076
$NEWS_{IR}$	0.034	1.00	-0.060	0.26	0.067
$NEWS_{IT}$	0.095	-0.060	1.00	0.029	0.088
$NEWS_{PT}$	0.18	0.26	0.029	1.00	0.14
$NEWS_{SP}$	0.076	0.067	0.088	0.14	1. 00

Table A.2: Correlations of bad news

	$NEWS\_BAD_{GR}$	$NEWS\_BAD_{IR}$	$NEWS\_BAD_{IT}$	$NEWS\_BAD_{PT}$	$NEWS\_BAD_{SP}$
$NEWS\_BAD_{GR}$	1.00	0.015	0.14	0.12	0.096
$NEWS\_BAD_{IR}$	0.015	1.00	-0.019	0.20	0.071
$NEWS\_BAD_{IT}$	0.14	-0.019	1.00	0.054	0.080
$NEWS\_BAD_{PT}$	0.12	0.20	0.054	1.00	0.14
$NEWS\_BAD_{SP}$	0.096	0.071	0.080	0.14	1.00

Table A.3: Correlations of good news

	$NEWS\_GOOD_{GR}$	$NEWS\_GOOD_{IR}$	$NEWS\_GOOD_{IT}$	$NEWS\_GOOD_{PT}$	$NEWS\_GOOD_{SP}$
$NEWS\_GOOD_{GR}$	1.00	0.055	0.072	0.097	0.021
$NEWS\_GOOD_{IR}$	0.055	1.00	0.037	0.11	0.059
$NEWS\_GOOD_{IT}$	0.072	0.037	1.00	-0.020	0.13
$NEWS\_GOOD_{PT}$	0.097	0.11	-0.020	1.00	-0.0020
$NEWS\_GOOD_{SP}$	0.021	0.059	0.13	-0.0020	1.00

Table A.4: Correlations of bad and good news within each country

	$NEWS\_GOOD_i$				
	Greece	Ireland	Italy	Portugal	Spain
$NEWS\_BAD_i$	0.22	0.082	0.063	0.11	-0.056

B. Adding German news

We classify German news into bad and good on the basis of whether we judge it as bad or good from the perspective of the resources available for GIIPS countries' resources. Examples of bad news are:

- Negative macroeconomic news (including projections) for Germany, so fewer resources are available for bail outs.
- Negative statements about the condition of Germany's public finances, so fewer resources are available for bail outs.
- Negative media sentiments in Germany about, for example, Greece, indicating a reduced willingness of the public to make transfers to the GIIPS.
- Warnings of overburdening Germany.
- Legal action in Germany against support policies.
- Calls for boycotts of German products in the GIIPS and anti-German sentiments (indicating a deterioration of the relations between countries and, thus, likely reduction in willingness to support GIIPS).

Table B.1 reports the results when German news is added. We leave out the estimates of the coefficients on the control variables. The table has a format analogous to previous tables. The German news variable is never significant.

Table B.1: Including German news

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$			
	Adding German news		Adding bad and good German news	
	5-year	10 year	5-year	10 year
	(1)	(2)	(3)	(4)
$NEWS_{it}$	0.023*** (0.0085)	0.013*** (0.0043)		
$NEWS\_BAD_{it}$			0.034*** (0.010)	0.019*** (0.0058)
$NEWS\_GOOD_{it}$			-0.044 (0.042)	-0.0094 (0.024)
$NEWS\_BH_{t,j\neq i}$	0.085*** (0.030)	0.043* (0.023)		
$NEWSBAD\_BH_{t,j\neq i}$			0.12*** (0.042)	0.068** (0.032)
$NEWSGOOD\_BH_{t,j\neq i}$			0.019 (0.088)	-0.021 (0.079)

$NEWS_{DE,t}$	0.0054 (0.0064)	0.0049 (0.0041)		
$NEWSBAD_{DE,t}$			0.0026 (0.0085)	0.0030 (0.0058)
$NEWSGOOD_{DE,t}$			0.0059 (0.016)	0.006 (0.011)
R^2-adjusted	0.093	0.12	0.096	0.12
DW	2.09	2.11	2.10	2.10

Notes: (i) See *Notes* to Table 2. (ii) German news is indicated by subscript "*DE*".

C. Testing for Endogeneity

To see whether movements in spreads affect news reporting, Table C.1 reports the results of a panel regression of news on the first lag of the spread. No effect is found.

Table C.1: Testing for endogeneity

	Dependent variable: $NEWS_{it}$	
	5-year	10 year
	(1)	(2)
$NEWS_{it-1}$	0.0521^{***} (0.024)	0.0521^{***} (0.024)
$\Delta yspr_{i,t-1}$	0.050 (0.074)	0.116 (0.115)
R^2-adjusted	0.32	0.32
DW	2.35	2.36

Notes: (i) See *Notes* to Table 2.

D. Statistical difference between GIIPS and NON-GIIPS

We now do our baseline panel regression including both the GIIPS and the non-GIIPS countries, while interacting our spill-over variable with a dummy that indicates whether a country is a GIIPS country or not. For the GIIPS countries the interaction variable is $NEWS\_BH_{t,j\neq i}$ constructed from all the other GIIPS countries and for the non-GIIPS countries it is $NEWS\_BH_{t,j\in GIIPS}$ constructed from all the GIIPS countries in our sample. Hence, we allow for different coefficients on the interaction variable, but we force the coefficients on the control variables to be the same for the two groups of countries. The null hypothesis that the coefficients on the interaction variable are the same for the GIIPS and the non-GIIPS countries rejects at the 0.86% level for the 5-year regression and the 11.2% level for the 10-year regression.

Table D.1: Baseline with all countries

	5-year	10-year
$GIIPS*NEWS\_BH_{t,j \in GIIPS}$	0.089*** (0.030)	0.044* (0.022)
$NONGIIPS*NEWS\_BH_{t,j \in GIIPS}$	0.00080 (0.014)	0.0045 (0.010)
H0: equality of the two parameters	6.91 [p-value = 0.0086]	2.53 [p-value = 0.112]
R^2-adjusted	0.065	0.085
DW	2.10	2.10

Notes: (i) See *Notes* to Table 2.

E. Sensitivity to linear interpolation

Table E.1 reports the results for baseline regressions when the interaction variables are held constant over the period (monthly for exports; quarterly for bank holdings). We leave out the estimates of the coefficients on the control variables. The table has a format analogous to previous tables. The results are unaffected – compare with Table 2.

Table E.1: Sensitivity to linear interpolation

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$			
	Based on exports		Based on bank holdings	
	5-year	10 year	5-year	10 year
	(1)	(2)	(3)	(4)
$NEWS_{it}$	0.023*** (0.0088)	0.013*** (0.0043)	0.023*** (0.0087)	0.013*** (0.0043)
$NEWS\_EXP_{t,j \neq i}$	0.0017 (0.0014)	0.001 (0.001)		
$NEWS\_BH_{t,j \neq i}$			0.082*** (0.028)	0.041* (0.021)
R^2-adjusted	0.092	0.12	0.093	0.12
DW	2.10	2.11	2.10	2.11

Notes: (i) See *Notes* to Table 2.

F. Statistical difference between the two sub-samples

Table F.1 reports the results of a baseline regression in which we allow the coefficients on the news variables to differ between the two sub-samples, but force the coefficients on all other variables to be equal (the estimates of these coefficients are not reported). Joint equality of the coefficients on the news variables for the two sub-samples is rejected.

Table F.1: Split in sub-samples

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$			
	5 year		10 year	
	First sample	Second sample	First sample	Second sample
	(1)	(2)	(3)	(4)
$NEWS_{it}$	-0.00028 (0.0027)	0.025** (0.0097)	0.00056 (0.0021)	0.013*** (0.0047)
$NEWS\_BH_{t,j\neq i}$	0.020 (0.014)	0.10*** (0.039)	0.018 (0.011)	0.045 (0.030)
H0: equality of news parameters in the two sub-samples	4.65 [p-value = 0.0096]		3.09 [p-value = 0.046]	
R^2-adjusted	0.13		0.16	
DW	2.09		2.11	

Notes: (i) See *Notes* to Table 2.

G. Instrumental variables with U.S. interest rate instrumenting for German interest rate

Table G.1 reports for the main variables under consideration the coefficient estimates when the German interest rate is instrumented with the U.S. interest rate. The IV regressions reported in Table 3 are not repeated.

Table G.1: Instrumental variables

	Dependent variable: $\Delta yspr_{it} = yspr_{it} - yspr_{i,t-1}$			
	September 1, 2009 – February 29, 2012		Adding bad and good German news	
	5-year	10 year	5-year	10 year
	(1)	(2)	(3)	(4)
$NEWS_{it}$	0.023** (0.0098)	0.012** (0.0048)		
$NEWS\_BAD_{it}$			0.034*** (0.011)	0.018*** (0.0064)
$NEWS\_GOOD_{it}$			-0.045 (0.043)	-0.0087 (0.025)
$NEWS\_BH_{t,j\neq i}$	0.13*** (0.041)	0.063* (0.033)		
$NEWSBAD\_BH_{t,j\neq i}$			0.18*** (0.056)	0.089** (0.044)
$NEWSGOOD\_BH_{t,j\neq i}$			0.13 (0.12)	0.031 (0.10)
R^2-adjusted	0.13	0.15	0.13	0.14
DW	2.09	2.11	2.08	2.09

Notes: (i) See *Notes* to Table 2.