NBER WORKING PAPER SERIES

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Working Paper 18028
http://www.nber.org/papers/w18028

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
May 2012

Joshua Aizenman and Yothin Jinjarak acknowledge funding from the Asian Development Bank (ADB). The views herein are entirely those of the authors. They do not necessarily represent the views of the ADB, or the National Bureau of Economic Research.

Developing countries' financial vulnerability to the euro crisis: An event study of equity and bond markets

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NBER Working Paper No. 18028
May 2012
JEL No. F30,F32,G15

ABSTRACT

The global crisis highlights the continued vulnerability of developing countries to shocks from advanced economies. Just a few years after the global crisis, the eurozone sovereign debt crisis has emerged as the single biggest threat to the global outlook. In this paper, we apply the event study methodology to gauge the scope for financial contagion from the EU to developing countries. More specifically, we estimate the responsiveness of equity and bond markets in developing countries to global crisis news and euro crisis news. Overall, we find that whereas global crisis news had a consistently negative effect on returns of equity and bond markets in developing countries, the effect of euro crisis news was more mixed and limited.

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1 Introduction

Well before the onset of the global financial and economic crisis of 2008-2009, the world economy has been experiencing a tectonic shift of global economic power from the advanced economies to the developing countries. Developing Asia in particular has been growing for decades and has become one of the main hubs of the world economy. China and to a lesser extent India followed the footsteps of newly industrialized economies and ASEAN countries on a path of sustained rapid growth which raised general living standards and reduced poverty at an unprecedented speed and scale. Sound policies and effective governments combined with openness to foreign trade and technology to propel Asian countries from the fringes of the world economy to the front and center within a generation. More recently, other parts of the developing world such as Latin America and Africa have also seen more rapid growth due to rising global commodity prices and improved policies. Structural factors such as younger populations will further tilt global economic power in toward developing countries in the future.

Unlike financial crises such as the Latin American debt crises of the 1980s and the Asian financial crisis of 1997-1998, the global crisis of 2008-2009 originated in the advanced economies. As a result, the global crisis hit the advanced economies harder than the developing countries. While the crisis originated in the US subprime mortgage market, it spread like a wildfire across the Atlantic to Europe due to the heavy exposure of European banks to US subprime assets. Although its limited exposure to subprime assets sheltered Japan from financial contagion, it suffered a recession along with the US and EU. In contrast to the fragile and stuttering recovery of the advanced economies, the developing countries enjoyed a much more

robust and speedy recovery. Indeed the continued strength of developing countries helped to partly offset the sluggishness of the advanced economies and contributed to global recovery. The global crisis and the post-crisis two-speed global recovery thus added further momentum to the growing role of developing countries even though they did not initiate the trend.

Notwithstanding their faster growth relative to the advanced economies before and after the global crisis, by no means were developing countries entirely immune from the adverse impact of the global crisis. To the contrary, the pronounced effect of the global crisis emphatically disproved the increasingly popular notion that developing countries are now de-coupled from the advanced economies. Put differently, despite their relative decline, the US, EU and Japan still account for a large share of global output, trade and capital flows, and still exert a major influence on the economic performance of the developing countries. Some parts of the developing world were hit harder than others by the global crisis. For example, developing Asia grew, and grew at a healthy pace, while Latin America suffered an outright contraction of output. However, growth rate fell sharply across the developing world as its exports to the advanced economies plummeted. Furthermore, some parts of the developing world such as Latin America also suffered instability due to the sudden and sharp withdrawal of capital.

Just a few years after the US-originated global crisis, the world economy finds itself confronted with another crisis emanating from the advanced economies. The eurozone sovereign debt crisis – henceforth the euro crisis – currently poses the single biggest downside risk to the global outlook. The crisis is rooted in the uneven growth performance of the Euro countries, the unsustainably large public debts of some EU periphery countries, and the European banks'

exposure to such debt. While massive and forceful liquidity support by the European Central Bank (ECB) since December 2011 has temporarily calmed the financial markets, the euro crisis still awaits a more fundamental resolution. The euro crisis differs from the global crisis in that it has been (so far) largely confined to Europe due to the US banks' lack of exposure to the government debt of peripheral European countries. But from the viewpoint of developing countries, both crises represent major external shocks from advanced economies. The pronounced effect of the global crisis on developing countries naturally brings up the question of the potential effect of the euro crisis on those countries.

At a broader level, our paper seeks to investigate the potential impact of the euro crisis on developing countries. More precisely, the central objective of our paper is to empirically assess the scope for financial contagion from the EU to the developing countries via the equity and bond markets. We apply the event study methodology to gauge the responsiveness of equity and bond markets in three regions of the developing world – (1) Emerging Asia, (2) Latin America, and (3) Eastern Europe, Middle East and Africa – to news from the eurozone. For example, we can expect new negative developments pertaining to the Greek crisis to adversely affect European financial markets but the extent of the spill-over to developing-country financial markets is uncertain. We implicitly assume that the prices of financial assets will efficiently incorporate the financial markets' expectations about the future effects of news from the eurozone. Therefore, we limit our empirical analysis to developing countries which have relatively well-developed, deep, liquid financial markets.

The sample period of our event study period encompasses both the global crisis period – i.e. the period when eurozone news interacted with and partly reflected news from the rest of the world, in particular the US, the epicentre of the global crisis – and the post-global crisis period – i.e. period when news from the eurozone largely reflected eurozone-specific news such as news from Greece or Spain. The findings from our event study indicate that in the post-global crisis period eurozone news had at best a mixed and limited effect on the returns of equity and bond markets in developing countries. On the other hand, during the global crisis period, our results imply that eurozone news had a consistently negative impact on the returns of the same markets. Overall our evidence thus suggests that the risk of financial contagion from the eurozone to developing countries was quite limited.[1] The rest of this paper is organized as follows. Section 2 describes the data and methodology used for the event study analysis. Section 3 reports and discusses the main results of the event study analysis. Section 4 concludes the paper.

2 Data and Empirical Specification

We focus on the recent episode of negative spillovers of financial shocks from the western countries to the rest the world, particularly the emerging markets. Our aim is to examine the exposure of the emerging markets to the financial crisis of western economies, specifically the Euro area. In this vein, we provide a new evidence of global market linkages based on the responses of global capital markets to the recent financial events, namely the Eurozone crisis.

[1] Among the European Union members, Bekaert et al. (2010) find that the Euro adoption and the anticipation of the adoption has minimal effects on market integration. Using an earlier period of data from 2007-10, Arezki et al. (2011) find some evidence of the spillover effects of sovereign rating news on the financial markets (CDS, stock indices) across the selected European countries. Bellas et al. (2010) study the EMBI from 1997-2009 and find that the spreads are driven by financial volatility in short run, and by fundamentals in the long run.

While some have argued that the panic over the Eurozone crisis has started in October 2009 as soon as the Greek Socialist government took the office, we extend our coverage of the negative spillovers back to August 2007, with the whole sample period for estimation from 2003 to 2011.[2]

Our measures of the financial market linkages are derived from the fluctuations of asset returns, including the stock market [MSCI Broad Investable Stock Prices (US$)] and the bond market [JP Morgan EMBI Bond Prices (US$)] indices. We consider the emerging market countries where the bond market and the stock market are relatively developed; these country indices are included in the MSCI and EMBI indices. By this matrix, the countries covered are Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey, totalling 20 countries for both the stock market and the bond market.

In order to examine the detail dynamics of these countries' reaction to the global news, we use the daily data of the market series of the emerging markets spanning January 1, 2005 to December 12, 2011. We then map the emerging markets' asset returns to the negative (and positive) news from the Euro area. We start by considering all financial news due to the Euro area. As can be seen from Table 1, there are numerous news related to the Euro area. We proceed by investigating four quantitative indicators pointing to major macroeconomic and financial news emanating from the Eurozone, indicators that are frequently followed by the market:

(i) VIX S&P500 (DataStream: CBOEVIX), considered the "fear-gauge" of the global financial markets.

[2] Following Taylor and Williams (2009) we define the global crisis period as August 7, 2007 onwards.

(ii) EONIA Swap Index 3-Month (DataStream: EUEON3M), signifies a funding cost in European money markets. The rate is a weighted average of overnight Euro interbank offer rate, calculated by the European Central Bank.

(iii) iTraxx Europe 5-Year Credit Default Swap Index (DataStream: DIXE5MC), considered a measure of default risk in the European capital markets. The index is tied to the most liquid 125 CDS of the region's investment grade credits.

(iv) Fitch 1-Year Probability of Default Western Europe (DataStream: FPWE01Y), provides a market view of credit condition. The index is computed from Fitch's proprietary default database, containing approximately 27,000 entities globally, based on latest information on the size of debt, equity price, and financial statement.

[Table 1 here]

2.1 Events

While the focus is how the negative news from the Eurozone (e.g. an abrupt increase of the European default risk) has influenced the financial markets and asset returns in emerging markets, we would like also to contrast positive with negative news impacting our quantitative measures. We apply an event study methodology to examining the reactions of the emerging markets to the news. The first empirical task is to arrange the window for events that appear to influence of volatility of the stock and bond returns of the emerging markets. As shown in Figure 1, the daily plots of the global financial market indicators suggest that we need to standardize the criteria to filter these financial market fluctuations.

[Figure 1 here]

We use three criteria to filter the fluctuations of the four quantitative measures (VIX, EONIA, ITRAXX, and FITCH): (a) the event is unanticipated; (b) the event is significant; (c) the event attracts the media interests. Following criteria (a) and (b), we quantitatively select events that have large effects, negatively or positively, on the global markets according to the fluctuation of global market indices; each of the indices must increase by more than four standard deviations (either negatively or positively) of their sample average to be considered as the empirical event due to the Euro area. Next we supplement the criteria (c) to the quantitative selection of news events based on (a) and (b), tracking qualitatively the associated market news in the publications of Wall Street Journal, Financial Times, and New York Times listed in Table 1. Following this filtering procedure, we then extract the fluctuations of VIX, EONIA, ITRAXX, FITCH by calculating their daily percentage changes, plotted in Figure 2: from January 2005 to December 2011, we have 95 events, 23 of which are negative news since the onset of Eurozone crisis in October 2009. Note that the decomposition of variance for VIX, EONIA, ITRAXX, FITCH suggests that each of these series movements are distinctive from the others as the series' own lags explain more than 80 percent of their variation.

[Figure 2 here]

2.2 Returns

Based on the MSCI stock and JP Morgan bond indices, we use their daily returns from January 1, 2005 to December 12, 2011. Figure 3 plots the financial market movements based on the equity returns and the bond returns by regions.

[Figure 3 here]

In our estimation, we account for the correlation across global market returns using the market model

$$r_{i,t} = a_i + b_i r_{m,t} + e_{i,t}$$

where $r_{i,t}$ denotes the return of country i on day t; m denotes the global market; $e_{i,t}$ the idiosyncratic error term. To estimate the normal returns, the above regression is done over the estimation window period from day t-70 to day t-30 (40 trading day observations). We next calculate the abnormal returns

$$e_{i,t} = r_{i,t} - a_i - b_i r_{m,t}$$

inferring the 5-day cumulative abnormal returns (i.e. 2 days before and after the event date). Figure 4 provides the average abnormal return on days in which an event is bad news, for during the Euro crisis period, outside the Euro crisis period, equity market return, and bond market return.

[Figure 4 here]

As a first pass on the financial market linkages between the Euro area and the emerging markets, we classify emerging markets according to the exposure of their economies to the Euro area. The exposure to the Euro area is measured by the size of a country's exports to the Euro area divided by the GDP of the exporting country. In Figure 5, top row, we plot the average equal-weighted abnormal 2-day before and after return of the emerging bond market $e_{i,t}^{(-2,2)}$ on days in which an event during a negative news worsens the financial markets in the Euro area.

In the bottom row, we plot the average abnormal return of the emerging stock markets. The left column shows the abnormal returns during the Euro-area crisis (October 2009 to December 2011), whereas the right column shows the abnormal returns outside the crisis (prior to October 2009).

As expected, for emerging bond markets in the high exposure group, the negative Euro-area news has a negative effect on returns. This effect larger than the low exposure group outside the crisis but smaller during the crisis. For emerging stock markets, the negative Euro-area news had a negative effect on returns, and this effect was larger than the low exposure group during the crisis but similar during the crisis. The evidence in Figures 4 and 5 supports the notion that the stock market of the high exposure emerging markets are more sensitive to the Euro area crisis. Nevertheless, the responses of the emerging markets during the Euro crisis are rather small, ranging from -1.2 to -1.8 percent for the bond markets and -1.2 to -2.3 percent for the stock markets. Comparing these results to the events outside the Euro area crisis, one can't rule out the possibility that emerging market investors have already anticipated and partially priced their exposure in the overall market risks well before the troubles in the Euro area were put in the spotlight.

[Figure 5 here]

3 Empirical results

In this section, we report and discuss our main empirical results. Table 2 provides the baseline results. The estimating specification is

$$e_{i,t}^{(-2,2)} = \alpha + \gamma(\text{Global Crisis Period 0/1 indicator}) + \lambda(\text{Euro Crisis News 0/1 indicator})$$

$$+ \theta(\text{Euro Crisis News} \times \text{Country i Exposure to the Euro area}) + u_{i,t}$$

where $e_{i,t}^{(-2,2)}$ is the 2-day before/after cumulative abnormal return for country i for the event on date t. The estimation uses the fixed-effects method to control for the unobserved country effects. The sample period of estimation is January 1, 2003 to December 12, 2011. Following Taylor and Williams (2009) we define the global crisis period as August 7, 2007 onwards. As discussed above, the Euro area crisis is defined as the period of October 8, 2009 onwards. Hence, λ measures the average effect of news events from the Euro area during the Euro area crisis. θ measures the interaction of news events from the Eurozone and country i exposure to the Euro area, thus measuring the effects of news by accounting for economic linkages with the Eurozone.

We employ several measures of emerging markets' exposure to the Euro area's economy. Our main measure of country i exposure is the size of country i's exports to the Euro area divided by the GDP of country i. As alternative measures, we also use as an indicator of economic exposure: market capitalization, saving/GDP, trade openness, and manufacturing production/value added. In the following, Table 2 reports the estimation using country i's exports to the Euro area as a measure of exposure, investigating the market responses for the whole sample of emerging markets, and by the region. Tables 3 and 4 provide the results using the alternative measures of the economic exposure for the stock markets and the bond markets, respectively.

In Table 2, the first two columns use cumulative normal return of equity and bond market, while the third and fourth columns use cumulative abnormal returns. The results suggest that

returns across equity and bond markets drop during the global crisis period. According to the cumulative normal return, bad news from the Eurozone negatively affects the equity market; good news positively affects the cumulative abnormal return of the equity markets.

For Emerging Asia, the average returns of the bond markets have declined since the global crisis period started, whereas the average returns of the stock markets are higher. The Asian markets are largely insulated from the Euro area news, both positive and negative events. For emerging market Latin America, both the stock and bond markets react uniformly and negatively to adverse global crisis period news. While there is some evidence of positive abnormal returns in the stock markets, the effect of the Euro area events on the Latin American markets during the sample period is mostly insignificant. For emerging markets in the Eastern Europe, Middle East, and Africa, both the bond and stock markets decline since the global crisis started. As for the effect of the Euro area events on this region, the estimation shows that the cumulative normal return of the stock market drop on the bad news (about -2.9 percent), while the cumulative abnormal return of the bond markets declines on good news (about -0.4 percent). We consistently find the negative effect **of global crisis news** on the stock and bond returns of the emerging markets. Yet, the estimation provides a mixed result on the impact of the Euro area events.

[Table 2 here]

Using alternative measures of economic exposure, Tables 3 and 4 provide the responses the equity markets and the bond markets, respectively. In Table 3, the effects of global crisis and bad news from the Eurozone on the emerging stock markets are similar as the baseline results in

Table 2. We also find that none of these alternative measures seems to explain the market reaction. The bond market reactions using different measures of exposure to the Euro crisis events, reported in Table 4, suggest a similar pattern as in Table 2. Except the lower return in the global crisis period, the bond markets are relatively less responsive to the news events from the Eurozone and various measures of country exposure.

[Table 3 here]

[Table 4 here]

Admittedly, there are limitations of using the regression analysis to the study the reaction of emerging markets to news events from the Euro area. Subject to data availability, we employ the market returns as a measure of market reaction. A more comprehensive set of market variables will include both the returns and the investment inflow and outflow. These inflow and outflow, as well as the net flow, cannot simply be extracted from the Balance of Payment data, but rather from the detail micro data due to the retail and institutional investors. With the flow of investment data, our study could examine returns and flows, as well as asset allocation, across the emerging stock and bond markets.

Table 5 supplement the formal estimation with a matrix of sample correlation across the market indicators and the Euro news events. We report there the statistical correlations among the quantitative Euro financial indicators (EONIA, iTraxx, Fitch's Probability of Eurozone Default), and emerging market MSCI and EMBI returns (by regions), for the whole sample period (top panel), pre-Euro-crisis (middle panel), and during the Euro crisis (bottom panel). While the correlation between EONIA and iTraxx, both of which are the widely followed money

market indicators, and the emerging market returns provide a mixed pattern, the correlation between the (Fitch's) probability of default of the Euro area and the emerging market returns are uniformly negative across the sample periods and regions. Figures 6A and 6B provide graphical evidence that seems consistent with these findings. While the correlation between the emerging bond markets and iTraxx Western Europe in 6A does not have obvious patterns, the plot in 6B suggests strong co-movements between the emerging stock market returns and probability of default in the Western Europe over the sample period.

[Table 5 here]

[Figures 6.A and 6.B here]

4 Conclusion

The global crisis of 2008-2009 highlighted the continued vulnerability of developing countries, even those armed with sound fundamentals, to major shocks emanating from advanced economies despite their growing relative weight in the world economy. Although there were considerable divergences among developing countries in terms of the magnitude of the impact, with some regions and countries suffering more than others, the crisis had a pronounced impact on the developing world as a whole. Even in developing Asia, the region least affected by the global crisis, exports and growth plummeted during the trough of the global downturn – i.e. 4th quarter of 2008 and 1st quarter of 2009 – and massive, forceful fiscal and monetary stimulus were required to stave off a deeper and more protracted recession. For all the talk of de-coupling, the US, EU and Japan still account for a sizable share of the world economy and remain key

economic partners of developing countries. Therefore, negative developments in advanced economies will still be felt, and felt tangibly, in developing countries.

Just a couple of years removed from the global crisis, developing countries face another major external shock from advanced economies. The eurozone sovereign debt crisis, which has its roots in the unsustainably high public debt of eurozone periphery countries and heavy exposure of eurozone banks to such debt, still awaits a fundamental resolution despite the European Central Bank's decisive provision of liquidity support since December 2011. Broadly speaking, there are two channels through which the euro crisis could affect developing countries. First, the eurozone remains a key trading partner and export market for many developing countries so a eurozone recession will hurt their exports and growth. This is the trade channel. Second, financial instability in the eurozone can contribute to financial instability in the developing countries. For example, eurozone banks may sharply curtail their lending to developing countries to bolster their balance sheets back home. Or, and this is the issue addressed in this paper, bad news which rocks eurozone equity and bond markets may spill over into markets in developing countries.

We use the event study methodology to analyze the effect of news from the eurozone on the equity and bond markets of developing countries. Overall, the results from our event study analysis provide a very mixed picture about the existence and magnitude of financial contagion from eurozone to developing countries via the equity and bond markets. Our analysis covers both the global crisis period and the more recent euro crisis period to allow for a comparison of their effects on the financial markets of developing countries. We find that global crisis news had a consistently negative impact on the returns of the equity and bond markets of developing

countries. In sharp contrast, we could not detect any systematic pattern in the effects of euro crisis news on developing-country financial markets. Even where there was a significant effect, the magnitude of the effect was smaller than during the global crisis. Our finding of a stronger impact of global crisis is intuitively plausible since whereas the global crisis brought about financial paralysis in both the US and EU, the euro crisis was (so far) largely confined to EU.

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Figure 1. Indicators of Global Financial Volatility and The Eurozone Crisis

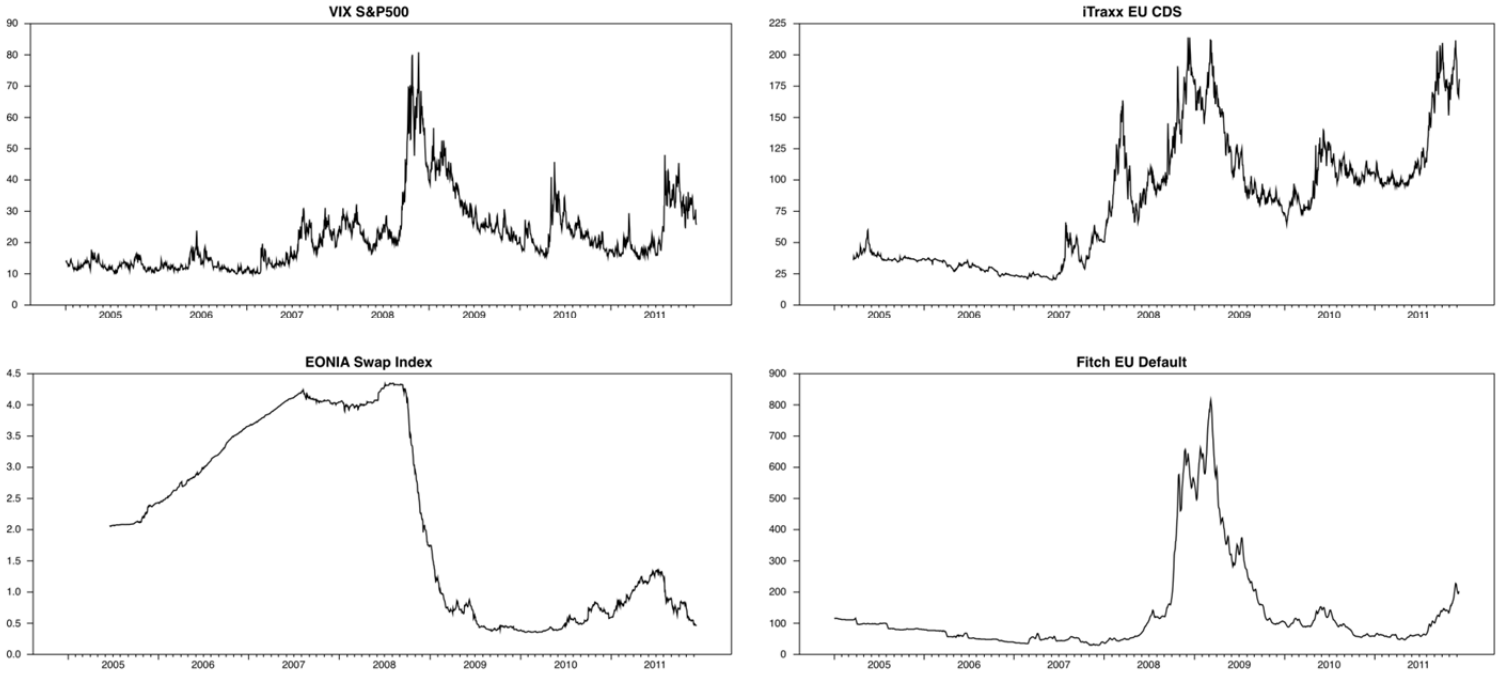

Figure 2. Global News and Large Fluctuations

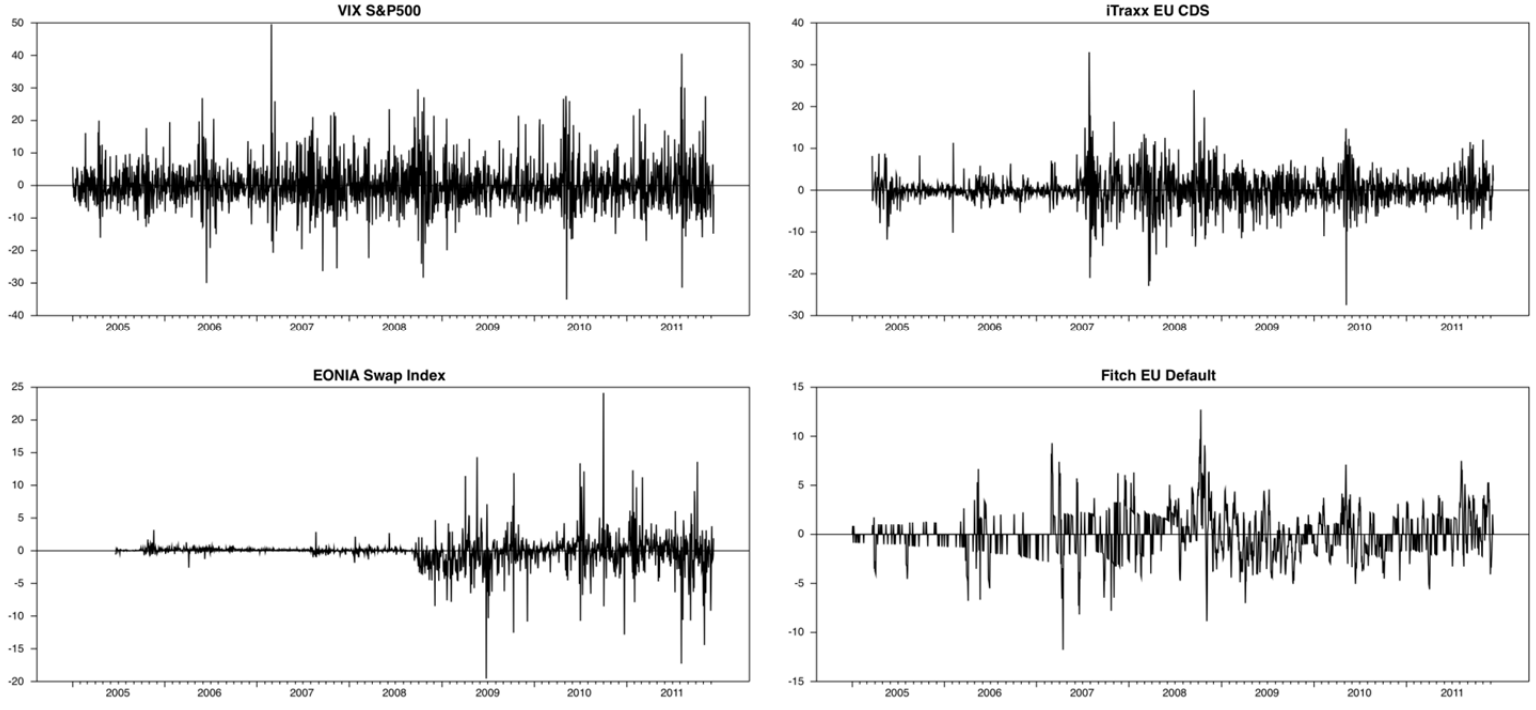

Figure 3. Market Returns of Emerging Markets

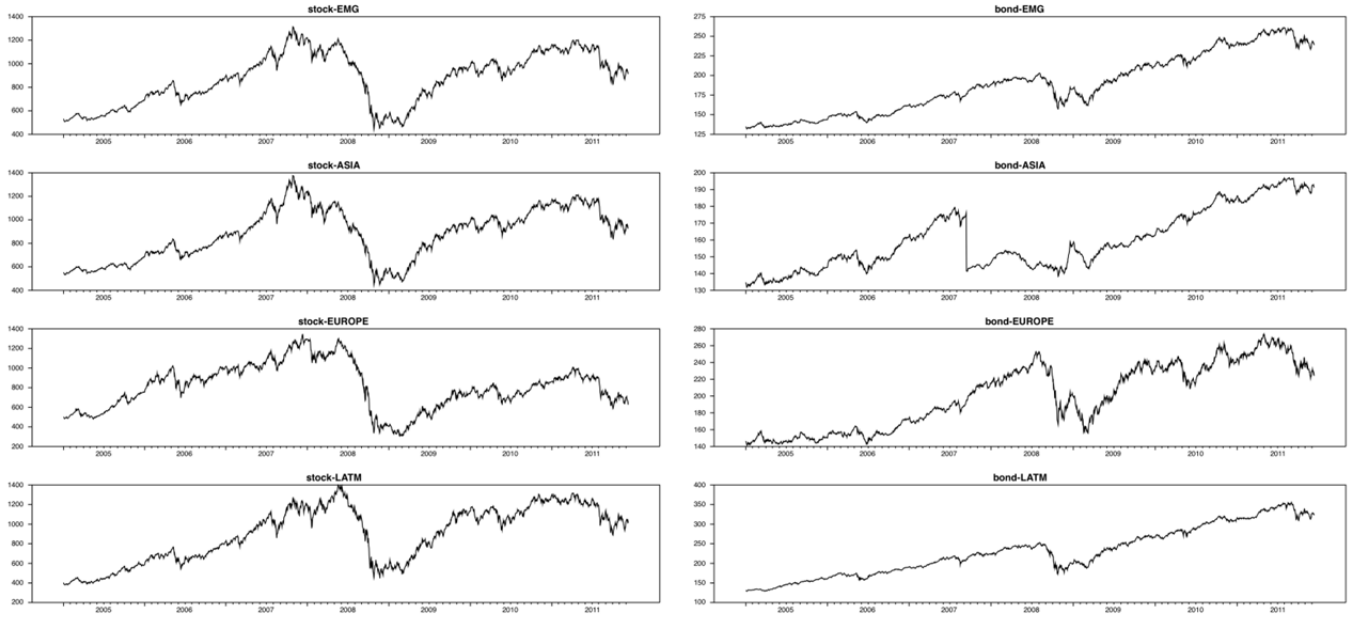

Figure 4. Average abnormal returns by economic exposure

This figure provides the average abnormal return on days in which an event is bad news. The exposure to the Euro area is measured by the size of a country's exports to the Euro area divided by the GDP of the exporting country. The figure is calculated from the daily data: the whole sample period is January 1, 2003 to December 12, 2011; the Euro area crisis is the period starting October 8, 2009 onwards.

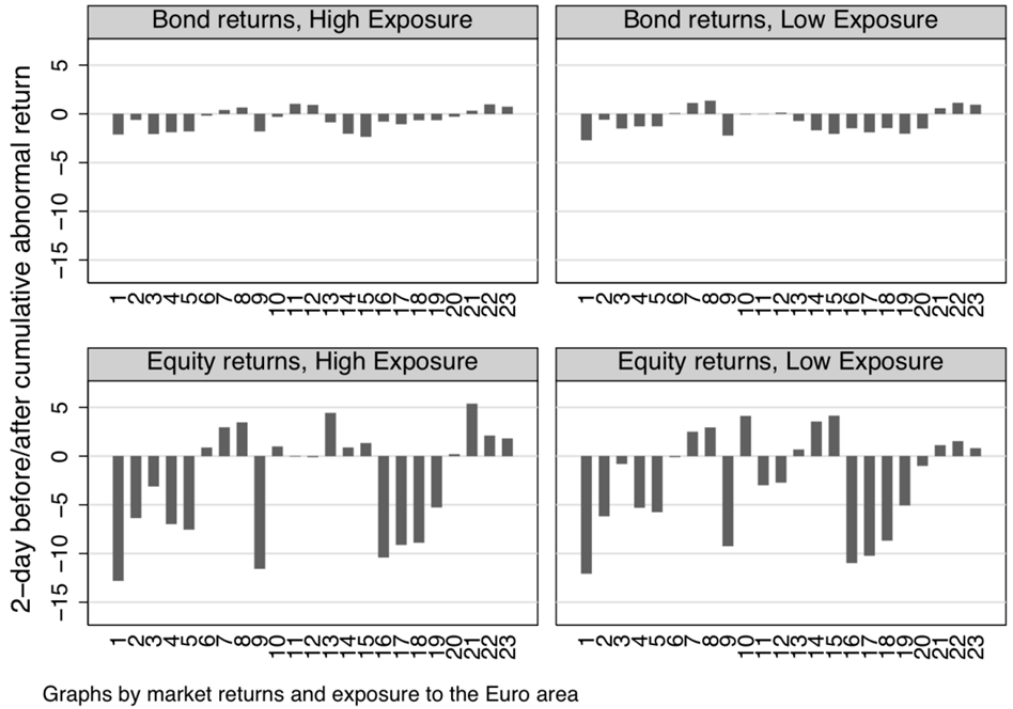

Figure 5. Average abnormal returns by event

This figure provides the average abnormal return on days in which an event is bad news since the onset of Eurozone crisis in October 2009. The exposure to the Euro area is measured by the size of a country's exports to the Euro area divided by the GDP of the exporting country. The figure is calculated from the daily data: the whole sample period is January 1, 2003 to December 12, 2011; the Euro area crisis is the period starting October 8, 2009 onwards.

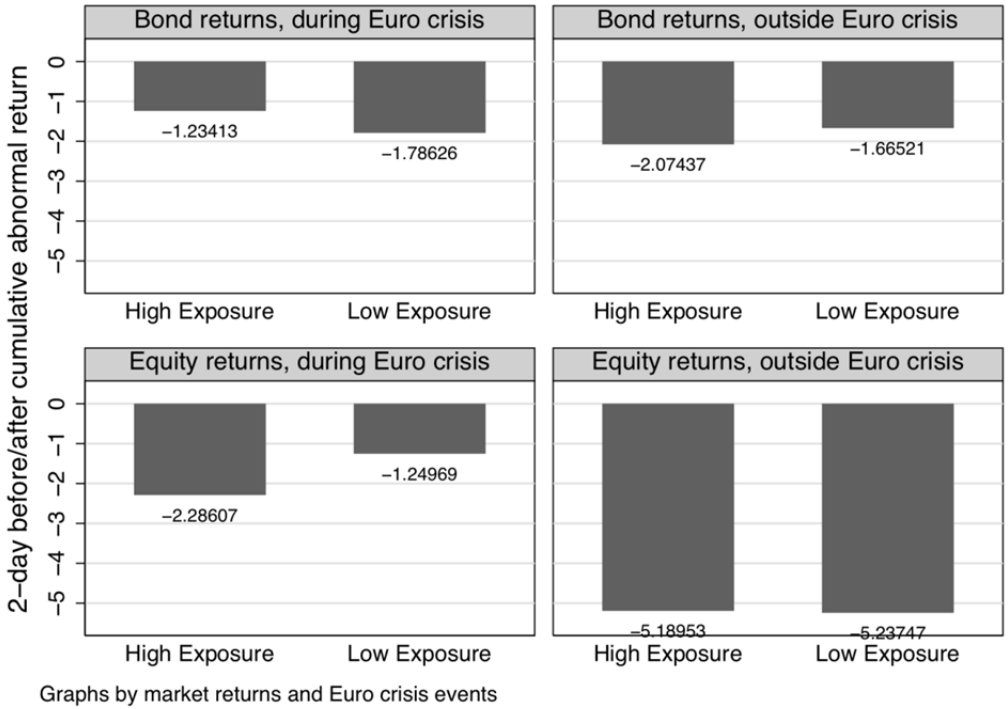

Figure 6A. Correlation between the Emerging Bond Markets and iTraxx in Western Europe

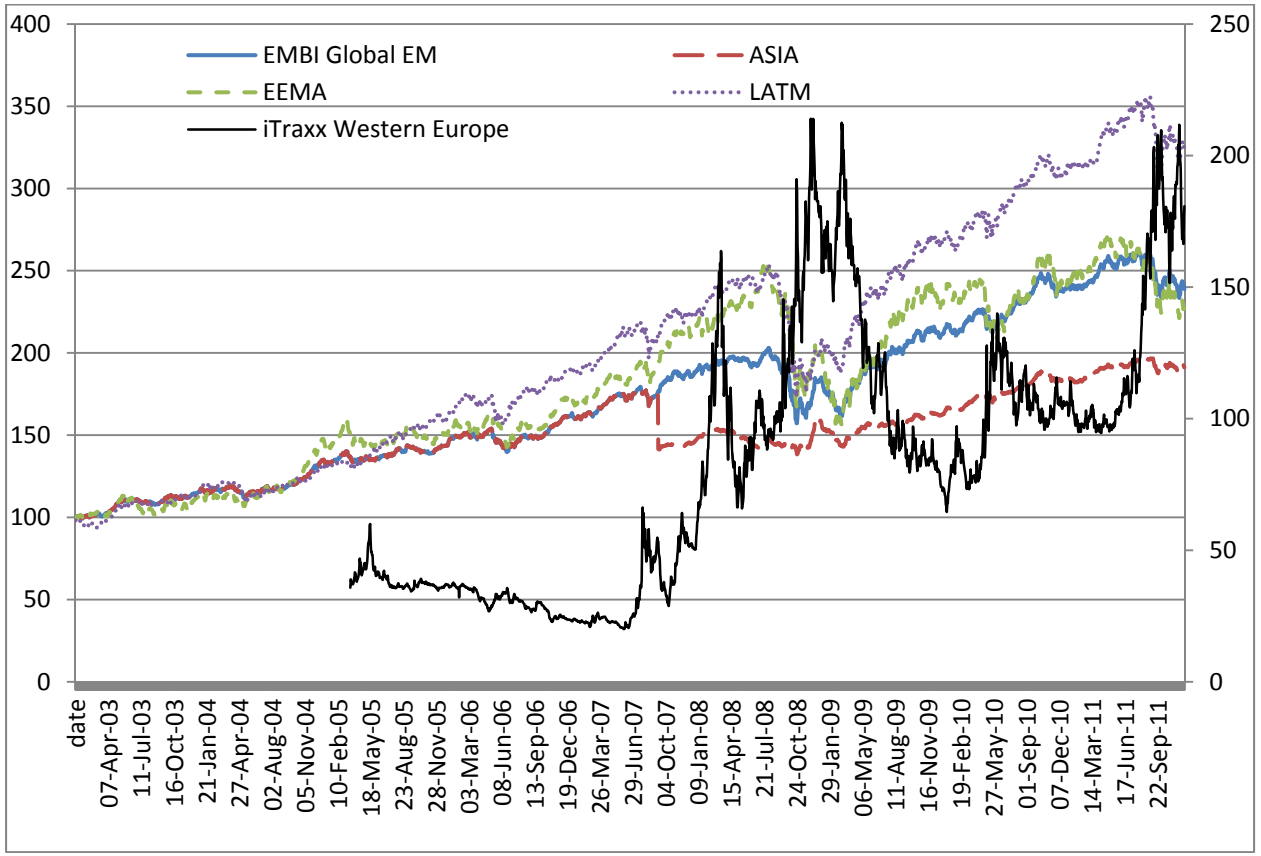

Figure 6B. Correlation between the Emerging Bond Markets and Default Probability in Western Europe

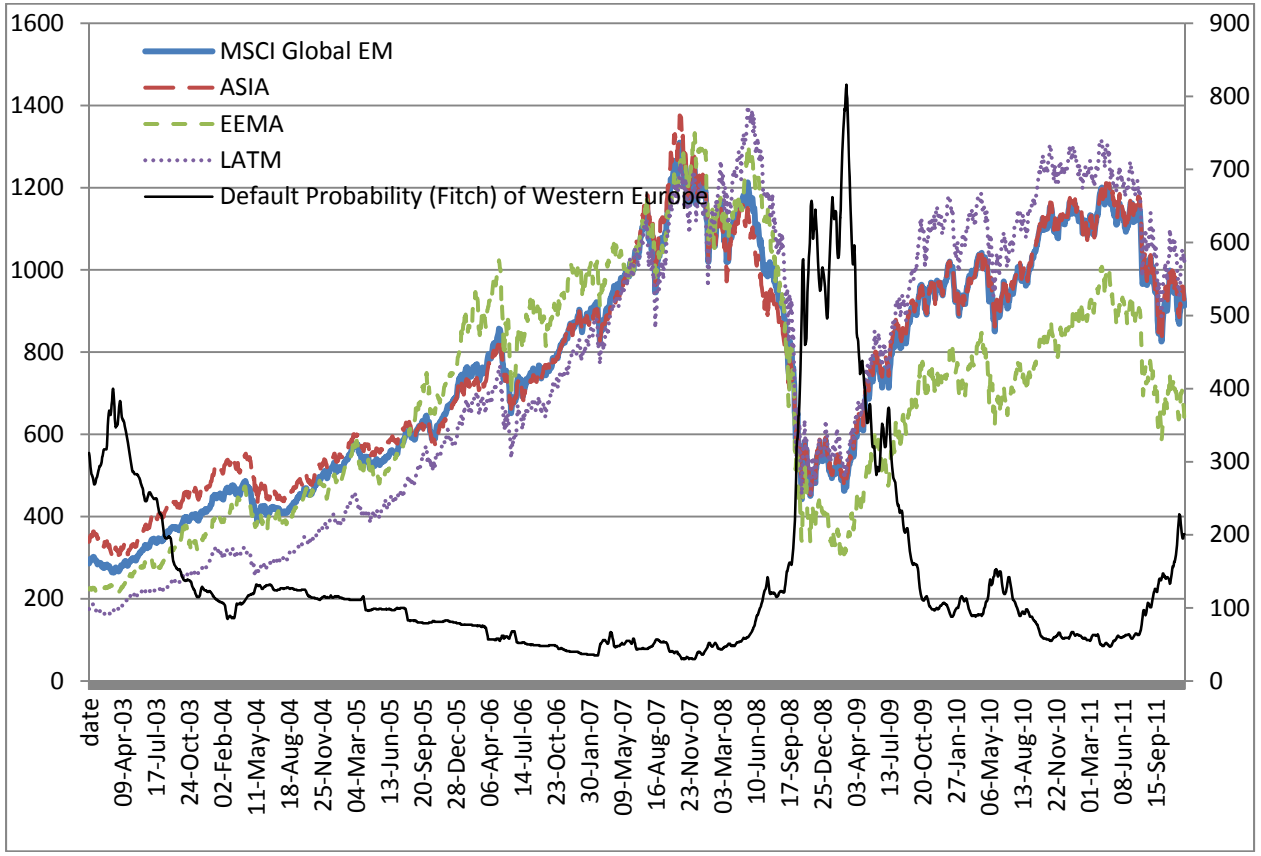

Table 1: Economic and Political Events of the Eurozone.

Date	Event
04-Oct-09	Socialists win in Greece
08-Dec-09	Greek debt downgraded
14-Dec-09	Greece's leader calls for austerity
02-Feb-10	Greek announces austerity plan
03-Feb-10	EU endorses Greek austerity plan; Spain raises deficit forecast
09-Feb-10	Concern shifts to Portugal; Germany considers bailout plan for Greece
11-Feb-10	Conflicts over aid to Greece
17-Feb-10	Spain gets boost with new bond issue
23-Feb-10	Fitch downgrades Greek banks
03-Mar-10	Greece announces austerity plan
04-Mar-10	ECB rejects IMF involvement; Greece raises cash with new bond issue
05-Mar-10	Merkel avoids giving Greece assistance
08-Mar-10	Portugal announces budget cut and tax hike
11-Mar-10	Street protests erupt
18-Mar-10	Greek PM asks EU for loans
24-Mar-10	Fitch cuts Portugal's rating
25-Mar-10	ECB accepts BBB- as collateral; Eurozone backs Greek bailout
06-Apr-10	Greek bond yields jump to 7.1% amid deficit concerns
09-Apr-10	Fitch cuts Greece's rating
11-Apr-10	Euro finance ministers agree Greece's borrowing
22-Apr-10	Moody downgrades Greece
23-Apr-10	Greek PM says bailout needed
27-Apr-10	S&P downgrades Greece
28-Apr-10	S&P downgrades Spain
29-Apr-10	Greece agrees with IMF and EU on austerity
02-May-10	Greek bailout announced
05-May-10	Moody downgrades Portugal; Euro tumbles to 14-mo low; Greek austerity plan
07-May-10	US pushes EU to act faster; Germany passes Greek bailout
10-May-10	A rescue fund for Europe agreed, 750euro
12-May-10	Spain announces public-sector wage cuts
13-May-10	Portugal approves tax hikes and spending cuts
19-May-10	Spain will raise taxes for high-income
21-May-10	Spain's central bank starts cleaning banking system
29-May-10	Fitch cuts Spain's rating
01-Jun-10	Spain faces an austerity battle
07-Jun-10	Eurozone finance ministers strike deal to create a safety net
14-Jun-10	Moody downgrades Greece
17-Jun-10	EU leaders agree to publish bank stress tests results in late July
13-Jul-10	Moody downgrades Portugal
19-Jul-10	Moody downgrades Ireland
23-Jul-10	Stress tests of banks fail to reassure
24-Aug-10	S&P downgrades Ireland
07-Sep-10	National Bank of Greece will raise capital
30-Sep-10	Moody downgrades Spain; Ireland says banking collapse will cost heavily
06-Oct-10	Fitch cuts Ireland's rating
18-Oct-10	German and France agree bondholders' sacrifices
26-Oct-10	Ireland says budget cuts are needed

12-Nov-10	Euro ministers confirm bond issued before mid-2013 unaffected by bailouts.
21-Nov-10	Ireland seeks a bailout
24-Nov-10	Ireland outlines spending cuts and tax hikes
28-Nov-10	Europe seals a 67.5euro bailout of Ireland
16-Dec-10	Permanent support fund for the Euro
04-Feb-11	Germany and France call for "pact of competitiveness"
02-Mar-11	S&P has Portugal and Greece on watchlist
07-Mar-11	Moody downgrades Greece
11-Mar-11	EU leaders agree on rules for a permanent bailout fund from 2013
23-Mar-11	Portugal's government collapses
24-Mar-11	Fitch cuts Portugal's rating
25-Mar-11	EU leaders agree on "Euro Plus Pact"
29-Mar-11	S&P downgrades Greece and Portugal
01-Apr-11	Fitch cuts Portugal's rating
05-Apr-11	Moody cut Portugal's rating
06-Apr-11	Portugal seeks bailout
13-Jun-11	S&P downgrades Greece; Germany calls for debt holders to take a partial loss
29-Jun-11	New austerity plan sparks protest
02-Jul-11	New round of aid for Greece
05-Jul-11	Portugal's debt rating cut to junk status
11-Jul-11	Worries about Italy and stand-off between PM and finance minister
12-Jul-11	Moody downgrades Ireland
21-Jul-11	New rescue plan
07-Aug-11	ECB signals intervention in bond market to protect ESP and ITA
06-Sep-11	Resistance to austerity in Italy, with a general strike
09-Sep-11	ECB Jurgen Stark resigns in protest of bond purchases
15-Sep-11	5 major banks agree to pump dollars into the banking system
12-Oct-11	Banks told to raise capital
26-Oct-11	Deal on Greek debt, banks to take a 50% loss
31-Oct-11	Call for referendum in Greece
03-Nov-11	ECB cuts rates from 1.5 to 1.25
04-Nov-11	IMF to monitor Italy's finances
05-Nov-11	Greece's leader survives confidence vote
06-Nov-11	Greek leaders reach deal to form a new government
10-Nov-11	A new leader for Greece
12-Nov-11	Berlusconi resigns
23-Nov-11	German bond auction flops

Table 2. Baseline results.
This table reports the fixed-effects estimation of equity and bond market reaction to the Eurozone news. The dependent variable is cumulative normal and abnormal return over the event window. Standard errors are in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent.

Whole Sample

Variable\Return	normal return						abnormal return					
	equity			bond			equity			bond		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.690	(0.29)	**	-0.336	(0.08)	***	-0.038	(0.44)		-0.683	(0.10)	***
Euro Crisis: bad news	-1.122	(0.54)	**	0.165	(0.14)		0.990	(0.82)		0.207	(0.19)	
Euro Crisis: good news	-0.432	(0.39)		0.012	(0.10)		1.429	(0.59)	**	-0.110	(0.14)	
(bad news)x(exposure)	-0.051	(0.04)		-0.004	(0.01)		-0.038	(0.06)		-0.022	(0.01)	*
constant	-1.178	(0.22)	***	0.075	(0.06)		-3.605	(0.33)	***	0.056	(0.08)	
country-events	1900			1900			1900			1900		
R-sq.	0.016			0.011			0.004			0.030		

Asia

Variable\Return	normal return						abnormal return					
	equity			bond			equity			bond		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	0.198	(0.42)		-0.194	(0.11)	*	1.293	(0.68)	*	-0.642	(0.16)	***
Euro Crisis: bad news	-2.273	(1.53)		0.082	(0.41)		1.528	(2.47)		0.039	(0.58)	
Euro Crisis: good news	-0.807	(0.56)		0.061	(0.15)		1.077	(0.91)		0.189	(0.21)	
(bad news)x(exposure)	0.185	(0.28)		0.016	(0.08)		0.025	(0.46)		0.057	(0.11)	
constant	-1.914	(0.32)	***	-0.065	(0.09)		-4.783	(0.51)	***	-0.174	(0.12)	
country-events	760			760			760			760		
R-sq.	0.008			0.004			0.015			0.022		

Latin America

Variable\Return	normal return						abnormal return					
	equity			bond			equity			bond		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-1.548	(0.54)	***	-0.373	(0.15)	**	-2.218	(0.72)	***	-0.728	(0.20)	***
Euro Crisis: bad news	0.258	(1.37)		0.211	(0.37)		1.235	(1.83)		-0.122	(0.51)	
Euro Crisis: good news	1.036	(0.72)		-0.003	(0.20)		3.276	(0.96)	***	-0.120	(0.27)	
(bad news)x(exposure)	-0.107	(0.36)		-0.006	(0.10)		-0.058	(0.49)		0.046	(0.13)	
constant	-0.364	(0.40)		0.195	(0.11)	*	-1.982	(0.54)	***	0.255	(0.15)	*
country-events	475			475			475			475		
R-sq.	0.021			0.016			0.033			0.035		

Eastern European, Middle East, and Africa

Variable\Return	normal return						abnormal return					
	equity			bond			equity			bond		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-1.090	(0.57)	*	-0.472	(0.15)	***	-0.002	(0.84)		-0.696	(0.19)	***
Euro Crisis: bad news	-2.915	(1.25)	**	0.042	(0.32)		-0.929	(1.86)		-0.016	(0.41)	
Euro Crisis: good news	-1.052	(0.76)		-0.033	(0.20)		0.512	(1.13)		-0.445	(0.25)	*
(bad news)x(exposure)	0.000	(0.05)		0.001	(0.01)		0.008	(0.08)		-0.019	(0.02)	
constant	-0.919	(0.43)	**	0.150	(0.11)		-3.416	(0.64)	***	0.177	(0.14)	
country-events	665			665			665			665		
R-sq.	0.035			0.018			0.001			0.043		

Table 3. Equity markets and alternative measures of country exposure to bad news.
This table reports the fixed-effects estimation of equity market reaction to the Eurozone news. The dependent variable is cumulative normal return over the event window. Standard errors are in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent.

Whole Sample

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.690	(0.29)	**	-0.690	(0.29)	**	-0.690	(0.29)	**	-0.690	(0.29)	**
Euro Crisis: bad news	-1.748	(0.72)	**	-1.785	(1.30)		-1.782	(0.87)	**	-2.492	(1.52)	
Euro Crisis: good news	-0.432	(0.39)		-0.432	(0.39)		-0.432	(0.39)		-0.432	(0.39)	
(bad news)x(exposure)	0.002	(0.01)		0.008	(0.05)		0.003	(0.01)		0.042	(0.07)	
constant	-1.178	(0.22)	***	-1.178	(0.22)	***	-1.178	(0.22)	***	-1.178	(0.22)	***
country-events	1900			1900			1900			1900		
R-sq.	0.015			0.015			0.015			0.015		

Asia

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	0.198	(0.42)		0.198	(0.42)		0.198	(0.42)		0.198	(0.42)	
Euro Crisis: bad news	-0.563	(1.35)		-0.497	(1.94)		-2.102	(1.36)		-2.060	(2.97)	
Euro Crisis: good news	-0.807	(0.56)		-0.807	(0.56)		-0.807	(0.56)		-0.807	(0.56)	
(bad news)x(exposure)	-0.009	(0.01)		-0.027	(0.06)		0.008	(0.01)		0.026	(0.11)	
constant	-1.914	(0.32)	***	-1.914	(0.32)	***	-1.914	(0.32)	***	-1.914	(0.32)	***
country-events	760			760			760			760		
R-sq.	0.008			0.008			0.008			0.008		

Latin America

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-1.548	(0.53)	***	-1.548	(0.54)	***	-1.548	(0.54)	***	-1.548	(0.54)	***
Euro Crisis: bad news	0.736	(1.64)		-1.332	(4.21)		-0.606	(2.26)		-0.589	(9.87)	
Euro Crisis: good news	1.036	(0.72)		1.036	(0.72)		1.036	(0.72)		1.036	(0.72)	
(bad news)x(exposure)	-0.013	(0.02)		0.054	(0.18)		0.011	(0.04)		0.032	(0.61)	
constant	-0.364	(0.40)		-0.364	(0.40)		-0.364	(0.40)		-0.364	(0.40)	
country-events	475			475			475			475		
R-sq.	0.021			0.021			0.021			0.021		

Eastern European, Middle East, and Africa

Variable\Return	Alternative Measures of Country Exposure							
	Market Cap.		Saving/GDP		Trade Openness		Manufac. Producer	
	coeff.	(s.e.)	coeff.	(s.e.)	coeff.	(s.e.)	coeff.	(s.e.)

Global crisis period	-1.090	(0.57)	*	-1.090	(0.57)	*	-1.090	(0.57)	*	-1.090	(0.57)	*
Euro Crisis: bad news	-3.485	(1.15)	***	-0.961	(3.02)		-3.212	(1.91)	*	-3.829	(5.12)	
Euro Crisis: good news	-1.052	(0.76)		-1.052	(0.76)		-1.052	(0.76)		-1.052	(0.76)	
(bad news)x(exposure)	0.008	(0.01)		-0.089	(0.13)		0.004	(0.02)		0.047	(0.26)	
constant	-0.919	(0.43)	**	-0.919	(0.43)	**	-0.919	(0.43)	**	-0.919	(0.43)	**
country-events	665			665			665			665		
R-sq.	0.036			0.036			0.035			0.035		

Table 4. Bond markets and alternative measures of country exposure to bad news.
This table reports the fixed-effects estimation of bond market reaction to the Eurozone news. The dependent variable is cumulative normal return over the event window. Standard errors are in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent.

Whole Sample

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.336	(0.08)	***	-0.336	(0.08)	***	-0.336	(0.08)	***	-0.336	(0.08)	***
Euro Crisis: bad news	0.164	(0.19)		-0.013	(0.34)		0.056	(0.23)		-0.144	(0.40)	
Euro Crisis: good news	0.012	(0.10)		0.012	(0.10)		0.012	(0.10)		0.012	(0.10)	
(bad news)x(exposure)	-0.000	(0.00)		0.006	(0.01)		0.001	(0.00)		0.013	(0.02)	
constant	0.075	(0.06)		0.075	(0.06)		0.075	(0.06)		0.075	(0.06)	
country-events	1900			1900			1900			1900		
R-sq.	0.011			0.011			0.011			0.011		

Asia

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.194	(0.11)	*	-0.194	(0.11)	*	-0.194	(0.11)	*	-0.194	(0.11)	*
Euro Crisis: bad news	0.274	(0.36)		0.226	(0.52)		-0.013	(0.37)		-0.408	(0.80)	
Euro Crisis: good news	0.061	(0.15)		0.061	(0.15)		0.061	(0.15)		0.061	(0.15)	
(bad news)x(exposure)	-0.001	(0.00)		-0.002	(0.02)		0.002	(0.00)		0.021	(0.03)	
constant	-0.065	(0.09)		-0.065	(0.09)		-0.065	(0.09)		-0.065	(0.09)	
country-events	760			760			760			760		
R-sq.	0.004			0.004			0.005			0.005		

Latin America

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.373	(0.15)	**	-0.373	(0.15)	**	-0.373	(0.15)	**	-0.373	(0.15)	**
Euro Crisis: bad news	0.199	(0.45)		0.193	(1.15)		0.030	(0.62)		-0.027	(2.69)	
Euro Crisis: good news	-0.003	(0.20)		-0.003	(0.20)		-0.003	(0.20)		-0.003	(0.20)	
(bad news)x(exposure)	-0.000	(0.01)		-0.000	(0.05)		0.003	(0.01)		0.014	(0.17)	
constant	0.195	(0.11)	*	0.195	(0.11)	*	0.195	(0.11)	*	0.195	(0.11)	*
country-events	475			475			475			475		
R-sq.	0.016			0.016			0.016			0.016		

Eastern European, Middle East, and Africa

Variable\Return	Alternative Measures of Country Exposure											
	Market Cap.			Saving/GDP			Trade Openness			Manufac. Producer		
	coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)		coeff.	(s.e.)	
Global crisis period	-0.472	(0.15)	***	-0.472	(0.15)	***	-0.472	(0.15)	***	-0.472	(0.15)	***
Euro Crisis: bad news	0.084	(0.30)		-0.340	(0.79)		0.070	(0.50)		-0.119	(1.33)	
Euro Crisis: good news	-0.033	(0.20)		-0.033	(0.20)		-0.033	(0.20)		-0.033	(0.20)	
(bad news)x(exposure)	-0.000	(0.00)		0.018	(0.03)		-0.000	(0.01)		0.009	(0.07)	
constant	0.150	(0.11)		0.150	(0.11)		0.150	(0.11)		0.150	(0.11)	
country-events	665			665			665			665		
R-sq.	0.018			0.019			0.018			0.018		

Table 5 Correlation between eurozone financial indicators and emerging market stock and bond market indices.
Standard errors are in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent.

Whole Sample: 01Jan03-12Dec11

		Euro Financial Indicators			Equity MSCI Indices (US$)				Bond EMBI Indices (US$)			
		EONIA	iTraxx	Pr(Default)	Global EM	ASIA	EEMA	LATM	Global EM	ASIA	EEMA	LATM
Euro Financial Indicators	EONIA											
	iTraxx	-0.5255***										
	Pr(Default)	-0.3076***	0.6529***									
Equity MSCI Indices (US$)	Global EM	0.1038***	-0.0193	-0.4809***								
	ASIA	0.0644***	-0.0097	-0.4868***	0.9954***							
	EEMA	0.6581***	-0.4620***	-0.6060***	0.8934***	0.8714***						
	LATM	-0.0887***	0.2022***	-0.3616***	0.9789***	0.9679***	0.8159***					
Bond EMBI Indices (US$)	Global EM	-0.5628***	0.5902***	-0.1573***	0.8472***	0.8439***	0.5524***	0.9104***				
	ASIA	-0.4873***	0.3627***	-0.2520***	0.8314***	0.8241***	0.6112***	0.8507***	0.9221***			
	EEMA	-0.3894***	0.5240***	-0.1857***	0.8865***	0.8739***	0.6419***	0.9472***	0.9751***	0.8763***		
	LATM	-0.5551***	0.5720***	-0.1713***	0.8471***	0.8440***	0.5553***	0.9095***	0.9969***	0.9230***	0.9644***	

Pre-Euro-Crisis: 01Jan03-07Oct09

		Euro Financial Indicators			Equity MSCI Indices (US$)				Bond EMBI Indices (US$)			
		EONIA	iTraxx	Pr(Default)	Global EM	ASIA	EEMA	LATM	Global EM	ASIA	EEMA	LATM
Euro Financial Indicators	EONIA											
	iTraxx	-0.4268***										
	Pr(Default)	-0.6360***	0.8595***									
Equity MSCI Indices (US$)	Global EM	0.6786***	-0.2538***	-0.4443***								
	ASIA	0.6344***	-0.2579***	-0.4532***	0.9938***							
	EEMA	0.8358***	-0.4882***	-0.5872***	0.9593***	0.9406***						
	LATM	0.5781***	-0.002	-0.3003***	0.9768***	0.9590***	0.9074***					
Bond EMBI Indices (US$)	Global EM	0.0603**	0.5108***	0.0093	0.8402***	0.8169***	0.7013***	0.9138***				
	ASIA	0.1685***	-0.1213***	-0.1654***	0.7855***	0.7596***	0.7296***	0.7848***	0.8251***			
	EEMA	0.2442***	0.4336***	-0.0551**	0.8517***	0.8227***	0.7331***	0.9263***	0.9826***	0.7724***		
	LATM	0.0996***	0.4391***	-0.0171	0.8559***	0.8319***	0.7250***	0.9289***	0.9928***	0.8256***	0.9700***	

Euro-Crisis: 08Oct09-12Dec11

		Euro Financial Indicators			Equity MSCI Indices (US$)				Bond EMBI Indices (US$)			
		EONIA	iTraxx	Pr(Default)	Global EM	ASIA	EEMA	LATM	Global EM	ASIA	EEMA	LATM
Euro Financial Indicators	EONIA											
	iTraxx	0.1789***										
	Pr(Default)	-0.5368***	0.5737***									
Equity MSCI Indices (US$)	Global EM	0.7006***	-0.3353***	-0.8570***								
	ASIA	0.7359***	-0.2840***	-0.8400***	0.9951***							
	EEMA	0.6878***	-0.4391***	-0.8496***	0.9534***	0.9357***						
	LATM	0.4881***	-0.5227***	-0.8677***	0.9475***	0.9177***	0.9057***					
Bond EMBI Indices (US$)	Global EM	0.8830***	0.4044***	-0.4147***	0.6661***	0.7045***	0.5713***	0.4505***				
	ASIA	0.7913***	0.5890***	-0.2215***	0.5119***	0.5588***	0.3965***	0.2764***	0.9662***			
	EEMA	0.8253***	-0.1751***	-0.7483***	0.8370***	0.8396***	0.8461***	0.7313***	0.7728***	0.5960***		
	LATM	0.8543***	0.5223***	-0.2886***	0.5580***	0.6037***	0.4536***	0.3269***	0.9860***	0.9788***	0.6800***	