Asymmetric Market Reactions to the 2007-08 Financial Crisis: From Wall Street to Main Street

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Abstract

We examine the impact of significant news events during the 2007 – 2008 financial crisis on the abnormal stock returns for portfolios of financial and real sector firms. We recognize 17 significant news events from 2007 and 2008 and create equity portfolios using daily CRSP data from January 1, 2006 to December 31, 2009. We estimate event announcement interval abnormal returns in the context of an asset pricing model similar to Fama and French (1993) and Carhart (1997). We document significant negative abnormal returns for the portfolio of non-financial firms, and the smallest firms exhibit the largest negative abnormal returns, an indication of a significant spillover of financial market news to real sector stock returns. Smaller financial firms also exhibit negative abnormal event returns, and these results are driven by broker-dealer, depository, holding-investment, and real estate firms. In addition, some larger financial institutions, like depository institutions, yield estimated positive abnormal returns in response to some financial crisis event announcements. The results provide new evidence regarding the incorporation of news events into asset prices during financial crises.

Abnormal Returns during the Financial Crisis of 2007 and 2008

1. Introduction

The 2007 – 2008 U.S. economic recession was one of the worst in recent history, second only to the Great Depression. The financial crisis that caused the recession resulted in the failure of many financial institutions and had important real sector implications, including the near-collapse of the U.S. auto industry. As a consequence, government agencies and policymakers strived to enact policies and design programs in order to help curtail the financial crisis and restore faith in the financial system. Such actions included unprecedented actions by the U.S. government such as the bailouts of several large U.S. institutions, like American International Group (AIG) and Citigroup, the arrangement to consolidate failing firms such as Merrill Lynch, Washington Mutual, and Countrywide Financial, and the establishment of the Troubled Asset Relief Program (TARP) to provide liquidity to struggling financial firms and U.S. automakers.

The financial crisis unfolded over a period of roughly two years in 2007 and 2008, whereby information regarding the scope and severity of the crisis were made known to the financial markets and regulators and policymakers began to respond to the crisis. The 2013 *USA Today* article "A Repeat of 2008? Not Impossible" outlines many of the events that were significant in the evolution of the financial crisis and provides a timeline of the major events associated with the financial crisis and the dates on which those events where announced to the public and financial markets. The scope of the financial crisis began to present in 2007 with an increase in defaults in subprime mortgages in February 2007. Banks and hedge funds were left with assets that were of questionable value and, thus, were highly illiquid. On February 27, 2007, Freddie Mac announced that it would no longer buy risky subprime loans, and, on April 2, 2007,

New Century Financial filed for bankruptcy protection. Then, on July 31, 2007, Bear Stearns liquidated two hedge funds that invested in risky subprime mortgage-backed securities. Similarly, on August 16, 2007, Fitch Ratings cut the credit rating of Countrywide Financial. As the crisis got worse, the Federal Reserve (Fed) realized that normal monetary policy changes were not enough to address the situation, and policymakers began a series of unconventional policies in an attempt to control the spread of the crisis.

By 2008, as a result of the financial crisis, the U.S. economy was in recession. The crisis in subprime mortgages had infected the credit markets, so the Federal Reserve began to create new facilities, changed its lending rules, and even injected large amounts of capital into financial institutions. On January 11, 2008, Bank of America agreed to purchase the failing Countrywide Financial. In addition, in March of 2008, The Fed stepped in and guaranteed $30 billion of the troubled financial institution Bear Stearns' assets in order to facilitate its purchase by J.P. Morgan Chase. Later, on July 11, 2008, the Fed seized IndyMac Federal Bank, as it was about to fail. Similarly, on September 7, 2008, Fannie Mae and Freddie Mac were taken over by the government. Later that September, Bank of America agreed to purchase Merrill Lynch, and Lehman Brothers filed for bankruptcy court protection. One day later, on September 16, 2008, American International Group (AIG) accepted an $85 billion federal bailout, giving the government almost an 80% stake in the company. Shortly thereafter, On September 21, 2008, in an attempt to improve liquidity, investment banks Goldman Sachs and Morgan Stanley became bank holding companies, thus becoming subject to greater Federal Reserve regulation. The following week, the failing commercial bank Washington Mutual was sold to J.P. Morgan Chase.

As a further response to the continuing financial crisis, Congress proposed a $700 billion relief package known as the Troubled Asset Relief Program (TARP) on September 29, 2009, but it was initially rejected. This sent the Down Jones industrial average down 778 points, the single worst point drop in history. Less than a week later, on October 3, 2008, Congress passed a version of TARP and President Bush signed it.

These important events of The U.S. financial crisis of 2007 and 2008 that began when the housing bubble collapsed made the entire financial system vulnerable. The series of failures or near failures of so many financial institutions during the crisis motivates our analysis of how the financial markets react to these types of financial crisis events. Financial markets can be volatile and react to events in the economy when information becomes available. In perfectly efficient markets, this information can be incorporated into asset prices instantaneously, risk can be priced efficiently, and we should observe no unexpected returns in the market, as defined in the context of an asset pricing model. However, when markets are less efficient at producing information, perhaps during a time a great uncertainty like a financial crisis, events may be unanticipated, and stock prices may move suddenly in unpredictable ways. Therefore, studying the abnormal returns surrounding the announcement of crisis events can help investors, regulators, and policymakers understand how markets react to financial sector news and lead to a better understanding of the function and efficiency of the financial markets. There is some existing literature pertaining to the impact of specific events in the financial crisis, but there are currently no studies that look at the cumulative and individual effects of crisis announcements on stockholder wealth. Additionally, there is limited research on the degree to which crisis events impact other financial firms, as well as the degree to which financial market event announcements spillover to the stock

returns of real sector firm. Therefore, we conduct empirical analyses that increases the understanding of the how financial crisis information is incorporated into asset prices.

For our empirical analysis, we create portfolios of financial, real sector, and event firms and test for the existence of abnormal stock returns surrounding event days when significant financial crisis news was released to the financial markets. We use daily stock return data from the CRSP database from January 1, 2006 to December 31, 2009 and use event day and interval dummy variables to estimate financial crisis event-related abnormal returns in the context of an asset pricing model robust to the factors of Fama and French (1993) and Carhart (1997). We examine estimated crisis event abnormal returns for portfolios of different size financial, real sector, and event firms, formed using industry SIC Codes and stock ticker symbols. Our results show that portfolio abnormal returns for non-financial, financial, and event-related firms are significant for daily intervals surrounding the announcement of financial crisis news. In particular, we find that estimated abnormal returns are negative for non-financial firms of all sizes, as well as small and mid-sized financial firms; however, the abnormal returns are positive for larger financial institutions.

In an extension of our results, we further examine the financial services industry by forming portfolios of two-digit SIC industry financial firms. The results show that the negative abnormal returns in response to financial crisis events seen by smaller financial firms are mainly driven by the negative and significant abnormal returns for portfolios of broker-dealer, depository, holding-investment, and real estate firms. In addition, the positive abnormal returns experienced by larger financial firms are mainly driven by positive and significant abnormal returns for the portfolio of large depository institutions. Finally, we analyze the impact of individual financial crisis event announcements on stock market abnormal returns. The results

show that, while not all events are associated with abnormal returns, there are several events during the recent financial crisis that consistently correspond to abnormal returns for portfolios having different characteristics. For example, the credit rating downgrade of mortgage giant Countrywide financial, the government backing of Bear Sterns' assets, the collapse of mortgage companies Freddie Mac and Fannie Mae, the government rescue of AIG, and U.S. automakers' requesting access to TARP funds are all associated with consistent negative abnormal announcement returns for small and mid-sized portfolios of both financial and real sector firms. On the other hand, the conversion of Morgan Stanley and Goldman Sachs into holding companies, the government rescue of Citigroup, and the extension of TARP funds to major U.S. automakers are associated with positive abnormal event day returns, particularly for real sector and larger financial firms.

The results provided in this study present new empirical evidence regarding the impact of financial crises on both financial sector and real firms and sheds light on how financial crisis risk is priced in the financial markets. For example, the estimation of negative abnormal returns for non-financial portfolios of all sizes illustrate that there is significant spillover of the impact of financial crisis events to the abnormal stock returns of non-financial firms. In fact, we estimate that the estimated negative abnormal returns for smaller real sector firms are larger than those estimated for small financial firms. In addition, we can interpret positive and significant abnormal returns for large depository institutions in response to financial crisis news as a perception of depository institutions having relatively lower risk, potentially due to the possible intervention from the Federal government. Finally, despite mixed results in the direction and magnitude of abnormal returns in response to individual crisis events, some events, such as the conversion of Morgan Stanley and Goldman Sachs into holding companies and the government

bailout of Citigroup are met with positive abnormal returns, as large financial firms and policymakers attempted to dampen the crisis.

The paper proceeds as follows. Section 2 describes previous literature on the subject. Section 3 describes the data and methodology used in the empirical analyses. Section 4 presents the specific financial crisis events and reports event interval summary statistics. Section 5 estimates event interval abnormal returns for portfolios of financial, real sector, and financial sub-industry firms. In section 6, we analyze the event interval abnormal returns for portfolios of firms directly impacted by the crisis events. Our results are extended in Section 7 with an analysis of the specific impact of each crisis event on the estimated abnormal returns of portfolios of financial, real sector, and event firms. Section 8 concludes.

2. Previous Literature

There have been several studies done on events surrounding significant dates and the effects they had on the financial markets. In an earlier study, Kabir and Hassan (2005) analyze the announcements pertaining to the Long Term Capital Management (LTCM) hedge fund in 1998. LTCM nearly collapsed in 1998, and the Federal Reserve stepped in to save it. The initial speculation of losses from LTCM had a positive effect on all portfolios, except the creditor investment bank portfolio, which may be due to the fact that the market knew little about LTCM's investments and risk exposures at that time. On September 3, 1998, LTCM publically announced its losses and, on the following trading day, the returns of all portfolios reacted adversely. The involvement of the Fed with LTCM on September 18 resulted in a positive impact on the industry. On September 23, 1998, the day on which the market came to know

about the bailout, the returns of all portfolios declined. However, once the bailout was announced by the media the following day, the market reacted favorably.

More recently, Safa et al. (2012) study AIG announcements in 2007 and 2008 and find that the dates pertaining to AIG's announcements of heavy losses result in no significant impact on the market. On September 16, 2008 when the Federal Reserve announced that they would be lending $85 billion to AIG, they find a positive impact on the market; however, on October 8, 2008, when the Federal Reserve announced another $37.8 billion in aid, there was a significant negative impact. The first bailout may have made investors expect positive changes in the economy, whereas the second bailout made investors lose trust in the market. They find no significant evidence that supports the Federal Reserve's perception of AIG as too-big-to-fail. The Federal Reserve may not have seen AIG as too-big-to-fail, but the near failure of AIG spread a serious contagion effect and caused an increased systemic risk in the financial industry.

Mamun et al. (2010) investigate whether the market responds to government intervention. They identify significant dates from 2007 and 2008, when he Federal Reserve announced changes in the Term Auction Facility (TAF), a monetary policy program aimed at increasing liquidity in the U.S. credit markets, as well as the creating of the Term Securities Lending Facility (TSLF), Primary Dealer Credit Facility (PDCF), and Asset-Backed Commercial Paper Money Market Fund Liquidity Facility (AMLF). They find that adjustments to the TAF had negative effects on the market, whereas the creation of and announcements related to TSLF and PDCF had positive wealth effects for bank portfolios, savings and loans portfolios, and primary dealer portfolios.

Li et al (2012) examine the reaction of the bond market after the collapse of prominent investment banks. On March 13, 2008 the Federal Reserve announced that it was providing financing to Bear Stearns through a commercial bank, J.P. Morgan Chase. On the day following the announcement, bonds recovered with a positive abnormal return. Four of the five days following the announcement, the mean abnormal return for the full sample is positive and significant. The bond market stabilized after absorbing the initial shock, due to the rescue. On September 15, 2008, Lehman Brothers filed for bankruptcy. When combined with the Merrill Lynch and AIG news, this elicited a negative corporate bond market response, which was more pronounced for financial firms, larger firms, and firms that had higher financial leverage. The mean abnormal returns of all bonds were negative and significant the following day.

According to the findings of Ivashina and Scharfstein (2010), new loans to large borrowers fell by 47% during the peak of the financial crisis. They examine the period after the failure of Lehman Brothers in September 2008, when there was a run by short-term bank creditors, making it hard for banks to roll over their short term debt. At the same time, there was a run by borrowers, which lead to an increase in commercial and industrial loans reported on bank balance sheets. They examine whether these two strains on bank liquidity led them to cut lending. Their results show that banks were less likely to cut their lending if they had better access to deposit financing, thereby making them less dependent on short-term debt. In addition, banks that co-syndicated more of their credit lines with Lehman Brothers were more vulnerable and reduced their lending to a greater extent.

Campello et al (2010) survey 1,050 Chief Financial Officers in different countries around the world to gauge whether firms were credit constrained during the global financial crisis of 2008. They examine the corporate spending plans of constrained and unconstrained firms and

find that constrained firms cut their spending in many areas. Constrained firms also use more cash, borrow more, and sell more of their assets to fund their operations. They also find that many firms had to forgo positive NPV projects, because they were unable to borrow from external sources.

Sorokina and Thornton (2013) conduct an event study on the equity market reaction to the financial reform initiatives during the crisis. They examine at the reaction to the Dodd-Frank Wall Street Reform Act and find that financial firms and a few other industries experience a statistically significant decrease in systematic risk as a result. However, many other industries experience a statistically significant increase in systematic risk, especially in industries that depended on external capital. Dodd-Frank may have lowered the risk for financial firms, but it may have increased the risk for the overall economy.

In a working paper by Taylor (2009), results show that the government's actions and interventions caused, prolonged, and worsened the financial crisis. The author asserts that the government helped cause the financial crisis by manipulating interest rates on mortgages, which was unprecedented. They also prolonged the crisis by focusing on liquidity problems, rather than risk. Finally, they made it worse by providing certain financial institutions and their creditors with bailouts, but not others. Crotty (2009) conducts a similar study and concludes that the financial deregulation begun in the late 1970s led to the crisis. The progress of the financial markets has taken the form of cycles in which deregulation, along with rapid financial innovation, stimulates large financial booms that eventually result in crises. Governments are then prompted to respond with bailouts that eventually lead to the next cycle. As a result, financial markets have become bigger, and financial crises have become more aggressive, which leads the government to institute even larger bailouts. Therefore, during the 2008 global

financial crisis, even with unprecedented government interventions, policymakers were unable to constrain it.

Reinhart and Rogoff (2008) provide context to the 2008 financial crisis and by analyzing 18 earlier post-war banking crises in industrialized countries. They find that the run-up in U.S. equity and housing prices was close to the average seen in earlier crises. Also, there was a slowdown in the output growth of the economy before the crisis, which was similar to previous crises. However, the increase in U.S. public debt was below average, and its pre-crisis inflation level was lower, when compared to previous crises. On the other hand, they find that the account deficit trajectory for the recent crisis was worse than average.

Berger et al. (2014) examine the impact of the discount window and Term Auction Facility. The purpose of these programs was to help banks meet liquidity needs and increase credit availability to firms and households. They analyze which banks used these facilities and whether they affected bank lending. They find that small banks that borrowed funds had less capital and higher portfolio risk, consistent with a greater need for the funds. Large banks receiving funds were generally healthier. Their results show that illiquidity played a negligible role in determining the borrowing for small and large banks. The do not find any evidence that small and large banks that utilized the programs increased their lending, relative to banks that did not. Their findings suggest that the Federal Reserve may not be able to influence the flow of credit to the economy in their role as lender of last resort.

Berger and Roman (2013) also look at a program enacted by the government by examining the Troubled Assets Relief Program (TARP) and whether or not it gave banks that participated a competitive advantage. They find that TARP recipients did have a competitive

advantage, as it increased their market shares and market power. In addition, Hoffman (2012) examine public opinion surrounding the TARP program and found that it was "one of the most hated, misunderstood, and effective policies in modern economic history". The study uses survey data to investigate why TARP was misunderstood and finds that knowledge of TARP is particularly dependent on education, party affiliation, and sex. Along with other policies that were enacted by the government, TARP appeared to stabilize the economy when the systemic failure of banks threated to bring about an even worse crisis.

Cornett et al. (2012) examine how the pre-crisis health of banks is related to the probability of receiving and repaying TARP funds. They examine the healthiest (over-achiever) versus the least healthy (under-achiever) banks and find that TARP under-achievers have weaker income production, and they also have liquidity issues. TARP over-achievers, on the other hand, perform well, but still have some liquidity issues that hurt their lending.

Hipper and Hassan (2015) study analyzes the impact of macroeconomic and financial stress on the profitability of financial firms by utilizing data from 1980 to 2010 and modelling firm profitability and stock returns using a panel regression, fixed-effect methodology. They show that that the profitability of all firms is negatively affected by increases in macroeconomic and financial stress, measured by the National Financial Conditions Index (NFCI) and the Adjusted National Financial Conditions Index (ANFCI), respectively; however financial sector firms have exhibited an increased marginal sensitivity to both stress indexes that began in the 1990s and continued through the financial crisis of 2008. In a further analysis of the financial sector and banks, they show that depository institutions are relatively robust to macroeconomic and financial stress, and financial sector instability is driven by non-depository finance, investment, and real estate firms. They also show that the largest 33 percent of financial firms

and banks exhibit increased sensitivity to macroeconomic stress in the most recent sample. Their results coincide with the risks associated with recent trends in the financial services industry, such as deregulation, global market integration, financial product innovation, and the increasing predominance of non-depository intermediation.

We extend previous studies in this area by testing for abnormal returns surrounding significant event announcements during the recent financial crisis of 2007 and 2008 in order to examine their impact on the equity markets. We include crisis events that contain relevant information regarding the severity of the crisis, including credit downgrades and financial firm failures, as well as policy response news, such as the creation of government-sponsored assistance programs. We extend the literature in this area by providing empirical results regarding the impact of these events on the financial markets and portfolios of stocks from different industries and of different sizes.

3. Data and Methodology

3.1 The Data

In this study, we generate equity portfolios having different characteristics and calculate abnormal returns for the designated event intervals surrounding financial crisis news announcements. Specially, we analyze estimated abnormal portfolio returns achieved over four intervals surround financial crisis event announcements: a.) the event announcement day (t=0); b.) the interval including the day prior to the announcement through the announcement day (t=–1, 0); c.) the interval from the day prior to the announcement through the day following the event announcement (t=–1, +1); and d.) the interval from two days prior to the announcement through the day following the event announcement (t=–2, +1). We assume that announcement

information is incorporated into prices efficiently; however, including intervals surrounding the event days adds robustness to the analysis by allowing for the anticipation of announcements as well as short delays in announcement reactions due to the timing of the announcements and other factors.

In order to achieve a representative sample of returns adequate to apply an asset pricing model, we sample daily stock return data from the CRSP database from January 1, 2006 to December 31, 2009, which spans the time frame of the identified financial crisis events. For the purpose of estimating abnormal event returns, we gather equity portfolio risk factors, including the risk-free rate and the risk factors of Fama and French (1993) and Carhart (1997) from the website of Kenneth French in order to apply an asset pricing model and calculate event-day abnormal returns. We test for the presence of event announcement abnormal returns for portfolios of firms in different industries and sub-industries using SIC codes reported by CRSP, and we examine the event announcement abnormal returns of portfolios composed of firms of different sizes by sorting firms based on market capitalization. In section 5, we analyze the portfolio of financial firms defined by firms with reported SIC codes between 6000 and 6999. Later in section 5, we further analyze the event abnormal returns of seven financial firm subsector portfolios, defined by reported two-digit SIC codes: broker-dealer; depository; holding-investment; insurance brokers; insurance carriers; non-depository credit; and real estate firms. We also examine the abnormal event announcement returns of portfolios of different sizes by sorting firms into market capitalization terciles. For each day t, we define the market capitalization as the opening price of the stock on day t (or closing price of day $t-1$) multiplied by the number of shares outstanding for day $t-1$. We then form small, mid, and large capitalization portfolios by sorting firms into terciles by market capitalization for each day. In addition, we also

utilize the calculated market capitalizations to weight the portfolios when constructing value-weighted portfolios.

3.2 Event abnormal return estimation methodology

In testing for abnormal returns, an event study methodology is often employed, whereby normal returns are estimated over an interval leading up to the event, and abnormal returns can be seen as the excess return over the normal return. However, when analyzing the abnormal returns surrounding financial crisis event announcements, the relatively short time period under which the financial crisis evolved and the relative proximity of the events make this type of event study impractical. Therefore, in this paper, we use a methodology similar to Hippler and Hassan (2015), Kabir and Hassan (2005) and Safa, Hasan and Maroney (2012) by using observed market returns and priced risk factors to examine how important announcements during the financial crisis affect the financial markets, the real sector, and the financial services industry. For example, Hassan and Kabir (2005) use a similar methodology to analyze the effect of the Long-Term Capital Management (LTCM) crisis on financial institutions and the effect of the Fed's intervention measures. We use a similar model to analyze the impact of crisis event announcements on equity portfolios using the asset pricing risk factors of Fama and French (1993) and Carhart (1997) and an ordinary least squares (OLS) estimation methodology.

In our first empirical specification, we estimate the model:

$$R_{p,t} = \alpha_p + \beta_1 RF_t + \beta_2 MRP_t + \beta_3 SMB_t + \beta_4 HML_t + \beta_5 UMD_t + \gamma Event_t + \varepsilon_{p,t}, \qquad (1)$$

where $R_{p,t}$ is either the equal or valued-weighted return on a portfolio, p, for day t. The explanatory variables *RF*, *MRP*, *SMB*, *HML*, and *UMD* represent the returns of the risk-free Treasury bill, the excess market portfolio, the small-minus-big portfolio, the high-minus-low

portfolio, and the momentum portfolio of Fama and French (1993) and Carhart (1997) on day t, respectively. Finally, $Event_t$ is a dummy variable equal to unity if day t falls within one of the four crisis event announcement intervals, as previously defined. Accordingly, $\beta_1 - \beta_5$ represent the portfolio returns explained by the asset pricing model, α represents the average abnormal return for portfolio p, which we expect to equal zero, and γ represents the abnormal return for portfolio p over the reported crisis event announcement interval.

In addition, in section 7, we modify Eq. 1 to observe the specific impact of individual crisis event announcements on portfolio abnormal returns. Similar to Hassan and Kabir (2005), we calculate the abnormal return of portfolio p in response to event i, by estimating the parameters of Eq. 2:

$$R_{p,t} = \alpha_p + \beta_1 RF_t + \beta_2 MRP_t + \beta_3 SMB_t + \beta_4 HML_t + \beta_5 UMD_t + \sum_{i=1}^{17} \gamma_i Event_i + \varepsilon_{p,t} \quad (2)$$

In Eq. 2, $R_{p,t}$ represents the return of portfolio p on day t, and the explanatory factors include those specified in Eq. 1; however, the abnormal returns for the 17 crisis events are measured using a set of 17 dummy variables, each having a value of one corresponding to each crisis event day. In Eq. 2, α_p represents the portfolio p's average abnormal return, which we expect to equal zero, and each coefficient for the event dummy variables, γ_i, represents the estimate of portfolio p's abnormal return for event day i.

We estimate the parameters in Eqs. 1 and 2 utilizing an ordinary least squares (OLS) econometric estimation procedure. In Section 5, we present the results for estimates of abnormal returns for portfolios of financial and non-financial firms, in Section 6, we present the estimates

for portfolios of firms directly related to the event announcements, and in Section 7, we provide estimates of event day abnormal returns for each specific event.

4. Crisis events and returns

We identify 17 event announcements surrounding the financial crisis of 2007 and 2008, which are reported in the September 15, 2013 *USA Today* article "A Repeat of 2008? Not Impossible". Table 1 summarizes the crisis announcements and their associated dates.

[Insert Table 1 here]

Table 2 presents summary statistics of the market portfolio returns on the event day intervals under study, as well as those over the entire sample period, Jan 1, 2006 to Dec. 31, 2009. We report market return statistics on the event days (t=0), as well as the intervals surrounding event days, t=−1 to 0, t=−1 to +1 and t=−2 to +1. The summary statistics reported in Table 2 are reported for both the equal and value-weighted market portfolios, as reported by CRSP.

[Insert Table 2 here]

Table 2 shows that the average non-event daily market return over the sample under study, January 1, 2006 to December 31, 2009, is 0.06 percent per day for the CRSP equal weight portfolio and 0.03 percent for the CRSP value weighted portfolio. The standard deviations of the daily market returns of the CRSP equal and value weighted portfolios are similar at 1.52 and 1.63 percent, respectively. In contrast, the average crisis event day market return (t=0) is negative. The CRSP equal weight market portfolio fell by an average of 0.82 percent on event days, while the CRSP value weighted index fell by 0.78 percent per day. In addition, the standard

deviation of market returns is significantly higher on event days. Returns for the CRSP equal weight portfolio have an event day standard deviation of 2.64 percent, while those of the CRSP value weighted portfolio have a standard deviation of 3.21 percent. Statistical tests of equal return variances across non-event and event days are rejected at the one percent level.

Table 2 also reports the average crisis event announcement returns for three intervals surrounding the event announcements. Aside from reporting average event day returns (t=0), we also report returns from the previous day through the event day (t=−1, 0), returns from the previous day through the day after the event announcements (t=−1,+1), and returns from two days prior to the announcement through the day following the announcement (t=−2, +1). The results in Table 2 for the event announcement intervals are similar to those of the event days; however, the average market returns are lowest on the actual event announcement days (t=0). Statistical tests for equality of variances among the event and non-event days are rejected for all announcement intervals presented in Table 2.

The results presented in Table 2 motivate our further analysis of the event interval abnormal returns surrounding significant events during the financial crisis. We show that average market portfolio returns are lower on days surrounding significant financial crisis events. For example, from 2006 to 2009, the CRSP value weighted portfolio yields an average return of 0.03 percent per day; however, on financial crisis event announcement days, the average reported return is -0.78 percent. We continue our analysis of the impact financial crisis event announcements by analyzing whether the lower reported event day returns are explained by traditional asset pricing models, or whether the financial crisis appears to signify unpriced risk.

5. Real sector and financial portfolio event interval abnormal returns

Despite the fact that many news events during the onset of the financial crisis pertained to financial service institutions, the 2007 – 2008 U.S. financial crisis had significant repercussions for both the real and financial sectors of the U.S. and global economies. The crisis spurred unprecedented policy actions, including monetary policy activity, a real sector stimulus package, government loans and bailouts, and an overhaul of U.S. financial regulations. Accordingly, it is important to acknowledge the impact that significant crisis events have on both the financial and real sectors of the economy. In this section, we examine the abnormal returns surrounding significant events of the 2007 – 2008 financial crisis for both financial and real sector firms. In addition, we examine the role that firm size plays in the pricing of risk surrounding the financial crisis. Finally, we conduct a further analysis of the finance industry to examine how financial crisis events impact different financial sub-industries.

5.1 Event interval abnormal returns for financial and real sector portfolios

In this section, we examine the abnormal returns surrounding significant events of the 2007 – 2008 financial crisis for both financial and real sector firms. We divide the sample of CRSP firms into financial and non-financial firms based on reported industry SIC codes. Financial firms are firms with an SIC code between 6000 and 6999, and we create equal and value-weighted portfolios of financial and non-financial firms using daily CRSP return data. To determine whether real sector and financial firms experience abnormal returns during the financial crisis, we employ an ordinary least squares (OLS) estimation methodology to the specification provided in Equation 1 and estimate the abnormal returns surrounding announcements during the financial crisis for equal and value weighted portfolios of real and

financial sector firms. Results are presented for four specifications, each reporting abnormal returns over different event announcement day intervals.

Panel A of Table 3 shows the abnormal return estimations for the portfolio of non-financial, or real sector, firms. The results exhibit a significant spillover of financial crisis event news to the real economy. Many of the events surrounding the financial crisis pertain only to firms in the financial services industry and the government's response to their distress. However, Table 3 shows that the impact of these events significantly affects the abnormal stock returns of real sector firms as well. Panel A of Table 3 shows that all event interval dummy variable coefficients are negative, and all but one are significant at the ten percent level or better. Negative event dummy coefficients imply that, when applying a traditional asset pricing model, the portfolios of non-financial, real sector firms experience negative and significant abnormal returns in response to financial sector crisis event announcements in the days leading up to and immediately after their announcement.

[Insert Table 3]

Table 3, Panel A also reports slight differences in the estimated event announcement interval abnormal returns between the equal and value weighted portfolios. The equal weighted portfolio returns exhibit larger negative abnormal returns and they have lower reported p-values than those of the value weighted portfolios. For example, the equal weighted non-financial portfolio exhibits negative abnormal returns that are significant at the one percent level across all event intervals. In contrast, the event day abnormal returns are negative, but insignificant for the event day (t=0) and only significant at the ten percent level for the [−1, 0] interval. In addition, while the coefficients for each interval vary within similar ranges, their ranges vary between the

portfolio construction methods, with the equal-weighted non-financial portfolio exhibiting larger negative returns. The differences in the coefficient estimates and their significance level across equal and value-weighted portfolios imply that firm size mat play role in the abnormal returns yielded in response to financial crisis events.

Panel B of Table 3 reports the estimated event interval abnormal returns for the portfolio of financial firms, and some key differences in the estimated abnormal returns are reported across non-financial and financial firms. Similar to the results reported for real sectors firms, the event interval coefficients for the equal-weighted financial portfolio are all negative, and those of the two longest intervals leading up to the event day are positive at the ten percent levels, with p-values of 0.051 and 0.061, respectively. The negative coefficients reported for the event dummy variables for the equal-weighted financial portfolios are consistent with those reported for the real sector firms and imply negative financial sector abnormal returns in response to important financial crisis announcements. However, the results reported for the value-weighted portfolio of financial firms differ from those of the real sector firms reported in Panel A. The event interval dummy variable coefficients are positive and significant at the ten percent level or better for all event intervals when value-weighted returns are used as the measure of financial portfolio return. The positive and significant event interval coefficients of the value-weighted financial portfolio imply positive abnormal returns to financial firms in response to the financial crisis event announcements.

In Table 3, we show that the estimated abnormal returns differ slightly across value and equal weighted portfolios for real sector firms; however, the difference is pronounced for the financial firm portfolios. In fact, the estimated event abnormal returns change signs across equal and value weighted portfolios for financial firms. Since firm size, measured by market

capitalization, explains the difference between the average returns of the value and equal weighted portfolios, both sets of results imply that estimated abnormal returns are dependent upon firm size. For both real sector and financial firms, the estimated abnormal returns are higher (less negative) for value-weighted portfolios, which implies that larger firms yield higher (or zero) abnormal returns in response to financial crisis events. In the case of real sector firms, Panel A of Table 3 implies that abnormal returns are less negative (or zero) for larger firms, while Panel B of Table 3 implies that larger financial firms actually experience positive abnormal returns, while smaller financial firms exhibit negative (or zero) abnormal returns. We include the impact of firm size on estimated abnormal returns in the following sections.

5.2 Firm size and event interval abnormal returns

The 2007 U.S. financial crisis brought the term "Too big to fail" to the American lexicon, because of the belief that the U.S. government would not allow its largest and most important institutions to fail. During the financial crisis, large firms such as Lehman Brothers and Bear Stearns collapsed; however, to prevent the further spread of the financial crisis and the associated recession, U.S. policymakers enacted a series of programs to support important institutions such as AIG, Citigroup, and the auto industry. However, at first, only large institutions deemed important for the stability of the national economic and financial infrastructure were able to participate in such programs. Therefore, announcements pertaining to such programs may have a different impact on firms of different sizes.

In the previous section, we show that estimated event interval abnormal returns differ across equal and value weighted portfolios, and we suggest that estimated abnormal returns differ across firm size, measured by market capitalization. In this section, we examine the effect

that firm size has on estimated event interval portfolio abnormal returns for the portfolios of non-financial and financial firms. We analyze the impact of firm size on our previous results by creating three equal-weighted, size tercile portfolios sorted daily by market cap: small cap; mid cap; and large cap. We then apply the same estimation procedure as in the previous section, and the results are presented in Table 4. The estimated abnormal event returns are presented for small, mid, and large cap non-financial portfolios in Panel A, while the estimated abnormal event returns for small, mid, and large cap financial firms are reported in Panels B.

[Insert Table 4 here]

Table 4 shows the impact of firm size, measured by market capitalization, on the estimated abnormal event interval returns of real and financial sector portfolios. Table 4, Panel A shows the estimated event abnormal returns for the size-tercile portfolios of non-financial firms. The event interval dummy coefficients are all negative and significant at the one percent level for the small cap portfolio, which implies that small real sector firms experience negative abnormal returns in response to financial crisis event announcements, even after controlling for the small-minus-big portfolio returns of Fama and French (1993). However, as implied by previous results, the estimates for the mid and large cap portfolios show that the estimated abnormal returns for portfolios of larger firms are less pronounced than those of the small cap portfolio. All event interval dummy coefficients are negative, and all but two are significant at the ten percent level or better; however, the negative abnormal portfolio returns of mid and large cap real sector firms are smaller in economic significance than those of the small cap portfolios; the small cap real sector portfolio abnormal returns are on the order of six times the magnitude of those of the larger portfolios. The results presented in Panels A of Table 4 expand on previous results and show that non-financial, real sector firms experience negative abnormal returns in response to

financial crisis event announcements; however, the negative abnormal returns are more pronounced from smaller firms.

Panel B of Table 4 examines the impact of firm size on the estimated event interval abnormal returns of the equal-weighted financial firm portfolio. We sort financial firms into size-tercile portfolios based on market capitalization for each day and estimate event interval abnormal returns using the estimation methodology described in previous sections. The first four specifications in Panel B of Table 4 show the estimated abnormal returns for the portfolio of the smallest 33 percent of financial institutions sorted by market cap. Consistent with the sample of real sector firms, we report negative event interval dummy variable coefficients, and all coefficients are significant at the five percent level or better. In addition, the estimated interval coefficients for the mid cap portfolio are all negative, and all except the [-1, 0] event interval are significant at the ten percent level or better.

In contrast to the results presented for the non-financial portfolios and the small and mid-cap portfolios of financial firms, Table 4 reports that the event interval dummy variable coefficients are all positive and significant at the ten percent level or better for the portfolio of large-cap financial institutions. Positive and significant event interval dummy variable coefficients imply that larger financial institutions experienced positive abnormal returns associated with financial crisis event announcements.

The results reported in Table 4 shed interesting insights into how financial crisis and intervention news is incorporate into real and financial sector assets prices. As expected, portfolios of small and medium sized financial firms exhibit significant negative abnormal returns in response to financial crisis event announcements. However, the portfolio of large

financial institutions does not report significant negative abnormal returns. In fact, Panel B of Table 4 reports that the portfolio of large financial institutions experience positive and significant event interval abnormal return, which imply larger than expected stock returns for large financial institutions in response to crisis events. Positive estimated abnormal returns for large financial institutions are interesting in the context of the recent 2008 financial crisis. One explanation for positive abnormal returns is the financial market's expectation that larger financial institutions are better able to withstand the increased risks associated with the financial crisis. However, event large financial institutions, such as Citigroup and AIG, were under considerable stress during the financial crisis, to the point where they required Federal government assistance. Therefore, an alternative explanation for large financial firm positive abnormal financial crisis event returns is the markets expectation that the largest financial institutions would not be allowed to fail. So, while non-financial and smaller financial institutions are left to absorb the impact of the financial crisis, the expectation that large financial firms would receive government assistance resulted in positive abnormal crisis event returns for these firms.

Moreover, Table 4 shows that real sector firms of all sizes report significant negative abnormal returns in response to financial crisis event announcements. In addition, the magnitudes of the negative estimated abnormal event returns for the portfolio of smaller non-financial firms are larger than those estimated for financial firms. These results illustrate the significant negative spillover effect that financial crisis event announcement have on real sector stock returns, and the impact appears to be largest for small firms.

5.3 Finance sub-industry portfolio abnormal event interval returns

In this section, we conduct a further examination of the finance industry by analyzing the estimated abnormal event announcement returns for portfolios composed of firms in finance industry sub-sectors. The financial crisis continues to have a lasting impact on the financial services industry; in the aftermath of the financial crisis, regulators, policymakers, and the like seek to understand the cause of the financial crisis and design new policies with the goal of preventing future financial crises of a similar nature. The financial crisis was precipitated by the collapse of the housing market, and was exacerbated by failures to absorb the risks posed by certain financial products and institutions, such as mortgage backed security derivatives and default insurers such as AIG.   Accordingly, some financial institutions and sub-industries were more directly involved with the financial crisis than others. In addition, regulations differ across different types of financial firms. For example, depository institutions face capitalization requirements and restrictions on asset purchases, while non-depository institutions are allowed more self-regulation. Therefore, understanding how a financial crisis events impact the stock returns of different types of financial institutions can help stakeholders develop a better understanding of financial sector risk.

We examine the event abnormal returns across finance subindustries by forming portfolios of firms in the same two-digit SIC classification. The sample of financial firms is divided into seven financial sector sub-industries: broker-dealer; depository; holding-investment; insurance brokers; insurance carriers; non-depository credit; and real estate. In addition, in light of previous results showing the impact of firm size on abnormal event returns, we also divide the sub-industry portfolios into size portfolios and report the results for small and large size sub-industry portfolios. Table 5 reports the event interval abnormal returns for the portfolios of

financial firm sub-industries and allows for a more detailed examination of the cumulative

impact of the financial crisis on the financial services industry. The reported regression

coefficients for the event intervals show that the financial crisis announcements appear to have a

different impact on different sub-sectors within the financial services industry, as well as

different size firms within financial firm sub-industries.

[Insert Table 5]

Panels A, B, C, and G of Table 5 show that smaller financial firms across four of the

financial sub-industries are negatively impacted by financial crisis event announcements. The

event interval announcement coefficients for broker-dealer, depository, holding-investment, and

real estate firms are all negative, and a majority of the event intervals are statistically significant

at the ten percent level or better, implying that these types of financial firms drive the small

financial portfolio negative returns reported in Table 4. On the other hand, the estimated

abnormal return coefficients are not negative and significant for the portfolios of larger financial

firms. In fact, consistent with previous results, the estimated abnormal return coefficients are

positive and significant for large depository institutions, and the coefficients are significant at the

five percent level or better. To a lesser extent, insurance brokers and insurance carriers exhibit

some positive abnormal returns as well, as the event day abnormal return coefficients (t=0) are

positive and significant at the ten percent level. No other event intervals exhibit statistically

significant abnormal returns for financial two-digit SIC industry portfolios.

The results presented in Table 5 expand on our results reporting negative crisis event

interval abnormal returns for small financial firms, but positive abnormal returns for large

financial institutions. By estimating abnormal returns for different size portfolios consisting of

firms in different financial sub-industries, we show that small broker-dealer, depository, holding-investment, and real estate firms all experience significant negative abnormal returns in response to financial crisis events announcements, which corresponds to the fact that weaknesses in the real estate and financial markets likely to negatively affect these firms are revealed during crisis event announcements. However, results also show that large depository institutions and, to a lesser extent, large insurance companies, exhibited positive event interval abnormal returns in response to financial crisis announcements. Positive abnormal portfolio returns for large depository and insurance firms are consistent with expectations these firms are relatively less risky, given the fact that the Federal government is unlikely to let large financial intuitions, especially depository institutions, fail. Indeed, large banks, such as Citigroup, and large insurance carriers, such as AIG, were given substantial assistance during the financial crisis.

6. Event Portfolio Abnormal Returns

As an extension of our analysis, we examine the event interval abnormal returns of a portfolio of firms directly associated with the announcement events identified in our study. To construct the portfolio of event firms, we identify all the firms associated with the event announcements defined in Table 1 by their stock ticker symbol during the sample period. We then construct equal and value weighted portfolios consisting of these firms, which include the following 17 firms: Freddie Mac, New Century Financial, Bear Stearns, Countrywide, Bank of America, J.P. Morgan Chase, IndyMac, Fannie Mae, Merrill Lynch, Lehman Brothers, American International Group (AIG), Goldman Sachs, Morgan Stanley, Washington Mutual, Ford, General Motors, and Chrysler.

Table 6 reports the estimated event interval abnormal returns for the equal weighted, size-tercile portfolios of the firms directly impacted by the identified financial crisis announcements. In order to examine the differential impact of event announcements on firms of different sizes, results for small, mid, and large capitalization tercile portfolios of the event firms are reported. The results reporting the abnormal returns for the portfolio of event firms and the role that firm size in the magnitude and direction of reported abnormal returns are similar to those reported for the portfolio of financial firms in Table 4, which is not surprising, considering a majority of the event firms are in the financial sector.

[Insert Table 6 here]

Table 6 reports negative and significant event interval coefficients over all estimation intervals for the portfolio of small event firms, implying that the smallest of the firms directly impacted by the event announcements experienced negative abnormal returns in response to those announcements. In addition, the magnitude of the estimates abnormal returns are larger than those reported by the portfolios of small financial and non-financial firms reported in Table 4. So, although our previous results indicate that real sector small cap firms experience lower abnormal event interval returns than financial sector firms, an extension of the analysis shows that the portfolio of the smallest event firms experience the largest negative abnormal returns in response to financial crisis event announcements.

However, in contrast the results pertaining to the small cap portfolio of event firms, and consistent with results presented for financial firms, Table 6 reports that the portfolio of the largest firms directly linked to the event announcements exhibit positive and significant event interval coefficients for the three longest event intervals, which implies that positive abnormal

returns were achieved by large firms that were directly associated with the financial crisis event announcements.

The results presented in Table 6 present interest insights into the abnormal event interval returns seen by firms directly related to the financial crisis in the context of the recent financial crisis and the actions taken to curtail the crisis. Estimated negative event interval abnormal returns for smaller event-related firms, but positive abnormal returns for larger event-related firms are consistent with many of the event that took place during the financial crisis. For example, many of the larger financial institutions, such as Citigroup, AIG were given substantial help by the Federal government in order to prevent their failure, and, consequently, we report positive abnormal returns for the portfolio of large event firms. On the other hand, relatively smaller firms, such as Lehman Brothers and New Century Financial were allowed to fail, and, consequently, we report negative abnormal returns for the portfolio of small firms. In addition, as part of the negotiations between troubled firms and regulators in an attempt to end the financial crisis, agreements were reached for some larger firms to acquire the smaller and weaker firms. For example, Bank of America agreed to purchase Countrywide and Merrill Lynch, while Washington Mutual and Bear Stearns were purchased by JP Morgan Chase. The purchase arrangements signaled weaknesses in the firms being purchased and allowed to acquiring firms to purchase distressed assets at lower costs. Consequently, we report abnormal returns consistent with these activities, with larger firms achieving positive abnormal event interval announcements and smaller firm achieving negative returns.

7. Event Day Portfolio Abnormal Returns

In previous results, we show that real sector, financial, and event firms all exhibit statistically significant event interval abnormal returns in response to financial crisis event announcements. In addition, we provide evidence with respect to which types of firms exhibit abnormal returns in response to announcements pertaining to the financial crisis of 2007 and 2008. As an extension of the analysis of event interval returns, we now examine the impact of particular events on the abnormal returns of real, financial, and event firm stock portfolios. In an empirical analysis we apply the asset pricing model of Fama and French (1993) and test for the presence of event day abnormal returns by estimating the coefficients of Equation 2 using the methodology described in Section 4. The resulting dummy variable coefficients representing each event day estimate the abnormal return of a given portfolio in response to a particular financial crisis event announcement. In section 7.1, we estimate event day abnormal returns for portfolios of real sector, financial, and event firms, as defined in previous analyses. Then, in Section 7.2 we extend the analysis to the two-digit SIC code financial sector sub-industries, in a fashion similar to that presented in Section 5.2. The resulting analyses provide more robust evidence regarding the pricing of financial risk into the returns of portfolios having different characteristics. In addition, this analysis sheds lights on the types of crisis and intervention events that result in returns that are not priced by standard asset pricing models.

7.1 Real sector, financial and event firm abnormal event day returns

Table 7 reports the estimated event day abnormal returns for each financial crisis event announcement for financial and non-financial portfolios. Similar to previous results, both real sector and financial sector firms exhibit significant event day abnormal returns in response to

financial crisis announcements; however, not all events report statistically significant abnormal returns.

[Insert Table 7 here]

Table 7 reports negative and significant coefficients corresponding to Event 4, the downgrading of Countrywide's credit rating, for real sector firms of all sizes, as well as for small financial institutions. The coefficients for Event 6, which corresponds to the government backing of Bear Stearns, are also all negative and are significant at the ten percent level or better for the smallest and largest-sized real sector and financial firms. The coefficients for Event 8, which corresponds to the government takeover of Freddie Mac and Fannie Mae, are negative and are significant at the ten percent level for small and large real sector firms, as well as small financial institutions. Similarly, the coefficients for Event 10, corresponding to the announcement of the government bailout of AIG, are negative and significant at the ten percent level or better for both real sector and financial firms of all sizes. Finally, the coefficients for Event 15, which corresponds to requests from the big three U.S. automakers for government financial assistance, are negative and significant at the ten percent level or better for larger real sector firms and smaller financial institutions.

There are, however, some financial crisis event announcements that correspond to significant positive abnormal portfolio returns, particularly for larger firms. For example, the Event 4 coefficient, which corresponds with the downgrade of Countrywide's credit rating and is negative for real sector firms of all sizes, is positive and significant for the largest 33 percent of financial institutions. In addition, the coefficients for Event 11, which correspond to the announcements of Goldman Sachs and Morgan Stanley becoming bank holding companies, are

positive and significant at the ten percent level or better for real sector firms of all sizes. However, the coefficients are not statistically different from zero for the sample of financial institutions. Finally, the coefficients for Event 16, which corresponds to the announcement of the Federal government's rescue of Citigroup, are positive and significant at the ten percent level or better for larger non-financial sector firms and financial institutions.

In Table 8, we report the estimates of abnormal event day returns for firms directly associated with the event announcements, as defined in section 6, and results are similar to those reported in previous tables.

[Insert Table 8 here]

Table 8 reports negative coefficients for Event 6 for all event firm size portfolios, and the coefficients are significant for small and mid-sized event firm portfolios, which corresponds to negative abnormal returns in response to the government's rescue of Bear Stearns. Similarly, the coefficients for Event 8, which corresponds to the takeover of Freddie Mac and Fannie Mae, are negative for all event firm size portfolios and are significant at the ten percent level for the small and medium sized event firm portfolios. In addition, the coefficients for event 9, which corresponds with the announcement of the Lehman Brothers bankruptcy, are negative and significant for all event firm size portfolios.

Similar to the portfolios of non-financial firms, the coefficients for Event 11, which correspond to the announcements of Goldman Sachs and Morgan Stanley becoming bank holding companies, are positive and significant at the ten percent level or better for small and mid-sized event firm portfolios. In addition, the coefficients for Event 16, which corresponds to

the announcement of the Federal government's bailout of Citigroup, are positive and significant at the ten percent level or better for the middle and large sized portfolios of event firms.

In addition, consistent with previous result presented in Table 6, the magnitude of the estimated event portfolio event day abnormal returns are much larger than those estimated for the financial and non-financial portfolios in Table 7. Larger estimated event returns imply that financial crisis announcement have the largest impact on portfolio of firms that are directly associated the announcements.

7.2 Financial sector sub-industry event day abnormal returns

In this section, we extend our analysis of the impact of individual event announcements to further examination of the finance industry. We create portfolios of different types of financial firms in order to test whether the impact of the event announcements under study have a homogeneous effect across all financial firms. Accordingly, abnormal event day returns are estimated for the two-digit SIC industry portfolios.

[Insert Table 9 Here]

Table 9 reports the estimation of the event day abnormal returns for important announcements surrounding the financial crisis of 2007 and 2008 across seven sub-industries of the financial services sector: broker-dealers, depository institutions, holding-investment firms, insurance brokers, insurance carriers, non-depository credit institutions, and real estate firms. Many news events during the financial crisis pertained to specific types of assets or involved specific companies in specific segments of the financial industry. An analysis of the impact of

financial crisis news events on the abnormal returns of specific types of financial institutions allows us to analyze potential differences in stock price reactions across financial sub-industries.

Similar to previous findings, many of the identified financial crisis event announcements correspond with negative estimated abnormal financial portfolio stock returns, and smaller financial firms are particularly impacted. The coefficients for Event 4 are negative and significant for smaller holding-investment companies and real estate firms, which correspond to negative abnormal returns in response to the downgrade of Countrywide's credit rating. The Event 6 dummy variable corresponds with the government rescue of Bear Sterns and is similarly negative and significant for small broker-dealer, holding-investment companies, insurance carriers, and real estate firms. The Event 6 coefficient is also negative an significant for the portfolio of large broker-dealer firms. The estimated abnormal returns in response to the Lehman Brothers bankruptcy announcement, Event 9, are negative and significant for small broker-dealer, and non-depository credit institutions. The coefficient for Event 10, the government bailout of AIG, is negative and significant for small broker-dealer and holding-investment companies, as well as larger holding-investment companies. The Event 11 dummy variables, corresponding to the conversion of Goldman Sachs and Morgan Stanley into investment companies, report negative and significant coefficients for the portfolios of small non-depository credit and large broker dealers firms. The coefficient for Event 13, the initial rejection of the government bailout package by Congress, is negative and significant for the portfolio of small broker dealer firms. The impact of the eventual passing the revised bailout package, measured by the coefficient for Event 14, is negative and significant for large real estate firms. The reported abnormal returns for Event 15, the request by the major U.S. auto manufacturers to access TARP funds, are negative and significant for small holding-investment, insurance carriers, and non-

depository firms, as well as large holding-investment companies. The coefficients for Event 16, which correspond to the government rescue of Citigroup, are negative and significant for small depository and real estate firm portfolios. Finally, the coefficients corresponding to Event 17, Congressional approval for TARP loans to the major U.S. auto manufacturers, are negative and significant for all small financial institutions, except holding-investment companies.

In contrast, consistent with prior evidence, we also estimate positive estimated abnormal portfolio returns in response to some financial crisis event announcements for certain portfolios of financial institutions, and these positive abnormal returns are generally yielded by larger financial institutions. Specifically, the coefficient for Event 4, corresponding to the downgrading of Countrywide's credit rating, is positive and significant for large depository institutions. The Event 9 dummy variables, which correspond to the Lehman Brothers bankruptcy announcement, also report positive and significant coefficients for the large broker-dealer, depository institution, and insurance carrier portfolios. The estimated abnormal returns in response to the government rescue of AIG, the coefficients for Event 10, are positive and significant for the large broker-dealer and depository firm portfolios. The coefficients associated with Event 11, the conversion of Goldman Sachs and Morgan Stanley into holding companies, are positive and significant for small broker dealer and insurance carriers, as well as the large non-depository credit institution portfolio. The coefficients for Event 13, which corresponds to the initial rejection of the TARP program, are positive and significant for small depository and insurance brokers, and large insurance carriers. The Event 14 dummy variable coefficients, indicating abnormal returns in response to the passing of the TARP program, are positive and significant for small insurance carriers as well as the large depository institution, insurance broker, and insurance carrier portfolios. The reported coefficients for Event 16, the government rescue of Citigroup, are

positive and significant for small holding-investment firms, as well as the large brokerage, holding-investment and real estate firm portfolios. Finally, the coefficients corresponding to Event 17, the approval of the inclusion of the major automakers into the TARP program, are positive and significant for large holding-investment and real estate firm portfolios.

8. Conclusion

The scope of the financial crisis began to present in the financial markets in February of 2007 with an increase in defaults in subprime mortgages, and the financial crisis spread throughout the economy as important news came to light throughout 2007 and 2008. In response to the crisis, the Fed and other Federal agencies and policymakers began to implement policies aimed at curtailing the crisis. The Fed enacted typical monetary policy to slow the crisis, but soon had to resort to unconventional approaches. The Fed began to create new facilities, changed its lending rules, and even injected large amounts of capital into financial institutions to overcome the crisis. The Fed's interventions were not aimed towards a particular financial institution, but were established to improve the entire financial system and the U.S. economy in general. The impact of the financial crisis and the effect that policymakers had on its severity and duration is an important issue, and we add to the empirical literature on the subject.

In this paper, we examine the impact of news announcements related to the financial crisis on the abnormal stock returns of real sector and financial firms. We identify 17 important financial crisis events from the *USA Today* article "A Repeat of 2008? Not Impossible" that occurred between 2007 and 2008 and conveyed important information about the evolution of the financial crisis. On the event days under study, the value-weighted CRSP market return averages -0.78 percent per day, while, on non-event days, the market return averages 0.03 percent.

Therefore, we test for whether the negative event day returns are explained by asset pricing models, or represent unexplained, or abnormal returns. We estimate abnormal returns over intervals surrounding our selected event days by creating portfolios of real sector, financial sector, and event firms using daily CRSP data from January 1, 2006 to December 31, 2009. Each event day or interval is indicated by a dummy variable, and we measure abnormal returns in the context of an asset pricing model similar to that of Fama and French (1993) and Carhart (1997). We calculate event interval and event day abnormal returns for portfolios of financial firms, real sector firms, and event firms. In addition, we highlight the role that firm size plays on estimated abnormal returns, as well the spillover effect of financial news to the real sector.

Our main results report significant event interval abnormal returns in response to financial crisis event announcements for both non-financial and financial firms. An estimation of the sensitivity of non-financial portfolio abnormal returns to financial crisis event announcements illustrates the spillover effect of financial market news to real sector stock returns. In Tables 3 and 4, we show significant negative abnormal returns for several daily intervals surrounding financial crisis event announcements. In particular, the negative abnormal event returns are larger for smaller, non-financial firms. Therefore, the estimation of event interval abnormal returns for non-financial firm portfolios is consistent with negative spillover effects from the financial to the real sectors. In addition, we show that smaller financial firm portfolios also exhibit significant negative abnormal returns in response to financial crisis events, which is consistent with unexpected negative returns associated with the announcement of events that impact financial sector risk. However, estimated event interval abnormal returns are positive for the portfolio of large financial firms, which indicates positive unexplained reactions to financial crisis event announcements for the largest financial institutions. Even though the

financial crisis negatively impacted many larger financial institutions, positive abnormal event returns in response to financial crisis announcements is consistent with the idea that the risks of larger financial firms was reduced by the perceived willingness of the Federal government to rescue the largest institutions in the event of their collapse. In addition, the programs established by policymakers such as the TARP Program and the Fed's special lending facilities were particularly aimed at larger financial institutions, thus announcements pertaining to these events have a positive impact on the abnormal stock returns of large financial institutions.

In an extension of our results, we examine the event interval abnormal returns for portfolios of financial firms grouped by two-digit SIC industries in order to better understand the impact of financial crisis events on the stock returns of financial firms. Results presented in Table 5 show that portfolios comprised of small broker-dealer, depository, holding-investment, and real estate firms earn negative abnormal event interval returns, indicating that these types of smaller financial firms drive the results for the full sample of smaller financial firms and indicate the negative impact that financial crisis announcements have on the returns of certain types of financial institutions. On the other hand, we report consistent, positive event interval abnormal returns for the portfolio of large depository institutions, but no other large financial firm portfolios exhibit significant abnormal returns. Therefore, results showing that large financial firms exhibit positive abnormal returns in response to financial crisis events are driven by depository intuitions. Depository institutions are subject to stricter regulations, and the government is more willing to provide assistance to larger commercial banks, which can act to reduce the risk of these types of firms, resulting in positive abnormal returns.

Finally, we analyze the impact of individual financial crisis event announcements on stock market abnormal returns. The results show that, while not all events are associated with

abnormal returns, there are several events during the recent financial crisis that consistently correspond to abnormal returns for portfolios having different characteristics. The credit rating downgrade of Countrywide financial, the government backing of Bear Sterns' assets, the collapse of Freddie Mac and Fannie Mae, the government rescue of AIG, and the auto industry's request for TARP funds are associated with consistent negative abnormal announcement returns for small and mid-sized portfolios of both financial and real sector firms. Conversely, the conversion of Morgan Stanley and Goldman Sachs into holding companies, the government rescue of Citigroup, and the extension of TARP funds to major U.S. automakers are associated with positive abnormal event day returns, particularly for real sector and larger financial firms and depository firms.

The empirical results presented add to the literature on the impact of financial crisis news and intervention announcements on the short-term stock price reactions in the financial markets. We show that financial crisis news significantly impacts the abnormal stock returns of most firms; however, such announcements have the least impact on large financial institutions, which actually achieve positive abnormal event interval returns. Positive abnormal portfolio returns for large financial firms in response to crisis event announcements are consistent with market perceptions of relatively lower risks for large financial institutions, despite the fact that many of these institutions were severely distressed, in part, due to the implicit understanding that the government would not allow the largest and most important financial institutions to fail. In addition, the negative impact of financial crisis event announcements on the real sector portfolios, especially those of small firms, illustrates the significant spillover effects that financial crisis news has on the returns of real sector stock returns and the importance of understanding and preventing financial crises. Finally, some individual events, such as the

conversion of Morgan Stanley and Goldman Sachs into holding companies and the government

bailout of Citigroup are met with positive abnormal returns, as large financial firms and

policymakers attempted to dampen the crisis, indicating that regulatory and policy intervention

can positively impact the targeted firms. Therefore, our results shed light on the stock price

reactions to financial crisis news in the literature and provide insights to firm managers,

investors, and policymakers.

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Table 1: Significant Event Dates in the 2007 – 2008 Financial Crisis

Significant dates and announcements made pertaining to the financial crisis of 2007 and 2008 used in this study. These dates are identified in the article "A Repeat of 2008? Not Impossible." from *USA Today*.

Event	Event Date	Event
Event 1	Feb. 27, 2007	Mortgage giant Freddie Mac says it will no longer buy the most risky subprime loans
Event 2	Apr. 02, 2007	Subprime mortgage lender New Century Financial files for bankruptcy court protection
Event 3	Jul. 31, 2007	Investment bank Bear Stearns liquidates two hedge funds that invested in risky securities backed by subprime mortgage loans
Event 4	Aug. 16, 2007	Fitch Ratings cuts the credit rating of mortgage lender Countrywide Financial to its third lowest investment-grade rating
Event 5	Jan. 11, 2008	Bank of America, the largest U.S. bank by market value, agrees to buy Countrywide Financial for about $4 billion.
Event 6	Mar. 16, 2008	The Federal Reserve agrees to guarantee $30 billion of Bear Stearns' assets in connection with the government sponsored sale of the investment bank to JPMorgan Chase
Event 7	Jul. 11, 2008	Federal regulators seize IndyMac Federal Bank after it becomes the largest regulated thrift to fail
Event 8	Sep. 07, 2008	Mortgage giants Fannie Mae and Freddie Mac are taken over by the government.
Event 9	Sep. 15, 2008	Bank of America agrees to purchase Merrill Lynch for $50 billion.
		Lehman Brothers files for bankruptcy court protection.
Event 10	Sep. 16, 2008	American International Group, the world's largest insurer, accepts an $85 billion federal bailout that gives the government a 79.9% stake in the company.
Event 11	Sep. 21, 2008	Goldman Sachs and Morgan Stanley, the last two independent investment banks, become bank holding companies, subject to greater regulation by the Federal Reserve.
Event 12	Sep. 25, 2008	Federal regulators close Washington Mutual Bank and its branches and its assets are sold to JPMorgan Chase in the biggest U.S. bank failure history.
Event 13	Sep. 29, 2008	Congress rejects a $700 billion Wall Street financial rescue package, known as the Troubled Asses Relief Program or TARP, sending the Dow Jones Industrial average down 778 points, its single worst point drop ever.
Event 14	Oct. 03, 2008	Congress passes a revised version of TARP, and President Bush signs it.
Event 15	Nov. 18, 2008	Ford, General Motors, and Chrysler executives testify before Congress, requesting federal loans from TARP.
Event 16	Nov. 23, 2008	The Treasure Department, Federal Reserve and Federal Deposit Insurance Corp. agree to rescue Citigroup with a package of guarantees, funding access, and capital. Citigroup will issue preferred shares to the Treasury and FDIC in exchange for protection against losses on a $306 billion pool of commercial and residential securities it holds
Event 17	Dec. 19, 2008	The US Treasury authorizes loans of up to $13.4 billion for GM and $4.0 billion for Chrysler from TARP. Ford ultimately takes no money.

Table 2: Event Day Market Returns

Equal and value-weighted CRSP market returns for event days surrounding the financial crisis. Daily CRSP returns are sample from Jan. 1 2006 to Dec. 31, 2009. Event returns are based on 17 events identified as being influential to the financial crisis of 2007 to 2008. See Table 1 for event day definitions. Event returns are calculated over four event intervals: the event day [t=0], the interval beginning the day prior to the event day and continuing through the event day [t=−1, 0], the interval beginning the day prior to the event and continuing through the day following the event day [t=−1. +1], and the interval beginning two days prior to the event and continuing through the day following the event day [t=−2, +1]. Event interval average daily returns are compared with those of non-event interval returns.

	CRSP Equal-weight Market Return					CRSP Value-weight Market Return			
	Mean	Std. Dev.	Min.	Max.		Mean	Std. Dev.	Min.	Max.
Non-Event Return	0.06	1.52	-8.03	10.74	Non-Event Return	0.03	1.63	-9.00	11.52
Event Return [t=0]	-0.82	2.64	-6.09	6.43	Event Return [t=0]	-0.78	3.21	-8.28	6.68
Diff.	0.89	1.54			Diff.	0.81	1.67		
Non-Event Return	0.07	1.51	-8.03	10.74	Non-Event Return	0.03	1.61	-9.00	11.52
Event Return [t=-1,0]	-0.49	2.38	-6.09	6.43	Event Return [t=-1,0]	-0.38	2.90	-8.28	6.68
Diff.	0.55	1.55			Diff.	0.40	1.67		
Non-Event Return	0.08	1.47	-8.03	10.74	Non-Event Return	0.04	1.57	-9.00	11.52
Event Return [t=-1,+1]	-0.60	2.55	-6.68	6.43	Event Return [t=-1,+1]	-0.43	2.96	-8.28	6.68
Diff.	0.68	1.54			Diff.	0.47	1.67		
Non-Event Return	0.09	1.45	-8.03	10.74	Non-Event Return	0.05	1.55	-9.00	11.52
Event Return [t=−2,+1]	-0.66	2.54	-6.88	6.43	Event Return [t=-2,+1]	-0.55	2.90	-8.28	6.68
Diff.	0.75	1.54			Diff.	0.60	1.66		

Table 3: Non-financial and financial portfolio event interval abnormal returns

OLS estimations of the abnormal returns for real sector and financial portfolios for event intervals surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal and value weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event interval dummy variables estimate event interval abnormal returns. Financial firms are defined by SIC codes between 6000 and 6999.

	Panel A: Non-Financial Portfolios							
Variable	VWRET	EWRET	VWRET	EWRET	VWRET	EWRET	VWRET	EWRET
Intercept	0.03861***	0.10535***	0.04087***	0.1095***	0.04389***	0.11696***	0.04438***	0.12177***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RF	-0.0306	-4.45132***	-0.0837	-4.56905***	-0.1503	-4.73207***	-0.1582	-4.8273***
	0.970	0.008	0.917	0.006	0.852	0.004	0.844	0.004
MRP	1.02***	0.889***	1.02***	0.89***	1.02***	0.89***	1.02***	0.888***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SMB	-0.0164*	0.4917***	-0.0169*	0.4883***	-0.018*	0.4849***	-0.0174*	0.4863***
	0.099	0.000	0.089	0.000	0.070	0.000	0.078	0.000
HML	-0.176***	-0.0465*	-0.1754***	-0.044*	-0.1754***	-0.0445*	-0.1746***	-0.0409*
	0.000	0.059	0.000	0.074	0.000	0.069	0.000	0.094
UMD	0.0693***	-0.102***	0.0696***	-0.0997***	0.0699***	-0.0987***	0.0699***	-0.0984***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Event [t=0]	-0.0265	-0.37311***						
	0.599	0.000						
Event [t=-1,0]			-0.06478**	-0.27774***				
			0.076	0.000				
Event [t=-1,+1]			.	.	-0.09227***	-0.30919***	.	.
			.	.	0.002	0.000	.	.
Event [t=-2,+1]			.	.	.	.	-0.07824***	-0.30106***
			.	.	.	.	0.004	0.000

Table 3 (continued): Non-financial and financial portfolio event interval abnormal returns

Variable	VWRET	EWRET	VWRET	EWRET	VWRET	EWRET	VWRET	EWRET
				Panel B: Financial Firm Portfolios				
Intercept	-0.0243	0.0242	-0.0300	0.0232	-0.0340	0.0278	-0.0337	0.0283
	0.319	*0.169*	*0.222*	*0.190*	*0.167*	*0.117*	*0.173*	*0.112*
RF	1.4632	-0.8761	1.6038	-0.8605	1.6907	-0.9640	1.6770	-0.9726
	0.417	*0.499*	*0.373*	*0.507*	*0.347*	*0.457*	*0.352*	*0.453*
MRP	1.01***	0.687***	1.01***	0.688***	1.01***	0.688***	1.011***	0.687***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	0.0240	0.195***	0.0263	0.1942***	0.0285	0.1929***	0.0270	0.1935***
	0.279	*0.000*	*0.235*	*0.000*	*0.197*	*0.000*	*0.222*	*0.000*
HML	0.6679***	0.1821***	0.6659***	0.1824***	0.6665***	0.1827***	0.6647***	0.1836***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
UMD	-0.2156***	-0.1429***	-0.2171***	-0.1424***	-0.2177***	-0.1419***	-0.2176***	-0.1419***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Event [t=0]	0.19957**	-0.1134	.	.	.	.	.	.
	0.077	*0.162*	.	.	.	.	.	.
Event [t=-1,0]			0.22672***	-0.0327	.	.	.	.
			0.005	*0.577*	.	.	.	.
Event [t=-1,+1]	.	.	.	.	0.21986***	-0.09576***	.	.
	.	.	.	.	*0.001*	*0.051*	.	.
Event [t=-2,+1]	.	.	.	.	.	.	0.16819***	-0.08149**
	.	.	.	.	.	.	*0.005*	*0.061*

Table 4: Non-financial and financial size portfolio event interval abnormal returns

OLS estimations of the abnormal returns for non-financial and financial portfolios for event intervals surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event interval dummy variables estimate event interval abnormal returns. Financial firms are defined by SIC codes between 6000 and 6999. Portfolios are divided into small, medium, and large size portfolios based on market capitalization.

Panel A: Non-financial firm portfolios

Variable	Small Non-financial Firms				Mid-cap Non-financial Firms				Large Non-Financial Firms			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Intercept	0.23983***	0.24864***	0.26209***	0.26929***	0.03649*	0.03758*	0.04171**	0.04703**	0.03996**	0.04252**	0.04736***	0.0493***
	0.000	*0.000*	*0.000*	*0.000*	*0.058*	*0.052*	*0.032*	*0.016*	*0.018*	*0.012*	*0.005*	*0.004*
RF	-13.1202***	-13.3781***	-13.6699***	-13.8057***	-0.4260	-0.4551	-0.5467	-0.6598	0.1753	0.1089	0.0021	-0.0350
	0.000	*0.000*	*0.000*	*0.000*	*0.764*	*0.748*	*0.700*	*0.641*	*0.888*	*0.930*	*0.999*	*0.977*
MRP	0.499***	0.502***	0.502***	0.498***	1.091***	1.091***	1.091***	1.089***	1.076***	1.076***	1.076***	1.075***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	0.2512***	0.2428***	0.2359***	0.2393***	0.8924***	0.8918***	0.8904***	0.8904***	0.331***	0.3296***	0.3277***	0.3285***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
HML	-0.0003	0.0056	0.0041	0.0111	-0.0085	-0.0080	-0.0079	-0.0058	-0.1309***	-0.1298***	-0.1299***	-0.1281***
	0.996	*0.903*	*0.929*	*0.809*	*0.683*	*0.701*	*0.705*	*0.779*	*0.000*	*0.000*	*0.000*	*0.000*
UMD	-0.1756	-0.1698	-0.1679	-0.1676	-0.1095	-0.1091	-0.1086	-0.1082	-0.0213	-0.0204	-0.0198	-0.0197
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.044*	*0.054*	*0.060*	*0.061*
Event [t=0]	-0.92281***	.	.	.	-0.0660	.	.	.	-0.13121*	.	.	.
	0.000	.	.	.	*0.456*	.	.	.	*0.092*	.	.	.
Event [t=-1,0]	.	-0.65342***	.	.	.	-0.0575	.	.	.	-0.12278**	.	.
	.	*0.000*	.	.	.	*0.369*	.	.	.	*0.029*	.	.
Event [t=-1,+1]	.	.	-0.66278***	.	.	.	-0.10473**	.	.	.	-0.16115***	.
	.	.	*0.000*	.	.	.	*0.051*	.	.	.	*0.001*	.
Event [t=-2,+1]	.	.	.	-0.60686***	.	.	.	-0.14755***	.	.	.	-0.14988***
	.	.	.	*0.000*	.	.	.	*0.002*	.	.	.	*0.000*

Table 4 (continued): Non-financial and financial size portfolio event interval abnormal returns

<div align="center">Panel B: Financial firm portfolios</div>

	Small Financial Firms				Mid-cap Financial Firms				Large Financial Firms			
Variable	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Intercept	0.05382*	0.05564**	0.06607**	0.06745**	0.0192	0.0179	0.0236	0.0236	-0.0003	-0.0037	-0.0060	-0.0057
	0.040	*0.035*	*0.012*	*0.011*	*0.391*	*0.428*	*0.297*	*0.300*	*0.988*	*0.839*	*0.747*	*0.759*
RF	-2.4519	-2.5124	-2.7434	-2.7639	-0.6820	-0.6630	-0.7903	-0.7857	0.4938	0.5818	0.6292	0.6190
	0.203	*0.193*	*0.153*	*0.150*	*0.679*	*0.688*	*0.632*	*0.634*	*0.714*	*0.666*	*0.641*	*0.647*
MRP	0.412***	0.413***	0.412***	0.411***	0.697***	0.698***	0.697***	0.697***	0.953***	0.952***	0.953***	0.953***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	-0.0156	-0.0183	-0.0219	-0.0201	0.257***	0.2557***	0.254***	0.2549***	0.3433***	0.3448***	0.3462***	0.3453***
	0.510	*0.441*	*0.354*	*0.395*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
HML	0.0036	0.0053	0.0055	0.0082	0.1319***	0.1325***	0.1328***	0.1338***	0.4103***	0.409***	0.4094***	0.4084***
	0.899	*0.851*	*0.845*	*0.771*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
UMD	-0.1701***	-0.1683***	-0.1671***	-0.1671***	-0.1212***	-0.1204***	-0.1197***	-0.1198***	-0.1375***	-0.1386***	-0.1389***	-0.1388***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Event [t=0]	-0.30572***	.	.	.	-0.17852*	.	.	.	0.14537*	.	.	.
	0.011	.	.	.	*0.084*	.	.	.	*0.085*	.	.	.
Event [t=-1,0]	.	-0.19132**	.	.	.	-0.0570	.	.	.	0.15066***	.	.
	.	*0.028*	.	.	.	*0.445*	.	.	.	*0.013*	.	.
Event [t=-1,+1]	.	.	-0.29662***	.	.	.	-0.12959**	.	.	.	0.13878***	.
	.	.	*0.000*	.	.	.	*0.038*	.	.	.	*0.007*	.
Event [t=-2,+1]	.	.	.	-0.24886***	.	.	.	-0.1011*	.	.	.	0.10533**
	.	.	.	*0.000*	.	.	.	*0.068*	.	.	.	*0.020*

Table 5: Financial sub-industry size portfolio event interval abnormal returns

OLS estimations of the abnormal returns for financial sub-industry portfolios for event day intervals surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event interval dummy variables estimate event day abnormal returns. Financial firms are defined by SIC codes between 6000 and 6999. Portfolios are divided into small, medium, and large size portfolios based on market capitalization. Financial firms are divided into sub-industries, based on SIC code: broker-dealer; depository; holding-investment; insurance brokers; insurance carriers; non-depository credit; and real estate. Pricing model factor coefficients are excluded for space.

Panel A: Broker-Dealer

Variable	Small EWRET	EWRET	EWRET	EWRET	Large EWRET	EWRET	EWRET	EWRET
Event [t=0]	-0.73624***	.	.	.	-0.0460	.	.	.
	0.005	.	.	.	*0.839*	.	.	.
Event [t=-1,0]	.	-0.38775**	.	.	.	-0.0275	.	.
	.	*0.043*	.	.	.	*0.866*	.	.
Event [t=-1,+1]	.	.	-0.27488*	.	.	.	0.0057	.
	.	.	*0.087*	.	.	.	*0.967*	.
Event [t=-2,+1]	.	.	.	-0.25483*	.	.	.	-0.0435
	.	.	.	*0.074*	.	.	.	*0.720*

Panel B: Depository

Variable	Small EWRET	EWRET	EWRET	EWRET	Large EWRET	EWRET	EWRET	EWRET
Event [t=0]	-0.36058*	.	.	.	0.4551**	.	.	.
	0.067	.	.	.	*0.034*	.	.	.
Event [t=-1,0]	.	-0.1925	.	.	.	0.65893***	.	.
	.	*0.176*	.	.	.	*0.000*	.	.
Event [t=-1,+1]	.	.	-0.35226***	.	.	.	0.65826***	.
	.	.	*0.003*	.	.	.	*0.000*	.
Event [t=-2,+1]	.	.	.	-0.32606***	.	.	.	0.63808***
	.	.	.	*0.002*	.	.	.	*0.000*

Panel C: Holding-Investment

Variable	Small EWRET	EWRET	EWRET	EWRET	Large EWRET	EWRET	EWRET	EWRET
Event [t=0]	-0.22486**	.	.	.	-0.0018	.	.	.
	0.050	.	.	.	*0.985*	.	.	.
Event [t=-1,0]	.	-0.15405*	.	.	.	-0.0306	.	.
	.	*0.063*	.	.	.	*0.641*	.	.
Event [t=-1,+1]	.	.	-0.25064***	.	.	.	-0.0518	.
	.	.	*0.000*	.	.	.	*0.346*	.
Event [t=-2,+1]	.	.	.	-0.21055***	.	.	.	-0.0704
	.	.	.	*0.001*	.	.	.	*0.150*

Table 5 (continued): Financial sub-industry size portfolio event interval abnormal returns

Panel D: Ins Brokers

Variable	Small				Large			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Event [t=0]	0.3772	.	.	.	0.49316*	.	.	.
	0.555	.	.	.	*0.051*	.	.	.
Event [t=-1,0]	.	0.0117	.	.	.	0.1954	.	.
	.	*0.980*	.	.	.	*0.284*	.	.
Event [t=-1,+1]	.	.	-0.5746	.	.	.	0.2388	.
	.	.	*0.137*	.	.	.	*0.118*	.
Event [t=-2,+1]	.	.	.	-0.1338	.	.	.	0.1296
	.	.	.	*0.697*	.	.	.	*0.340*

Panel E: Insurance Carriers

Variable	Small				Large			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Event [t=0]	-0.1209	.	.	.	0.36063*	.	.	.
	0.552	.	.	.	*0.073*	.	.	.
Event [t=-1,0]	.	0.1437	.	.	.	0.1616	.	.
	.	*0.327*	.	.	.	*0.266*	.	.
Event [t=-1,+1]	.	.	0.0202	.	.	.	0.1533	.
	.	.	*0.870*	.	.	.	*0.208*	.
Event [t=-2,+1]	.	.	.	-0.0721	.	.	.	0.0562
	.	.	.	*0.509*	.	.	.	*0.603*

Panel F: Non-dep Credit

Variable	Small				Large			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Event [t=0]	-0.7068	.	.	.	-0.3068	.	.	.
	0.110	.	.	.	*0.303*	.	.	.
Event [t=-1,0]	.	-0.4235	.	.	.	-0.0490	.	.
	.	*0.185*	.	.	.	*0.820*	.	.
Event [t=-1,+1]	.	.	-0.4178	.	.	.	0.2181	.
	.	.	*0.118*	.	.	.	*0.227*	.
Event [t=-2,+1]	.	.	.	-0.2558	.	.	.	0.1394
	.	.	.	*0.282*	.	.	.	*0.384*

Panel G: Real Estate

Variable	Small				Large			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Event [t=0]	-1.48093***	.	.	.	0.0884	.	.	.
	0.001	.	.	.	*0.691*	.	.	.
Event [t=-1,0]	.	-1.37828***	.	.	.	0.2061	.	.
	.	*0.000*	.	.	.	*0.200*	.	.
Event [t=-1,+1]	.	.	-0.56479**	.	.	.	-0.1196	.
	.	.	*0.044*	.	.	.	*0.375*	.
Event [t=-2,+1]	.	.	.	-0.3071	.	.	.	-0.1936
	.	.	.	*0.218*	.	.	.	*0.105*

Table 6: Event firm size portfolio event interval abnormal returns

OLS estimations of the abnormal returns for event-related firm portfolios for event intervals surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event interval dummy variables estimate event interval abnormal returns. Event related firms include Freddie Mac, New Century Financial, Bear Stearns, Countrywide, Bank of America, J.P. Morgan Chase, IndyMac, Fannie Mae, Merrill Lynch, Lehman Brothers, American International Group (AIG), Goldman Sachs, Morgan Stanley, Washington Mutual, Ford, General Motors, and Chrysler.

Variable	Small Event Firms				Medium Event Firms				Large Event Firms			
	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Intercept	-0.0374	-0.0060	-0.0456	-0.0438	-0.1389	-0.1232	-0.1271	-0.1471	0.0036	-0.0177	-0.0292	-0.0287
	0.903	*0.984*	*0.883*	*0.888*	*0.273*	*0.333*	*0.320*	*0.252*	*0.966*	*0.834*	*0.730*	*0.736*
RF	-4.7717	-5.8285	-4.8896	-4.8723	2.8889	2.5318	2.6257	3.0704	0.0517	0.5479	0.7975	0.7670
	0.832	*0.796*	*0.829*	*0.830*	*0.757*	*0.786*	*0.779*	*0.743*	*0.993*	*0.929*	*0.897*	*0.901*
MRP	0.92***	0.941***	0.948***	0.94***	1.526***	1.525***	1.525***	1.528***	1.137***	1.139***	1.139***	1.142***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	0.0493	0.0015	-0.0076	0.0037	-0.4935***	-0.4954***	-0.4964***	-0.4923***	-0.4269***	-0.4228***	-0.4168***	-0.4208***
	0.859	*0.996*	*0.978*	*0.989*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
HML	0.9149***	0.946***	0.9274***	0.942***	0.6325***	0.6356***	0.6336***	0.6307***	1.7361***	1.7311***	1.7325***	1.7279***
	0.006	*0.005*	*0.006*	*0.005*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
UMD	-1.2959***	-1.2627***	-1.2637***	-1.2646***	-0.7519***	-0.7507***	-0.7508***	-0.7527***	-0.5845***	-0.5872***	-0.5889***	-0.5885***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Event [t=0]	-5.54449***	.	.	.	0.0014	.	.	.	0.1940	.	.	.
	0.000	.	.	.	*0.998*	.	.	.	*0.616*	.	.	.
Event [t=-1,0]	.	-3.42978***	.	.	.	-0.3590	.	.	.	0.58233**	.	.
	.	*0.001*	.	.	.	*0.394*	.	.	.	*0.037*	.	.
Event [t=-1,+1]	.	.	-1.73843**	.	.	.	-0.1851	.	.	.	0.58334***	.
	.	.	*0.043*	.	.	.	*0.600*	.	.	.	*0.013*	.
Event [t=-2,+1]	.	.	.	-1.38115*	.	.	.	0.1026	.	.	.	0.44953**
	.	.	.	*0.070*	.	.	.	*0.743*	.	.	.	*0.030*

Table 7: Non-financial and financial firm portfolio event day abnormal returns

OLS estimations of the abnormal returns for non-financial and financial portfolios for event days surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event day dummy variables estimate event day abnormal returns. Financial firms are defined by SIC codes between 6000 and 6999. Portfolios are divided into small, medium, and large size portfolios based on market capitalization.

| | Non-Financial Firms | | | Financial Firms | | |
| | Small | Mid | Large | Small | Mid | Large |
Variable	EWRET	EWRET	EWRET	EWRET	EWRET	EWRET
Intercept	0.23998***	0.03645*	0.04071**	0.05597**	0.0212	0.0000
	0.000	0.052	0.014	0.031	0.339	0.999
RF	-13.1587***	-0.4110	0.1185	-2.6392	-0.8542	0.4837
	0.000	0.767	0.923	0.168	0.602	0.719
MRP	0.502***	1.091***	1.077***	0.415***	0.699***	0.955***
	0.000	0.000	0.000	0.000	0.000	0.000
SMB	0.2599***	0.8928***	0.3319***	-0.0129	0.2596***	0.3383***
	0.000	0.000	0.000	0.591	0.000	0.000
HML	0.0321	-0.0006	-0.1239***	0.0175	0.1449***	0.4186***
	0.489	0.979	0.000	0.540	0.000	0.000
UMD	-0.1734***	-0.1034***	-0.0150	-0.1615***	-0.114***	-0.1293***
	0.000	0.000	0.151	0.000	0.000	0.000
Event 1	-1.55226**	-0.4362	0.1939	0.0303	0.2199	0.1723
	0.049	0.217	0.533	0.950	0.598	0.614
Event 2	0.0517	-0.0064	0.3142	0.0419	-0.1370	-0.1780
	0.948	0.986	0.311	0.931	0.741	0.601
Event 3	0.7296	0.5660	0.3495	0.4586	0.3407	0.2514
	0.353	0.108	0.259	0.344	0.412	0.461
Event 4	-3.80594***	-0.8999**	-1.24428***	-1.58052***	-0.5755	0.73954**
	0.000	0.011	0.000	0.001	0.167	0.031
Event 5	0.2864	-0.3028	0.0005	0.4756	0.0458	0.4208
	0.716	0.390	0.999	0.327	0.912	0.217
Event 6	-1.53724*	-0.2403	-0.66307**	-1.15547**	-0.5004	-0.6473*
	0.051	0.495	0.033	0.018	0.229	0.058
Event 7	-0.4843	0.58426*	0.0013	-0.1118	0.2843	0.2659
	0.539	0.097	0.997	0.818	0.494	0.436
Event 8	-2.29253***	-0.2368	-0.8718***	-0.80887*	-0.4676	-0.2966
	0.004	0.502	0.005	0.096	0.261	0.385
Event 9	-1.1101	-0.3571	-0.3021	-0.4168	-0.4032	0.3225
	0.161	0.313	0.333	0.393	0.335	0.347
Event 10	-2.7172***	-0.75879**	-0.51523*	-1.59418***	-1.71718***	-0.57872*
	0.001	0.032	0.098	0.001	0.000	0.091
Event 11	1.47378*	1.48068***	0.68545**	0.4510	0.6803	-0.1244
	0.063	0.000	0.028	0.356	0.104	0.717
Event 12	-0.9368	0.0902	-0.1651	0.1277	0.1886	-0.2941
	0.234	0.798	0.595	0.793	0.650	0.389
Event 13	-0.0500	-0.0397	0.0147	-0.0010	-0.6773	0.2993
	0.951	0.913	0.963	0.998	0.113	0.393
Event 14	0.0819	-0.2871	-0.4588	0.3578	0.5377	0.7694**
	0.917	0.415	0.140	0.461	0.196	0.024
Event 15	-0.3189	-1.43963***	-0.91106***	-1.70558***	-1.60862***	-0.5012
	0.686	0.000	0.003	0.000	0.000	0.143
Event 16	-1.1580	1.45441***	1.25958***	0.7250	0.1166	1.02871***
	0.147	0.000	0.000	0.141	0.782	0.003
Event 17	-2.27427***	-0.2865	0.0939	-0.4500	0.6618	0.86036**
	0.004	0.416	0.762	0.354	0.111	0.012

Table 8: Event firm size portfolio event day abnormal returns

OLS estimations of the abnormal returns for non-financial and financial portfolios for event days surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event day dummy variables estimate event day abnormal returns. Portfolios are divided into small, medium, and large size portfolios based on market capitalization. Event related firms include Freddie Mac, New Century Financial, Bear Stearns, Countrywide, Bank of America, J.P. Morgan Chase, IndyMac, Fannie Mae, Merrill Lynch, Lehman Brothers, American International Group (AIG), Goldman Sachs, Morgan Stanley, Washington Mutual, Ford, General Motors, and Chrysler.

Variable	Small EWRET	Mid EWRET	Large EWRET
Intercept	-0.0137	-0.1280	0.0015
	0.962	*0.302*	*0.986*
RF	-6.9927	1.9670	0.3200
	0.743	*0.830*	*0.959*
MRP	0.941***	1.54***	1.141***
	0.000	*0.000*	*0.000*
SMB	0.0011	-0.4749***	-0.4279***
	0.997	*0.000*	*0.000*
HML	1.2718***	0.709***	1.7554***
	0.000	*0.000*	*0.000*
UMD	-1.2187***	-0.7***	-0.5532***
	0.000	*0.000*	*0.000*
Event 1	-0.4007	1.7203	-0.5336
	0.941	*0.461*	*0.734*
Event 2	-0.1964	-0.2282	-0.0787
	0.971	*0.922*	*0.960*
Event 3	-0.6341	-0.7424	0.1854
	0.907	*0.750*	*0.906*
Event 4	-3.6372	3.5264	0.8576
	0.503	*0.131*	*0.584*
Event 5	-4.6852	4.4674*	0.0287
	0.387	*0.055*	*0.985*
Event 6	-22.6147***	-4.2371*	-0.1089
	0.000	*0.069*	*0.945*
Event 7	-0.0419	-3.5164	0.1453
	0.994	*0.132*	*0.926*
Event 8	-50.1223***	-5.9181**	-1.8478
	0.000	*0.011*	*0.238*
Event 9	-27.8057***	-7.8376***	-3.1374**
	0.000	*0.001*	*0.046*
Event 10	-2.5615	-0.7816	-2.4171
	0.637	*0.738*	*0.123*
Event 11	26.3259***	11.088***	2.3680
	0.000	*0.000*	*0.132*
Event 12	-8.0546	-4.7157**	-0.9069
	0.137	*0.043*	*0.562*
Event 13	3.4811	1.7124	3.1758**
	0.532	*0.474*	*0.048*
Event 14	-5.2586	1.6564	-0.7841
	0.332	*0.477*	*0.616*
Event 15	7.8629	0.6789	-0.3530
	0.148	*0.771*	*0.822*
Event 16	-5.6252	5.2772**	7.3358***
	0.306	*0.026*	*0.000*
Event 17	0.5446	-1.9613	-0.5850
	0.920	*0.400*	*0.708*

Table 9: Finance sub-industry size portfolio abnormal event day returns

OLS estimations of the abnormal returns for non-financial and financial portfolios for event days surrounding important announcements during the financial crisis of 2007 and 2008. See Table 1 for event definitions. Daily CRSP returns are sampled from Jan. 1 2006 to Dec. 31, 2009. Dependent variables include the equal weighted daily portfolio returns. Abnormal returns are calculated using the factors of Fama and French (1993) and Carhart (1997). Event day dummy variables estimate event day abnormal returns. Financial firms are defined by SIC codes between 6000 and 6999. Portfolios are divided into small, medium, and large size portfolios based on market capitalization.

Panel A: Small financial sub-industry portfolios

Variable	Broker-Dealer EWRET	Depository EWRET	Holding-Investment EWRET	Ins Brokers EWRET	Insurance Carriers EWRET	Non-dep Credit EWRET	Real Estate EWRET
Intercept	0.19883***	0.07902*	0.04453*	0.0635	0.12996***	0.1865*	0.33283***
	0.000	*0.063*	*0.067*	*0.647*	*0.003*	*0.051*	*0.001*
RF	-8.7128**	-5.2835*	-1.5059	1.7382	-5.9112*	-12.8234*	-18.4247**
	0.037	*0.092*	*0.401*	*0.865*	*0.067*	*0.070*	*0.013*
MRP	0.8242***	0.1371***	0.5302***	0.8478***	0.7733***	0.5117***	0.3802***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	0.4726***	-0.0278	-0.0220	0.8738***	0.6359***	0.2049**	0.1318
	0.000	*0.479*	*0.327*	*0.000*	*0.000*	*0.021*	*0.154*
HML	0.2392***	0.0805*	-0.0452*	-0.1073	0.3822***	0.3645***	0.3067***
	0.000	*0.086*	*0.093*	*0.484*	*0.000*	*0.001*	*0.006*
UMD	-0.1868***	-0.266***	-0.1089***	-0.3945***	-0.1772***	-0.3477***	-0.2563***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Event 1	-0.1017	0.0604	0.0506	1.1329	0.5059	0.4789	-0.9764
	0.924	*0.940*	*0.912*	*0.664*	*0.538*	*0.790*	*0.603*
Event 2	-0.3721	0.0634	0.0918	-0.0841	-0.1090	-0.3891	-0.7998
	0.725	*0.936*	*0.840*	*0.974*	*0.894*	*0.828*	*0.669*
Event 3	-0.0973	1.0434	0.2951	3.4885	0.2456	-0.5146	-0.7483
	0.927	*0.190*	*0.517*	*0.180*	*0.764*	*0.774*	*0.689*
Event 4	-0.1326	-1.2190	-1.61802***	2.3991	-0.3507	-2.3448	-4.7728**
	0.901	*0.127*	*0.000*	*0.358*	*0.669*	*0.192*	*0.011*
Event 5	0.4939	0.9017	0.2852	-5.7272**	1.0544	1.2578	-0.1987
	0.641	*0.257*	*0.531*	*0.028*	*0.198*	*0.483*	*0.915*
Event 6	-3.18844***	-1.2932	-0.86436*	2.3332	-1.55798*	-0.6597	-5.17869***
	0.003	*0.105*	*0.058*	*0.370*	*0.057*	*0.713*	*0.006*
Event 7	0.3239	-0.5071	0.0237	0.1552	-1.90553**	2.8226	0.6721
	0.760	*0.525*	*0.959*	*0.952*	*0.020*	*0.116*	*0.720*
Event 8	-1.3103	-1.4691	-0.3634	-2.7278	-1.0438	-3.3599*	-0.3451
	0.217	*0.066*	*0.425*	*0.295*	*0.203*	*0.061*	*0.854*
Event 9	-4.70964***	-1.0392	-0.2402	-1.0550	0.3469	-4.38285**	1.1494
	0.000	*0.195*	*0.600*	*0.687*	*0.674*	*0.015*	*0.541*
Event 10	-3.22967***	-0.7835	-1.69685***	-2.3615	-1.1790	-2.1349	-1.9453
	0.002	*0.327*	*0.000*	*0.366*	*0.152*	*0.235*	*0.300*
Event 11	2.99648***	-0.1492	0.5309	1.7633	2.35482***	-3.63818**	0.6669
	0.005	*0.852*	*0.247*	*0.501*	*0.004*	*0.044*	*0.723*
Event 12	0.0537	0.6518	-0.0111	-1.6722	0.0483	2.5678	0.1502
	0.960	*0.413*	*0.981*	*0.521*	*0.953*	*0.152*	*0.936*
Event 13	-1.8135*	1.879**	-0.3354	5.6661**	0.9410	1.7140	-1.1851
	0.096	*0.022*	*0.473*	*0.034*	*0.264*	*0.352*	*0.538*
Event 14	1.5500	1.1684	-0.0906	-1.6423	2.03689**	1.6248	-1.7472
	0.144	*0.143*	*0.842*	*0.528*	*0.013*	*0.365*	*0.351*
Event 15	-1.6295	-0.6990	-2.28391***	1.8073	-2.06039**	-3.22643*	2.5433
	0.126	*0.381*	*0.000*	*0.488*	*0.012*	*0.073*	*0.175*
Event 16	0.5956	-2.2078***	1.8676***	-2.3558	0.5002	1.5897	-7.7796***
	0.580	*0.006*	*0.000*	*0.372*	*0.547*	*0.382*	*0.000*
Event 17	-2.0267*	-2.3802***	0.5510	5.7595**	-1.7356**	-3.4326*	-4.5448**
	0.056	*0.003*	*0.226*	*0.027*	*0.034*	*0.056*	*0.015*

Table 9 (continued): Finance sub-industry size portfolio abnormal event day returns

Variable	Broker-Dealer EWRET	Depository EWRET	Holding-Investment EWRET	Ins Brokers EWRET	Insurance Carriers EWRET	Non-dep Credit EWRET	Real Estate EWRET
Intercept	-0.0319	-0.0820	0.0219	-0.0176	0.0201	-0.0136	0.0032
	0.507	*0.076*	*0.256*	*0.748*	*0.646*	*0.830*	*0.947*
RF	3.8779	4.1214	-0.2136	0.6795	-1.7359	-2.2433	-0.0242
	0.276	*0.227*	*0.881*	*0.867*	*0.591*	*0.632*	*0.995*
MRP	1.3348***	1.0482***	0.8391***	0.8369***	1.026***	1.1165***	1.1918***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
SMB	0.3249***	0.7717***	0.1774***	0.24***	-0.1022***	0.4177***	0.6918***
	0.000	*0.000*	*0.000*	*0.000*	*0.012*	*0.000*	*0.000*
HML	0.3995***	0.9411***	0.1901***	0.4574***	0.6482***	0.7262***	0.3194***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
UMD	-0.2793***	-0.2686***	-0.0611***	-0.0967***	-0.1133***	-0.4938***	-0.2156***
	0.000	*0.000*	*0.000*	*0.006*	*0.000*	*0.000*	*0.000*
Event 1	0.2391	0.2937	-0.0492	0.5259	1.0064	0.6871	1.66636*
	0.792	*0.735*	*0.892*	*0.611*	*0.221*	*0.564*	*0.066*
Event 2	-0.0441	-0.9745	0.1689	-0.6231	-0.0857	-0.2318	-0.2328
	0.961	*0.260*	*0.640*	*0.545*	*0.917*	*0.845*	*0.797*
Event 3	-0.4070	-0.2605	0.5887	0.9534	-0.0147	-1.1406	0.4727
	0.652	*0.763*	*0.103*	*0.354*	*0.986*	*0.336*	*0.601*
Event 4	0.0781	3.65987***	-0.3809	-0.6905	0.5654	0.8646	-0.4983
	0.931	*0.000*	*0.293*	*0.504*	*0.492*	*0.468*	*0.583*
Event 5	0.6269	-0.6788	0.5899	-0.2135	0.0328	1.6460	-0.8087
	0.487	*0.433*	*0.103*	*0.836*	*0.968*	*0.166*	*0.371*
Event 6	-4.95733***	0.4362	-0.5006	0.7111	-0.5228	-1.7130	-0.1530
	0.000	*0.614*	*0.166*	*0.490*	*0.524*	*0.150*	*0.866*
Event 7	-0.8175	1.0905	0.2726	-0.1366	-0.1186	0.5036	-0.0386
	0.366	*0.208*	*0.451*	*0.895*	*0.885*	*0.672*	*0.966*
Event 8	-0.2459	0.8967	-0.3487	-0.9301	-0.0610	-8.3223***	-0.6329
	0.786	*0.301*	*0.335*	*0.367*	*0.941*	*0.000*	*0.485*
Event 9	2.18336**	1.60288*	-0.4242	0.3623	1.9377**	-0.3557	-1.4494
	0.016	*0.066*	*0.243*	*0.727*	*0.019*	*0.766*	*0.112*
Event 10	2.06976**	2.08733**	-1.64632***	0.7786	-0.2031	-1.3621	-0.5720
	0.022	*0.016*	*0.000*	*0.451*	*0.805*	*0.253*	*0.529*
Event 11	-1.78948**	-1.2534	0.1757	1.6674	-0.2713	3.07516*	-0.9709
	0.049	*0.150*	*0.629*	*0.108*	*0.742*	*0.010*	*0.286*
Event 12	-1.2003	-0.6827	0.0674	1.1919	-0.6319	-1.5597	0.2487
	0.184	*0.431*	*0.852*	*0.248*	*0.441*	*0.189*	*0.784*
Event 13	0.1217	0.0594	-0.1802	1.3735	1.8639**	1.7167	1.5074
	0.896	*0.947*	*0.627*	*0.195*	*0.027*	*0.160*	*0.105*
Event 14	1.2534	2.69068***	-0.0672	2.5875**	1.51994*	0.1135	-1.5896*
	0.166	*0.002*	*0.853*	*0.012*	*0.064*	*0.924*	*0.079*
Event 15	-0.7018	0.7860	-1.12586***	-1.1875	0.4730	-0.6060	0.4167
	0.438	*0.365*	*0.002*	*0.250*	*0.565*	*0.611*	*0.646*
Event 16	2.5234***	-1.2019	1.3727***	1.3003	-0.2692	1.6653	2.3114**
	0.006	*0.171*	*0.000*	*0.214*	*0.746*	*0.167*	*0.012*
Event 17	0.2983	-0.7939	1.4629***	0.7836	1.0863	0.0907	1.8525**
	0.741	*0.359*	*0.000*	*0.447*	*0.186*	*0.939*	*0.041*