What Influences New Zealand Stock Returns?

Abstract

We estimate the effect of different events on New Zealand stock returns. Our results indicate that New Zealand Central Bank interest rate (OCR) announcements, U.S. Federal Open Market Committee (FOMC) interest rate announcements, and company earnings announcements have the most important impact. Macroeconomic announcements including CPI, GDP, and unemployment, play a lesser role, as do technical factors. These results hold across all stocks and are also prevalent in cohorts of small and large, value and growth, and low- and high-leverage stocks.

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1. Introduction

Research has documented that company fundamentals, technical factors, macroeconomic announcements, and central bank interest rate decisions affect stock returns. However, international studies have generally focused on the impact of each of these variables in isolation. Using different samples of stocks and periods has made it challenging to gauge their relative impact. Further, little research in this area relates to New Zealand stocks.

We contribute to the literature by estimating the relative impact of various "events" on New Zealand stock returns. First, we consider semi-annual earnings announcement dates. Ball and Shivakumar (2008) show that a meaningful proportion of annual stock returns occurs on earnings announcement days in the U.S. Second, we include days when popular technical indicators give buy and sell signals. We focus on moving average trading rules as these are popular in the industry (e.g., Zhu and Zhou, 2009). Third, the macroeconomic announcement events we include are inflation, GDP, and unemployment. Flannery and Protpapadakis (2002) document the importance of macroeconomic announcements for U.S. stock returns. We also include Reserve Bank of New Zealand (RBNZ) Official Cash Rate (OCR) announcements. However, recent work by Brusa, Savor, and Wilson (2020) indicates that announcements by local central banks have much less impact on stock returns than the Federal Open Market Committee (FOMC) announcements do. We, therefore, include the FOMC announcements as well. Finally, as it is well documented that U.S. equity returns influence the equity returns of other countries, we consider New Zealand equity returns on days following a large change in U.S. equity returns (e.g., Rapach, Strauss, and Zhou, 2013).

To measure the influence of the different news sources, we regress annual returns for each stock on the returns for a three-day window surrounding each event. The adjusted R^2 measures the proportion of annual return driven by the event. We deduct from this the expected adjusted R^2 for a random equivalent period with no news to arrive at the event-driven abnormal adjusted R^2. Each source of news may already be reflected in stock prices before the window we test if investors correctly anticipate its impact in advance, or the news may be reflected with a delay if investors are slow to react. However, this is difficult to determine due to confounding events. A defined window allows us to attribute stock return variation to various events with more certainty. We test a five-day day window for robustness.

Our results indicate that New Zealand Central Bank interest rate (OCR), U.S. Central Bank (FOMC) interest rate announcements, and company earnings announcements have the largest impact. In the three days surrounding these announcements, the average abnormal adjusted R^2 for these announcements based on logarithmic returns is 12-16% and 9-12% based on arithmetic returns. Macroeconomic announcements, including CPI, GDP, and unemployment, play a lesser but still statistically significant role, with average abnormal adjusted R^2's of 5-10%. We consider two popular technical trading rules. The first is prices crossing a 50-day moving average; the second is crossing a 200-day moving average. In each instance, we focus on the first buy signal (price is moving above the moving average) and the first sell signal (price moving below the moving average) for the calendar year. The average abnormal adjusted R^2 following a 50-day moving average buy or sell signal is also in the 5-10% range. The average abnormal adjusted R^2s following a 200-day moving average buy or sell signal or following large positive or negative returns in the S&P 500 are not statistically significant.

We conduct numerous robustness tests. While there is some variation, the results outlined above generally hold in both the pre-and post-global financial crisis periods. They also hold in different cohorts of stocks, including small and large-cap stocks, value and growth stocks, and those with low and high leverage. We test whether there are differences between these cohorts, but most are not statistically significant. Our findings indicate that the events we consider have a greater impact on stocks in the energy, financial, and healthcare industries than others. However, sample size limitations prevent us from determining whether these differences are statistically significant.

We contribute to several strands of the literature. First, we add to work that considers the impact of various factors on stock returns. The importance of earnings information for stock returns has been documented for decades (e.g., Ball and Brown, 1968). Ball and Kothari (1991) point out that risk increases around earnings announcements, but abnormal returns exist after controlling for this. More recently, Dellavigna and Pollet (2009) document slower immediate response to earnings announcements made on Fridays, which they attribute to investor distraction due to the pending weekend. The extent to which technical analysis adds value is highly contested. While it is often dismissed for conflicting with weak-form market efficiency, theoretical support exists (e.g., Brown and Jennings, 1989). Technical analysis is widely used in industry (e.g., Menkoff, 2010) and has been shown to explain stock returns (e.g., Han, Yang, and Zhou, 2013). The impact of macroeconomic variables and monetary policy announcements on stock returns is less controversial and is well-documented in the literature (e.g., Savor and Wilson, 2013; Ai, Han, Pan, and Xu, 2022). Finally, our inclusion of U.S. equity returns is related to the literature on the co-movement of stock returns (e.g., Brooks and Del Negro, 2006).

Second, we add work focusing on the New Zealand equity market. Frijns and Indriawan (2018) note that most New Zealand active fund managers hold portfolios that closely resemble the market index. Balli, Balli, Hasan, and Gregory-Allen (2020) show that both New Zealand and U.S. economic policy and certainty impact New Zealand stock returns. Ali, Badshah, Demirer, and Hedge (2022) also show that New Zealand's economic policy uncertainty impacts the returns earned by institutional investors.[1] More recently, Ma, Marshall, Nguyen, and Visaltanachoti (2024) document several aspects of New Zealand's long-term equity returns over 156 years, including the impact of inflation on equity returns.

We also hope our paper will interest a range of stakeholders. New Zealand stock returns impact various groups. They influence the savings accumulated by investors who invest in stocks directly or via their workplace savings, the "Kiwisaver" scheme. They impact the Government's accounts. The New Zealand Super Fund invests in stocks. Although the fund operates as a standalone entity, it will be used to support future generations in retirement, thereby reducing the taxation revenue that would otherwise need to be raised. Finally, stock returns impact companies via their influence on the company's cost of capital.

The rest of our paper is organized as follows. Section 2 contains the data and method. The results are in Section 3, while Section 4 concludes the paper.

2. Data and Method

We obtain data on all stocks listed on the NZX Main Board at any point between 1990 and 2024 from LSEG / Refinitiv. This results in a sample of 184 companies. We calculate returns using the total return series that includes dividends and accounts for capital changes such as stock splits. We follow Hollstein (2020) and require that a firm trades for at least 50% of trading days in a calendar year to be included in that year. We conclude that the firm has traded on a particular day if its trading volume for the day is not 0. Earnings announcement date data is also obtained from LSEG. Macroeconomic announcement dates are from

[1] We do not include these data in our analysis because it relates to the average policy uncertainty over a month it is therefore difficult to relate to daily stock returns.

Bloomberg. U.S. market returns are from CRSP. OCR announcement dates are from the RBNZ website, and FOMC announcement dates are from the U.S. Federal Reserve website.

We follow Ball and Shivakumar (2008) and use the R^2 from the annual cross-section regression of stock calendar-year returns on the returns surrounding earnings announcements, as specified in Equation 1. Using the same approach, we substitute earnings announcement returns with returns around moving average buy and sell signals, macroeconomic announcements, central bank interest rate decisions, and U.S. equity returns. There is evidence of skewness in the return data. Median returns are consistently negative across all announcement types. The proportion of returns greater than 0 is always less than 50%; however, many mean returns are positive. Ball and Shivakumar (2008) note that logarithmic and arithmetic returns have strengths and weaknesses. Logarithmic returns are superior for time-series aggregation, whereas arithmetic returns are superior for cross-sectional aggregation. We, therefore, include results for both logarithmic and arithmetic returns.

$$R_i(annual) = a_0 + a_1 R_i(window\ 1) + a_2 R_i(window\ 2) + \cdots + a_n R_i(window\ n) + \varepsilon_i \tag{1}$$

where $R_i(annual)$ represents calendar-year buy-and-hold returns and $R_i(window\ n)$ denotes the buy-and-hold return over day -1, day 0, and day +1 within the *n*th event window for a specific event category. For example, n=2 corresponds to the earnings announcement events. Equation 1 reflects that there are different numbers of events across the different return determinants we consider. We define day 0 for each type of event as follows. There are two earnings announcements (EA) per year, with day 0 being the day of the earnings announcement. The technical indicators we consider are the 50-day (MA050) and 200-day (MA200) moving average rules. Day 0 is recorded as the first time in a calendar year when the stock price moves above these averages and the first time it moves below them. Therefore, some stocks may have no technical analysis signal in a calendar year, while others may have one or two signals. For GDP, CPI, and unemployment (UEMP), there are generally four announcements per year, with day 0 corresponding to each announcement date. The number of OCR and FOMC announcements varies slightly each year. OCR announcements are recorded in New Zealand time. For FOMC announcements, we follow Brusa, Savor, and Wilson (2020) to convert the U.S. times into the New Zealand times. Day 0 for U.S. stock returns relate to the days in New Zealand when the S&P500 increased or decreased by more than two standard deviations from the most recent 12-month daily returns (SPsd2).

The results we present in Table 1 contain the total number of events across firm years in each category. This ranges from 3,795 for earnings announcements to 19,375 for FOMC announcements. Earnings announcements date back to the start of the sample period but only occur twice per year. FOMC announcements begin in 1991, but there are up to 14 of these per year. OCR announcements commenced in 1999, with a maximum of 9 per year. Macroeconomic announcement data commences in 2000 for CPI and 2001 for GDP and unemployment, with four announcements of each type per year. Given that we only include the first buy or sell signal from a technical indicator in a calendar year, the maximum number of signals per indicator is two per year. For U.S. market movement, we only consider days where the S&P 500 moved by the mean return ±2 standard deviations on the previous day.

[Insert Table 1 About Here]

3. Results

The first row of results in Table 2, denoted BM, relates to the expected adjusted R^2 (i.e., the benchmark adjusted R^2) for each type of event under the null hypothesis that daily returns, including event window returns, are i.i.d. over time. In a year with 250 trading days, one 3-day event window would contain approximately 1.2% (3/250) of the total annual information. Therefore, 1.2% is the expected value of the adjusted R^2 under the null hypothesis. While variation in the number of trading days each year impacts the benchmark adjusted R^2, the primary source of variation is differences in the number of events per year. This is why the FOMC events have an average benchmark adjusted R^2 of 9.82%, whereas earnings announcements have an average benchmark adjusted R^2 of 2.38%.

In Panel A, we present the mean and median adjusted R^2s and the mean and median abnormal adjusted R^2s for each event based on logarithmic returns. Equivalent results are presented for arithmetic returns in Panel B. In both panels, we report the p-value in parentheses for the t-test for the null hypothesis that the mean abnormal return is zero and the Kruskal-Wallis test that the median abnormal return is zero. The results in Panel A indicate that the largest mean abnormal adjusted R^2 is 16.3% of OCR announcements. The next largest is 13.5% for FOMC announcements and then 12.2% for earnings announcements. The three macroeconomic announcements have a mean abnormal adjusted R^2 of 7.0%-7.1%, while the 50-day moving average rules have a mean abnormal adjusted R^2 of 5.3%. The mean abnormal adjusted R^2 is not statistically significantly different from zero for the 200-day moving average rule of large S&P 500 stock returns. The magnitude of median abnormal returns is smaller, but the relative size across events is the same as it is for the means.

The arithmetic returns in Panel B also indicate that OCR announcements, FOMC announcements, and earnings announcements have the most impact. However, under this method of calculated returns, earnings announcements have the largest impact. In Panel C, we report p-values for the statistical test of the null hypothesis that the difference between the mean abnormal adjusted R^2 for the different events is zero. These results, based on logarithmic returns, show that the mean abnormal adjusted R^2 of OCR announcements is not statistically significantly different from those for FOMC and earnings announcements. Further, the mean abnormal adjusted R^2 of each of the macroeconomic announcements and the 50-day moving average trading rule are not statistically significantly different from each other.

[Insert Table 2 About Here]

In Appendix 1, we report results equivalent to those in Table 2, but for 5-day windows around each event. Given the longer windows, the benchmark adjusted R^2s are higher in each instance, and the mean and median abnormal adjusted R^2s for each event are broadly consistent but generally lower than those reported in Table 2. For the logarithmic returns, the largest mean abnormal adjusted R^2s are for OCR announcements, earnings announcements, and FOMC announcements. However, for arithmetic returns, OCR announcements and earnings announcements are the two events with the largest abnormal adjusted R^2s.

There is always the possibility that results are not driven solely by historical data and are not present in more recent data. We examine this by segmenting our sample around the global financial crisis (GFC). We label the years up to and including 2009 as “Pre-GFC” and the remaining years as “Post-GFC.” The results in Table 3 indicate that the core results are consistent in both sub-samples. Further, there is little difference between the two samples. The OCR, FOMC, and earnings announcements have the largest mean abnormal adjusted R^2 in both sub-periods.

[Insert Table 3 About Here]

Announcement returns to different events may vary across large and small stocks. Large stocks generally have more analyst coverage (e.g., Hong, Lim, and Stein, 2000) and higher institutional ownership (e.g., O'Brien and Bhushan, 1990). As a result, large stocks may exhibit a smaller reaction to announcement events, as this information is often already incorporated into their prices before the events. On the other hand, large stocks may be expected to react more quickly to news released during the event windows we consider. This suggests that announcement returns over a three-day window may be larger for large stocks than for small stocks that may exhibit a more delayed reaction. However, we find no consistent evidence to support this hypothesis. The reaction to GDP announcements is larger for large stocks using both log arithmetic and arithmetic returns. However, the reaction to earnings announcements is smaller for large stocks. The results in Table 4 indicate that OCR announcements, FOMC announcements, and earnings announcements mean abnormal adjusted R^2s are statistically significant in both large and small stocks when logarithmic returns are used. This is also consistent in small stocks using arithmetic returns. However, GDP announcements have particularly large mean abnormal adjusted R^2 for large stocks using arithmetic returns.

[Insert Table 4 About Here]

Value and growth stocks have different characteristics and may respond differently to various events. For instance, Black (2002) documents differences in the impact of monetary policy on value and growth stocks. We classify stocks annually based on their book-to-market value ratio, with stocks above the median designated as value stocks and those below the median as growth stocks. The results in Table 5 indicate that value stocks have a statistically significantly larger mean abnormal adjusted R^2 around earnings announcements when returns are calculated using logarithmic returns. However, there is no statistically significant difference between the returns associated with different events between value and growth stocks. OCR, FOMC, and earnings announcements have the largest mean abnormal adjusted R^2 for value stocks based on both calculation methods and for growth stocks based on arithmetic returns. FOMC and OCT have the largest mean abnormal adjusted R^2 For growth stocks based on logarithmic returns.

[Insert Table 5 About Here]

In Table 6, we present results that split the sample firms by leverage, calculated as debt divided by total assets. There is some evidence that high-leverage firms exhibit more return sensitivity to events (e.g., Cai and Zhang, 2011). However, only two of the differences in mean abnormal adjusted R^2 between high- and low-leverage firms are statistically significant: OCR announcements and periods when the 50-day moving average is crossed, both measured using logarithmic returns. The general pattern remains consistent across both high- and low-leverage firms: OCR, FOMC, and earnings announcements exhibit the largest mean abnormal adjusted R^2s, indicating that they contain the most information, whether measured using logarithmic or arithmetic returns.

[Insert Table 6 About Here]

Our final set of results, presented in Table 7, considers the mean abnormal adjusted R^2 by industry. Due to sample size limitations, these are generated using all firms across years, making tests of statistical significance not possible. However, the energy, financial, and healthcare industries have the highest average abnormal adjusted R^2s across all events.

[Insert Table 7 About Here]

4. Conclusions

We address the question of "what influences Zealand stock returns?" The events we consider include earnings announcements, RBNZ interest rate (OCR) announcements, macroeconomic announcements, including CPI, GDP, and unemployment announcements, 50-day and 200-day moving average rule buy and sell signals, U.S. Federal Reserve (FOMC) interest rate announcements, and large positive and negative U.S. stock returns.

Our results indicate that OCR, FOMC, and earnings announcements have the largest impact on New Zealand stock returns. This is evident across the entire sample and in a more recent sub-period. Interestingly, the result is relatively consistent across stocks with different characteristics, such as small and large stocks, value and growth stocks, and high- and low-leverage stocks. We hope our findings will be of interest to various stakeholders in the New Zealand equity market, including researchers, regulators, and investors.

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Table 1. Summary Statistics of Returns

	N	Mean	Median	Skewness	Obs = 0	Obs > 0
Panel A: Logarithmic returns						
EA	3,795	0.0048	0.0000	-0.1338	0.0935	0.4938
CPI	8,115	-0.0020	0.0000	-2.5499	0.1272	0.4421
GDP	7,904	0.0022	0.0000	1.0766	0.1374	0.4500
OCR	16,002	-0.0007	0.0000	-1.1557	0.1272	0.4382
UEMP	7,904	-0.0006	0.0000	0.4070	0.1308	0.4269
MA050	4,644	0.0059	0.0000	0.6127	0.0991	0.4662
MA200	3,934	0.0046	0.0000	0.4978	0.0785	0.4680
SPsd2	4,531	-0.0048	0.0000	-0.5782	0.1426	0.3624
FOMC	19,375	-0.0032	0.0000	-2.2756	0.1324	0.4228
Panel B: Arithmetic returns						
EA	3,795	0.0079	0.0000	1.9009	0.0935	0.4938
CPI	8,115	0.0000	0.0000	0.4957	0.1272	0.4421
GDP	7,904	0.0035	0.0000	3.7202	0.1374	0.4500
OCR	16,002	0.0010	0.0000	1.0751	0.1272	0.4382
UEMP	7,904	0.0008	0.0000	2.4525	0.1308	0.4269
MA050	4,644	0.0085	0.0000	2.8335	0.0991	0.4662
MA200	3,934	0.0087	0.0000	3.0710	0.0785	0.4680
SPsd2	4,531	-0.0033	0.0000	2.6997	0.1426	0.3624
FOMC	19,375	-0.0011	0.0000	0.2162	0.1324	0.4228

This table presents summary statistics (mean, median, and skewness) for event window buy-and-hold returns. N represents the total number of events across firm years for each event category. The final two columns report the proportions of event window return observations that are equal to and greater than 0, respectively. Ball and Shivakumar (2008) note that logarithmic and arithmetic returns both have strengths and weaknesses. Logarithmic returns are superior for time-series aggregation, whereas arithmetic returns are superior for cross-sectional aggregation. We, therefore, include results for both logarithmic and arithmetic returns in Panels A and B, respectively.

Table 2. Benchmark and Abnormal Adjusted R^2

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
BM	0.0238	0.0476	0.0476	0.0924	0.0476	0.0238	0.0238	0.0238	0.0982
Panel A: Using logarithmic returns									
ME	0.1457	0.1182	0.1182	0.2557	0.1180	0.0770	0.0448	0.0444	0.2331
MD	0.1078	0.0867	0.0829	0.2167	0.1050	0.0683	0.0230	0.0306	0.2206
ME - BM	**0.1219**	**0.0706**	**0.0706**	**0.1633**	**0.0704**	**0.0532**	0.0210	0.0206	**0.1349**
	(0.000)	(0.001)	(0.009)	(0.000)	(0.004)	(0.005)	(0.155)	(0.117)	(0.000)
MD - BM	**0.0840**	**0.0391**	**0.0352**	**0.1243**	**0.0574**	**0.0445**	-0.0008	0.0068	**0.1224**
	(0.000)	(0.000)	(0.034)	(0.000)	(0.003)	(0.066)	(0.635)	(0.243)	(0.000)
Panel B: Using arithmetic returns									
ME	0.1411	0.1185	0.1039	0.2014	0.0963	0.0826	0.0448	0.0486	0.1917
MD	0.1064	0.0740	0.0534	0.2061	0.0771	0.0543	0.0216	0.0238	0.1751
ME - BM	**0.1173**	**0.0709**	0.0563	**0.1090**	**0.0487**	**0.0588**	0.0209	0.0248	**0.0935**
	(0.000)	(0.015)	(0.106)	(0.000)	(0.023)	(0.003)	(0.132)	(0.149)	(0.007)
MD - BM	**0.0826**	**0.0263**	0.0057	**0.1137**	**0.0295**	**0.0305**	-0.0022	0.0000	**0.0769**
	(0.000)	(0.059)	(1.000)	(0.000)	(0.015)	(0.066)	(1.000)	(0.816)	(0.009)
Panel C: Correlations									
	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
EA	-	**0.069**	0.120	0.263	**0.094**	**0.015**	**0.000**	**0.000**	0.701
CPI	**0.069**	-	0.999	**0.014**	0.994	0.509	**0.036**	**0.025**	**0.058**
GDP	0.120	0.999	-	**0.021**	0.996	0.560	**0.095**	**0.084**	**0.092**
OCR	0.263	**0.014**	**0.021**	-	**0.017**	**0.004**	**0.000**	**0.000**	0.481
UEMP	**0.094**	0.994	0.996	**0.017**	-	0.542	**0.056**	**0.062**	**0.073**
MA050	**0.015**	0.509	0.560	**0.004**	0.542	-	0.168	0.147	**0.016**
MA200	**0.000**	**0.036**	**0.095**	**0.000**	**0.056**	0.168	-	0.982	**0.001**
SPsd2	**0.000**	**0.025**	**0.084**	**0.000**	**0.062**	0.147	0.982	-	**0.001**
FOMC	0.701	**0.058**	**0.092**	0.481	**0.073**	**0.016**	**0.001**	**0.001**	-

This table presents benchmark and abnormal adjusted R^2s for each type of return determinant. The benchmark (BM) adjusted R^2 is the expected adjusted R^2 for each return determinant, as per Ball and Shivakumar (2008). In Panels A and B, ME and MD denote mean and median adjusted R^2

values, respectively. The final rows report the mean and median abnormal adjusted R^2s. We also report the p-value in parentheses for the t-test for the null hypothesis that the mean abnormal return is zero in Panel A, and for the Kruskal-Wallis test that the median abnormal return is zero in Panel B. In Panel C, we report p-values for the statistical test of the null hypothesis that the difference between mean abnormal adjusted R^2s for the different events is zero.

Table 3. Abnormal Adjusted R^2s Over Pre- and Post-GFC Periods

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
Panel A: Using logarithmic returns									
Pre-GFC	**0.1123**	**0.0456**	**0.0737**	**0.1759**	**0.0396**	**0.0791**	0.0365	0.0212	**0.1294**
	(0.002)	(0.087)	(0.096)	(0.000)	(0.082)	(0.012)	(0.161)	(0.310)	(0.003)
Post-GFC	**0.1274**	**0.0867**	**0.0684**	**0.1535**	**0.0902**	0.0199	0.0033	0.0197	**0.1420**
	(0.001)	(0.006)	(0.056)	(0.006)	(0.018)	(0.226)	(0.782)	(0.149)	(0.003)
Post - Pre	0.0151	0.0411	-0.0053	-0.0224	0.0506	**-0.0592**	-0.0333	-0.0015	0.0126
	(0.731)	(0.288)	(0.919)	(0.718)	(0.218)	(0.085)	(0.243)	(0.952)	(0.819)
Panel B: Using arithmetic returns									
Pre-GFC	**0.1030**	0.0312	0.0416	**0.1274**	0.0143	**0.0905**	**0.0402**	0.0208	**0.1015**
	(0.001)	(0.365)	(0.220)	(0.000)	(0.490)	(0.002)	(0.098)	(0.363)	(0.065)
Post-GFC	**0.1255**	**0.0965**	0.0668	**0.0945**	**0.0708**	0.0180	-0.0011	0.0304	**0.0832**
	(0.007)	(0.025)	(0.236)	(0.005)	(0.030)	(0.433)	(0.921)	(0.272)	(0.049)
Post - Pre	0.0225	0.0653	0.0252	-0.0328	0.0566	**-0.0725**	-0.0413	0.0096	-0.0182
	(0.610)	(0.243)	(0.693)	(0.397)	(0.136)	(0.045)	(0.123)	(0.782)	(0.789)

This table reports the abnormal adjusted R^2 results equivalent to those in Table 2, but for pre- and post-GFC sub-periods.

Table 4. Abnormal Adjusted R^2s for Large and Small Stocks

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
Panel A: Using logarithmic returns									
Large	**0.0975**	0.0488	**0.1985**	**0.1460**	**0.0722**	**0.0349**	0.0387	**0.0470**	**0.1923**
	(0.003)	(0.102)	(0.000)	(0.001)	(0.024)	(0.054)	(0.217)	(0.084)	(0.000)
Small	**0.1856**	**0.0729**	**0.0711**	**0.1870**	**0.1226**	**0.0527**	0.0169	0.0165	**0.1955**
	(0.000)	(0.004)	(0.036)	(0.000)	(0.002)	(0.058)	(0.341)	(0.384)	(0.000)
Large - Small	**-0.0882**	-0.0242	**0.1274**	-0.0410	-0.0504	-0.0178	0.0218	0.0305	-0.0032
	(0.050)	(0.509)	(0.019)	(0.448)	(0.283)	(0.579)	(0.541)	(0.350)	(0.953)
Panel B: Using arithmetic returns									
Large	**0.1000**	0.0377	**0.1629**	**0.0962**	**0.0606**	0.0256	0.0224	**0.0433**	**0.1522**
	(0.001)	(0.311)	(0.000)	(0.011)	(0.040)	(0.111)	(0.327)	(0.052)	(0.000)
Small	**0.1424**	**0.0584**	0.0462	**0.1278**	**0.0922**	0.0330	0.0093	0.0195	**0.1322**
	(0.001)	(0.029)	(0.312)	(0.000)	(0.005)	(0.219)	(0.529)	(0.428)	(0.002)
Large - Small	-0.0424	-0.0207	**0.1168**	-0.0316	-0.0316	-0.0074	0.0131	0.0238	0.0200
	(0.342)	(0.644)	(0.051)	(0.498)	(0.442)	(0.810)	(0.629)	(0.462)	(0.697)

This table reports the abnormal adjusted R^2 results, similar to those in Table 2, but comparing abnormal adjusted R^2s between large and small stocks.

Table 5. Abnormal Adjusted R^2s for Growth and Value Stocks

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
Panel A: Using logarithmic returns									
Growth	**0.1034**	**0.0892**	**0.1065**	**0.2410**	**0.1216**	0.0503	0.0029	**0.0787**	**0.2030**
	(0.000)	(0.004)	(0.002)	(0.000)	(0.000)	(0.103)	(0.894)	(0.004)	(0.000)
Value	**0.2151**	**0.0963**	**0.1519**	**0.1744**	**0.1148**	**0.1027**	**0.0655**	**0.0660**	**0.2688**
	(0.000)	(0.005)	(0.000)	(0.006)	(0.008)	(0.000)	(0.048)	(0.051)	(0.000)
Growth - Value	**-0.1117**	-0.0071	-0.0454	0.0666	0.0068	-0.0523	-0.0626	0.0127	-0.0658
	(0.036)	(0.865)	(0.333)	(0.386)	(0.887)	(0.177)	(0.104)	(0.752)	(0.279)
Panel B: Using arithmetic returns									
Growth	**0.1202**	**0.0950**	**0.0869**	**0.2154**	**0.1198**	0.0448	0.0027	**0.0451**	**0.1503**
	(0.001)	(0.013)	(0.032)	(0.000)	(0.000)	(0.105)	(0.908)	(0.036)	(0.001)
Value	**0.1676**	**0.0822**	**0.0823**	**0.1294**	**0.1036**	**0.0803**	**0.0842**	**0.0725**	**0.2239**
	(0.003)	(0.037)	(0.004)	(0.016)	(0.007)	(0.000)	(0.068)	(0.065)	(0.000)
Growth - Value	-0.0474	0.0128	0.0046	0.0860	0.0162	-0.0355	-0.0814	-0.0274	-0.0735
	(0.430)	(0.803)	(0.922)	(0.196)	(0.721)	(0.278)	(0.115)	(0.525)	(0.194)

This table reports the abnormal adjusted R^2 results, similar to those in Table 2, but comparing abnormal adjusted R^2s between growth and value stocks.

Table 6. Benchmark and Adjusted R^2s for High- and Low-Leverage Stocks

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
Panel A: Using logarithmic returns									
High Leverage	**0.1802**	**0.1146**	**0.1333**	**0.3023**	**0.1056**	**0.0986**	**0.0589**	**0.0963**	**0.2774**
	(0.001)	(0.005)	(0.003)	(0.000)	(0.035)	(0.000)	(0.026)	(0.025)	(0.000)
Low Leverage	**0.1313**	**0.0922**	**0.1376**	**0.1634**	**0.0819**	0.0308	**0.0427**	**0.0422**	**0.1854**
	(0.000)	(0.002)	(0.000)	(0.001)	(0.003)	(0.251)	(0.096)	(0.025)	(0.000)
High - Low	0.0488	0.0224	-0.0042	**0.1389**	0.0237	**0.0678**	0.0162	0.0541	0.0920
	(0.400)	(0.624)	(0.934)	(0.044)	(0.659)	(0.061)	(0.642)	(0.228)	(0.160)
Panel B: Using arithmetic returns									
High Leverage	**0.1786**	**0.0814**	**0.0938**	**0.2296**	**0.0771**	**0.0700**	**0.0395**	**0.0995**	**0.2114**
	(0.000)	(0.005)	(0.014)	(0.000)	(0.043)	(0.013)	(0.053)	(0.016)	(0.000)
Low Leverage	**0.1245**	**0.0929**	**0.1094**	**0.1323**	**0.0615**	0.0284	**0.0418**	0.0314	**0.1417**
	(0.007)	(0.021)	(0.016)	(0.005)	(0.036)	(0.220)	(0.074)	(0.104)	(0.002)
High - Low	0.0540	-0.0115	-0.0156	0.0973	0.0156	0.0415	-0.0023	0.0681	0.0696
	(0.338)	(0.803)	(0.776)	(0.103)	(0.733)	(0.231)	(0.938)	(0.123)	(0.271)

This table reports the abnormal adjusted R^2 results, similar to those in Table 2, but comparing abnormal adjusted R^2s between high- and low-leverage stocks.

Table 7. Abnormal R^2 By Industry

	EA	CPI	GDP	OCR	UEMP	MA0501	MA2001	SPsd2	FOMC
Panel A: Using logarithmic returns									
Basic Materials	0.1099	-0.0722	0.1671	-0.2074	-0.0787	-0.0277	-0.0186	-0.0176	-0.1590
Consumer Discretion	0.0411	0.0423	0.1243	0.1352	0.0079	-0.0257	-0.0299	0.0532	0.3709
Consumer Staples	0.1425	0.0166	0.0234	0.1171	-0.0089	0.0018	-0.0150	-0.0238	0.2750
Energy	-0.0147	0.2458	0.2921	0.1871	0.0404	0.1356	-0.0139	-0.0385	0.4001
Financials	0.2749	-0.0286	0.0838	0.3474	0.2269	0.0116	-0.0361	-0.0121	0.3796
Health Care	0.0652	0.0295	0.1451	0.1839	0.0495	-0.0265	-0.0044	-0.0039	0.5122
Industrials	0.0717	-0.0471	0.0339	0.1165	-0.0336	-0.0128	0.0313	-0.0125	0.3572
Real Estate	-0.0216	0.0085	-0.0270	0.0767	-0.0560	0.0126	-0.0257	-0.0277	0.4295
Technology	0.1332	-0.0543	0.1192	0.0190	-0.0535	0.0130	-0.0403	0.0153	0.1721
Telecommunications	0.0283	-0.0928	0.0663	-0.0356	0.0822	0.0355	-0.0114	0.0045	0.2240
Utilities	0.1016	0.1076	0.0782	-0.2928	0.0603	0.0180	-0.0206	0.0202	0.2666
Panel B: Using arithmetic returns									
Basic Materials	0.0542	-0.0460	0.0395	0.0253	-0.0883	-0.0311	0.0875	-0.0077	-0.0604
Consumer Discretion	0.0277	0.0374	0.0293	0.0732	-0.0058	-0.0272	-0.0276	0.0585	0.3816
Consumer Staples	0.1770	0.0101	0.0334	0.0871	0.0138	-0.0032	-0.0020	-0.0142	0.3318
Energy	0.0226	0.1072	0.0700	0.0927	-0.0714	0.0301	-0.0281	-0.0190	0.3708
Financials	0.1139	-0.0545	0.0825	0.3047	0.0580	0.0121	-0.0355	-0.0060	0.2621
Health Care	0.0062	-0.0320	0.4819	0.2162	-0.0100	-0.0174	-0.0061	-0.0274	0.4554
Industrials	0.0730	-0.0535	0.0341	0.1201	-0.0368	-0.0280	0.1459	-0.0163	0.3152
Real Estate	-0.0279	0.0111	-0.0368	0.0759	-0.0588	-0.0008	-0.0066	-0.0165	0.3511
Technology	0.1439	-0.0497	0.1133	0.0947	-0.0226	-0.0257	-0.0257	0.0024	0.0794
Telecommunications	0.0192	-0.0765	-0.0061	0.1035	0.0654	0.0189	-0.0442	0.0247	0.2870
Utilities	0.1011	0.0924	0.0929	-0.3138	0.0708	0.0337	-0.0247	0.0185	0.1990

This table presents mean abnormal adjusted R^2s by industry.

Appendix 1. Benchmark and Adjusted R^2 for 5-Day Windows

	EA	CPI	GDP	OCR	UEMP	MA050	MA200	SPsd2	FOMC
BM	0.0397	0.0794	0.0794	0.1540	0.0794	0.0397	0.0397	0.0397	0.1637
Panel A: Using logarithmic returns									
ME	0.1697	0.1211	0.1472	0.3135	0.1431	0.0692	0.0369	0.0874	0.2526
MD	0.1278	0.1176	0.1339	0.2548	0.1258	0.0356	0.0169	0.0356	0.1987
ME - BM	**0.1300**	**0.0417**	**0.0678**	**0.1595**	**0.0638**	**0.0295**	-0.0028	**0.0477**	**0.0889**
	(0.000)	(0.091)	(0.006)	(0.000)	(0.011)	(0.081)	(0.812)	(0.058)	(0.003)
MD - BM	**0.0881**	0.0382	**0.0545**	**0.1008**	**0.0465**	-0.0041	**-0.0228**	-0.0041	**0.0350**
	(0.000)	(0.787)	(0.034)	(0.000)	(0.059)	(0.646)	(0.018)	(0.243)	(0.012)
Panel B: Using arithmetic returns									
ME	0.1661	0.1203	0.1267	0.2548	0.1198	0.0710	0.0426	0.0933	0.2039
MD	0.1314	0.0868	0.0787	0.2454	0.0847	0.0539	0.0188	0.0229	0.2002
ME - BM	**0.1264**	0.0409	**0.0473**	**0.1008**	**0.0405**	**0.0313**	0.0030	**0.0536**	0.0402
	(0.000)	(0.180)	(0.096)	(0.004)	(0.089)	(0.063)	(0.799)	(0.090)	(0.193)
MD - BM	**0.0917**	**0.0074**	-0.0007	**0.0914**	0.0053	0.0142	**-0.0209**	**-0.0168**	0.0365
	(0.000)	(0.015)	(0.597)	(0.005)	(0.787)	(1.000)	(0.058)	(0.036)	(0.703)

This appendix reports results equivalent to those in Table 2, but for 5-day windows around each event as robustness checks.