

The Impact of Dodd-Frank Reforms on Investment Banks

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Introduction

The Dodd-Frank Wall Street Reform and Consumer Protection Act was proposed in response to the 2008 financial crisis, in order to decrease risk in the U.S. financial system.

The reform introduced new governmental regulatory agencies that oversee and restrict the profit-seeking behavior of finance firms. These agencies include the Financial Stability Oversight Council (FSOC), Federal Insurance Office, and the Consumer Financial Protection Bureau (CFPB). Additionally, the reform proposed various legislatures that targets “too-big-to-fail” firms from engaging in risky behavior that significantly harm the U.S. economy. One of such legislature is the Volcker Rule, which prohibited investment banks from conducting proprietary trading (Huntington 2010). Proprietary trading allows investment banks to invest its own funds and obtain 100% of all returns. With the passing of the Volcker Rule, investment banks would now only trade on the behalf of their clients and earn commission dollars.

Since the Volcker Rule directly affects the profit-making ability of investment banks, we questioned whether the passing of the Dodd-Frank reform had a significant impact on the stock prices of investment banks. Swicegood (2012) conducted an event study on the passing of the Dodd-Frank reform and showed that stocks of large banks experience positive returns while stocks of smaller banks were mostly unaffected. Large banks are described as those with more than \$1 billion in assets. Akhigbe, Martin, and Whyte (2016) has shown that the Dodd-Frank

reform has been effective in reducing risk in the financial system. They specifically identify large banks that have practiced risky investment strategies prior to the reform as institutions which experiences the greatest decreases in risk. Given these two studies it may be that the Dodd-Frank reform was positively received by the market and that the expected decreases in risk pleased shareholders, even if that meant restricting the means of making profit. However, under the assumption that stock prices are driven by the profit-making abilities of the firm rather than shareholder sentiment, we expect the stock prices of investment banks to experience abnormally low returns upon the passing of the Dodd-Frank reform.

The theory of market efficiency states that all available information and their predicted effects of stock prices will be accounted for in the current market price. The three forms of market efficiency deal with different types of information. The weak form states that all previous, historic information is accounted for. The semi-strong form states that all historic and public information is accounted for. The strong form states that all historic, public, and private information is accounted for. If the semi-strong form of market efficiency holds true, public information available on the drafting and passing process of the Dodd-Frank reform would be reflected in market stock prices. Thus, coverage of the Dodd-Frank reform and its potential effects on investment banks would be reflected by a decrease in stock price.

We also know that the present value of stock prices are calculated by dividing the dividend by the difference between the interest rate and the growth rate of firm. If the Dodd-Frank reform does decrease investment banks' profits, we can expect the stocks' dividends to also decrease, as dividends are proportional to the company's earnings when financial managers decide to distribute the firm's profits to investors. Thus, according to the present value formula, the

decrease in investment banks' dividends will be reflected by a decrease in stock price. To summarize, as the Volcker Rule directly limits the profit-seeking behavior of investment banks, we predict the stock prices of investment banks to show abnormally low returns, compared to the rest of the market, upon the passing of the Dodd-Frank reform.

Data and Empirical Framework

We will execute an event study, examining Cumulative Abnormal Returns for Investment Banks around our dates of interest. Our event dates are June 25, 2010, and June 17, 2009. On June 25, the Senate-House committee came to an agreement on The Dodd Frank Reform and Consumer Protection act (Huntington et al 2010). On June 17, 2009, President Obama made a preliminary statement regarding these reforms (Obama 2009).

We use the Fama-French 3 factor model to generate predicted returns, calculating our factor betas in the 100 days prior to the 10 day event window. We subtract predicted returns from actual returns to generate abnormal returns, and sum abnormal returns to calculate Cumulative Abnormal Returns over 3, 11, and 21 day windows, with the day of the event being day zero.

$$r = r_f + \beta_{\text{market}}(r_{\text{market factor}}) + \beta_{\text{size}}(r_{\text{size factor}}) + \beta_{\text{book-to-market}}(r_{\text{book-to-market factor}})$$

We regress Cumulative Abnormal Returns on our indicator variable, `investment_bank`. We include controls for other firm characteristics that may lead to different responses to the Dodd-Frank Act. We also regress CARs on our Finance indicator variable, with the same controls, to examine the effects of the act on CARs for the larger finance industry.

We identify investment banks using the North American Industry Classification Code 523110. We identify finance firms using the corresponding first two digits of the NAICS code, 52. Our control variables are the natural logarithm of firm size, debt to asset ratio, and Return on

Assets. Firm size is calculated as the share price multiplied by the number of common shares outstanding. Its inclusion is derived from Swicegood (2012), given his findings that larger banks were more sensitive to the Dodd-Frank act. Debt-to-Asset ratio is calculated as Total Liabilities divided by Total Assets, and is included as it makes sense that the Dodd-Frank act, intended to curtail risk, could have an outside impact on highly levered firms. Return on Assets (ROA) is calculated as Net Income divided by Total Assets, and is included as firms with a higher ROA may be less affected by this regulation.

$$CAR = \beta_0 + \beta_1(\text{Investment Bank}) + \beta_2(\text{Ln}(\text{Firm Size})) + \beta_3(\text{Debt}/\text{Assets}) + \beta_4(\text{ROA})$$

$$CAR = \beta_0 + \beta_1(\text{Finance}) + \beta_2(\text{Ln}(\text{Firm Size})) + \beta_3(\text{Debt}/\text{Assets}) + \beta_4(\text{ROA})$$

Analysis- June 25 (investment Banks Relative to the market)

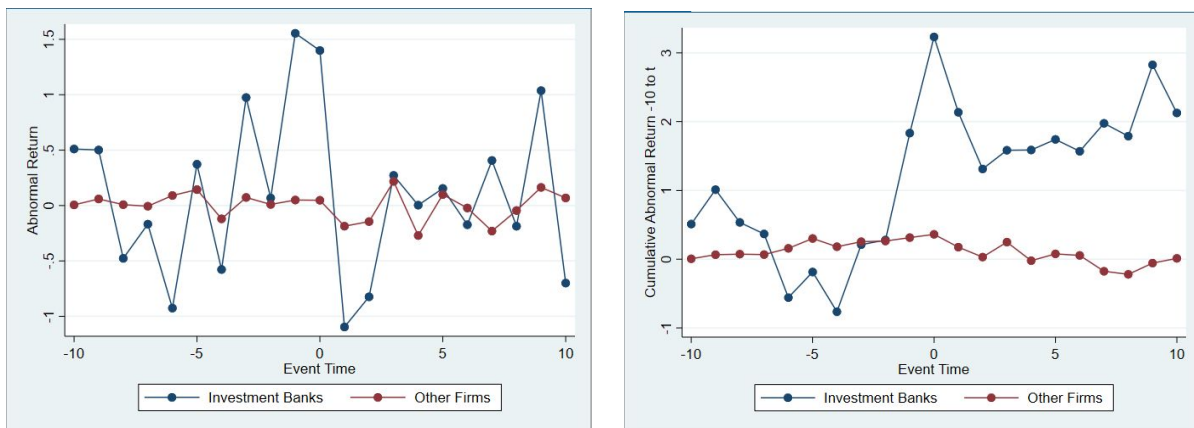


Figure 1. Investment Banks’ abnormal returns (left) and cumulative abnormal returns (right) relative to the market around the Senate-House committee agreement on the Dodd-Frank reform. Event time 0 = June 25, 2010.

We observe a large change in Abnormal Returns for Investment Banks from Day 0, where they were approximately 1.5 percent, to Day 1, where they fall to slightly below -1 percent. This represents a drop of approximately 2.5 percent. Examining the Graph of Cumulative Abnormal Returns, we observe increasing CARs from Day -4 (June 21st) to Day 0 (June 25th), our event day. This could potentially speak to some leakage regarding the upcoming

agreement, that markets interpreted as generally positive for investment banks, relative to their expectations. However, we are unable to assert with any real conviction that these increasing CAR's are not simply a result of other market movements and other changes in information. CARs fall dramatically for the two days after our event, before seeming to level off by Day 3 (June 28), increasing slightly thereafter, and remaining positive. It is important here to consider the act itself; Dodd-Frank, in its original form, was exceedingly long, and fairly dense (Huntington 2010). It would have taken investors some time to digest and disseminate the information it contained. Overall, it appears visually that the policy was ultimately interpreted as being slightly better for banks than expected.

Effect of Dodd-Frank on CARs

	(1) 3 day	(2) 3 day	(3) 3 After	(4) 3 After	(5) 21 day	(6) 21 day
Investment Bank	1.961 (1.589)	1.782 (1.581)	-0.184 (1.793)	-0.240 (1.791)	2.088 (3.669)	1.723 (3.653)
Ln(Firm Size)		0.217*** (0.0357)		0.140*** (0.0405)		0.469*** (0.0826)
Debt/Assets		-0.975*** (0.240)		-0.946*** (0.272)		-2.206*** (0.554)
ROA		-0.0129 (0.0229)		-0.00253 (0.0260)		0.0385 (0.0529)
Constant	-0.104 (0.0738)	-0.938*** (0.269)	-0.0646 (0.0833)	-0.430 (0.305)	0.0377 (0.170)	-1.716*** (0.622)
Obs.	4173	4173	4173	4173	4173	4173
Adj. R-squared	0.000125	0.0118	-0.000237	0.00472	-0.000162	0.0108

Standard errors in parentheses
 * p<0.1, ** p<0.05, *** p<0.01

Table 1. Cumulative abnormal returns relative to the market around June 25, 2010, regressed over varying times windows.

For each of our Time Windows: 3 Day CARs, 3 Days After Event CARs, and 21 Day CARs, we run two models. The first model includes only our investment bank indicator variable, while the second includes our control variables. These variables were chosen as each may contribute to CARs. We observe that for our 3 and 21 day CARs, the coefficient on our indicator

variable is positive, although not significant. For our 3 Days After the Event CARs, the indicator variable is negative, closer to what we expected, though again not significant. Thus, we are unable to conclude that Dodd-Frank Act had a significant effect on CARs for investment banks, relative to the market. The lack of significance for 3 Days after the event may stem in some part from the relatively low sample size for investment banks.

We observe that our Ln(Firm Size) variable is positive and significant at the 99 percent level in each regression, implying that larger firms tend to experience higher Cumulative Abnormal Returns. In our 3-Day regression the coefficient is .217; when firm size increases by 1 percent, CARs increase by .217. The Debt/Asset Ratio coefficient is negative and significant at the 99 percent level in each regression, implying that firms with a higher Debt/Asset ratio experience lower Cumulative Abnormal Returns, which makes intuitive sense. In our 3 Day regression, the coefficient is -.975: when the Debt/Asset Ratio increases by 1, CARs decrease by .975. This is a very large decrease, which stems from the fact that an increase in the Debt/Asset ratio by 1 is quite drastic— consider a firm going from having equal amounts of debt and assets to having twice as much debt as assets. The coefficients on Return on Assets are not significant in any of the regressions.

June 25-Investment Banks Relative to Finance firms

Examining the CARs for investment banks relative to the finance industry yields a nearly identical story, with markedly similar interpretations. Again, no coefficients on the investment bank indicator are significant, while Ln(Firm Size) coefficient is positive and significant, and the Debt to Asset Ratio coefficients are negative and significant. This may be in part due to the fact

that some aspects of the Dodd-Frank act could have affected firms in the finance industry other than investment banks. Dodd-Frank also forbade investment banks from being too involved with private equity firms and hedge funds, which could easily impact these firms stock prices.

June 25- Finance Firms Relative to the Market

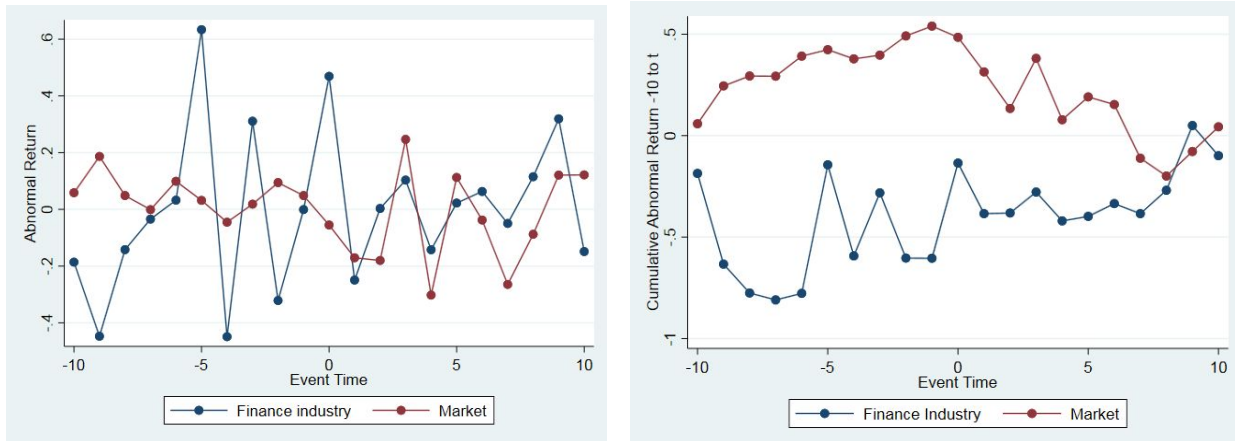


Figure 1. Finance Firms abnormal returns (left) and cumulative abnormal returns (right) relative to the market around the Senate-House committee agreement on the Dodd-Frank reform. Event time 0 = June 25, 2010.

Here we compare the finance industry to the market, as the Dodd-Frank Act may have had farther reaching implications for the rest of the industry, given how closely tied the larger investment banks are to other firms. The Abnormal Returns graph tells us little of substance- the finance industry CARs are more volatile, almost certainly due to the fact that it is simply a much smaller subset of the overall market. We observe that it begins the period negative, and begins fluctuating thereafter. Examination of CARs is only slightly more interesting- we again see the peak on the day of our event, and a decrease thereafter.

Effect of Dodd-Frank on CARs						
	(1)	(2)	(3)	(4)	(5)	(6)
	3 day	3 day	3 After	3 After	21 day	21 day
finance	0.395** (0.186)	0.988*** (0.202)	0.486** (0.210)	1.028*** (0.229)	-0.192 (0.431)	0.918* (0.469)
Ln(Firm Size)		0.244*** (0.0360)		0.166*** (0.0408)		0.494*** (0.0833)
Debt/Assets		-1.463*** (0.260)		-1.463*** (0.294)		-2.660*** (0.601)
ROA		-0.0185 (0.0229)		-0.00842 (0.0259)		0.0333 (0.0530)
Constant	-0.176** (0.0821)	-1.024*** (0.269)	-0.159* (0.0926)	-0.508* (0.304)	0.0794 (0.190)	-1.796*** (0.622)
Obs.	4173	4173	4173	4173	4173	4173
Adj. R-squared	0.000838	0.0171	0.00104	0.00949	-0.000192	0.0116

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 2. Cumulative abnormal returns relative to the market around June 25, 2010, regressed over varying times windows.

Here we observe that our finance indicator is positive and significant at a minimum of the 90 percent level in each regression that includes our controls. Over our 3 Day window finance firms experience CARs that are .988 percent higher than that of non-finance firms. For the 3 Days after our event, this stand at 1.028 percent, while for the 21 Day window it is only .918. This appears to support the idea that, relative to expectations, the actual Dodd-Frank act was interpreted as being slightly positive for the finance industry overall. However, the finance industry as a whole likely experienced many other changes across this time frame, so we are unable to truly consider them to be a “treated group”. Additionally, we lack a theoretical reason for many of the non-investment bank firms to be affected by this act at all.

All in all, it appears that markets were quite efficient, and already capitalized much of the Dodd-Frank act’s effect into share prices prior to the acts public release. This supports the strong form, as we can consider specific aspects of the act to be essentially private. However, this may be due in part to our event on June 17 2009: President Obama’s announcement regarding the need for reform. This announcement effectively represents the first official statement of intent to

pursue the regulation that ultimately became the Dodd-Frank act. He highlights the need to decrease risk-taking activities of the aforementioned banks, and advocates for the the creation of powerful new agencies to deal with this; perhaps the lack of market reaction on the 25th of June stemmed from the fact markets accurately surmised what Obama’s statement would mean in terms of concrete policy.

Surprisingly, regression analysis for June 17, 2009 yields results similar to those observed for June 25, 2010. This announcement represents private information becoming publicly available yet again investment banks do not experience significantly different CARs than the market, or the rest of the finance industry, for any of the observed windows.

Effect of Dodd-Frank on CARs						
	(1)	(2)	(3)	(4)	(5)	(6)
	3 day CAR	3 day CAR	3 After	3 After	21 day	21 day
Investment Bank	1.793 (2.285)	1.867 (2.286)	1.070 (2.586)	1.162 (2.587)	6.689 (5.808)	9.327 (5.747)
Ln(Firm Size)		-0.0937* (0.0502)		-0.105* (0.0568)		-1.261*** (0.126)
Debt/Assets		0.401 (0.310)		0.305 (0.351)		-1.363* (0.780)
ROA		0.502** (0.245)		0.758*** (0.277)		-0.473 (0.616)
Constant	-0.335*** (0.104)	0.0206 (0.360)	-0.553*** (0.117)	-0.0627 (0.407)	2.428*** (0.263)	10.71*** (0.905)
Obs.	4376	4376	4376	4376	4376	4376
Adj. R-squared	-0.0000878	0.000925	-0.000189	0.00136	0.0000746	0.0231

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 3. Cumulative abnormal returns relative to the market around June 17, 2009, regressed over varying times windows.

Conclusion

We find that investment banks did not experience significantly different CARs than the rest of the market, or the rest of the finance industry, around either event date. This rejects our hypothesis, that investment banks would experience lower CARs for each event. Our more recent event can be explained by the fact that investors would have had some sense of the

impending regulation, if not the exact specifics, thanks to the first event. The first event, June 17, 2009, represents the first time a major government official advocated explicitly for regulation of this sort. As such, intuitively it seems that it should have a negative impact on investment banks CARs, as this regulation actively seeks to curtail their profit seeking activity. A potential story to explain this is that investors already expected regulations of this kind, perhaps since the financial crisis. The risky activities and trading behaviours of banks directly lead to the housing bubble and subsequent meltdown. Perhaps even as stock prices were plummeting and liquidity vanishing worldwide, there was a sense that the US government would not allow something of this scale to happen again. As such, it may be impossible to isolate a specific event to study. Opportunities for future research entail the recent roll-back of certain aspects of the Dodd-Frank reforms. Additionally, we could look at the announcement date for Gary Cohn's appointment as Director of the National Economic Council (Paletta and Timiraos 2016). As a former investment banker at Goldman Sachs, his appointment signaled the increasingly closer ties between the Trump Administration and the investment banks, perhaps increasing the likelihood of rollbacks.

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