Red vs. blue stocks: politics and profitability of firms

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This paper shows the impact of politics on a firm's profitability. The Republican Party has a color of red, while the Democratic Party is coded blue. In this paper, we show that the equity market's performance is statistically the same whoever occupies the White House. However, at the firm level we see a quite different picture. Over the years, 4.35 percent of firms could be labeled as blue meaning their stocks perform better when the sitting president comes from the Democratic Party. The red firms count for 5.11 percent. The rest, 90.54 percent of all US firms, are colorless. In an election year, the excess volatility of colored stocks increases dramatically, 48 percent more volatile than colorless ones. In addition, a zero-investment portfolio formed by longing and shorting opposite colored stocks at the beginning of a new administration generates an abnormal return of 9.3 percent per year.

JEL Codes: G10, G11, G18, G28

1. Introduction

The year 2012 was an election year in the United States. However, this was not an ordinary election year since many political commentators claimed that the election results in 2012 would shape the directions of the US in the coming decade or beyond. According to Mullins (2012), the total cost of the election in 2012 is well above $6 Billion making it the most expensive election in American history. Although thousands of individuals make donations to the Republican Party or the Democratic Party, the corporations have a definitive lion's share. Many firms contribute heavily to either one or both parties.

To many of us, there is no doubt in our minds that the outcome of this election (and other elections) must have a material impact on some firms, such as their profitability. From Table 1, showing the top donors to the Republican Party in 2012, it should not be a surprise to see so many famous financial institutions. In 2012, the Republican presidential nominee Mitt Romney claimed that if he was elected as the president of the United States, he would repeal the Dodd-Frank Act, which had a huge impact on many American corporations especially on financial institutions. He criticized one of the law's centre pieces — a provision that allows top regulators to designate certain large institutions as "systemically important" and force them to hold more capital—arguing that it had created the perception that those firms may act recklessly because the government would bail them out. Because of his attitude, certain financial institutions might have a differential preference between two candidates. Below is another example.

In the 2012 election year, American Crossroads and Crossroads GPS spent more than $100 million on advertisements directed against President Obama and other Democratic candidates, Mullins (2012). Since Obama's attitude towards gun is well-known, the National Rifle Association would definitively prefer a Republican win in 2012. The organization donates millions to congressmen who support gun rights. A natural question is: "is it true that certain firms are better-off when a specific party is in power?" We hope that this paper would shed certain light on this question.

The focus of this research is to study the impacts of ruling parties on the equity returns of individual firms. After sorting market returns into two groups: under the Democratic Party and under the Republican Party, we test the equality of those two group mean returns. Our empirical results strongly suggest that based on the value-weighted market index (VWRETD), we could not find any difference between those two mean returns. The interpretation of this result is that the two parties have the same ability (or luck) to manage economy or equity markets. However, for the equal-weighted market index (EWRETD), the Democratic Party has a slight advantage over the Republican Party.

On the other hand, when applying a similar methodology to the individual firms, a different picture emerges. Based on all of the American presidents' party affiliations, we have 10 non-overlapping periods. The equity performances of the same firm in two adjacent periods, with different parties in power, are compared. Over the years, 4.35% of firms could be labeled as blue which means their stocks perform better when the sitting president is from the Democratic Party. The red firms, defined similarly, are 5.11%. The rest of firms (90.54% of all US firms) are colorless. In an election year, the excess volatility, defined as the difference between an election year's volatility and the mean volatility of the past three years, of colored stocks increases dramatically, 48% higher than that of colorless stocks. Thus, we could arbitrage by buying both call and put options of those colored stocks, i.e., a straddle in terms of Options Theory.

This paper contributes to the literature in three fundamental ways. First and foremost, our methodology is quite unique. The current literature always identifies first whether a firm is politically connected or not. This step is a necessary condition, see, e.g., Fishman (2001), Johnson & Mitton (2003), Faccio (2006), Fan, Wonga & Zhang (2007), Choi & Thum (2009), Ang, Ding & Thong (2010) and Goldman, Rocholl & So (2010). For the two groups of firms, politically-connected and non-politically-connected, researchers check certain performance measures to test various hypotheses. In this paper, we choose a quite distinct approach: studying the individual stock's performance first, then classifying the stocks (firms) into different groups according to various criterions. Second, we find that a small percentage of firms perform better under a certain party. For those firms, we label them as either blue or red firms. Third, the volatilities of those color labeled firms are dramatically higher during an election year than colorless ones.

The rest of the paper is organized as follows. Section 2 is the literature review, while Section 3 details our methodology and proposes six hypotheses we plan to test. After that, we show the sources of data used in the paper and how to process them. In section 5, we report our empirical results and discuss their impacts on our six hypotheses. The last section concludes the paper and points out some potential future extensions.

2. Literature Review

We grossly classify all related research into two main streams: research discussing the benefits, costs and issues of politically connected firms, and papers studying the impact of elections, political systems or political parties on the value of a firm, and other related issues. Although our paper has the flavors of both, it should fall into the latter since we don't have enough data to pin point the exact political connection a firm might have forged over the years.

Johnson & Mitton (2003) present evidence showing that politically connected firms in Malaysia benefit from the capital controls imposed in 1998 during the Asian financial crisis.

Faccio (2006) provides a comprehensive check on corporate political connections around the world. She finds them to be relatively widespread and do exist in 35 countries in her 47 country-sample. However, she finds no significant price effect for the appointment of politicians to corporate boards. On the contrary, when a company's large shareholder or officer enters politics, we see a positive price effect. Choi & Thum (2009) link the prosperity of politically-connected firms with the survival of the governing regime. The links force those firms to support the governments. In return, politically connected firms have an easy access to profitable markets and have fewer policy barriers. In addition, those firms could be exempted from the regime's extortion. Chaney, Faccio & Parsley (2011) show that the accounting quality of politically-connected firms is poorer than those of non-politically-connected firms. Hong & Kostovetksty (2012) show the evidence that fund managers who offer more donations to the Democratic Party would hold less in deemed socially-irresponsible firms.

Usually, when a firm looks for a political connection, it seeks benefits or political rent. The other way is also true: a politician or middle-man would try to extract potential political rents. However, Ang et al. (2010) find an exception when studying the profitability of politically connected firms in Singapore. Their empirical results suggest that the political connection in Singapore's legal and business environment adds little to the value of a firm. Fan et al. (2007) find that almost 27% of the CEOs of newly partially privatized firms in China are either former or current government officials. Their results show that firms with politically connected CEOs underperform those without it by almost 18% based on the three-year post-IPO stock returns; those firms also have poorer three-year post-IPO earnings growth. Goldman et al. (2010) present evidence that after the Republican Party's win, firms connected to Republicans receive more government contracts than firms connected to Democrats.

The second stream of research has relatively fewer papers. After analyzing the election data and S&P500 index performance, Nickles (2004) suggests a potentially lucrative investment strategy of buying on October 1 of the second year of the presidential election term and selling out on December 31th of the fourth year. Brown & Dinc (2005) find that governments are reluctant to take over a failed bank or revoke its license before an election compared to after an election. Bebchuk and Neeman (2010) design a theoretical model showing how lobbying by interest groups affects the level of investor protection.

Faber (2010) studies the combined impact of the presidential election and the January effect. However, he does not find any meaningful results. Dinc and Gupta (2011) study the relationships between politics and business using Indian data. They find that the Indian government significantly delays privatization in regions where the governing party faces more competition. Cox (2012) reports that since 1945, a positive January return in an election year has never missed in predicting a full-year gain for the S&P500 index with an average of 16%, while a negative first month return has predicted a full-year loss with an average of 3.9%. Using the predictions of the FDA (the US Food and Drug Administration) rulings on new drugs, Mullins & Pulliam (2013) show that the Wall Street companies could have handsome returns with "political intelligence"- in which firms gather information and analysis about activities in Congress, the White House and federal agencies- and sell these insights to investors looking for an edge. However, there are some limitations based on the related literature. For example, there is no study trying to link the impact of political cycles on a firm's profitability without identifying the affiliation of the firm to one of the two parties first.

3. The Methodology and Hypotheses

In this paper, we focus on individual firms' stock market performance under different political regimes, i.e., under the Democratic Party and under the Republican Party in the US. However, before formulating our methodology, we have to ask another closely-related question: do Republican and Democratic Parties have the same ability to manage the economy? If two parties have distinct ability to handle the economy or stock markets, we have to find a way to remove this discrepancy before we could discuss a firm's behaviour convincingly under different regimes.

H1: the means return of the whole equity market are the same under both parties

The rejection of this hypothesis makes our main task a little bit tricky since we have to remove the discrepancy rooted from the two parties' economic managing ability. Fortunately, our empirical results accept the null hypothesis. Note that to examine this hypothesis, both value-weighted and equal-weighted market indices are employed.

Table 1: Top donors to Mitt Romney (Republican presidential nominee in 2012)

Goldman Sachs	965,140	PricewaterhouseCoopers	386,835
Bank of America	844,734	UBS AG	363,160
Morgan Stanley	768,216	HIG Capital	362,500
JPMorgan Chase & Co	749,918	Blackstone Group	354,725
Credit Suisse Group	588,841	Elliott Management	281,925
Wells Fargo	524,601	EMC Corp	278,450
Deloitte LLP	477,812	Bain Capital	277,970
Kirkland & Ellis	470,672	Rothman Institute	263,700
Citigroup Inc	448,408	Ernst & Young	254,875
Barclays	426,800	General Electric	247,270

Source: http://www.opensecrets.org/pres12/contrib.php?id=N00000286

Before turning to our second hypothesis, the so-called 'blue' and 'red' firms have to be defined. A firm is labelled blue if its stock performs better (worse) under the Democratic (Republican) Party. Similarly, a red firm is a firm whose stock performs better (worse) under the Republican (Democratic) Party. All other firms are classified as colourless. The second hypothesis is given below.

H2: all firms are colourless.

Here is a detailed procedure to test this hypothesis. According to the presidents' party affiliations, we create 10 periods with alternative parties occupying the White House, see Table 2. For each publicly traded stock, we estimate its performance over 10 periods. Next, we calculate its gain or loss over two adjacent periods with different parties in power. Then based on our definitions of blue-firm and red-firm, we assign a colour to each firm. Although the procedure is straightforward, we have several concerns in terms of implementation.

The first concern is the impact of business cycle. For example, from 1993 to 2000 (under the Democratic Party), the total cumulative market return, based on the value-weighted market index, is 223.15%, while the total cumulative market return from 2001 to 2008 (the Republican Party was in Power) is -12.6%. In order to remove the impact of business cycles on our results, we utilize excess returns: the difference between an individual

stock's returns and a market index's returns. In other words, a firm's performance is benchmarked on the whole market.

The second concern is the different lengths of the two adjacent periods. For example, the Republican Party occupied the White House for 8 years, from 1969-1976, while the Democratic Party occupied the White House for the next 4 years. Comparing the total cumulative returns over those two adjacent periods, we would expect the 4-year period to have a lower cumulative total return than an 8-year period, assuming ceteris paribus. To make them comparable, we compare average monthly excess returns. For each period, an individual firm's monthly excess return, defined as the difference between a stock monthly return and a market index monthly return, is estimated below:

$$R_{i,j}^{excess} = R_{i,j} - R_{m,i} \tag{1}$$

where $R_{i,j}$ is monthly return for stock j (j=1,2,3, …, n) in period i (i=1,2,3, …, 10), n is the number of stocks, and $R_{m,i}$ is a market monthly return. For stock j, in two adjacent periods (i, i+1), we test the following equality and inequalities.

$$\begin{cases} \bar{R}_{i,j}^{excess} = \bar{R}_{i+1,j}^{excess} \\ \bar{R}_{i,j}^{excess} > \bar{R}_{i+1,j}^{excess} \\ \bar{R}_{i,j}^{excess} < \bar{R}_{i+1,j}^{excess} \end{cases} \tag{2}$$

For example, for stock A over two adjacent periods of (i, i+1), we try to find its color in period i+1. If $\bar{R}_{i,A}^{excess} = \bar{R}_{i+1,A}^{excess}$ is true, we classify it as a colourless stock in period i+1. On the other hand, if $\bar{R}_{i,A}^{excess} > \bar{R}_{i+1,A}^{excess}$ is true and the sitting president is from the Democratic Party in period i+1, we label it as a red stock. If the sitting president is from the Republican Party in period i+1, then stock A is a blue one. Finally, if $\bar{R}_{i,A}^{excess} < \bar{R}_{i+1,A}^{excess}$ is true and the sitting president is from the Democratic Party in period i+1, we colour the stock blue in period i+1. If the sitting president is instead from the Republican Party in period i+1, then stock A is coded red. When classifying a firm into blue or red category, we need a statistical significance level for the F-test for equal variances and the T-test for equal (excess) means. Following the convention, both 5% (for equal-variance) and 1% (for equal-mean) statistical significance levels are applied. Obviously, the major criticism of our methodology is that the colour of a firm could be a pure random phenomenon: i.e., Company A happens to perform better than the market in the current period than the previous one. Thus, we have our third hypothesis given below.

H3: A firm's colour is a random phenomenon.

To investigate this hypothesis, we conduct three tests. Firstly, we run a simulation to test the probability that a firm has consecutive the same colour over two adjacent periods. If it really is a random effect, then a blue firm should have an equal chance of being blue or red next period. This is also true for red stocks. Secondly, in an election year, the uncertainty should be much higher for coloured firms than colourless firms since the former has more at stake than the latter. Thus, their expected volatility should be much higher, stated in Hypothesis 5. The last test is associated with whether we could implement a profitable trading strategy after we identify the colours of firms in the previous period. If our results confirm this hypothesis, i.e., it is indeed possible to implement a profitable trading strategy based on those so-called colour stocks, it would offer the strongest support to the methodology developed in the paper. Faccio (2006) finds that the

size of a politically-connected firm is much larger than that of a typical non-politically-connected firm. Here is our related hypothesis.

H4: the sizes of coloured firms are much bigger than colourless firms.

Since lobbying and efforts to establish a political link could be costly, we expect these so-called coloured firms to have abundant resources to spend. Thus, their sizes should be bigger than the colourless firms. Also, the histories of coloured firms should be longer since we should not expect that a newly start-up could establish a political connection quickly, on average. If a politician intends to extract political rents, bigger firms should be an easy prey. On the other hand, big firms would have more at stake if their wealth is influenced by political uncertainty. The size of a firm is defined as the end of the year stock price multiplied by its shares outstanding. When a firm's future fortune depends on the outcome of a political election, we expect its volatility to be higher in an election year because of such an uncertainty, as in the next hypothesis.

H5: The volatility of coloured stocks is much higher in an election year.

On the election day of November 6, 2012, Dow Jones climbed 133.24 points or 1%. Dieterich (2012) argues that if we take any element of uncertainty off the table, the volatility tends to fall. Thus, the market would go higher. Nevertheless, if coloured firms have a relatively bigger size, we have to consider size-adjusted volatility since volatility is negatively correlated with size. Another argument is that coloured stocks are inheritably more volatile than colourless stocks because of our definitions of blue and red stocks. For those two reasons, we test whether a coloured firm's excesses volatility, defined as the volatility in an election year adjusted by the mean volatility over the past 3 years, is more volatile than those of colourless firms. Below, comes our final hypothesis:

H6: For a Democratic (Republican) win, a zero-investment portfolio by longing blue (red) stocks and shorting red (blue) stocks is a profitable trading strategy.

The logic behind the above hypothesis comes from the fundamental idea that a typical investor is rational. If certain firms perform better than others when a specific party is in power, why not make a profit from such knowledge? A more critical question is how a coloured firm benefits from a specific party. There are so many possible answers, such as one party possibly favouring certain industries and adopting policies that benefit those companies within such industries directly or indirectly, see the example in the previous section related to financial industry. Another example is 'ObamaCare'. Many organizations and institutions benefit from the implementations of ObamaCare. If ObamaCare was appealed with a Republican win in 2012, those firms and organizations would lose those benefits. Because of this perceived risk, those firms and organizations should have a strong incentive to keep ObamaCare. A perceived economic consequence might force them to take sides.

Differential tax policies would be another possible motivation for certain firms to support or dislike one or the other candidate. Universal medicare insurance requirements might have a differential impact on certain firms compared with others. Nepotism is definitively a cause, seen in Fishman (2001) and Faccio (2006). Because our data is totally unrelated to this, we don't claim or speculate on this. The list could go on and on to why certain firms prefer one party to the other. Nevertheless, finding a specific reason or reasons is beyond the scope of this paper.

4. Source of data

In this paper, we use two types of data: 1) data related to political parties, such as which party occupied the White Houses in 1960, and 2) the trading data which is used to support or reject our hypotheses. The party data is from two web pages.[2] The CRSP monthly data is used to estimate the excess returns. When testing the performance of the whole market, we use both value-weighted and equal-weighted market indices. Most researchers prefer a value-weighted market index since it is more representative of the whole market. On the other hand, an Equal-weighted market index would put more weight on small stocks.

To estimate portfolio returns, value-weighed and equal-weighted are two commonly used methods. For various reasons, researchers may prefer one weighting scheme to the other. For instance, Conrad & Kaul (1989), and Bollen & Busse (2004) use a value-weighted scheme, while Jegadeesh and Titman (1993) apply an equal-weighted one. Some researchers, such as Pastor and Stambaugh (2003), apply both weighting schemes. Occasionally, a mixture of the two is utilized, say, by Fama & French (1992): value-weighted for their basic 7 portfolios and equal-weighted for their SMB (Small minus Big) and HML (High minus Low) factors.

Our results suggest that the equity market performances are the same under both parties by using both the VWRETD and EWRETD if we choose a significance level of 1%. Thus, we report the results when testing individual firms with the value-weighted market returns (VWRETD). One issue is that the business cycles could complicate our examination. For example, when one party is in power and a recession happens, then the next president would be better off when the economy picks up. If we ignore the potential impact of business cycles, we could reach an erroneous conclusion. To mitigate the impact of business cycles, we use the excess-return instead of returns. We will return to this in the Robustness Test section.

5. Empirical results and discussions

First, we test the hypothesis of equal-performance of the equity market under both parties, i.e., H1 (Hypothesis 1). Our results confirm the null hypothesis, i.e., no difference under both parties.

Table 2: 10 periods based on party instead of individual persons

					VWRETD		EWRETD	
Period	Party	beginning	ending	Duration years	Mean	cumulative	mean	Cumulative
1	Republican	1923	1932	10	-0.0010	-0.3731	-0.0015	-0.5185
2	Democratic	1933	1952	20	0.0123	10.9805	0.0198	41.0821
3	Republican	1953	1960	8	0.0122	2.0287	0.0123	2.0581
4	Democratic	1961	1968	8	0.0100	1.4540	0.0174	3.7206
5	Republican	1969	1976	8	0.0035	0.2403	0.0024	-0.0170
6	Democratic	1977	1980	4	0.0127	0.7457	0.0260	2.1699
7	Republican	1981	1992	12	0.0118	3.6756	0.0106	2.7640
8	Democratic	1993	2000	8	0.0131	2.2315	0.0110	1.5647
9	Republican	2001	2008	8	-0.0003	-0.1264	0.0066	0.5754
10	Democrat	2009	2012	4	0.0135	0.5308	0.0196	0.8729

In total, three long periods are adopted. As an illustration, the results based on the whole sample period from 1926 to 2011 will be discussed. First, we test whether the variances of the monthly market index returns are the same under both parties. An F-value of 1.16 (with

a p-value of 0.1001) confirms that the variances are the same if based on a significance level of 5%. Because of this, we look at the results under Equal-Variance. Based on the related T-value of 1.82 (with a p-value of 0.0692), we accept the null hypothesis when the value-weighted market index is applied with a statistical significance level of 1% or 5%. To eliminate the impact of the Great Depression, our second period is from 1933 to 2011. We reach the same conclusion that no party has a better market performance. The third period from 1950 to 2011 offers the same result. Later in the paper, we will see that this No-Difference verdict lays a level playing field for our individual firm's examination.

However, if the equal-weighted market index (EWRETD) is applied with a 5% significance level, the equity market under the Democratic Party performs marginally better, see Table 3. Because the equal-weighted market index puts more weight on small stocks than a value-weighted market index, we could argue, though not very strongly, that the Democratic Party might have an edge with the success of small businesses. But if we choose a more rigorous significance level of 1%, we conclude that there is no difference between two parties. Since the value-weighted index is more close to the real world and is used more widely, its related results should dominate.

Table 3: Test of equality of stock market performance under two parties (value-weighted index)

Panel A: (1926 – 2011) N=516 for D and 516 for R				
Party	Mean	Std Dev	Minimum	Maximum
Democrat	0.0121	0.0523	-0.2371	0.3837
Republican	0.00599	0.0563	-0.2901	0.3660
Diff(1-2)	0.00615	0.0543		
Method	Variances	DF	tValue	Pr>|t|
Pooled	Equal	1030	1.82*	0.0692
Satterthwaite	Unequal	1024.6	1.82*	0.0692
Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	515	515	1.16	0.1001
Panel B: (1933 – 2011) N=516 for D and 432 for R				
Party	Mean	Std Dev	Minimum	Maximum
Democrat	0.0121	0.0523	-0.2371	0.3837
Republican	0.00735	0.0446	-0.2254	0.1656
Diff(1-2)	0.00479	0.0490		
Method	Variances	DF	tValue	Pr>|t|
Pooled	Equal	946	1.50	0.1336
Satterthwaite	Unequal	945.67	1.50	0.1283
Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	515	431	1.37	0.0006
Panel C: (1950 – 2011) N=312 for D and 432 for R				
Party	Mean	Std Dev	Minimum	Maximum
Democratic	0.0126	0.0412	-0.1577	0.1140
Republican	0.00735	0.0446	-0.2254	0.1656
Diff(1-2)				
Method	Variances	DF	tValue	Pr>|t|
Pooled	Equal	742	1.62	0.1053
Satterthwaite	Unequal	699.33	1.62	0.1009
Equality of Variances				

Method	Num DF	Den DF	F Value	Pr > F
Folded F	431	311	1.17	0.1296

Unlike the whole equity market discussed above, we see a quite different picture in individual stocks. To illustrate our methodology better, we randomly choose a stock, say IBM, to show how to determine its "colour" or "colours". To reduce the impact of business cycle, the excess monthly returns are estimated for each month from 1926 to 2011. The value–weighted market return (VWRETD) is used as our market index. Panel A of Table 4 shows the sample statistics, such as mean, median, minimum, maximum, number of observations, and standard deviations for all 10 periods under different parties. For instance, for Period I (under the Republican Party), the mean monthly excess-return is 2.12%, while its corresponding value in Period II (under the Democratic Party) is a mere 0.27%. It seems that IBM performs better under the Republican Party, showing that those two mean excess returns are statistically different at a 5% significance level. According to our definition, IBM is labelled as a "red firm" for Period 2, i.e., it performs worse under the Democratic Party than under the Republican Party.

Is this just a coincidence? What is IBM's colour in Period 3? Let's look at the next two adjacent periods (from Period 2 to 3). The difference changes sign from Period 2 (0.27% under the Democratic Party) to Period 3 (1.78% under the Republican Party). The switch of luck for IBM confirms our hypothesis that IBM indeed has a colour of red, i.e., it performs better under the Republican Party. Panel B of Table 4 presents the testing results. Based on a 5% statistical significance level, out of 9 periods, IBM has a colour of red in 3 of them, and 1 for blue. All the differences for those colour periods are statistically significant at a 5% level. For other periods, IBM has no colour. Another observation is the trend. IBM is a red firm for three consecutive periods, then became colourless, then blue, then colourless again. For Period 8 (1993-2001) it became blue, at a 5% significance level, for the first time. It appears that IBM has changed its colour gradually over the years.

Table 4: An illustration on how to assign a "color" to IBM.
***** significant at 1% level and ** significant at 5% level.**

Panel A: Sample statistics for each period								
			Monthly excess returns					
Period	Range	Party	Mean	median	Min	max	Std	n
1	1923-1932	R	0.02122	0.01698	-0.1367	0.1949	0.06067	83
2	1933-1952	D	0.00267	0.00218	-0.1744	0.1366	0.04782	239
3	1953-1960	R	0.01784	0.01347	-0.0788	0.1952	0.05140	96
4	1961-1968	D	0.00430	0.00216	-0.0907	0.1183	0.03945	96
5	1969-1976	R	0.00109	0.00331	-0.1968	0.1262	0.04399	96
6	1977-1980	D	-0.00816	-0.00513	-0.0967	0.0899	0.04034	48
7	1981-1992	R	-0.00820	-0.00382	-0.2797	0.1449	0.05956	144
8	1993-2000	D	0.01173	0.00535	-0.2501	0.1942	0.07744	96
9	2001-2008	R	0.00473	-0.00289	-0.1450	0.2789	0.06454	96

10	2009-2012	D	0.01094	0.00541	-0.0582	0.1663	0.05040	36

Source: http://www.enchantedlearning.com/history/us/pres/list.shtml.

Panel B: test of equal-variances of two adjacent periods

		F-test for equal variances				If equal variances			If unequal variances		
	Party	NUMDF	DENDF	F	P	DF	T	P	DF	T	P
2	D	82	238	1.61	0.006	320	-2.8	0.005	119	-2.5	0.01
3	R	95	238	1.16	0.383	333	2.6	0.0111	164	2.5	0.01
4	D	95	95	1.70	0.011	190	-2.0	0.042	178	-2.0	0.04
5	R	95	95	1.24	0.291	190	-0.5	0.595	1879	-0.5	0.60
6	D	95	47	1.19	0.517	142	-1.2	0.224	101	-1.3	0.21
7	R	143	47	2.18	0.003	190	-0.0	0.997	119	-0.0	0.996
8	D	95	143	1.69	0.004	238	2.2	0.026	167	2.1	0.03
9	R	95	95	1.44	0.078	190	-0.68	0.497	184	-0.7	0.50
10	D	95	35	1.64	0.100	130	0.52	0.604	80	0.6	0.56

Panel C: the T-test for the difference of the mean monthly excess-returns in two adjacent periods for IBM.

Period	Range	Party	Diff	T	DF	P	color
2	1933-1952	Democratic	-0.0186	-2.53	119.3	0.013	Red**
3	1953-1960	Republican	0.0152	2.57	333	0.011	Red**
4	1961-1968	Democratic	-0.0135	-2.05	178.08	0.042	Red**
5	1969-1976	Republican	-0.0032	-0.53	190	0.600	
6	1977-1980	Democratic	-0.0092	-1.22	119.4	0.224	
7	1981-1992	Republican	-0.0001	-0.01	190	1.000	
8	1993-2000	Democratic	0.0200	2.14	167.42	0.034	Blue**
9	2001-2008	Republican	-0.0070	-0.680	190	0.4975	
10	2009-2012	Democratic	0.0062	0.520	130	0.6036	

Goldman et al. (2010) identify two companies, Philips Petroleum and Occidental Petroleum as politically connected. Philips Petroleum is a Republican firm because its three board members were prominent Republicans. On the other hand, Occidental Petroleum is labelled as a Democratic firm because Al Gore was on its board. Goldman et al. show that Philips Petroleum, a Republican firm, signed more government contracts than Occidental Petroleum after a Republican win. Those two politically connected firms offer us a good opportunity to apply our methodology to them, see Table 5.

Table 5: Phillip Petroleum and Occidental Petroleum

Goldman et al. (2010) identify Phillip Petroleum as a Republican Firm and Occidental Petroleum as a Democratic, see Panel A which is from their Table 1. *** significant at 1% level, ** significant at 5% level and * significant at 10% level.

Panel A: Political connections of two companies		
	Phillips Petroleum	Occidental Petroleum
Connected board members	James B. Edwards (1983) Lawrence S. Eagleburger (1993) Norman r. Augustine (1989)	Albert Gore (1972) Ray R. Irani (1984)
Connected Party	Republican	Democratic

Panel B shows our testing results for Phillip Petroleum.

Panel B: (Phillip Petroleum) tests of equal-variances and equal means of two	

adjacent periods										
			Difference between excess means	F-test for equal variances		T-test of equal excess mean returns for				color
						equal variances		unequal variances		
	Party			F	P	T	P	T	P	
2	D	1933-1952	0.0178	3.65	0.000	1.80	0.073	1.36	0.179	
3	R	1953-1961	-0.011	2.01	0.0001	-1.70	0.0902	-1.96	0.051	Blue**
4	D	1961-1968	-0.0001	1.02	0.9173	-0.02	0.983	-0.02	0.983	
5	R	1969-1974	0.0122	4.19	0.000	1.22	0.225	1.22	0.226	
6	D	1977-1981	-0.0053	2.54	0.001	-0.38	0.705	-0.44	0.662	
7	R	1981-1989	-0.0064	1.77	0.026	-0.55	0.581	-0.64	0.526	
8	D	1993-2001	0.002	1.08	0.705	0.20	0.841	0.20	0.840	
9	R	2001-2009	0.011	1.39	0.111	1.13	0.261	1.13	0.261	
10	D	2009-2012	-0.009	1.31	0.372	-0.77	0.444	-0.82	0.417	

Panel C below shows our testing results for Occidental Petroleum.

Panel C: (Occidental Petroleum) tests of equal-variances and equal means of two adjacent periods										
			Difference between excess means	F-test for equal variances		T-test of equal excess mean returns for				Color
						equal variances		unequal variances		
	Party			F	P	T	P	T	P	
5	R	1969-1974	-0.029	1.20	0.397	-1.63	0.106	-1.61	0.110	Blue*
6	D	1977-1981	0.005	2.76	0.001	0.28	0.783	0.32	0.747	
7	R	1981-1989	-0.011	1.07	0.738	-1.00	0.319	-0.98	0.329	
8	D	1993-2001	0.005	1.71	0.004	0.48	0.632	0.46	0.650	
9	R	2001-2009	0.024	1.69	0.011	2.21	0.028	2.21	0.02815	Red**
10	D	2009-2012	-0.018	1.27	0.421	-1.43	0.154	-1.52	0.13409	

For Occidental Petroleum, we indeed find that it was a Democratic Firm, i.e., a blue firm according to our definition, around the similar period as Goldman et al. (2010). However, this conclusion is not statistically strong since it is significant only at a 10% significance level. One important observation is that this firm's colour has changed in later years of our sample period, from Blue to Red. For the second firm, Phillips Petroleum, we find it colourless over the time period identified in Goldman et al. (2010). Surprisingly, based on our result, it was a Democratic firm at the early stage of our sample period from 1933 to 1961. In addition, we thank Goldman for supplying three more names: 3M and Alcoa with a Republican connection while Ascendant with a Democratic connection. Because Ascendant (PERMNO=87375) has only three years' trading data, we could not apply our methodology to it. Note that PERMNO is the stock identification number used by CRSP. Our result confirms that 3M Co. (PERMNO=22592) is indeed a "Red" firm for the 4th

period with a p-value of 0.0115, i.e., significant at a 5% level. However, there is no color for Alcoa (PERMNO=24640) according to our methodology.

The discrepancy between our results and those of Goldman et al. (2010) could be traced back to those two fundamentally different methodologies. First, they identify whether a firm is politically connected in the first place while we don't. Second, they compare benefits from the government, and the numbers and sizes of government contracts, while we study the equity's performance. More importantly, we use the market as a benchmark to gauge a firm's performance, while they compare the benefits received by Firm A with those received by Firm B. They study one period (under one party), while we estimate the difference of the excess returns between two adjacent periods (under two different parties). It is possible that a politically-connected firm receives extra benefits from a specific party but still could not beat the market. If this is true, then it is still a politically connected firm according to their methodology, while it is colourless according to our methodology. Table 6 shows the first 30 observations for stocks that have more than one "colourful" period.

Table 6: first 30 observations for stocks that have more than one colorful period
The symbol of ** indicates significant at 5% level and *** indicates significant at 1% level. T value and PROB based on the Pooled method.

							P value for equal-mean		
#	Permno	period	Party	diff	F	σ is equal	σ is equal	σ is unequal	Color
1	10078	9	R	-0.0524	0.688	T	0.003	0.003	Blue***
2	10078	10	D	0.0858	0.116	T	0.032	0.111	Blue**
3	10153	3	R	-0.0137	0.001	F	0.063	0.034	Blue**
4	10153	7	R	-0.0487	0.000	F	0.020	0.005	Blue***
5	10363	9	R	0.0670	0.001	F	0.018	0.011	Red **
6	10363	10	D	-0.0686	0.012	F	0.073	0.035	Red **
7	10395	9	R	0.0362	0.164	T	0.004	0.004	Red ***
8	10395	10	D	-0.0339	0.392	T	0.025	0.019	Red **
9	10401	2	D	-0.0118	0.140	T	0.028	0.039	Red **
10	10401	5	R	0.0109	0.072	T	0.039	0.039	Red **
11	10401	6	D	-0.0161	0.208	T	0.031	0.041	Red **
12	10530	9	R	0.0413	0.145	T	0.023	0.023	Red **
13	10530	10	D	-0.0522	0.012	F	0.013	0.004	Red ***
14	10576	6	D	0.0810	0.137	T	0.048	0.048	Blue**
15	10576	7	R	-0.0687	0.020	F	0.007	0.017	Blue**
16	10612	2	D	0.0432	0.000	F	0.112	0.040	Blue**
17	10612	3	R	-0.0399	0.000	F	0.374	0.027	Blue**
18	11260	3	R	-0.0254	0.005	F	0.004	0.002	Blue***
19	11260	4	D	0.0306	0.021	F	0.003	0.003	Blue***
20	11260	7	R	0.0483	0.750	T	0.012	0.014	Red **
21	11375	3	R	-0.0190	0.001	F	0.018	0.035	Blue**
22	11375	4	D	0.0418	0.001	F	0.003	0.003	Blue***
23	11442	9	R	0.0414	0.830	T	0.010	0.010	Red ***
24	11442	10	D	-0.0327	0.000	F	0.094	0.027	Red **
25	11447	2	D	-0.0138	0.606	T	0.042	0.047	Red **
26	11447	7	R	0.0288	0.000	F	0.045	0.050	Red **
27	11607	3	R	-0.0192	0.000	F	0.098	0.023	Blue**
28	11607	6	D	-0.0275	0.077	T	0.028	0.018	Red **
29	11790	9	R	0.0289	0.000	F	0.028	0.028	Red **
30	11790	10	D	-0.0446	0.098	T	0.028	0.015	Red **

To avoid potential data mining, we sort our observations by PERMNO, the CRSP unique stock identification, before reporting them. To choose those observations, a 5% significance level is applied for both the F-test (for equal variances) and the T-test (for equal excess means). Let's use the first stock (PERMNO=10078) as an example. The F-test for equal-variances for periods 8 and 9 has a P-value of 0.69. Thus, we could not reject the null hypothesis that the variances of those two periods are equal. Because of this, we should check the T-test under "equal variance". A p-value of 0.03 indicates that those two means are statistically different at a 5% significance level. In period 9, since the Republican Party was in power and the difference is negative, the firm is labelled as 'blue'. In the next period, the firm's fortune turned and the mean difference became statistically positive. Since the Democratic Party is currently in power, the firm remains as a 'blue' firm.

After studying the table carefully, we identify a few interesting patterns. First, a firm often has just one colour over multiple periods, i.e., the same colour over different periods. This pattern is consistent with our conventional wisdom: we often expect a firm connected with just one party. Also, for many firms, we observe the same colour over two consecutive periods. Such consecutive same colours occur 94% of the time for all colour stocks. For instance, for firm with PERMNO =10078 in periods 9 and10, for PERMNO=10363 in periods 9 and 10 and for PERMNO=10401 in periods 5 and 6. This offers a very strong support that those observations are not a random phenomenon, see H3: A firm's colour is a random phenomenon. The third observation is that when a firm has two colours, they usually are separated by a few periods. This is consistent with our real-world reality since it is difficult to change a firm's political affiliation quickly. We observe that a few firms have consecutive colours for over 3 periods. Based on this, we speculate that the duration of "implied political-connection" is, most of the time, from 8 to 19 years.

Table 7: Numbers of 'Blue' and 'Red' firms (stocks)

2D means period 2 and Democratic Party. 3R for the 3rd period and Republican Party. All even periods are for Democratic Party and all odd periods are for Republican Party. Note that the total number of firms is 36,982.

Panel A: percentage of blue, red and color stocks over whole sample period (1926-2011), VWRETD is used as the market index. F for equal variances and T for equal mean				
Significance levels:	F = 5%, T = 5%	F=1%, T =5%	F = 5% , T = 1%	F=1%, T=1%
B (Democratic)	1607 (4.35%)	1634 (4.42%)	565(1.53%)	581(1.53%)
Red (Republican)	1891 (5.11%)	1916 (5.18%)	695(1.88%)	695 (1.88%)
Colorless	33482 (90.54%)	33430 (90.40%)	35720 (96.59%)	35720 (96.69%)

Panels B to E: percentages of blue, red and color stocks for each period (the market index used is VWRETD)

Panel B: Significance levels : F=0.05, T=0.05 (percentages in the parentheses)										
Period/party	2D	3R	4D	5R	6D	7R	8D	9R	10D	Total
Colorless	681(95.2)	953(91.2)	1004(90.0)	2062(93.9)	4808(93.8)	4288(86.0)	6427(92.8)	7110(87.7)	6149(91.0)	33482(90.5)
Blue	20(2.8)	70(6.7)	86(7.7)	109(5.0)	237(4.6)	454(9.1)	186(2.7)	211(2.6)	234(3.5)	1607(4.4)
Red	14(2.0)	22(2.1)	26(2.3)	25(1.1)	80(1.6)	245(4.9)	310(4.5)	791(9.8)	378(5.6)	1891(5.1)
Panel C: F=0.01, T=0.05										
Period/party	2D	3R	4D	5R	6D	7R	8D	9R	10D	Total

Colorless	680(95.1)	953(91.2)	1005(90.1)	2064(94.0)	4815(94.0)	4283(85.9)	6414(92.7)	7080(87.3)	6136(90.8)	33430(90.4)
Blue	20(2.8)	70(6.7)	85(7.6)	106(4.8)	231(4.5)	462(9.3)	192(2.8)	220(2.7)	248(3.7)	1634(4.4)
Red	15(2.1)	22(2.1)	26(2.3)	26(1.2)	79(1.5)	242(4.9)	317(4.6)	812(10.0)	377(5.6)	1916(5.2)
Panel D: F=0.05, T=0.01										
Period/party	2D	3R	4D	5R	6D	7R	8D	9R	10D	Total
Colorless	708(99.2)	1022(97.8)	1087(97.4)	2143(97.6)	5051(98.6)	4704(94.3)	6733(97.3)	7735(95.4)	6537(96.7)	35720(96.6)
Blue	2(0.3)	17(1.6)	23(2.1)	36(1.6)	47(0.9)	184(3.7)	72(1.0)	99(1.2)	85(1.3)	565(1.5)
Red	5(0.7)	6(0.6)	6(0.5)	17(0.8)	27(0.5)	99(2.0)	118(1.7)	278(3.4)	139(2.1)	695(1.9)
Panel E: F=0.01, T=0.01										
Period/party	2D	3R	4D	5R	6D	7R	8D	9R	10D	Total
Colorless	707(98.9)	1022(97.8)	1084(97.1)	2147(97.8)	5054(98.6)	4700(94.3)	6731(97.2)	7722(95.2)	6541(96.8)	35708(96.6)
Blue	3(0.4)	17(1.6)	25(2.2)	32(1.5)	45(0.9)	192(3.9)	74(1.1)	107(1.3)	86(1.3)	581(1.6)
Red	5(0.7)	6(0.6)	7(0.6)	17(0.8)	26(0.5)	95(1.9)	118(1.7)	283(3.5)	134(2.0)	691(1.9)

After learning how to assign a colour to an individual firm, we are ready to discuss the colours of all firms from 1926 to 2011. Table 8 presents the testing results for H2 where all firms are colourless. Based on a 5% significance level to judge equal variances and equal-means over two adjacent periods, 4.35% firms could be labelled as blue, which means that they perform better under the Democratic Party, while this number is 5.11% for red firms. The colourless firms would then be 90.54%. It is worth mentioning that our results do not seem consistent with Fan et al. (2007). Fan et al. find that the politically-connected firms perform worse than non-politically-connected firms, while our paper points to an opposite direction. Our paper and theirs adopt two different approaches. Fan et al. (2007) define politically-connected firms first, then analyse their market performance. Since we don't have such data to define a blue or red firm in the first place, we have to rely on a firm's market performance. It appears that our results are opposite of those in Fan et al. (2007), but this is actually rooted from our definition of coloured firms. The fundamental reason is that we define it to be blue or politically-connected to the Democratic Party if a firm is more profitable under the Democratic Party.

Based on the whole period, it seems that the proportions of blue and red firms are quite close to each other: 4.35% vs. 5.11%. However, if we go one step further to study each period, we could find an interesting trend: before 1992, more firms could be labelled as blue, while in later years, red firms outnumber blue firms. Since we don't have related data to pin point the exact reason(s), we speculate that the image of the Republican Party is more pro-business and its business linkages (connections) might go hand-in-hand. Again, it is not our intention in this paper to find a reason, theory or hypothesis to explain the trend. We will leave this for future research.

For Hypothesis 4 which concerns the sizes of coloured and colourless firms, we find that the average size of colour firms is little bit bigger (47% bigger, 1.66 m vs. 2.46 m) at a 5% significance level. However, based on a 1% significance level, the coloured firms are just 9% bigger (1.72 m vs. 1.88m). Thus, we could not claim without any doubt that the sizes of those two types of firms are significantly different from each other. In summation, we don't have concrete evidence to support Hypothesis #4.

When testing the hypothesis of volatility jumps in an election year for coloured stocks, we use excess volatility, which is defined as the volatility in an election year (t) adjusted by the average volatility over the past three years (t-3 to t-1) for the same stock. The usage of

excess volatility instead of volatility intends to reduce the impact of the firm's size since its volatility is negatively correlated with its size. In addition, its usage aims at reducing the impact of our methodology based on whether the volatility of a coloured stock should be "inherently" higher than a colourless one. By using excess volatility, we could eliminate this selection bias. The empirical results for testing volatility jump in an election are shown in table 8.

Table 8: Empirical results for testing of volatility change in the election year

Panel A: excess volatility defined as $\sigma_t - \sigma_{(t-1,t-3)}$ (benchmarked on previous 3 years)								
Significance (%)		Stock color	Excess volatility (based on daily frequency)					
F	T		Mean	std	min	max	n	Annualized (%)
5	5	N	0.0054	0.0185	-0.0991	0.3636	14752	8.63
5	5	Y	0.0081	0.0219	-0.0800	0.2109	1201	12.80
5	1	N	0.0056	0.0186	-0.0991	0.3636	15611	8.83
5	1	Y	0.0091	0.0263	-0.0800	0.1924	342	14.41
1	5	N	0.0054	0.0185	-0.0991	0.3636	14754	8.61
1	5	Y	0.0083	0.0220	-0.0800	0.2109	1199	13.11
1	1	N	0.0056	0.0186	-0.0991	0.3636	15610	8.84
1	1	Y	0.0088	0.0253	-0.0800	0.1924	343	13.97
Panel B: excess volatility defined as $\sigma_t - \sigma_{(t-1,t-2)}$(benchmarked on previous 2 years)								
5	5	N	0.0044	0.0185	-0.1366	0.3565	14748	7.02
5	5	Y	0.0071	0.0216	-0.0993	0.2064	1198	11.22
5	1	N	0.0045	0.0186	-0.1366	0.3565	15604	7.22
5	1	Y	0.0080	0.0252	-0.0993	0.1812	342	12.68
1	5	N	0.0044	0.0185	-0.1366	0.3565	14750	7.00
1	5	Y	0.0073	0.0217	-0.0993	0.2064	1196	11.52
1	1	N	0.0046	0.0186	-0.1366	0.3565	15603	7.23
1	1	Y	0.0076	0.0245	-0.0993	0.1812	343	12.12
Panel C: excess volatility defined as $\sigma_t - \bar{\sigma}_{t-1,group}$(10 groups sorted on volatility in year *t-1*)								
5	5	N	0.0042	0.0182	-0.0925	0.2941	14741	6.61
5	5	Y	0.0065	0.0207	-0.0807	0.2153	1195	10.39
5	1	N	0.0043	0.0183	-0.0925	0.2941	15597	6.81
5	1	Y	0.0069	0.0233	-0.0807	0.1296	339	10.89
1	5	N	0.0042	0.0182	-0.0925	0.2941	14743	6.60
1	5	Y	0.0066	0.0209	-0.0807	0.2153	1193	10.53
	1	N	0.0043	0.0183	-0.0925	0.2941	15596	6.82
1	1	Y	0.0065	0.0234	-0.0807	0.1296	340	10.24
Panel D: excess volatility defined as $\sigma_t - \bar{\sigma}_{t-1,group}$(10 groups sorted on size in year *t-1*)								
5	5	N	0.0044	0.0216	-0.0762	0.3495	14782	6.97
5	5	Y	0.0079	0.0231	-0.0762	0.1916	1206	12.56
5	1	N	0.0046	0.0216	-0.0762	0.3495	15643	7.24
5	1	Y	0.0090	0.0280	-0.0369	0.1916	345	14.30
1	5	N	0.0044	0.0216	-0.0762	0.3495	14784	6.97
1	5	Y	0.0079	0.0233	-0.0762	0.1916	1204	12.56
1	1	N	0.0046	0.0216	-0.0762	0.3495	15642	7.25
1	1	Y	0.0086	0.0270	-0.0369	0.1916	346	13.65

Our empirical results show that the annualized mean excess volatility increases for colour stocks in an election year is 12.80%, while this value for colourless stocks is mere 8.63%. This translates into a jump of 48.3% for coloured stocks.

This result is based on a significance level of 5% for both the F-test and T-test. Thus, we could adopt a profitable trading strategy by buying a call and a put of a coloured stock, a straddle in terms of options theory. On the other hand, based on a 1% significance level for both the F-test for equal variances and the T-test for equal means, the annualized excess volatility in an election year for colour and colourless stocks are 13.97% and 8.84%, respectively.

This pair represents an extra 58.0% increase for colour stocks. The above results are based on the benchmarked over the past three years. If we use the previous two years' volatility as our benchmark, the results are quite similar, see Panel B in Table 8. In an election year, the colour stocks are 60% (the critical F- and T-values are both at 5%) or 68% (the critical F- and T-value are both at 1%) more volatile, measured by the excess volatility, than those colourless stocks.

For the robustness related to the potential volatility jumps for colour stocks in election years, we have conducted two more tests. The first one is to look at a stock's volatility increase in an election over its previous year's volatility group mean. First, we sort all stocks into 10 groups based on individual stock's volatility the year before an election year. Then group means are estimated. The excess volatility of Stock A in an election year is defined as the difference between its volatility in that year and its group mean. Its group assignment depends on its previous year's volatility. Panel C of Table 8 reports such a result, which is consistent with our results reported before. During an election year, the volatility of all stocks increases. In particular, the coloured stocks are 57% more volatile than that of colourless stocks. The next test is quite similar to the one we just mentioned. The only difference is the first step. We sort stocks into 10 groups by size instead of volatility. The underlying logic is that the size and volatility is negatively correlated. Our results, shown in Panel D in Table 8, confirm further that in an election year the excess volatility of colour stocks indeed has a huge jump, 80% more volatile than colourless stocks.

Table 9: Profitability of a trading strategy based on long or short colored stocks

Panel A: result of a zero-investment portfolio (whole sample period, 1926 to 2011).							
Cut-off		Monthly return for a long position		Monthly returns for a short position		Portfolio return	
F-value	T-value	mean	n	mean	n	monthly	annualized
0.05	0.05	0.016273	45719	0.008841	39821	0.007432	9.292%
0.05	0.01	0.017334	14602	0.008447	9974	0.008887	11.202%
0.01	0.05	0.016299	46320	0.008996	39092	0.007303	9.124%
0.01	0.01	0.017369	14943	0.008615	9845	0.008754	11.026%

We have two significance levels: 0.05 and 0.01.

Panel B: zero-investment portfolio returns (significance levels: F=0.05, T=0.05)									
	Critical levels			Long		Short		Portfolio	
#	F	T	period	mean	N	mean	N	monthly	Annual
1	0.05	0.05	3	0.0135	1152	0.01062	1211	0.00288	0.03509
2	0.05	0.05	4	0.0170	4870	0.01030	1579	0.00680	0.08478
3	0.05	0.05	5	0.0051	2071	0.00574	5836	-0.00066	-0.00791
4	0.05	0.05	6	0.0252	2866	0.0079	688	0.01727	0.22815
5	0.05	0.05	7	0.0136	8321	0.0078	13772	0.00585	0.07247
6	0.05	0.05	8	0.0199	15081	0.0097	7102	0.01019	0.12941
7	0.05	0.05	9	0.0111	10352	0.0062	4740	0.00495	0.06107

8	0.05	0.05	10	0.0344	1006	0.0162	4893	0.01820	0.24167
Panel C: zero-investment portfolio returns (significance levels: F=0.05, T=0.01)									
9	0.05	0.01	3	0.0147	288	0.0147	288	0.00000	0.00000
10	0.05	0.01	4	0.0182	1227	0.0096	288	0.00867	0.10915
11	0.05	0.01	5	0.0102	384	0.0037	1567	0.00648	0.08063
12	0.05	0.01	6	0.0260	664	0.0094	450	0.01659	0.21834
13	0.05	0.01	7	0.0154	2466	0.0045	2403	0.01045	0.13292
14	0.05	0.01	8	0.0200	5944	0.0103	2153	0.00976	0.12359
15	0.05	0.01	9	0.0120	3419	0.0081	1781	0.00394	0.04836
16	0.05	0.01	10	0.0344	210	0.0173	1332	0.01714	0.22615
Panel D: zero-investment portfolio returns (significance levels: F=0.01, T=0.05)									
17	0.01	0.05	3	0.013496	1152	0.0106	1211	0.0029	0.03509
18	0.01	0.05	4	0.0167	4870	0.0102	1579	0.0068	0.08478
19	0.01	0.05	5	0.0051	2071	0.0057	5740	-0.0006	-0.00730
20	0.01	0.05	6	0.0248	2866	0.0080	688	0.0169	0.22259
21	0.01	0.05	7	0.0137	8177	0.0081	13567	0.0057	0.06942
22	0.01	0.05	8	0.0200	15567	0.0100	6770	0.0100	0.12731
23	0.01	0.05	9	0.0111	10611	0.0061	4644	0.0050	0.06121
24	0.01	0.05	10	0.0344	1006	0.0162	4893	0.0182	0.24167
Panel E: zero-investment portfolio returns (significance levels: F=0.01, T=0.01)									
25	0.01	0.01	3	0.0147	288	0.0136	96	0.0012	0.01391
26	0.01	0.01	4	0.0182	1227	0.0096	288	0.0087	0.10915
27	0.01	0.01	5	0.0071	480	0.0039	1663	0.0032	0.03926
28	0.01	0.01	6	0.0256	568	0.0094	450	0.0162	0.21254
29	0.01	0.01	7	0.0152	2322	0.0053	2259	0.0099	0.12526
30	0.01	0.01	8	0.0205	6204	0.0105	1976	0.0100	0.12671
31	0.01	0.01	9	0.0125	3644	0.0081	1781	0.0044	0.05431
32	0.01	0.01	10	0.0344	210	0.0173	1332	0.0171	0.22615

From the above results, a rational investor could adopt a profitable trading strategy based on those colour stocks. For example, we could form a long-short zero-investment portfolio, at the beginning of a new administration, based on those stocks whose future performances are strongly associated with whom is in power. If the Democratic Party wins an election, rational investors should long blue stocks and short red ones. The opposite is true: after a Republican Party win, investors should long red stocks and short blue stocks, i.e., Hypothesis 6. Table 9 reports our empirical results. Panel A repents the results for the whole sample period from 1926 to 2011. Let's look at the case when the significance levels for both the F-test and the T-test are 5%. The mean monthly return for a long and a short position are 1.63% and 0.88%, respectively. The difference is 0.7432% which translates into an abnormal return of 9.29% per year. From Panel A, we also see that the impact of significance levels depend on whether we assign stocks into different colour groups. The impact of significance level for the F-test is negligible. On the other hand, if we set the significance level for our T-test at a more strict level of 1%, the annualized zero-investment portfolio's abnormal return is 11.5% instead of a 9.29%.

The above conclusion is based on the whole sample period, but does the profitability of our zero-investment portfolio strategy still hold for each sub-period? Since we start with 10 periods and need two periods to assign colours, we end up with 8 sub-periods to test the profitability of our trading strategy. The related results are presented in Panel B which repeats Panel A, but for each sub-period. First, let's check the case when both significance levels are set at 5%. Out of 8 periods, we observe one negative yet quite small portfolio return: 7 basis points per month or -0.8% per year. For the other periods, our long-short portfolio is more profitable, ranging from 29 basis points per month (3.5% per year) to 173 basis points per month (22.8% per year). It is interesting to find out that based on a 1% significance level for our tests, our long-short zero-investment portfolio would have positive

returns over all sub periods. Our empirical results strongly support our last hypothesis, that we could conduct a profitable trading strategy by longing and shorting opposite colour stocks when a new administration just formed. This result confirms our methodology developed in this paper and offers a final stamp of approval.

5 Conclusions and future extensions

Using historical market data, we offer evidence that the performances of equity market in the United States under both parties (Democratic and Republican) are statistically the same. However, this is not true for individual firms. Over the years, 4.35 percent (5.11 percent) of firms fare better when the sitting president is from the Democratic (Republican) Party. The rest of the firms (90.54 percent of total) are colourless. A zero-investment portfolio formed based on those colourful stocks at the beginning of a new administration generates an abnormal return of 9.29% per year. Our empirical results also confirm that in an election year, the excess volatilities of colour stocks are 50% higher than those of colourless stocks. Thus, we could use a straddle by buying both call and put options on those coloured stocks. Our results are robust to all stocks, with only NYSE/AMEX listed stocks, whether we eliminate stocks with end of year prices are less than $5, or to winsorize our samples both at the top or bottom 1%.

More importantly, in this paper, we show empirically the existence of so-called ‘coloured’ stocks without identifying a real political connection. Thus, the implied political linkages are up to debate. Pinpointing how coloured firms- identified based on the method discussed in this paper-benefit from a specific party in power could be a good future research topic. In a sense, our methodology expands the related research horizon dramatically. Since Obama just formed his new administration, investors could construct a profitable trading strategy according to the methodology specified in this paper. Like Faccio (2006) and Fishman (2001), the event study methodology could be used to test the impacts of political events on the coloured firms further. Another direction is that we could study the true control of the government in terms of congress and senate, as discussed in Goldman et al. (2010). To study the industry concentration of coloured firms might be another interesting topic.

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Endnotes:

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2: The web pages related to a US Presidents’ party affiliation are given below:
http://www.enchantedlearning.com/history/us/pres/list.shtml, and

http://www.enchantedlearning.com/history/us/pres/list.shtml.

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