Price of a Surprise

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Motivation

- Large body of literature studying the effect of political events, both anticipated and unanticipated, on financial markets.
- Surge in interest given recent political events: Brexit, Independence Referendums on several European countries, 2016 US Election, etc.
- Several of these episodes led to wild swings in financial markets.
- Most papers focus on particular events, or on whether unanticipated political events lead to abnormal returns or rises in volatility.
- Few papers analyze cross-country effects of electoral surprises on both returns and volatility, and take into account not only elections but previous polls.
- To our knowledge, no previous paper attempts to quantify the magnitude of election surprises.

Related Literature

- Breinlich et al (2018) focus on the impact of Brexit on abnormal returns of different industries within the UK.
- Similarly, Herron et al (1999) study the influence of the 1992 US presidential election on the return performance of 15 industry sectors within the US stock market.
- Darby and Roy (2019) analyze the impact on the volatility of Scottish companies trading in London's stock market of Scotland's independence referendum, considering both polls and the electoral result.
- All of these papers study the effect on returns or volatility of a particular political event

Related Literature

- Bialkowski et al (2008) study the effect of national elections on stock market volatility using a wide sample of 27 OECD countries.

- Carnahan and Saiegh (2020) evaluate whether predictability and/or decisiveness of elections have an impact on stock market volatility, using data for 2-round presidential elections of 5 Latin American countries.

- Arin et al (2013) investigate the impact of political variables (political orientation of ruling party, government composition, etc) on both stock market returns and volatility.

- The aforementioned papers consider more than a single political event and expand the set of countries analyzed, but either focus on returns or volatility, and do not quantify electoral surprises.

Contributions

- The main objective of the paper is to estimate the impact of the magnitude of electoral surprises on both abnormal returns and volatility of equities.
- We specifically quantify the magnitude of electoral surprises using the information of polls conducted near the election date.
- We use a large cross-country data set of polls and electoral results, as well as time series data of returns and volatility of 24 countries for the period 1972-2018.
- By controlling for the political orientation of the parties involved and whether the election winner is the incumbent or not along with other traits, we also study the qualitative impact of these political variables on abnormal returns and volatility.

Data

- We obtained data from 24 countries (European Union countries, USA and Canada) for both polls and national elections.
- Datasources for elections were the following:
  - Senate.gov, History, Art and Archives Institution database and the American Presidency Project database for US Senate, House of Representatives and presidential elections.
  - Parliamentary and presidential election results data of European countries for the period 1990-2012 were gathered from the European Election database, while for the 2012-2019 timeframe, data were extracted from The Election Resource site database.
  - Canada's elections data (both parliamentary and presidential) for the period 1979-2015 were collected from the Canadian Elections Database.

Data

- Electoral polls data were collected from various sources:
  - US data were obtained from Gallup.
  - The German polls data were obtained from Allensbach Institute.
  - UK polls data were collected from Markback.
  - Abacus, Kantar and SWG provided data for Canada, France and Italy, respectively.
  - For most of the remaining European countries, poll data were obtained from the Poll of Polls website.
  - To complete the missing data for Portugal and Germany, we tracked the published polls results in the local media and newspapers.

Data

	Elections Data	
Countries	Sample	Number of Elections
Austria	2002-2017	7
Belgium	2003-2014	4
Canada	1997-2015	7
Croatia	2000-2016	6
Cyprus	2008-2018	5
Czechia	2002-2018	9
Denmark	1994-2015	7
Estonia	2003-2015	4
Finland	2000-2018	8
France	1995-2012	8
Germany	1998-2017	6
Greece	2004-2015	5
Hungary	2002-2018	5

Data

	Elections Data	
Countries	Sample	Number of Elections
Italy	2001-2018	5
Poland	1997-2015	9
Portugal	1995-2016	10
Republic of Ireland	1997-2018	8
Slovakia	2002-2016	8
Slovenia	2004-2018	8
Spain	1982-2016	11
Sweden	1998-2018	6
The Netherlands	2010-2017	3
United Kingdom	1987-2017	8
United States	1972-2016	17
Total number of countries		24
Total number of elections		174

Data

- Financial data for returns are computed from the time series of benchmark stock market indices for each country in the sample.
- As for interest rates, when available, daily observations on benchmark government bonds were extracted. For some countries where these series were not available, daily 3-month interbank rates were used.
- Volatility was computed by applying a GARCH model to the returns series.
- Datasources for financial data were the following:
  - CEIC - ISI Markets.
  - Investing.com
  - MarketWatch.

Methodology: Measuring the Surprise Effect

- We construct three separate indicators to quantify election surprises:
  1. Lead surprise: the percentage difference between the leading party's share in the election and in the poll closest to the election.
  2. Lead Margin Surprise: the percentage difference between: (election share of the leading party in the election - election share of the trailing party in the elections) - (poll share of the leading party in the polls - poll share of the trailing party in the polls).
  3. Dummy Surprise: a dummy variable which takes the value of 1 if the party trailing in the polls actually won.

Methodology: Excess Returns and Volatility

- For each country, the excess returns are computed as follows:

$$ER_t = r_t - i_t$$

- r_t stands for each country's stock market returns, while i_t represents the 3-month government bond yield

- Average excess returns for h days after election dates (where h takes the value of either 2 or 5) were computed as:

$$AER_t = \frac{\sum_{j=1}^{h}(r_{t+j} - i_{t+j})}{h}$$

Methodology: Excess Returns and Volatility

- We proxy stock market unanticipated uncertainty by means of excess conditional volatility.
- Excess conditional volatility is defined as the spread between conditional and unconditional volatility in the two and five days after the election.
- We construct the conditional volatility series by fitting the following GARCH(1,1) model on stock market returns' daily data:

$$r_t = \mu + \lambda r_{t-1} + \epsilon_t, \quad \epsilon_t = \sigma_t e_t$$

$$\sigma_t^2 = \omega + \alpha \epsilon_{t-1}^2 + \beta \sigma_{t-1}^2$$

- Unconditional volatility is computed as: $\frac{1}{1-(\alpha+\beta)}$

Model

- We construct and estimate a pooled panel data aimed at investigating the cross-country variation in the magnitude of the impact of election surprises on financial markets.

- To control for country-specific political variables, we include dummy variables for each country in the sample for the following electoral events:
  - If the election was won by a right-wing party.
  - If it was won by the incumbent party.
  - If it was a parliamentary or a presidential election

- We also include interaction variables between the election surprise variables and the aforementioned country-specific political dummy variables.

Model

- The full model takes the following form:

$$y_{i,t} = \alpha + \beta_i Surprisej_{i,t} + \gamma_i RightWing_{i,t} + \delta_i Coalition_{i,t} + \lambda_i Incumbent_{i,t} + \theta_i Parliamentary_{i,t} + \phi_i Z_{i,t} + \varepsilon_{i,t}$$

  - $y_{i,t}$ stands for excess returns (or excess volatility).
  - $Z_{i,t-1}$ is the vector of interaction variables (Surprise*RightWing, Surprise*Incumbent, Surprise*Coalition, Surprise*Parliamentary).
  - The Surprise variable can be Lead surprise, Lead margin surprise and Dummy surprise depending on the specification.

- All errors ($\epsilon_{i,t}$) are White (1980) corrected.

Results - Main Variables

	2 Days after Election					
	Excess Returns			Conditional Volatility		
	1	2	3	4	5	6
Intercept	−4.016***	−3.841***	−3.631***	1.294***	1.367***	1.349***
	(0.665)	(0.727)	(0.635)	(0.130)	(0.125)	(0.156)
Lead Surprise	2.476			1.550		
	(6.108)			(1.451)		
Lead Surprise^2	−4.358			−1.872		
	(7.197)			(1.712)		
Lead Margin Surprise		11.07			1.259	
		(12.55)			(1.945)	
Lead Margin Surprise^2		−30.91			1.708	
		(30.29)			(4.819)	
Dummy Surprise			−2.300			1.708
			(1.645)			(4.819)
Right Wing win	3.277**	2.392**	2.686*	−0.417***	−0.469***	−0.418***
	(1.208)	(0.839)	(1.131)	(0.0882)	(0.0850)	(0.0896)
Incumbent win	1.473*	1.157*	0.978	−0.0860	−0.0328	−0.0804
	(0.655)	(0.569)	(0.655)	(0.111)	(0.104)	(0.113)
Coalition win	0.482	0.206	0.300	−0.0685	−0.0234	−0.0730
	(0.655)	(0.676)	(0.742)	(0.0977)	(0.0938)	(0.104)
Parl.	−0.389	0.002	−0.294	0.0536	−0.0780	−0.0530
	(0.683)	(0.678)	(0.699)	(0.136)	(0.132)	(0.146)
Countries	24	24	24	24	24	24
Obs	162	162	162	175	175	175
R^2	0.08	0.12	0.08	0.05	0.07	0.04
F-statistics	2.32	2.29	1.96	4.77	3.92	4.13
	(0.01)	(0.02)	(0.05)	(0.000)	(0.000)	(0.000)

Results - Interaction Variables

	2 Days after Election					
	Excess Returns			Conditional Volatility		
	1	2	3	4	5	6
Lead Surprise*Right	−14.11			−2.247		
	(17.39)			(1.746)		
Lead Surprise*Incumbent	−7.809			0.842		
	(9.332)			(1.684)		
Lead Surprise*Coalition	−16.41			0.663		
	(10.13)			(1.493)		
Lead Surprise*Parl.	9.624			−0.859		
	(11.67)			(1.798)		
Lead Margin Surprise*Right		−31.74*			0.141	
		(14.94)			(1.689)	
Lead Margin Surprise*Incumbent		−14.72			2.659	
		(14.43)			(2.129)	
Lead Margin Surprise*Coalition		−8.837			2.835	
		(11.99)			(1.929)	
Lead Margin Surprise*Parl.		20.84			−0.606	
		(10.63)			(1.446)	
Dummy Surprise*Parl.			0.253			−0.0769
			(1.613)			(0.414)
Dummy Surprise*Right			0.942			−0.282
			(2.455)			(0.235)
Dummy Surprise*Incumbent			2.147			0.0702
			(1.527)			(0.351)
Dummy Surprise*Coalition			0.666			0.240
			(1.579)			(0.261)

Results - Main Variables

	5 Days after Election					
	Excess Returns			Conditional Volatility		
	7	8	9	10	11	12
Intercept	−4.166***	−4.473***	−3.915***	1.260***	1.356***	1.313***
	(0.676)	(0.693)	(0.636)	(0.124)	(0.127)	(0.161)
Lead Surprise	1.030			1.908		
	(6.061)			(1.453)		
Lead Surprise^2	−3.105			−2.177		
	(7.411)			(1.718)		
Lead Margin Surprise		−0.850			1.484	
		(9.858)			(1.875)	
Lead Margin Surprise^2		−4.196			1.766	
		(25.10)			(4.652)	
Dummy Surprise			−2.180			0.305
			(1.661)			(0.298)
Right Wing win	2.902*	2.082*	2.472*	−0.400***	−0.437***	−0.413***
	(1.327)	(0.905)	(1.240)	(0.0856)	(0.0886)	(0.0918)
Incumbent win	1.489*	1.164*	1.148	−0.0861	−0.0396	−0.0835
	(0.665)	(0.569)	(0.663)	(0.105)	(0.0993)	(0.113)
Coalition win	0.646	0.336	0.454	−0.0785	−0.0355	−0.102
	(0.624)	(0.678)	(0.717)	(0.0930)	(0.0892)	(0.0962)
Parl.	−0.254	0.436	−0.137	0.0807	−0.0694	−0.005
	(0.693)	(0.678)	(0.702)	(0.125)	(0.126)	(0.150)
Countries	24	24	24	24	24	24
Obs	162	162	162	175	175	175
R^2	0.09	0.13	0.08	0.06	0.09	0.04
F-statistics	3.19	2.28	1.44	5.21	2.28	4.31
	(0.001)	(0.02)	(0.18)	(0.000)	(0.02)	(0.000)

Results - Interaction Variables

	5 Days after Election					
	Excess Returns			Conditional Volatility		
	7	8	9	10	11	12
Lead Surprise*Right	−11.40			−2.034		
	(19.28)			(1.798)		
Lead Surprise*Incumbent	−7.232			0.679		
	(9.522)			(1.638)		
Lead Surprise*Coalition	−22.13*			0.661		
	(10.20)			(1.455)		
Lead Surprise*Parl.	12.46			−1.081		
	(12.04)			(1.749)		
Lead Margin Surprise*Right		−34.46*			0.203	
		(16.78)			(1.613)	
Lead Margin Surprise*Incumbent		−16.77			2.646	
		(15.26)			(2.030)	
Lead Margin Surprise*Coalition		−23.28			2.522	
		(15.41)			(1.916)	
Lead Margin Surprise*Parl.		24.72*			−3.332	
		(11.12)			(2.020)	
Dummy Surprise*Parl.			0.638			−0.189
			(1.646)			(0.368)
Dummy Surprise*Right			0.696			−0.382
			(2.850)			(0.307)
Dummy Surprise*Incumbent			1.444			0.0488
			(1.515)			(0.334)
Dummy Surprise*Coalition			0.313			0.354
			(1.977)			(0.321)

Conclusions

- The results show that a right-wing win, even if anticipated, has a positive and significant effect on excess returns.
- It also has a negative and significant effect on conditional volatility.
- These results are consistent with previous studies that suggest that stock markets perform better under right-wing governments in the short run.
- In addition, an anticipated incumbent win also has some statistically significant positive effect on excess returns.
- These results challenge the usual conclusion from Fama's seminal work, which states that all anticipated events are already priced by the market.

Conclusions

- When interaction terms are considered, we can see that the interaction variable between Lead margin surprise and Right Wing Win has a statistically significant negative sign.
- This suggests that a big surprise in terms of a winning margin may wipe off some of the positive abnormal returns.
- Similarly, the interaction of Lead surprise and Coalition variables has a negative and statistically significant effect.
- This implies that a coalition government with a surprisingly large winning margin for the lead party is not well perceived by financial markets.
- The two aforementioned results imply that financial markets react negatively to consolidation of power beyond expectations.