Supplementary Appendix

How Robust Is the Renewable Energy Industry to Political Shocks? Evidence from the 2016 U.S. Elections

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A1 Overview

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A2 Additional Tables

	Observed Returns			Abnormal Returns			Cumulative Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) FE	(9) FE
Post-Election Period	0.47***	0.47***	0.47***	0.17	0.17	0.17	-0.79	-0.77	-0.77
	(0.11)	(0.11)	(0.11)	(0.11)	(0.12)	(0.12)	(1.35)	(1.36)	(1.35)
Firm FE		✓			✓			✓	
Headquarter FE			✓			✓			✓
Sector FE			✓			✓			✓
Observations	4542	4542	4542	3974	3974	3974	3974	3974	3974
R^2	0.01	0.03	0.02	0.00	0.03	0.01	0.00	0.55	0.15
# Clusters	120	120	120	108	108	108	108	108	108

Table A1: Sample including all countries, except those that were not identifiable as related to renewable energy. Dependent variable: observed returns (OR), abnormal returns (AR), and cumulative abnormal returns (CAR). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

	Observed Returns			Abnormal Returns			Cumulative Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) FE	(9) FE
Post-Election Period	0.32	0.32	0.32	-0.20	-0.20	-0.20	-2.21	-2.21	-2.21
	(0.22)	(0.23)	(0.22)	(0.15)	(0.15)	(0.15)	(5.19)	(5.25)	(5.25)
Firm FE		✓			✓			✓	
Headquarter FE			✓			✓			✓
Sector FE			✓			✓			✓
Observations	268	268	268	222	222	222	222	222	222
R^2	0.00	0.03	0.02	0.00	0.04	0.04	0.01	0.63	0.63
# Clusters	7	7	7	6	6	6	6	6	6

Table A2: Sample limited to firms operating in the wind energy sector. Dependent variable: observed returns (OR), abnormal returns (AR), and cumulative abnormal returns (CAR). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

	Observed Returns			Abnormal Returns			Cumulative Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) FE	(9) FE
Post-Election Period	-0.17	-0.17	-0.17	-0.53**	-0.52**	-0.52**	-9.93***	-9.88**	-9.88**
	(0.20)	(0.20)	(0.20)	(0.21)	(0.22)	(0.22)	(3.51)	(3.57)	(3.54)
Firm FE		✓			✓			✓	
Headquarter FE			✓			✓			✓
Sector FE			✓			✓			✓
Observations	815	815	815	793	793	793	793	793	793
R^2	0.00	0.02	0.01	0.01	0.06	0.02	0.10	0.63	0.21
# Clusters	22	22	22	22	22	22	22	22	22

Table A3: Sample limited to firms operating in the solar energy sector. Dependent variable: observed returns (OR), abnormal returns (AR), and cumulative abnormal returns (CAR). Standard errors clustered by firm. $*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$.

	Observed Returns			Abnormal Returns			Cumulative Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) FE	(9) FE
Post-Election Period	0.38	0.38	0.38	0.11	0.11	0.11	-1.92	-1.92	-1.92
	(0.24)	(0.24)	(0.24)	(0.29)	(0.30)	(0.29)	(3.04)	(3.08)	(3.05)
Firm FE		✓			✓			✓	
Headquarter FE			✓			✓			✓
Sector FE			✓			✓			✓
Observations	568	568	568	444	444	444	444	444	444
R^2	0.01	0.02	0.01	0.00	0.02	0.02	0.01	0.40	0.17
# Clusters	15	15	15	12	12	12	12	12	12

Table A4: Sample limited to firms operating in the biofuel energy sector. observed returns (OR), abnormal returns (AR), and cumulative abnormal returns (CAR). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

	Observed Returns			Abnormal Returns			Cumulative Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) FE	(9) FE
Post-Election Period	2.36	2.36	2.36	2.21	2.21	2.21	9.19	9.19	9.19
	(2.08)	(2.10)	(2.09)	(2.04)	(2.06)	(2.05)	(8.39)	(8.47)	(8.43)
Firm FE		✓			✓			✓	
Headquarter FE			✓			✓			✓
Sector FE			✓			✓			✓
Observations	115	115	115	111	111	111	111	111	111
R^2	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.58	0.16
# Clusters	3	3	3	3	3	3	3	3	3

Table A5: Sample limited to firms operating in the hydro energy sector. observed returns (OR), abnormal returns (AR), and cumulative abnormal returns (CAR). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

	Observed Returns			Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE
November 9, 2016	-0.61	-0.63	-0.62	-2.44	-2.52	-2.52
	(2.14)	(2.17)	(2.16)	(2.55)	(2.60)	(2.60)
Post-Election Period	0.37*	0.37	0.37	-0.12	-0.14	-0.14
	(0.19)	(0.19)	(0.19)	(0.18)	(0.18)	(0.18)
Return (t-1)	-0.93***	-0.95***	-0.95***			
	(0.08)	(0.08)	(0.07)			
Abnormal Return (t-1)				-0.99***	-1.03***	-1.03***
				(0.15)	(0.15)	(0.15)
Firm FE		✓			✓	
Headquarter FE			✓			✓
Sector FE			✓			✓
Observations	268	268	268	214	214	214
R^2	0.46	0.48	0.47	0.49	0.52	0.52
# Clusters	7	7	7	6	6	6

Table A6: Sample limited to firms operating in the wind energy sector. Dependent variable: first difference of observed returns (OR; models 1-3) and first difference of abnormal returns (AR; models 4-6). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

	Observed Returns			Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE
November 9, 2016	-4.02***	-3.97***	-3.98***	-4.17***	-4.10***	-4.13***
	(1.01)	(1.03)	(1.03)	(1.04)	(1.05)	(1.05)
Post-Election Period	0.07	0.07	0.08	-0.33	-0.35	-0.33
	(0.20)	(0.20)	(0.20)	(0.20)	(0.22)	(0.21)
Return (t-1)	-0.98***	-1.00***	-0.99***			
	(0.05)	(0.05)	(0.05)			
Abnormal Return (t-1)				-0.97***	-1.03***	-0.98***
				(0.04)	(0.04)	(0.04)
Firm FE		✓			✓	
Headquarter FE			✓			✓
Sector FE			✓			✓
Observations	815	815	815	770	770	770
R^2	0.53	0.54	0.53	0.51	0.54	0.52
# Clusters	22	22	22	22	22	22

Table A7: Sample limited to firms operating in the solar energy sector. Dependent variable: first difference of observed returns (OR; models 1-3) and first difference of abnormal returns (AR; models 4-6). Standard errors clustered by firm. $*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$.

	Observed Returns			Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE
November 9, 2016	-0.77	-0.77	-0.77	-1.69	-1.70	-1.69
	(0.94)	(0.95)	(0.95)	(1.14)	(1.15)	(1.14)
Post-Election Period	0.45*	0.46*	0.46*	0.21	0.21	0.21
	(0.24)	(0.25)	(0.25)	(0.28)	(0.29)	(0.29)
Return (t-1)	-0.98***	-1.00***	-0.99***			
	(0.04)	(0.04)	(0.04)			
Abnormal Return (t-1)				-0.96***	-0.98***	-0.97***
				(0.04)	(0.04)	(0.04)
Firm FE		✓			✓	
Headquarter FE			✓			✓
Sector FE			✓			✓
Observations	566	566	566	432	432	432
R^2	0.50	0.50	0.50	0.48	0.50	0.49
# Clusters	15	15	15	12	12	12

Table A8: Sample limited to firms operating in the biofuel energy sector. Dependent variable: first difference of observed returns (OR; models 1-3) and first difference of abnormal returns (AR; models 4-6). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

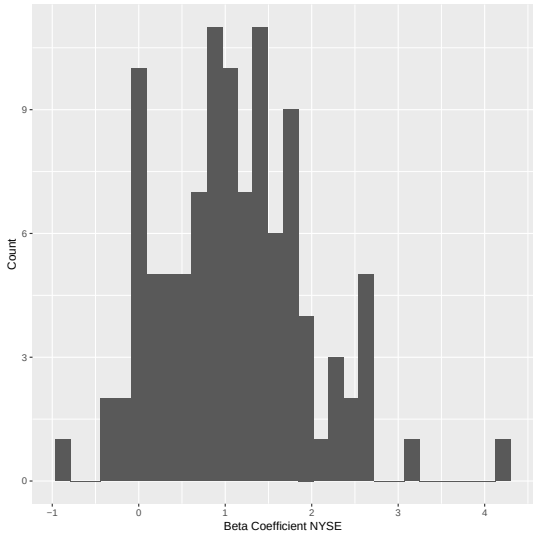
	Observed Returns			Abnormal Returns		
	(1) OLS	(2) FE	(3) FE	(4) OLS	(5) FE	(6) FE
November 9, 2016	2.06	2.06	2.06	0.76	0.76	0.76
	(0.92)	(0.93)	(0.92)	(1.03)	(1.04)	(1.04)
Post-Election Period	2.66	2.66	2.66	2.55	2.55	2.55
	(2.49)	(2.51)	(2.50)	(2.38)	(2.40)	(2.39)
Return (t-1)	-1.11***	-1.11***	-1.11***			
	(0.02)	(0.02)	(0.02)			
Abnormal Return (t-1)				-1.12***	-1.12***	-1.12***
				(0.02)	(0.02)	(0.02)
Firm FE		✓			✓	
Headquarter FE			✓			✓
Sector FE			✓			✓
Observations	115	115	115	107	107	107
R^2	0.56	0.56	0.56	0.56	0.56	0.56
# Clusters	3	3	3	3	3	3

Table A9: Sample limited to firms operating in the hydro energy sector. Dependent variable: first difference of observed returns (OR; models 1-3) and first difference of abnormal returns (AR; models 4-6). Standard errors clustered by firm. $* : p < 0.1$, $** : p < 0.05$, $*** : p < 0.01$.

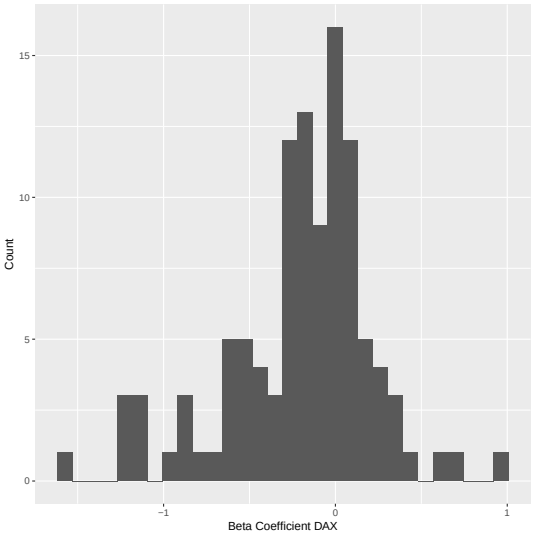
Name	Headquarters
ABO Group	Belgium
Archer-Daniels Midland	USA
Advanced Energy Industries, Inc	USA
Adecoagro SA	Luxembourg
American Superconductor Corporation	USA
Andersons Inc	USA
Ballard Power Systems Inc. (USA)	USA
Broadwind Energy Inc.	USA
Canadian Solar Inc.	Canada
Cosan Ltd	Brazil
Daqo New Energy Corp	China
EnerSys	USA
Enertronica SpA	Italy
Etrion SA	Switzerland
Enviva Partners LP	USA
FutureFuel Corp.	USA
FirstSolar Inc.	USA
General Electric	USA
TerraForm Global Inc	USA
Green Plains Inc	USA
Grenergy Renovables SL	Spain
Hanwha Q Cells Co Ltd	South Korea
JA Solar Holdings Co., Ltd.	China
JinkoSolar Holding Company	China
Gladstone Land Corp	USA
ON Semiconductor Corp	USA
Ocean Power Technologies Inc	USA
Ormat Technologies, Inc	USA
Pacific Ethanol Inc	USA
Renewable Energy Group Inc	USA
Red Trail Energy, LLC	USA
American Resources Corp	USA
Sunrun Inc	USA
Solar Alliance Energy Inc	Canada
Solaredge Technologies Inc	Israel
Siemens AG	Germany
Sky Solar Holdings Ltd	China
ReneSola Ltd.	China
SunPower Corporation	USA
Sunworks Inc	USA
Teledyne Technologies Incorporated	USA
TPI Composites Inc	USA
Tesla Inc.	USA
Valero Energy Corporation	USA
Vivint Solar Inc	USA
Vestas Wind Systems	Denmark
Wacker Chemie AG	Germany
Yingli Green Energy Holding Co Ltd	China

Table A10: Roster of all firms used in the main analysis. The second column indicates the location of the firm's headquarters.

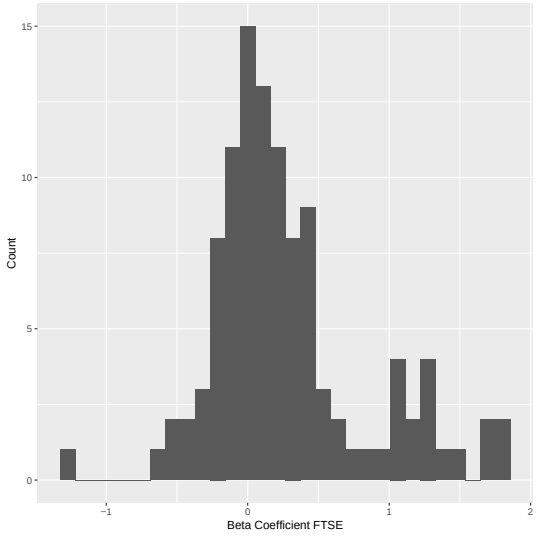
A3 Additional Figures



(a) NYSE



(b) DAX



(c) FTSE

Figure A1: Distribution of the estimated parameters of the effect of the NYSE, DAX, and FTSE on the shares of all firms included in the analysis. The effect of each market indicator is estimated separately for each firm. These are the estimates. A point estimate of one means that for an increase of a given index by one unit, the stock market return increases by one unit.

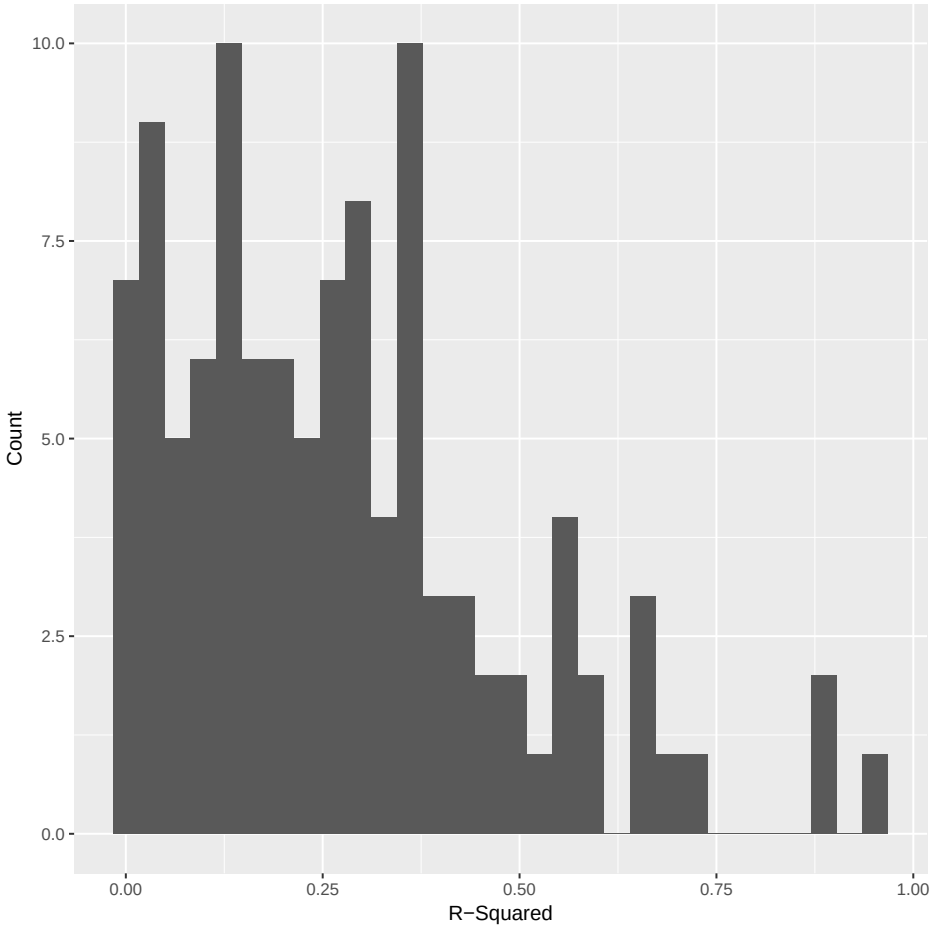


Figure A2: Distribution of the R^2 of the estimates generated during the estimation window.