The Power of the Street

Evidence from Egypt's Arab Spring

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Introduction

- Throughout recent history, corruption and favoritism have motivated people to pour into the streets to protest against the economic and political arrangements benefiting connected individuals and firms.
- Such protests have often led to the downfall of unpopular regimes (e.g., Bin Ali in Tunisia, Mubarak in Egypt, Gaddafi in Libya, Yanukovych in Ukraine).

- But are such street protests effective in limiting corruption and economic favoritism?

- This paper: use the **Arab Spring in Egypt** as a testing ground for this question.

Egypt's Arab Spring

- Mubarak regime perfect specimen of corruption and favoritism.
- Following Jan 25, 2011, unprecedented street protests broke down the Mubarak regime, ushered in an era of competition during which **political power shifts repeatedly between** three rival groups of elites: Mubarak's National Democratic Party (**NDP**), the **military**, and the **Islamist Muslim Brotherhood**.
- Street protests play key role throughout this period.
- Different, well-identified groups repeatedly rotate in and out of power, giving us an opportunity to estimate the effect of changing political fortunes on rents.

Methodology

- Use changes in stock market valuation of firms connected to the three rival groups relative to non-connected firms in response to events changing the distribution of political power in Egypt.
  - focus on high-frequency changes in protest activity (during periods without actual changes in government or *de jure* political institutions).
- To the extent that we control for the sensitivity of different types of firms to macroeconomic and political risk, these patterns will be informative about the market's perceptions about the changes in the ability of different types of firms to capture rents in the future.
- These results will be validated further with data on profitability and changes in the board composition of firms.

Summary of Findings

1. Key events in the struggle for power between NDP, military, and Islamists reflected in stock returns of firms connected to these groups.
   - For example, fall of Mubarak reduced the market value of firms connected to the NDP by about 13%.
   - These findings corroborated by changes in profitability and changes in board composition.
2. A higher turnout of protesters in Tahrir Square is associated with lower daily stock returns of firms connected to the group currently in power (relative to non-connected firms), but has no impact on the relative valuations of firms connected to other powerful groups.
   - No effects before the events and from the leads of protester activity.
3. Activity on social media (Twitter) predicts protest but appears to have no direct effect on market valuations, except through mobilizing street protests.

- Cohesiveness of opposition as measured from social media determines the effectiveness of protests at limiting rents.

Interpretation of Results

- Unlikely to be a reflection of a given amount of rents being reallocated between different types of connected firms.
  - As the fortunes of incumbent firms wane, typically no positive effects on rival connected firms.
- Are protests are a marker for broader discontent in society signaling changes in government (or *de jure* institutions) or their expectations?
  - Partly. But not solely. Similar results from events that do not involve such changes, and from protester activity when this involved neither any change of government nor any prospect of such changes. Moreover, it is protests, not other measures of discontent, that matter for our results.
- Likely that the results partly reflect the ability of popular mobilization (*de facto* power of the street) to constrain rent seeking in a society with weak institutions.
  - Consistent with recent results in the literature on the implications of other protest activity.

Contribution

- **Event studies, value of political connections**
  Suharto health scare: Fisman (2001), Leuz and Oberholzer-Gee (2006); Malaysian capital controls: Johnson and Mitton (2003); Nazi accession to power: Ferguson and Voth (2008); Khwaja and Mian (2005);

→ Investigate direct effect of street protests on firms connected to current power holders and rival groups.

- **Street protests** as a driving force of democratization. Acemoglu and Robinson (2000, 2001, 2006), Aidt and Jensen (2013), Aidt and Franck (2014).
  - Random changes in protests affect future protests, socio-economic outcomes: Collins & Margo (2007) Shoag & al. (2013), Cheney (2014).

→ Investigate the role of street protests on constraining or redistributing economic rents.

- **Costs from protests and instability**: Alesina and Perotti (1996), Alesina, Ozler, Roubini and Swagel (1995), Svensson (1998).

→ Protests may serve as a partial check on rent-seeking activity.

- Theory of **social media & collective** action Edmond (2013)

→ Show impact of social media on mobilization, but no direct effect on rents

Outline

Outline

Historical Context

- 1952: "Free Officers" surrounding Gamal Abdel Nasser depose king.
- Suez crisis, pan-Arab movement, alignment with Soviet Union.
- Defeat in 1967 war against Israel.
- 1970: Anwar Sadat (another free officer) takes power.
- Yom Kippur war, Dayton accords, alignment with the West.
- 1981: Sadat assassinated by Muslim Brother, Hosni Mubarak (former air force general) takes power.

- Since 1952: Continuous power struggle between the military, secular elites and cronies organized in NDP, and the Muslim Brotherhood.
- Military: fiscally independent ("two tills" system).
- NDP: no clear ideology, collects cronies, bureaucrats, and secular elite. Expanded influence in final years of Mubarak rule.
- Muslim Brothers: Islamist movement, wide-spread support among lower classes and urban middle class. Outlawed, but usually operating openly.

Connected Firms

- Hand-collected board structure from *quarterly disclosure reports* posted on EGX website since Jan 2011.
- Classify firms as **NDP connected** if the name of at least one principal shareholder or member of the board in Jan 2011 appears on the *Feloul List*, a list of the 6,000 leading NDP members compiled by activists. Details
- Classify firms as **Military connected** if the firm is partially or fully owned by one of 11 holding companies controlled by the Egyptian military
- Use firms classified as operating by **Islamic** principles according to *Zawya* and *Morgan Stanley*.
- Stock return and accounting data Jan2005- Aug2013 from *Zawya*, a business intelligence firm. All 177 firms traded on the EGX exchanges in Alexandria & Cairo.

Firm-level Controls

- Estimate world market betas, β_i^{World}, and egyptian market betas β_i^{Egypt} for each stock using MSCI indices in pre-period (2010 data).

$$R_{it} = \alpha_i^x + \beta_i^x R_t^x + \nu_{it},$$

- Size: Log of total assets of each firm.
- Leverage: Total debt over total assets.
- Sensitivity to unrest: Use GDELT to obtain a list of strikes boycotts, riots, and instances of religious clashes in egypt 2005-2010.
  - Regress each firm's stock return on a dummy variable that is one on the two trading days following the events on this list, generate β_i^{Unrest}.

Firm Characteristics by Network

	(1)	(2)	(3)	(4)	(5)	(6)
		Share	Mean			
	N	Market Cap	Size	Leverage	β^{World}	β^{Egypt}
All	177	1.00	800.87	0.39	0.53	0.79
Unconnected	114	0.38	465.46	0.37	0.51	0.79
NDP	22	0.34	2436.62	0.65	0.58	0.61
Military	33	0.07	240.11	0.25	0.56	0.88
Islamic	13	0.25	2481.98	0.49	0.77	0.68

Notes: Size is in millions of EGP. Leverage is total debt over total shareholder assets

- Subject to these controls and (16) sector fixed effects, no systematic association between β_i^{Unrest} and and the four groups of firms.

Firm Connections by Sector

	NDP	Military	Islamic	Unconnected	All
Agriculture	0	0	0	8	8
Construction	3	0	0	7	10
Consumer Goods	0	1	0	3	4
Education	0	0	0	2	2
Financial Services	4	0	5	23	31
Food and Beverages	2	8	1	10	20
Health Care	1	4	0	6	11
Industrial Manufacturing	3	10	1	23	37
Leisure and Tourism	1	1	0	7	9
Media	0	1	0	0	1
Mining and Metals	2	2	0	3	7
Oil and Gas	0	2	0	2	4
Real Estate	4	0	4	18	23
Services	0	0	0	1	1
Telecommunications	1	0	2	0	3
Transport	1	4	0	1	6
Total	22	33	13	114	177

Notes: There is no overlap between NDP, Military and Unconnected firms. Among the 13 islamic firms, 5 are connected to NDP and the other 8 are unconnected.

Protester Data

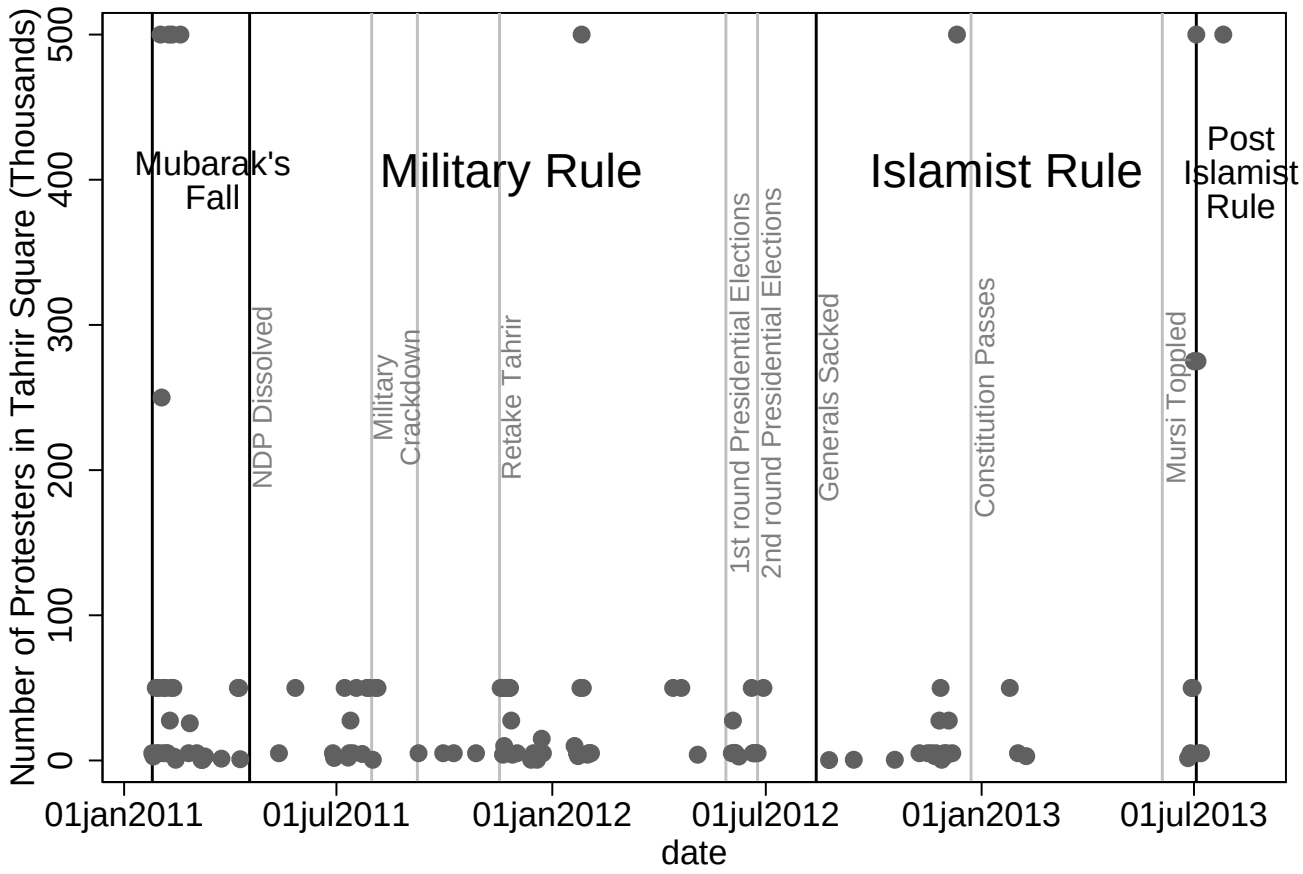
English-language sources

- Lexis Nexis Academic: "major world publications", Al-Ahram Gate, Al-Ahram Weekly, Al-Akhbar English, and Daily News Egypt
- Websites of Al-Masry Al-Youm, Al-Ahram English, and Copts United

Procedure

- Select articles "(protestors OR protesters) AND tahrir AND egypt)" Jan 2011 - July 2013.
- Select text snippet that contains the largest number mentioned in the article.
- Filter out snippets with bad words, such as "arrested", "killed", "soldiers".
- Determine the date of the protest.
- Use only dates for which at least three different sources report a protest.
- Assign numerical values to words like "thousands", "millions".
- Use median number of protesters reported for a given day.

Protesters in Tahrir Square



- Repeat procedure for Rabaa Square (rallying point of Islamists).
- Biggest protests on Fridays.

→ Assign number of protesters to first trading day after protests.

Outline

Definitions & Strategy

- Define cumulative returns $CR[n,m]_i = \sum_{t=n}^{m} R_{it}$ and run

$$CR[n,m]_i = \delta + N_i'\gamma + X_i'\nu + \epsilon_i,$$

  where N_i is the vector of dummies reflecting the affiliation to rent-seeking networks and X_i is a vector of controls that contains β_i^{World}, β_i^{Egypt}, β_i^{Unrest} a full set of (16) sector fixed effects and controls for size and leverage.
- In some specifications also hard-wire an "Egyptian CAPM" by using $CAR[n,m]_i = \sum_{t=n}^{m} R_{it} - \left(\alpha_i - \beta_i^{Egypt} R_{Mt}\right)$.
- Identifying assumption: Absent the political event, there are no systematic differences between the returns of the different types of connected firms and non-connected firms.

- Adjust standard errors for cross-firm correlation of residual returns estimated in 2010 data.
- Check results using a matching estimator.

Interpretation & Caveats

- Interpret γ as the effect of the event on market participant's expectation of NPV of economic rents accruing to the 3 types of connected firms relative to non-connected firms.
- May also reflect effects of discrimination against firms (although extent of monopoly power and rents in Egyptian economy is very high).
- Cannot rule out that relative influence of minority shareholders changes in response to event.
- Measure perceptions rather than changes in realized rents.

Egypt's Arab Spring in Event Studies

Pre-Period

1981 Mubarak takes power after the assassination of Anwar Sadat.

12/10 Unrest begins in Tunisia.

Phase 1: Mubarak's Fall

01/25/11 50,000 turn out to first large demonstration in Tahrir.

$\rightarrow$ Use as event time 0.

01/27/11 Egyptian stock exchange (EGX) ceases trading amid unrest.

02/11/11 Hosni Mubarak resigns, military (SCAF) takes power.

03/23/11 EGX resumes trading.

04/17/11 NDP dissolved.

Feb 11, 2011: Mubarak's Fall

	(1)	(2)	(3)	(4)	(5)	(6)
			CR[0,8]			*CAR[0,8]*
NDP	-0.086*	-0.131**	-0.142**	-0.131**	-0.142**	-0.145**
	(0.049)	(0.049)	(0.059)	(0.046)	(0.054)	(0.056)
Military	0.048*	0.032	0.075**	0.032	0.035	0.051
	(0.028)	(0.030)	(0.021)	(0.026)	(0.033)	(0.035)
Islamic	-0.031	-0.064	-0.058	-0.064	-0.090	-0.125*
	(0.054)	(0.051)	(0.063)	(0.041)	(0.058)	(0.066)
β^{World}		0.037**	0.023	0.037	0.050**	0.132**
		(0.016)	(0.023)	(0.023)	(0.013)	(0.046)
β^{Egypt}		-0.028	-0.021	-0.028	-0.093**	
		(0.018)	(0.025)	(0.023)	(0.030)	
β^{Unrest}		2.134*	0.897	2.134	1.812	11.219**
		(1.182)	(1.337)	(2.253)	(2.039)	(4.632)
Size		0.024**	0.022**	0.024**	0.016*	0.014
		(0.007)	(0.007)	(0.007)	(0.009)	(0.009)
Leverage		-0.024	-0.003	-0.024*	-0.028	0.017
		(0.017)	(0.019)	(0.014)	(0.022)	(0.027)
R^2	0.252	0.320	0.138	0.320	0.387	0.451
N	145	143	143	143	136	143
Sector F.E.	yes	yes	no	yes	yes	yes
Weights	no	no	no	no	yes	no
Adjusted S.E.	no	no	no	yes	no	no

Notes: Robust s.e. in parentheses. CR=cumulated return; CAR=cumulative abnormal return relative to MSCI egypt total market index.

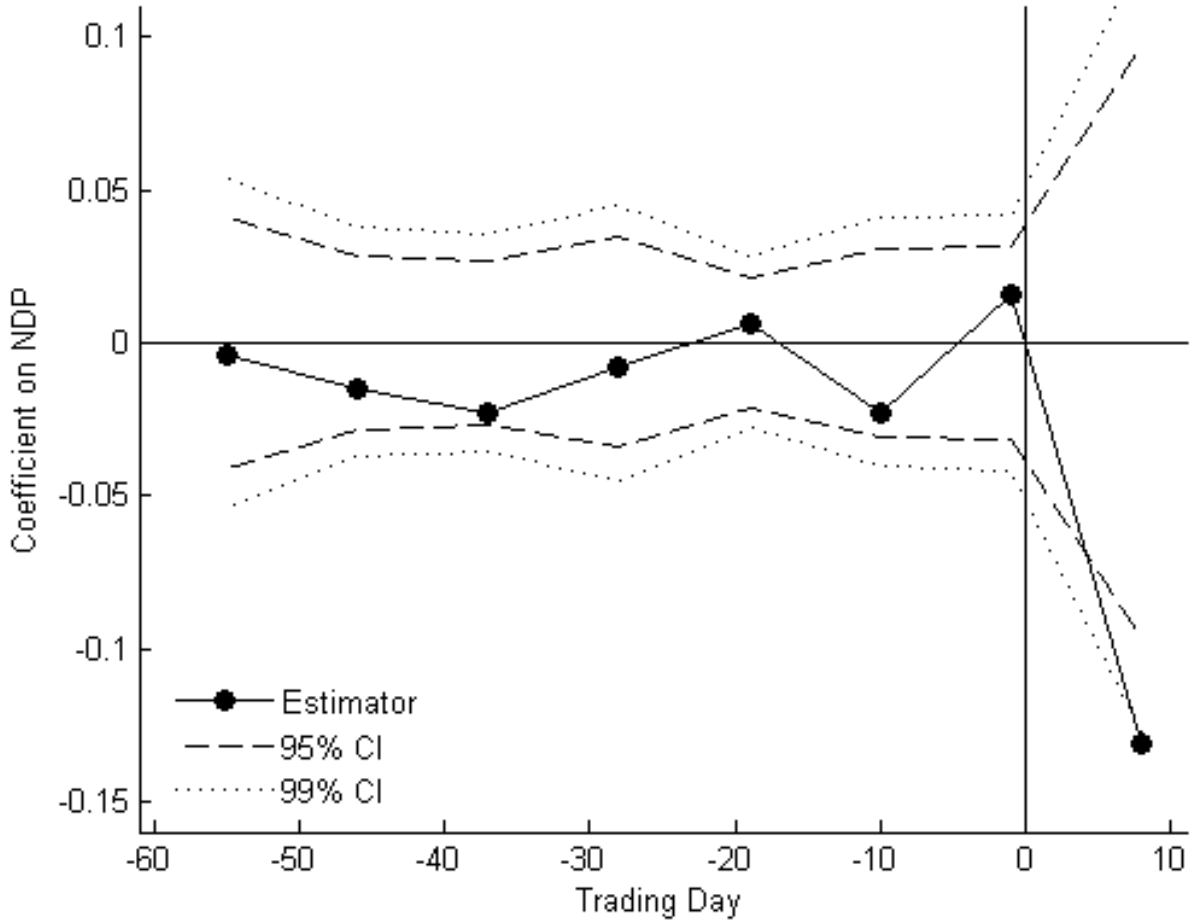
Mubarak's Fall - Size of Effect

- NDP connected firms lose 30.6% of their value in 8 trading days.
- 13.1 percentage points of this loss or $2.8bn attributable to the lost value of their political connections.
- This politically induced loss is equivalent to a loss of 5% of the total market cap of the Egyptian market at event time 0.
- Compare this to estimates of politically induced destruction of market cap in previous studies
  - 0.71% Nazi Germany 1933 (60 days)
  - 6.3% Malysia 1997-1993 (13 months)
  - 0.78% US 2001 (7 days)

▸ April 16, 2011: Dissolution of the NDP

Robustness: Pre-Trends

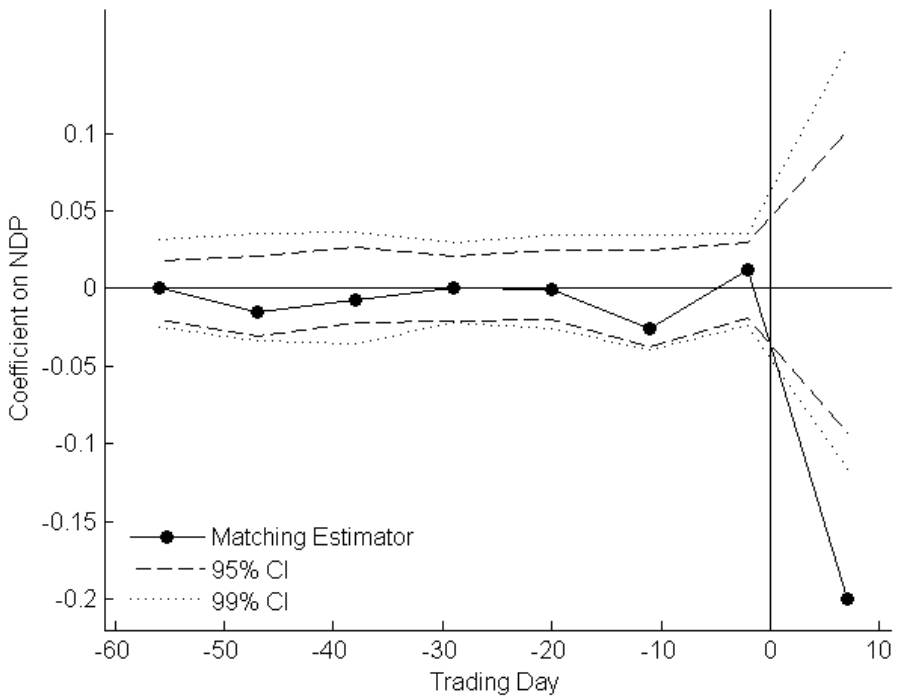
7 consecutive event windows prior to Jan 25, 2011.



▸ Alternative Event Windows ▸ More Placebo Treatments

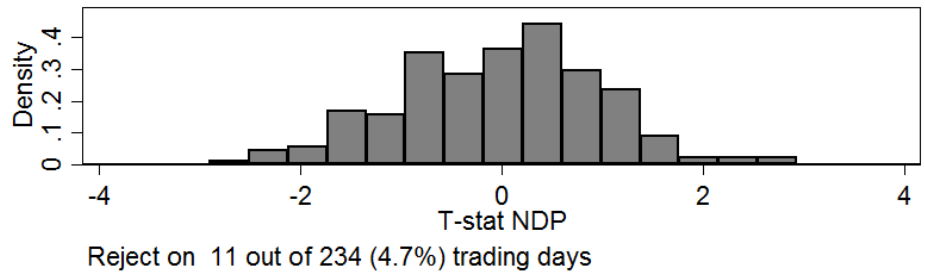
Robustness: Matching Estimator

- Compare firms that are similar in behavior of their pre-event abnormal returns, rather than firms that are similar in terms of covariates. (Abadie, Diamond & Hainmueller, 2010; Abadie & Gardeazabal, 2003)
- Construct a synthetic match for each NDP-connected firms as a convex combination of the returns of non-connected firms. ▸ Details

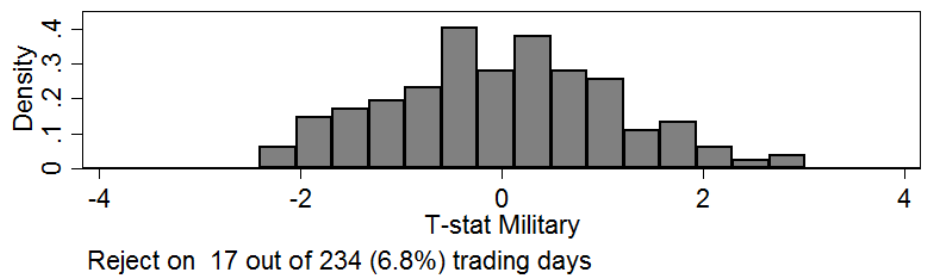


Robustness: Placebo Regressions

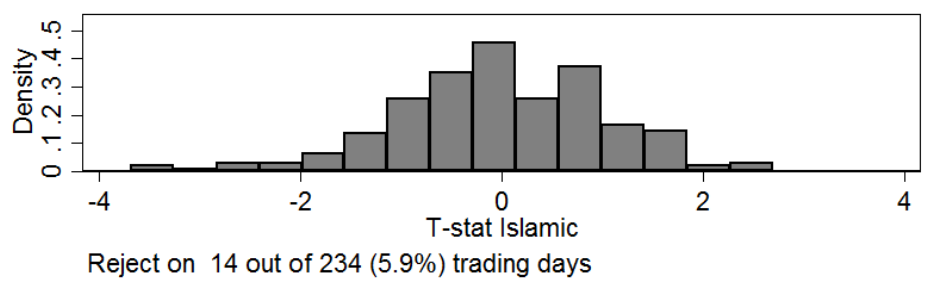
- T-stats on *NDP* and *Military* on randomly selected dates Jan-Nov 2010.
- False positives on 4.7% and 6.8% of trading days, respectively.



Reject on 11 out of 234 (4.7%) trading days



Reject on 17 out of 234 (6.8%) trading days



Reject on 14 out of 234 (5.9%) trading days

Back

Robustness: Placebo Events during 2010 Calendar Year

	(1)	(2)	(3)
	Nag Hammadi Massacre	Labor Dispute, Strikes	State of Emergency Extended
Panel A	*CR[-270,-269]*	*CR[-192,-190]*	*CR[-185,-184]*
NDP	-0.005	0.021	-0.013
	(0.010)	(0.018)	(0.014)
Military	0.016	0.038	-0.006
	(0.012)	(0.026)	(0.019)
Islamic	-0.004	-0.016	-0.007
	(0.011)	(0.016)	(0.013)
R^2	0.203	0.063	0.060
N	135	136	136

Robustness: Placebo Events during 2010 Calendar Year

	(1)	(2)	(3)
	Editor of Al-Dostour Sacked	Regulation of Mass SMS	Satellite Channels Shut down
Panel B	*CR[-80,-79]*	*CR[-75,-74]*	*CR[-73,-72]*
NDP	-0.002	-0.001	-0.003
	(0.006)	(0.006)	(0.009)
Military	-0.004	0.004	0.006
	(0.005)	(0.008)	(0.008)
Islamic	0.008	0.008	0.010
	(0.012)	(0.005)	(0.010)
R^2	-0.021	0.076	0.002
N	129	146	144

Phase 2: Military Rule

July 31 - Sept 8 2011: Military Crackdown

- Military begins month-long campaign of crack-downs on protesters, arrests key activists, clears Tahrir square.

Nov 17 - 20, 2011: Protesters Re-take Tahrir

- Protesters re-take Tahrir square, demanding elections. 33 dead.
- Military-appointed cabinet offers resignation.

May 28, 2012: 1st Round of Presidential Elections

- Former General Ahmed Shafiq and Muslim Brother Mohammed Mursi win 1st round with both around 25% of the vote.

June 24, 2012: 2nd Round of Presidential Elections

- Official results released after a week-long delay. Mursi beats Shafik with 51.7% vs. 48.3% of the vote.

Events During Military Rule

	(1)	(2)	(3)	(4)
	Military	Retake	*Presidential Elections*	
	Crackdown	Tahrir	1st round	2nd round
	CR[91,117]	*CR[163,165]*	*CR[291,292]*	*CR[309,310]*
NDP	0.004	-0.010	-0.015	0.018**
	(0.029)	(0.012)	(0.010)	(0.008)
Military	0.080*	-0.024**	0.002	0.015*
	(0.044)	(0.008)	(0.007)	(0.009)
Islamic	-0.009	0.001	0.010	0.022*
	(0.030)	(0.012)	(0.008)	(0.012)
R^2	0.025	0.250	0.068	0.241
N	138	141	126	137
Sector F.E.	yes	yes	yes	yes
Std. Controls	yes	yes	yes	yes

Phase 3: Islamist Rule

August 12, 2012: Generals Sacked

- Mursi fires the head of the SCAF (Mohammed Tantawi) and sidelines a large number of other high-ranking military officials.
- Assumes interim legislative control.

Dec 23, 2012: Constitution passes

- Islamist constitution passes with 63% of the vote, turnout of 32.9%.

Jun 4 - July 4, 2013: Mursi undermined and toppled

- Tamarood, a secular opposition group, announces that it collected 22 million signatures demanding Mursi step down.
- Millions are on the street July 1-3.
- Army removes and arrests Mursi on July 3.

Events During Islamist Rule

	(1)	(2)	(3)
	Generals sacked	Constitution passes	Mursi sacked
	CR[343,344]	*CR[433,433]*	*CR[541,562]*
NDP	-0.002	-0.011**	-0.019
	(0.006)	(0.005)	(0.021)
Military	-0.004	0.003	-0.009
	(0.007)	(0.005)	(0.029)
Islamic	0.010*	-0.005	-0.054**
	(0.006)	(0.005)	(0.016)
R^2	0.069	0.050	0.054
N	122	128	127
Sector F.E.	yes	yes	yes
Std. Controls	yes	yes	yes

- Firms connected to a given group increase in value when group gains power, decrease in value when group loses power.
- Most consistent results from events that involve changes in de facto but not de jure power (military crackdown, re-take Tahrir, generals sacked).

Phase 4: Post Islamist Rule

07/05/13 Demonstrations for and against the military government continue in Tahrir and Rabaa squares, respectively.

07/29/13 Sample ends, no large street protests since.

▸ Cumulated Effects

External Validity

	(1)	(2)	(3)
Panel A	Number of Board Members		
	Pre-Revolution	Military Rule	Islamist Rule
	Jan 1, 2011	*Jun 30, 2012*	*Jun 30, 2013*
Prominent NDP members	19	16	14
Using military titles	21	28	22
Known Muslim Brothers	1	0	0
Panel B	Profitability of Connected and Non-connected Firms		
	Pre-Revolution	Military Rule	Islamist Rule
	7/2009-6/2010	*7/2011-6/2012*	*7/2012-6/2013*
NDP-connected firms	11%	2.8%	2.2%
Military-connected firms	8%	11.4%	- 0.01%
Islamic firms	7.9%	2.4%	4.9%
Non-connected firms	7%	4%	11.9%

Notes: The reporting years 2011 and 2012 coincide roughly with our definition of the "Military Rule" and "Islamist Rule" periods.

Outline

Strategy

- Exploit **daily variation** to show that protests have a systematic effect on rents of firms connected to incumbent regime, but not on rents of other connected firms:

$$R_{it} = N_i'\gamma + (P_t \times N_i')\,\gamma^p + X_i'\nu_t + \delta_t + \eta_s + \epsilon_{it},$$

N_i : vector of dummies reflecting the affiliation to 3 groups
X_i : vector of controls, β_i^{World}, β_i^{Egypt}, β_i^{Unrest} , size and leverage

- γ^p measures effect of protests on value of connected firms if

$$Cov\left(P_t \times N_i', \epsilon_{it} \mid X_i, \delta_t, \eta_s\right) = 0,$$

1. No omitted variables that fluctuate at daily frequency and are correlated with both R_{it} and P_t.
2. No reverse causality from differential daily stock returns to protests.

Effect of Street Protests on Market Valuations

	(1) Mubarak's Fall	(2) Military Rule	(3) Islamist Rule	(4) Post-Islamist
	Daily Log Returns × 100			
NDP x Tahrir Protesters	-1.614***	-0.135	0.672*	-0.308
	(0.602)	(0.411)	(0.382)	(0.742)
Military x Tahrir Protesters	-0.886	-0.889***	-0.527	-0.145
	(0.612)	(0.326)	(0.324)	(0.617)
Islamic x Tahrir Protesters	1.773	0.600	0.421	-1.332*
	(1.213)	(0.382)	(0.477)	(0.815)
NDP x Rabaa Protesters				-8.089
				(11.595)
Military x Rabaa Protesters				-6.406
				(9.539)
Islamic x Rabaa Protesters				27.850**
				(12.895)
R^2	0.610	0.331	0.421	0.423
N	5603	43997	27210	1895
Total # Protesters	1.22	5.29	4.17	1.02
Incumbent	NDP	Military	Islamic	Islamic

Notes: Number of Protesters capped at and divided by 500,000.

- Significantly negative effect of street protests on valuation of firms connected to incumbent regime.

Protests Reduce Value of Firms Connected to Incumbent

- Pool across all 4 phases and include only two dummies, one for firms connected to the incumbent group and one for firms connected to the other two (non-incumbent) groups.

$$R_{it} = I_{it}\ \gamma + (P_t \times I'_{it})\,\gamma^p + X'_i\nu_t + \delta_t + \eta_s + \epsilon_{it}.$$

	(1)	(2)	(3)	
	Daily Log Returns × *100*			
Incumbent x Tahrir Protesters	-0.879***	-0.751***	-0.834***	-0.855***
	(0.243)	(0.254)	(0.278)	(0.281)
Other Connected x Tahrir Prot.	-0.281	-0.160	-0.110	-0.122
	(0.205)	(0.216)	(0.227)	(0.228)
R^2	0.386	0.404	0.337	0.320
N	78705	78705	72527	66857
Include $(\delta_t \times X'_i\nu)$	no	yes	yes	yes
Drop all changes in g'ment	no	no	yes	yes
Drop all events in previous tables	no	no	no	yes

Notes: Connected firms: NDP or Military or Islamic, but not currently incumbent group. Columns 2 and 3 drop all events studied previously plus the 3 following trading days.

Results

- Tahrir protests significantly decrease valuation of firms connected to the incumbent. On average, no corresponding increase in valuation of (non-incumbent) connected firms.
- This is true even when there are no changes in formal political institutions or the fall of governments

$\Rightarrow$ Street protests do more than just re-distribute rents. Evidence consistent with the view that street protests constrain extent of expected rent seeking.

- Main challenge: news about government's performance may affect value of certain types of firms while also triggering protests.
- Daily variation: ability to solve collective action problem fluctuates daily frequency, while grievances against the government pent up for decades.

$\Rightarrow$ Interact controls and sector fixed effects with P_t ▸ Interactions $P_t \times X_i$

$\Rightarrow$ Check timing of the effect

Interpretation

1. Street protests appear to affect the stock market valuation of firms connected to the three rent-seeking coalitions relative to non-connected firms.
2. The *intent* of protesters has real effects: protests directed against the government lowers valuation of firms connected to the incumbent government but does not affect valuation of firms connected to other (rival) groups.
3. Pattern consistent with second channel: de facto power emanating from street protests appears to curtail the total amount of rents accruing to connected firms.

Robustness: Firm, Time, and Sector Effects

	(1)	(2)	(3)	(4)
	Daily Log Returns × 100			
Incumbent x Tahrir Protesters	-0.754***	-0.695***	-0.685***	-0.548**
	(0.255)	(0.252)	(0.234)	(0.271)
Other Connected x Tahrir Prot.	-0.165	-0.092	-0.166	-0.243
	(0.218)	(0.217)	(0.208)	(0.223)
R^2	0.404	0.404	0.387	0.404
N	78705	78705	78705	78705
Firm fixed effects	yes	no	no	no
Time effects $\times X_i$	yes	yes	no	no
Time effects $\times X_i^2$	no	yes	no	no
Sector effects × Tahrir Protesters	no	no	yes	no
Sector effects ×time effects	no	no	no	yes

Back

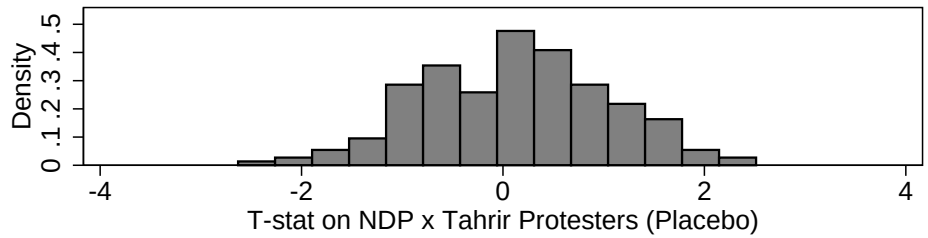
Robustness: Timing of Effects

	(1)	(2)	(3)	(4)
		Daily Log Returns × 100		
Incumbent x Tahrir Protesters		-0.757***	-0.736***	-0.751***
		(0.254)	(0.255)	(0.256)
Other Connected x Tahrir Prot.		-0.143	-0.153	-0.146
		(0.218)	(0.217)	(0.218)
Lead Incumbent x Tahrir Prot.	0.003	0.063		
	(0.250)	(0.254)		
Lead Other Connected x Tahrir Prot.	-0.099	-0.071		
	(0.224)	(0.228)		
Lag 1 Incumbent x Tahrir Prot.			-1.522***	-1.501***
			(0.347)	(0.348)
Lag 1 Oth. Connected x T. Prot.			0.465	0.464
			(0.336)	(0.336)
Lag 2 Incumbent x Tahrir Prot.				-0.580*
				(0.349)
Lag 2 Oth. Connected x T. Prot.				0.010
				(0.288)
Lag 3 Incumbent x Tahrir Prot.				-0.143
				(0.263)
Lag 3 Oth. Connected x T. Prot.				0.114
				(0.240)
R^2	0.404	0.404	0.404	0.404
N	78705	78705	78705	78705

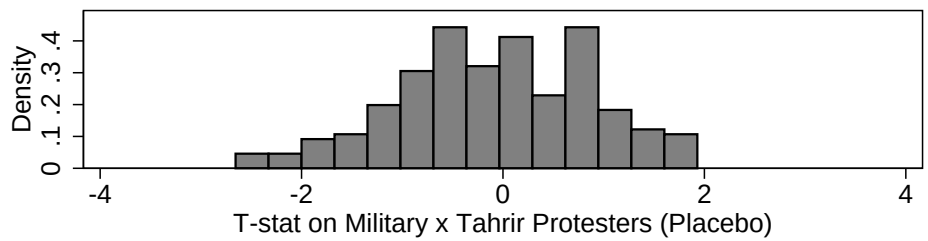
- Future protests have no predictive power for current stock valuations, weighing against concerns about omitted factors .

Robustness: Placebo Treatment

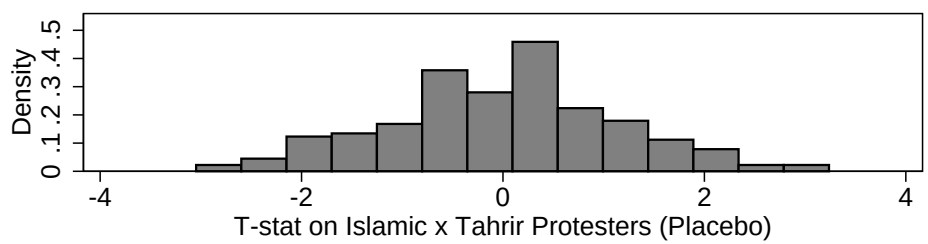
- Use the sample distribution of the number of protesters Jan 2011-July 2013 to randomly assign a number of protesters to trading days between Jan and Nov 2010.
- Estimate standard specification using the fictitious data, plot t-stats.



7 out of 200 false positives (3.5%).



6 out of 200 false positives (3%).



6 out of 200 false positives (3%).

Outline

Twitter Data

- Download entire history of tweets made by 370,000 Twitter users who tweeted at least once in June, July or August 2013. End up with 300m tweets.
- Count retweets and # of unique retweeters of prominent opposition figures

→ Daily measure of political support for opposition. ▸ Definition of Opposition ▸ Retweets ▸ Retweeters

- Count tweets containing hashtags referring to Tahrir square

→ Daily measure of mobilization for street protests. ▸ Hashtags

Activity on Twitter Predicts Protests

	(1)	(2)	(3)	(4)	(5)	(6)
	Number of Tahrir Protesters					
Lag Tahrir Hashtags	0.225***	0.137				0.155**
	(0.077)	(0.123)				(0.061)
Tahrir Hashtags		0.108	0.237*			
		(0.115)	(0.133)			
Lead Tahrir Hashtags			-0.022			
			(0.117)			
Lag Retweets of Opp.				0.240***	0.098	0.178*
				(0.091)	(0.102)	(0.092)
Retweets of Opp.					0.181	
					(0.136)	
Lead Retweets of Opp.						
Internet Shutdown	1.865*	1.871*	1.858*	1.974*	2.005*	1.984*
	(1.070)	(1.070)	(1.070)	(1.074)	(1.075)	(1.074)
R^2	0.080	0.083	0.077	0.087	0.098	0.106
N	917	917	916	917	917	917

Notes: All variables standardized by deducing the mean and dividing with the sample standard deviation.

- Positive association between Tahrir Hashtags and number of protesters.
- Lags dominate, consistent with the view that Twitter used for mobilization.

No Direct Effect on Differential Stock Returns

	(1)	(2)	(3)	(4)
	Daily Log Returns × 100			
Incumbent x Tahrir Protesters		-0.0723***		-0.0842***
		(0.0231)		(0.0234)
Other Connected x Tahrir Prot.		-0.0030		-0.0035
		(0.0258)		(0.0259)
Incumbent x Tahrir Hashtags	0.0148	0.0226		
	(0.0251)	(0.0258)		
Other Connected x T. Hashtags	-0.0182	-0.0179		
	(0.0244)	(0.0253)		
Incumbent x Retweets of Opposition			0.0500*	0.0605**
			(0.0289)	(0.0302)
Other Connected x Retweets of Opp.			-0.0127	-0.0145
			(0.0229)	(0.0249)
R^2	0.4039	0.4040	0.4039	0.4040
N	78705	78705	78705	78705

- In the context of weak institutions what matters for distribution of power (and resulting rents) is mobilization of people in the street and not discontent as voiced on social media.

Opposition Turnover Rate

Use Twitter to learn about who is turning out to protest.

Opposition Turnover

- Measure daily turnover in opposition retweeters
- Ability of opposition members to attract and retain retweeters.

$$\frac{\#\text{ of users who stop retweeting the opposition leaders}}{.5\#\text{ retweeters yesterday} + .5\#\text{ retweeters today}}$$

- High turnover=low retention of followers

The Effect of more Cohesive Opposition

	(1)
	Daily Log Returns × 100
Incumbent x Tahrir Protesters	-1.5481*
	(0.8050)
Other Connected x Tahrir Prot.	0.3957
	(0.5478)
Incumbent x Opposition Turnover	-0.0029
	(0.0073)
Other Connected x Opposition Turnover	-0.0010
	(0.0056)
Incumbent x Tahrir Prot. x Opp. Turnover	0.1376*
	(0.0748)
Other Connected x T. Prot. x Opp. Turnover	-0.0374
	(0.0507)
R^2	0.4040
N	78705

- One s.d. increase in opposition turnover (3.73) is associated with a 13% drop in the effect of street protests on stock returns.
- Consistent with the view that more cohesive opposition can exert more de facto power.

Conclusion

- Many theories emphasize the role of de facto power from solving the collective action problem and mobilizing in the street.
- Nevertheless only limited evidence showing that changes in de facto political power and political mobilization matter directly for economic outcomes.
- Have provided evidence that protests have played an important role in curtailing rents captured by politically connected firms in Egypt:
  - Street protests lower stock market valuation of firms connected to the incumbent government, but have no differential effect on the valuation of firms connected to other powerful groups.
- Consistent with popular media coverage, social media activity predicts protests and may have played a role in mobilizing protesters. However, rents do not seem to respond to discontent voiced on social media unless it results in protests.
- Also use social media to show that protests are more effective when opposition to the regime is more cohesive.

Appendix


حركة
أمسك فلول
الرئيسيه
من نحن
فلول الرئاسه
أمسك فساد
بعتي ايه؟
راسلنا
آخر الأخبار :
" أمسك فلول" بالدقهلية: الميدان هو من سيحكمنا " الوفد"
بحث
ادخل كلمات البحث
قوائم الفلول
فلول 6 أكتوبر (135)
فلول أسوان (90)
فلول أسيوط (152)
فلول الأسكندرية (404)
فلول الإسماعيلية (333)
فلول الأقصر (25)
فلول البحر الأحمر (53)
فلول البحيرة (124)
Find us on Facebook
قوائم الفلول بالمحافظات
6 أكتوبر
أسوان
أسيوط
الأسكندرية
الإسماعيلية
الأقصر
البحر الأحمر
البحيرة
الجيزة
الدقهلية
السويس
الشرقية
الغربية
الفيوم
القاهرة
القليوبية
المنوفية
المنيا
الوادي الجديد
بني سويف
بورسعيد
جنوب سيناء
حلوان
دمياط
سوهاج
شمال سيناء
قنا
كفر الشيخ
مطروح
فلول محافظه الأسكندريه
القسم
كل الاقسام
اضغط على الاسم لمزيد من المعلومات
إبراهيم أحمد جمعة شعبان أبو كليلة عضو مجلس محلي
إبراهيم شريف زيدان الفقي عضو مجلس شعب
إبراهيم فهمي كامل محمد عضو مجلس محلي
أحمد إبراهيم إبراهيم عوض عضو مجلس محلي
أحمد إبراهيم أحمد عبيد عضو مجلس محلي
إبراهيم احمد محمد الأعرج عضو مجلس محلي
إبراهيم عبد الملك عضو مجلس محلي
أبو العباس فرحات محمود تركي عضو مجلس محلي
أحمد إبراهيم أحمد اسماعيل عضو مجلس شعب
أحمد إبراهيم عبيد عضو مجلس محلي

Back

NDP – A Prominent Example

Ahmed Ezz

- On the board and partial owner of three NDP connected firms (steel, porcelain).
- Member of Parliament for the NDP 2000-2011, Chairman of the Planning and Budget Committee.
- Confidant of Gamal Mubarak, Hosni Mubarak's would-be heir.
- Accused of money-laundering and running a government sanctioned steel monopoly.
- Arrested in Feb 2011 convicted to 7 years in prison and a fine of $3bn.

Back

Synthetic Matching Estimator

- Compares firms that are similar in terms of the behavior of their pre-event abnormal returns rather than firms that are similar in terms of covariates.
- Create a synthetic match in 2010 data for each NDP firm; convex combination of unconnected firms. Details

	(1)	(2)	(3)	(4)	(5)
	[0,59]	[0,62]	[0,63]	[0,64]	[0,65]
			CR		
NDP	-0.062***	-0.102***	-0.107***	-0.122***	-0.117***
	(0.029)	(0.033)	(0.035)	(0.035)	(0.041)
			CAR		
NDP	-0.090**	-0.130***	-0.129***	-0.141***	-0.136***
	(0.040)	(0.042)	(0.037)	(0.038)	(0.039)
			CR with Correction		
NDP	-0.066**	-0.110***	-0.117***	-0.134***	-0.129***
	(0.033)	(0.040)	(0.039)	(0.039)	(0.040)
			CAR with Correction		
NDP	-0.076**	-0.119**	-0.125***	-0.141***	-0.136***
	(0.036)	(0.046)	(0.043)	(0.044)	(0.038)
#Uncon. firms	107	107	107	107	107
#NDP firms	13	13	13	13	13

Back

Details on Synthetic Matching

- Developed by Abadie and Gardeazabal (2003) and Abadie, Diamond, and Hainmueller (2009), Acemoglu & al. (2013)
- Construct synthetic match return

$$\hat{R}_{it} = \sum_{j \in Unconnected} w_j^i R_{jt}$$

- Treatment effect is weighted difference in returns, where weight accounts for goodness of match between R_{it} and $\hat{R}_{it}$.
- Corrected synthetic matching results eliminate treatment firms with matching residual sum of squares greater than 3 times the average of all treatment firms.
- Standard errors reported in parentheses are calculated using 100 random placebo treatment groups each with the same size as the real treatment group.
- Matching weights are calculated with an estimation window from 200 to 30 days prior to the event day 0. Back

Mubarak's Fall - Alternative Event Windows

	(1)	(2)	(3)	(4)	(5)
	CR[0,59]	CR[0,62]	CR[0,63]	CR[0,64]	CR[0,65]
NDP	-0.098**	-0.110**	-0.111**	-0.129**	-0.139**
	(0.038)	(0.054)	(0.053)	(0.057)	(0.061)
Military	0.005	0.047	0.039	0.055	0.063*
	(0.037)	(0.043)	(0.039)	(0.035)	(0.036)
Islamic	-0.082	-0.064	-0.069	-0.080	-0.078
	(0.071)	(0.073)	(0.062)	(0.061)	(0.063)
R^2	0.058	0.078	0.083	0.119	0.132
N	137	147	147	147	143
Sector F.E.	yes	yes	yes	yes	yes
Std. Controls	yes	yes	yes	yes	yes

Notes: Robust s.e. in parentheses. CR=cumulated return; CAR=cumulative abnormal return relative to MSCI egypt total market index. Cumulative returns between the last trading day before closing of the exchange and the second day of trading after re-opening.

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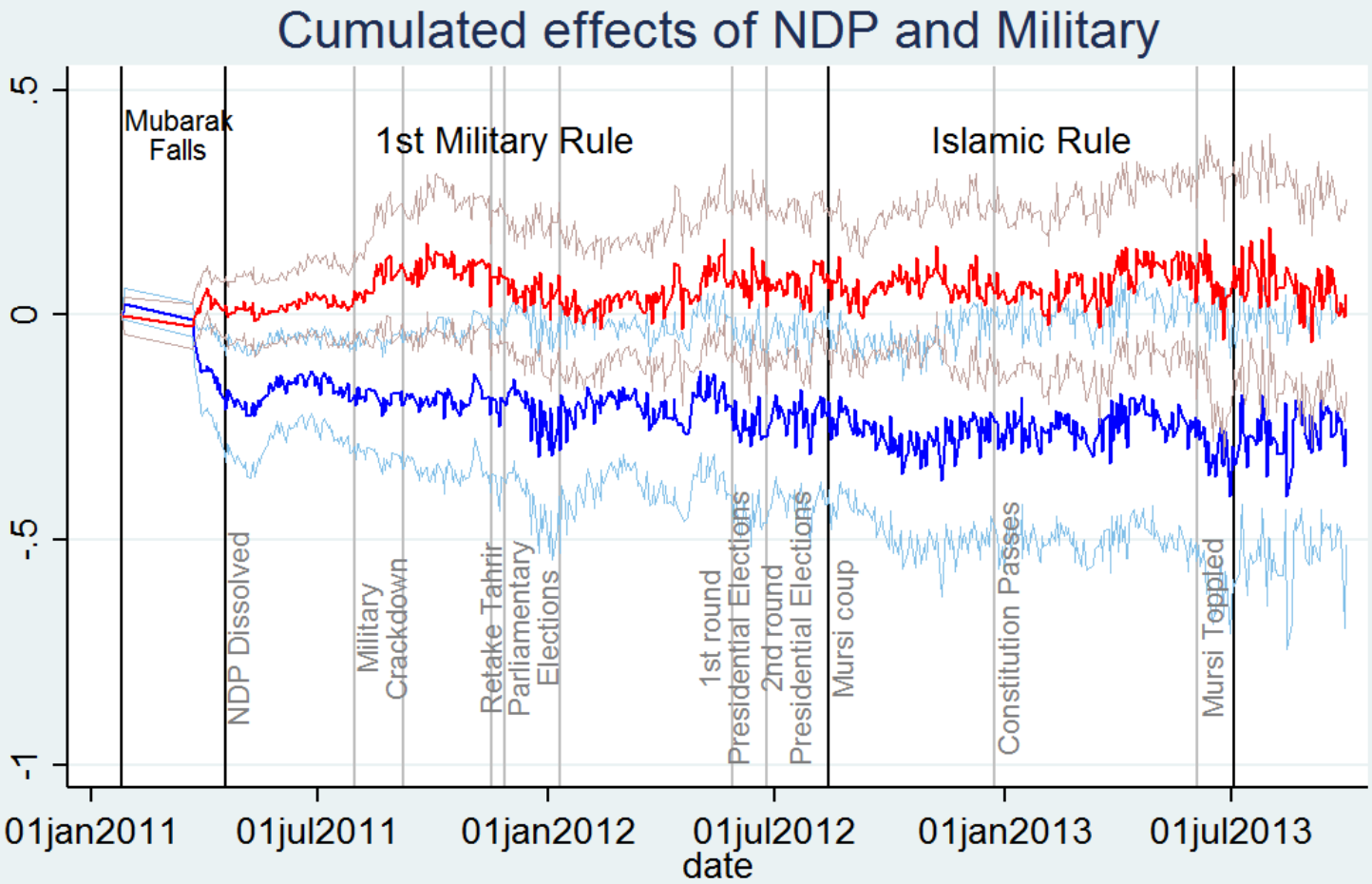
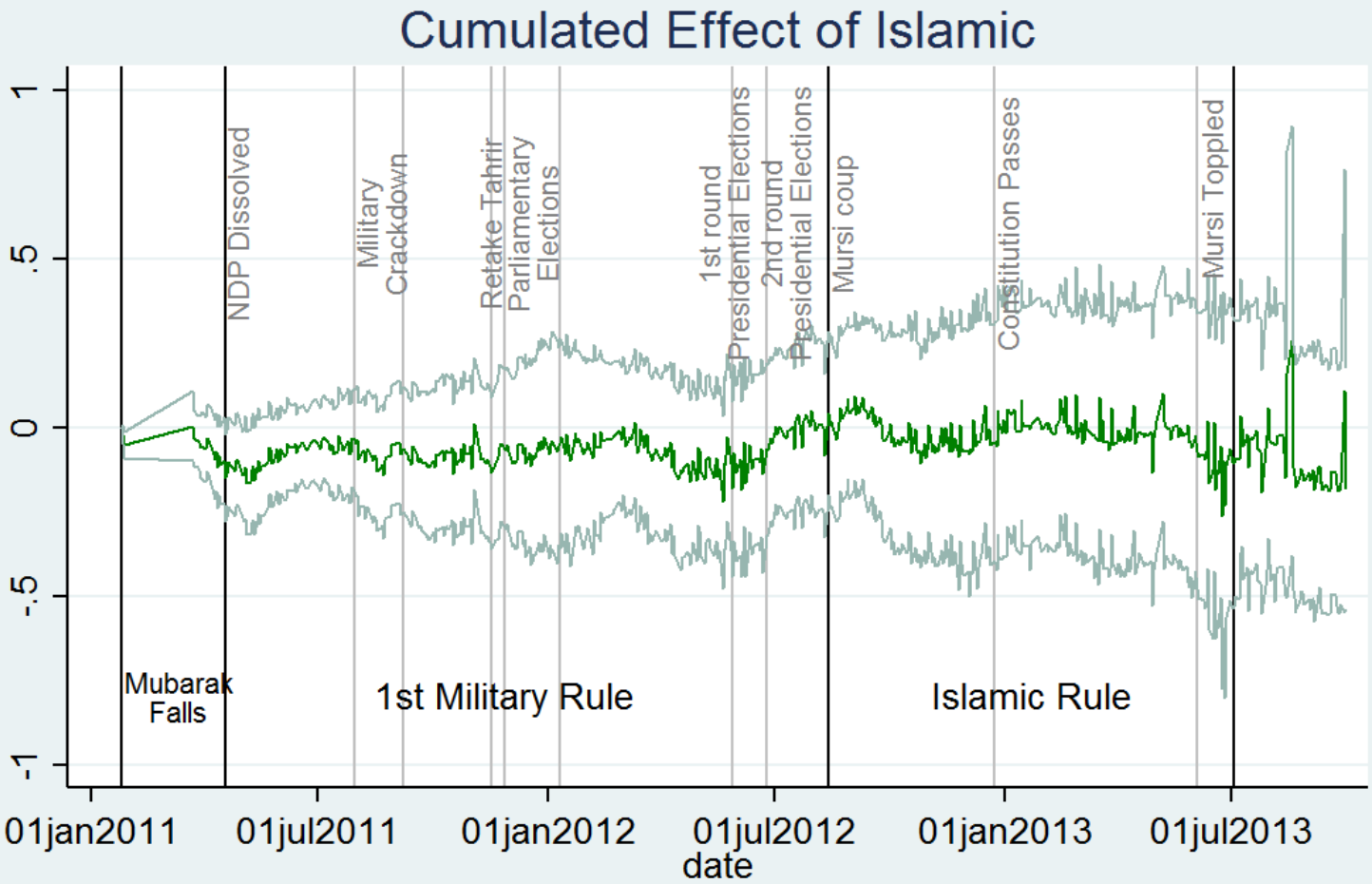
Cumulated Effects



Coefficients and s.e. regression relating CR[0,t] to corruption network affiliation and standard controls. Red: Military, blue: NDP

Back

Cumulated Effects



Coefficients and s.e. regression relating CR[0,t]
to corruption network affiliation and standard controls.

Back

Definition of Opposition Seed Users

- The opposition in a given phase is the group of prominent twitter users asking protesters to gather in Tahrir to demand the removal of the government that is in power in that phase.
- Main groups are: Secular, MB, Salafist, and Old Regime (that is both felool and Military)
- Search for public announcements made by each of the above-groups regarding their intention to join Tahrir protests, e.g. MB's political wing (FJP) announced their refusal to take part in the demonstrations that aimed to put an end to the Military rule (phase 2). So, while MB tweeters are included in opposition in phase 1, they are excluded in phase 2.
- Resulting classification:

  Mubarak's fall: Secular, MB, Salafist

  1st Military Rule: Secular

  Islamist Rule: Secular and Old Regime (felool and Military)

  2nd Military Rule: Secular, Salafist and Old Regime (felool and Military)

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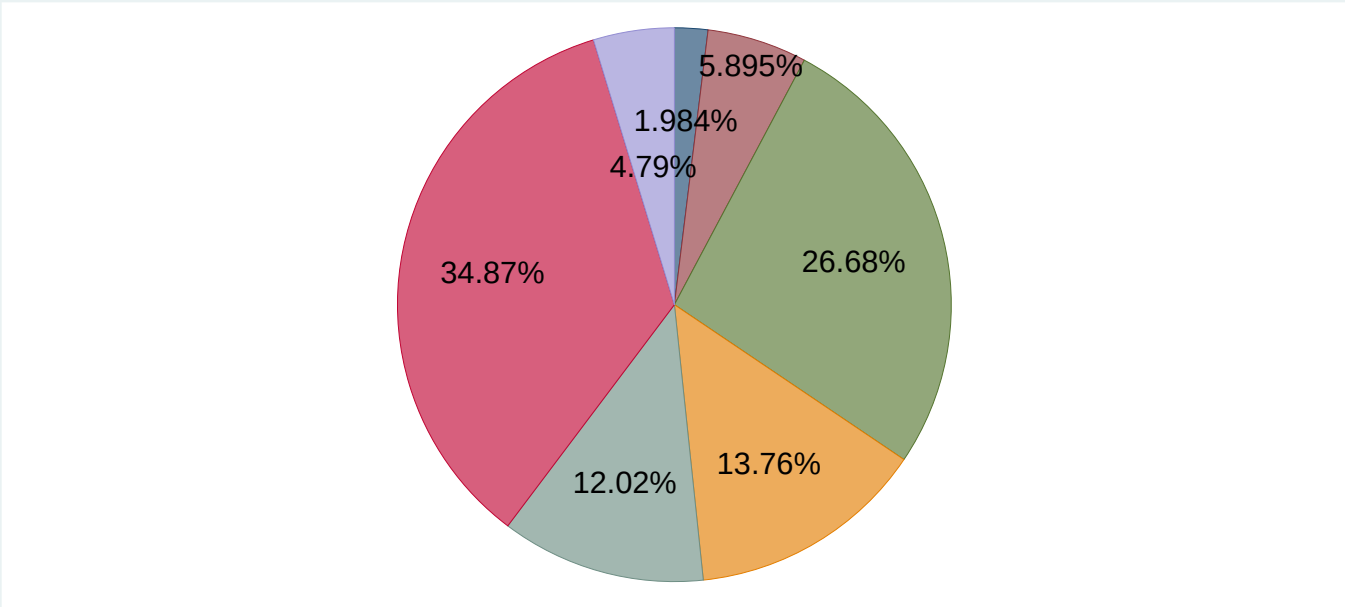
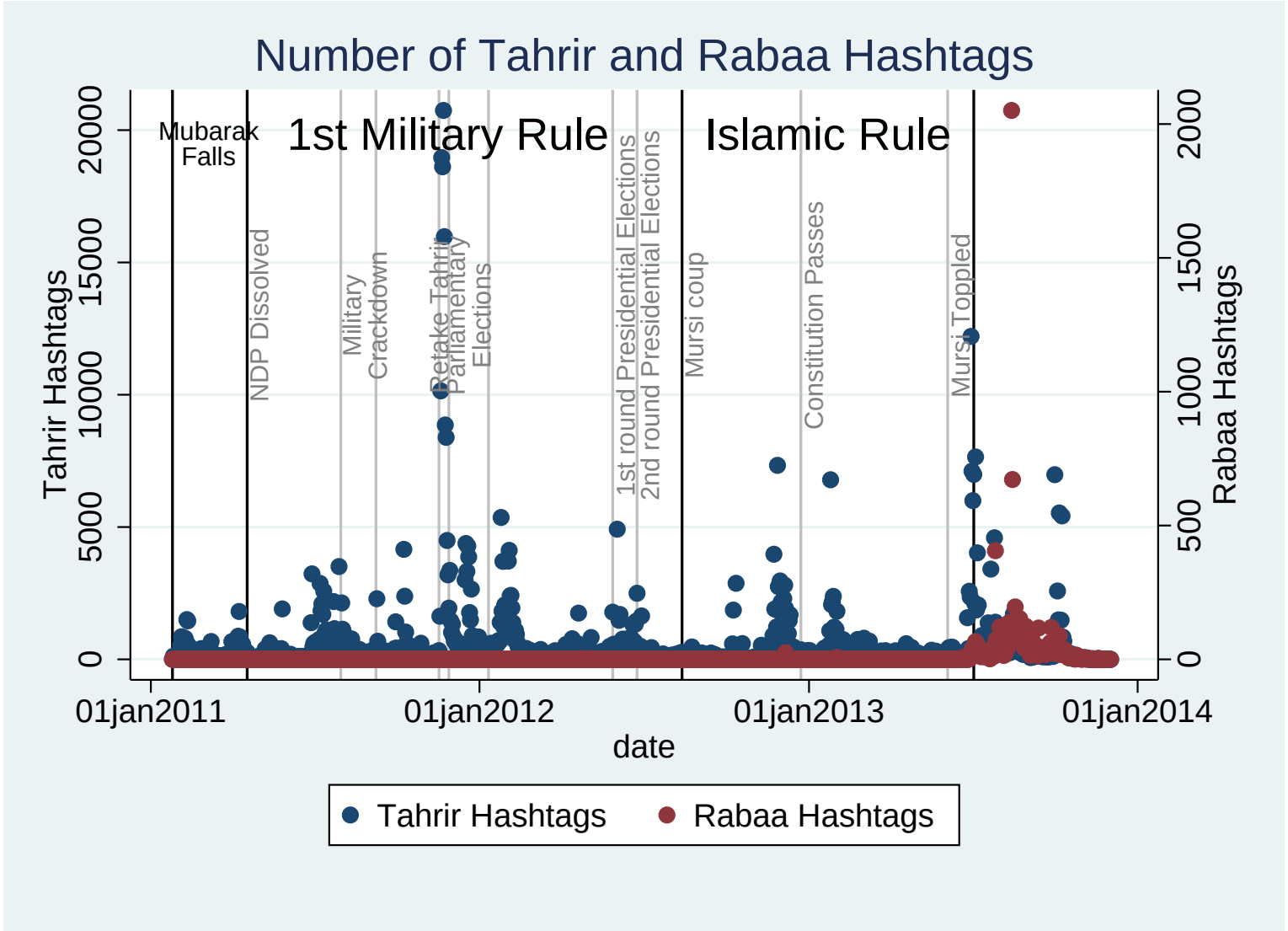
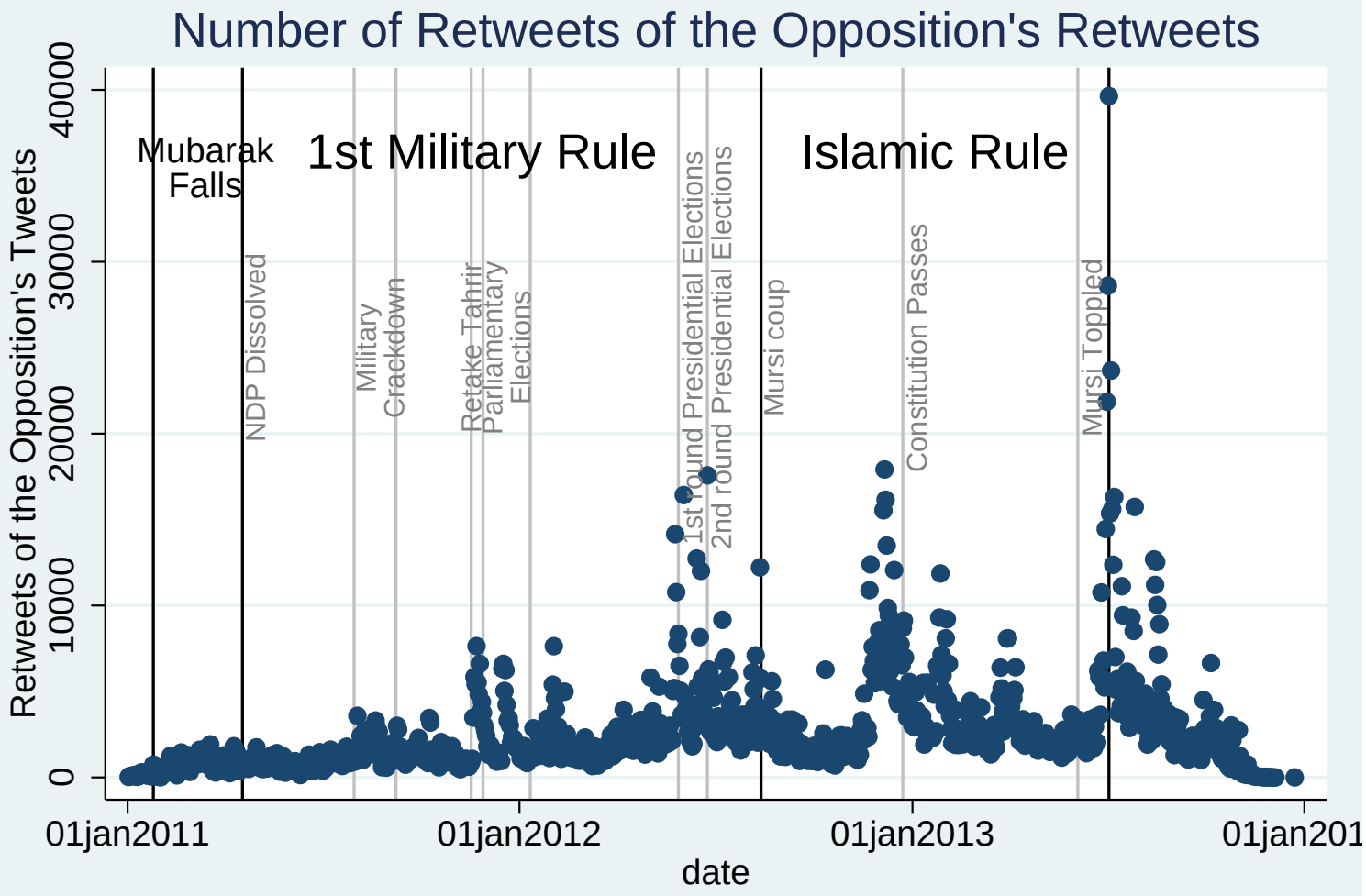
Number of Protesters in Tahrir Square by Weekday



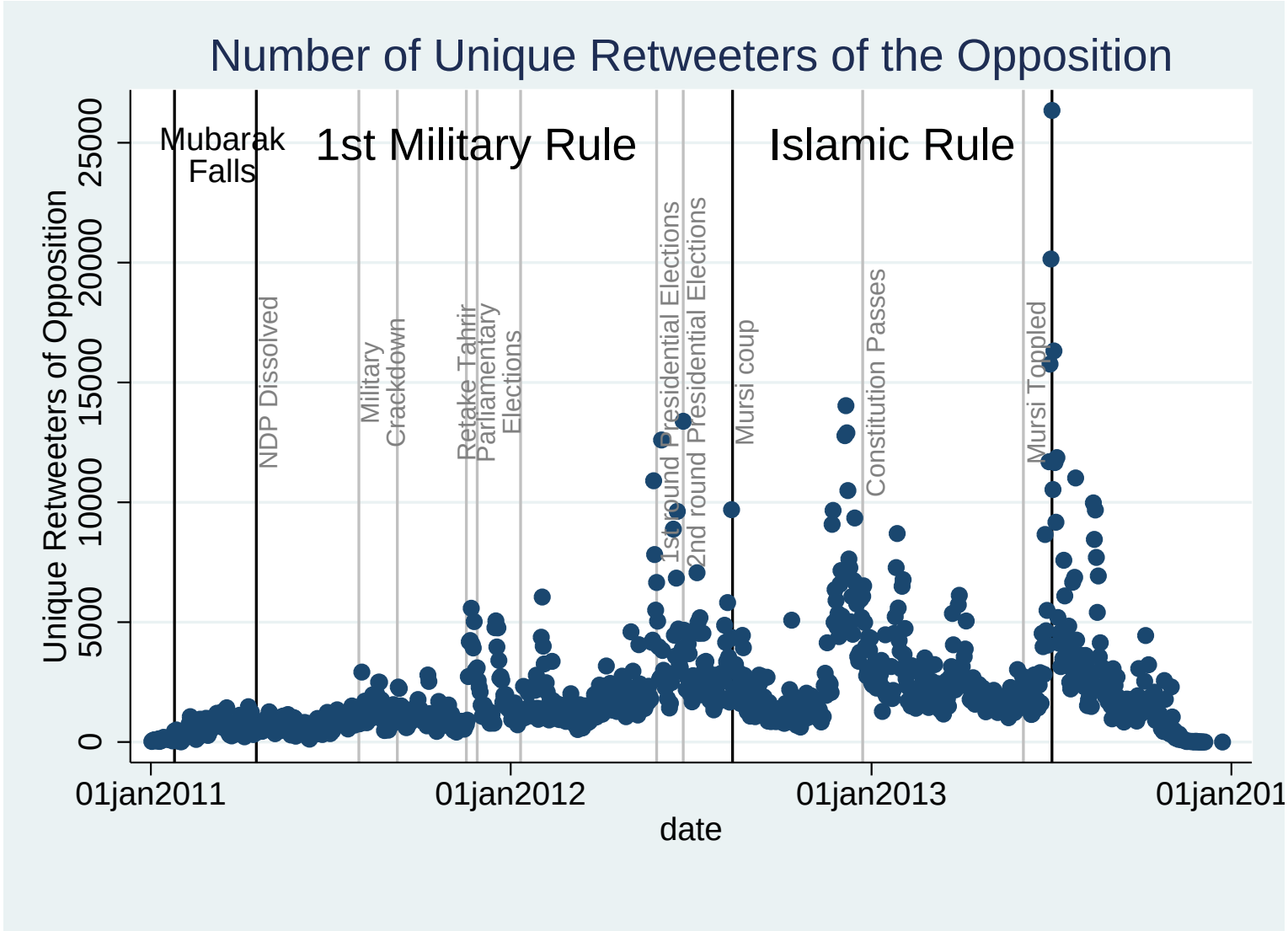
Back


Number of Tahrir and Rabaa Hashtags
Mubarak Falls
1st Military Rule
Islamic Rule
NDP Dissolved
Military Crackdown
Retake Tahrir
Parliamentary Elections
1st round Presidential Elections
2nd round Presidential Elections
Mursi coup
Constitution Passes
Mursi Toppled
Tahrir Hashtags
Rabaa Hashtags
0
5000
10000
15000
20000
500
1000
1500
2000
01jan2011
01jan2012
01jan2013
01jan2014
date
Tahrir Hashtags
Rabaa Hashtags

Back


Number of Retweets of the Opposition's Retweets
Retweets of the Opposition's Tweets
0
10000
20000
30000
40000
Mubarak Falls
1st Military Rule
Islamic Rule
NDP Dissolved
Military Crackdown
Retake Tahrir
Parliamentary Elections
1st round Presidential Elections
2nd round Presidential Elections
Mursi coup
Constitution Passes
Mursi Toppled
01jan2011
01jan2012
01jan2013
01jan201
date

Back


Number of Unique Retweeters of the Opposition
Unique Retweeters of Opposition
0
5000
10000
15000
20000
25000
Mubarak Falls
1st Military Rule
Islamic Rule
NDP Dissolved
Military Crackdown
Retake Tahrir
Parliamentary Elections
1st round Presidential Elections
2nd round Presidential Elections
Mursi coup
Constitution Passes
Mursi Toppled
01jan2011
01jan2012
01jan2013
01jan201
date

Back

	(1)	(2)	(3)
	Daily Log Returns		
Incumbent x Tahrir Protesters	-0.006***	-0.006***	-0.004*
	(0.002)	(0.002)	(0.002)
Connected x Tahrir Protesters	-0.002	-0.002	-0.001
	(0.002)	(0.002)	(0.002)
β^{World} x Tahrir Protesters		-0.001	-0.000
		(0.004)	(0.004)
β^{Egypt} x Tahrir Protesters		-0.010*	-0.012**
		(0.006)	(0.006)
β^{Unrest} x Tahrir Protesters		-0.257	-0.173
		(0.695)	(0.621)
Size x Tahrir Protesters		-0.002	-0.002
		(0.002)	(0.002)
Leverage x Tahrir Protesters		0.005	0.007
		(0.008)	(0.005)
R^2	0.404	0.404	0.405
N	78705	78705	78705
Include δ_s x Tahrir Protesters	no	no	yes