

Information Inequality and Mass Media

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Why Study Mass Media?

"Knowledge is Power"

- ▶ Access to information is as important as access to other resources and it gets more important.
- ▶ We should worry about inequality in information as much as we worry about income and wealth inequality.
- ▶ Information can be provided in a
 - ▶ centralized way
 - ▶ mass media
 - ▶ decentralized way
 - ▶ word of mouth, rumours
- ▶ Mass media is the most important source of information at the macro level.
- ▶ This makes mass media extremely important for political outcomes.

Power of Mass Media



The media's the most powerful entity on earth.
They have the power to make the innocent guilty
and to make the guilty innocent, and that's power.
Because they control the minds of the masses.

(Malcolm X)

Media Effects

Media can have an effect by

- ▶ Providing information
 - ▶ *What* is being said on a particular issue?
 - ▶ omitting relevant information (gate keeping)
- ▶ Agenda setting/Priming
 - ▶ *Which* issues are covered?
 - ▶ media coverage of an issue makes people believe that this issue is important (McCombs and Shaw, 1972)
 - ▶ people evaluate politicians based on the issues covered in the media (Iyengar and Kinder, 1987).
 - ▶ differences in the amount of articles/reports/air time devoted to different topics
- ▶ Framing
 - ▶ *How* a particular issues is covered?
 - ▶ slant in the language describing information

Traditional Studies of Media Effects

- ▶ People became interested in media effects during and after WWII
 - ▶ trying to understand effectiveness of propaganda
- ▶ But: early studies did not find any effects
 - ▶ based on individual survey data
- ▶ Self-selection to media consumption is the main problem
- ▶ “Minimal effects” paradigm
 - ▶ Media reinforce existing beliefs and predispositions
- ▶ Lazarsfeld, Berelson, and Gaudet 1948; Berelson, Lazarsfeld, and McPhee 1954; Klapper 1960

Estimating Media Effects: Methodology

- ▶ The main problem is self-selection
 - ▶ People choose media which reflect their preferences and prior beliefs
 - ▶ As a result, effects are either too small, if a study controls for individual pre-existing preferences, or too large, if a study does not do it
- ▶ Need some exogenous variation to identify the effect
- ▶ Field experiments (e.g. Gerber, Karlan, and Bergan 2009, free 10-week subscription to Washington Post or Washington Times)

Methodology-2

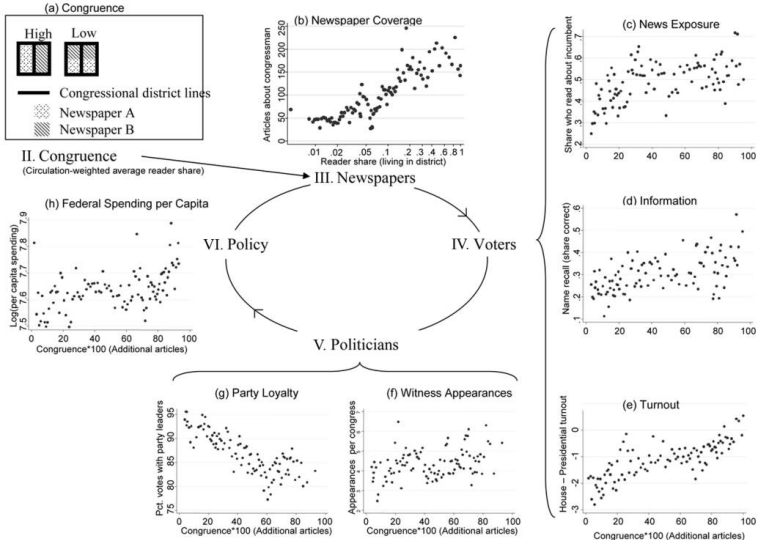
- ▶ Another potential solution: use geography coupled with models of signal propagation. . .
 - ▶ Ground conductivity, proportion of woodland (e.g. Stromberg, QJE, 2004)
 - ▶ Detailed information on the location of transmitters and propagation of signal (Irregular Terrain Model, ITM) and mountains (e.g. Olken, JPubE 2009)
 - ▶ ITM and idiosyncrasy of Soviet times resource allocation (Enikolopov, Petrova, Zhuravskaya, AER 2011)
 - ▶ ITM and signal from neighboring country (DellaVigna, Enikolopov, Mironova, Petrova, Zhuravskaya, AEJ: Applied 2014)
 - ▶ ITM coupled with change in media bias (Adena, Enikolopov, Petrova, Santarosa, Zhuravskaya, QJE 2015)

Methodology-3

- ▶ ... or other source of idiosyncratic variation
 - ▶ Cable industry variables (DellaVigna and Kaplan, QJE 2007)
 - ▶ Variation in coverage due to Olympic Games or other exogenous events (Eisensee and Stromberg, QJE 2007)
 - ▶ Different distance to the nearest newspaper publishing information about school grants in Uganda (Reinikka and Svensson JEEA 2005)
 - ▶ Different overlap between media markets and congressional districts (Stromberg and Snyder, JPE 2009)

Political Information and Access to Resources

Stromberg and Snyder (2009) "Press Coverage and Political Accountability", Journal of Political Economy



Effect of New Media

- ▶ Advent of Internet had an important effect on the working of mass media
- ▶ There is evidence that increased access to Internet
 - ▶ decreases turnout (e.g. Falck, Gold, and Heblich, AER 2014)
 - ▶ ..but increased in other forms of political engagement (Campante, Durante, and Sobbrío, 2016)
 - ▶ helps to promote political competition and democratization (Miner, JPubE 2015)

Internet and Politics: Evidence from UK Local Elections and Local Government Policies

Gavazza, Nardotto, Valletti (2016)

- ▶ Empirical Questions:
 - ▶ Does the Internet affect news consumption?
 - ▶ Does the Internet affect elections?
 - ▶ Does the Internet affect government policy?

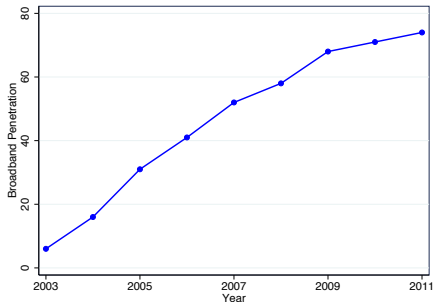
- ▶ Setting: UK Local Elections and Local Governments.
 - ▶ The effect of the Internet displacing traditional media should be larger for local elections, as many local newspapers disappeared;
 - ▶ Greater variation than national elections and policies;
 - ▶ Good data on internet penetration at a disaggregated level;
 - ▶ More direct channel between local voting and local policies.→ Ideal ground for testing.

- ▶ Identification:
 - ▶ IV based on weather that (exogenously) shifts internet penetration;
 - ▶ Falsifications based on pre-internet period;

Internet and Media in the UK, 2001-2010

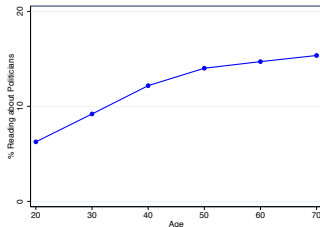
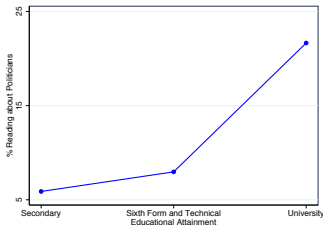
▶ Broadband Internet in the UK:

- ▶ Technology: 80 percent through telephone network (BT); 20 percent through cable (Virgin).
- ▶ BT Network has remained the same since 1930. 5,587 nodes called Local Exchanges (LEs).
- ▶ ADSL technology provides Internet through an upgrade at the LE level. Each house connects to one LE.
- ▶ De-regulation in the early 2000s, allowing firms to provide broadband internet services over BT's network.



Internet Use

- ▶ How do people use the internet? Oxford Internet Survey:
 - ▶ Communicate: 93%.
 - ▶ Download video, music, play games: 50-60%.
 - ▶ Access news: 28%.
 - ▶ Look for info about an MP, local councilor or politician: 11%.
- ▶ News/Leisure usage varies dramatically according to education, socio-economic status, and age:



Empirical Analysis: Elections

Basic framework is the following equation:

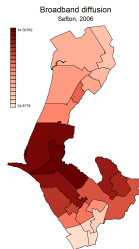
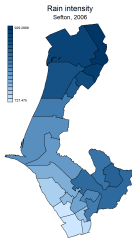
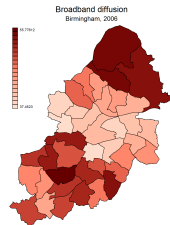
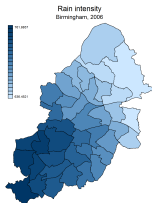
$$Y_{it} = \beta \text{INTERNET}_{it} + \gamma X_{it} + \delta_l + \eta_t + \varepsilon_{it}$$

- ▶ INTERNET_{it} is the share of houses with broadband in ward i year t ;
- ▶ X_{it} : demographic characteristics; geographic characteristics; network characteristics (i.e., number of phone lines); election characteristics (i.e., number of candidates);
- ▶ δ_l Local Authority fixed effects; ward i belongs to LA l ;
- ▶ η_t year fixed effects.

Identification (1)

- ▶ **OLS (with controls):** Likely upward biased. Demographics that increase turnout are positively correlated to Internet Penetration. Observables and Unobservables likely moving in similar direction.
- ▶ **Exogenous Instruments:** Ofcom in technical reports emphasizes the role of **rainfall** and floods on costs and quality of service. We use rainfall in year $t - 1$
 - ▶ RAIN^2 and the MAX RAIN (month)
 - ▶ We control for the rain on the day of the election and the month before election.
- ▶ **Falsification/Exclusion Restriction:** We use elections 1996-2000 to show that rain had no effect on turnout *before* internet diffusion.

Identification (2)



Results: Turnout, Education and Age

Dependent Variable: Log(Electoral Turnout)								
	(1)		(2)		(3)		(4)	
	IV 1st	IV 2nd	IV 1st	IV 2nd	IV 1st	IV 2nd	IV 1st	IV 2nd
Internet		-1.69*** (0.50)		-0.76*** (0.27)		-1.04* (0.57)		-0.73** (0.29)
Rain ²	-5.44*** (1.63)		-9.34*** (1.72)		-6.67*** (1.65)		-7.73*** (1.45)	
Max Rain	-0.07*** (0.02)		-0.10*** (0.04)		-0.06** (0.03)		-0.09*** (0.03)	
Rain Election Day	1.19*** (0.36)	3.09** (1.38)	0.58 (0.41)	0.38 (1.09)	0.77** (0.35)	1.94 (1.34)	0.69* (0.37)	2.32** (1.01)
Work Age	0.22*** (0.02)	-0.49*** (0.15)	0.12*** (0.02)	-0.71*** (0.08)	-0.01 (0.02)	-0.85*** (0.09)	0.26*** (0.02)	-0.30*** (0.11)
High Socio-Economic Status	0.35*** (0.04)	2.18*** (0.24)	0.06** (0.03)	1.48*** (0.09)	-0.02 (0.03)	1.20*** (0.12)	0.45*** (0.03)	1.29*** (0.18)
White	-0.05*** (0.01)	-0.47*** (0.05)	-0.00 (0.01)	0.01 (0.03)	0.00 (0.00)	-0.31*** (0.03)	-0.05** (0.02)	0.04 (0.07)
University Degree	-0.20*** (0.03)	-0.60*** (0.18)	0.16*** (0.02)	-0.25*** (0.08)	0.20*** (0.02)	0.13 (0.15)	-0.22*** (0.03)	0.03 (0.12)
Multiple Vacancies	-0.42*** (0.16)	-4.54*** (0.68)	0.30* (0.16)	-3.85*** (0.52)	-0.07 (0.19)	-2.27*** (0.77)	-0.09 (0.14)	-4.33*** (0.46)
Labour Incumbent	-0.01 (0.12)	-3.60*** (0.53)	-0.66*** (0.18)	-3.25*** (0.70)	-0.28** (0.11)	-3.53*** (0.54)	0.34** (0.16)	-4.56*** (0.62)
Conservative Incumbent	-0.48*** (0.13)	-1.95*** (0.62)	-0.10 (0.12)	-2.89*** (0.40)	0.01 (0.13)	-0.76 (0.53)	-0.29** (0.12)	-2.48*** (0.41)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics × Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-test		25.768		36.988		16.836		31.359
R ²	0.851	0.758	0.887	0.761	0.886	0.752	0.854	0.759
Observations	8489	8489	8490	8490	8489	8489	8490	8490

Results: Expenditures and Taxes

Dependent Variables:	Log(Expenditures)		Log(Taxes)	
	(1)	(2)	(3)	(4)
		Hous.&Soc. Serv. Educ.		
Internet	-0.28** (0.12)	-0.30** (0.14)	-0.24 (0.15)	-0.32*** (0.12)
Conservative Majority	0.01 (0.01)	-0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
Labour Majority	0.00 (0.01)	-0.00 (0.02)	0.00 (0.01)	0.01 (0.01)
Election Year	0.00 (0.00)	-0.00 (0.01)	0.00 (0.01)	-0.00 (0.00)
Year Fixed Effects	Yes	Yes	Yes	Yes
LA Fixed Effect	Yes	Yes	Yes	Yes
R ²	0.404	0.121	0.421	0.266
Observations	565	565	565	565

Magnitudes of Effects on Expenditures and Taxes

- ▶ A one-percentage-point increase in `INTERNET` decreases Expenditures by 0.28 percent.
- ▶ Per capita Total Expenditures are approximately £1,200.
- A decrease of £3.4, which is approx 1.7 percent of one standard deviation of per capita Expenditures in our sample.

- ▶ A one-percentage-point increase in `INTERNET` decreases Taxes by 0.32 percent.
- ▶ Per capita Tax Requirements are approximately £350.
- A decrease of £1.1, which is approx 2 percent of one standard deviation of per capita Tax Requirements in our sample.

Conclusions

- ▶ Internet crowds out political engagement:
 - Turnout decreases.
- ▶ Policies seem to respond to change in electorate:
 - Lower expenditures and taxes.
- ▶ Heterogeneous Effects:
 - ▶ Less-educated use the internet mainly for entertainment, become less politically involved, vote less. Similar patterns for young.
 - ▶ Suggestive evidence of less-favorable policies for less-educated/low-income individuals.
- ▶ Results raise a few observations:
 - ▶ Potentially, unintended consequences of closing the “Digital Divide:” Increasing the “Political Divide” between groups.
 - ▶ Large decrease in turnout of local election: recent devolution of powers towards Local Governments raises question of accountability.

Social Media

- ▶ Increasingly becomes one of the most popular media
 - ▶ More than 65% of adult US population use social networking sites (as of 2015)
 - ▶ 39% of US population indicate that they get news about government and politics from Facebook
- ▶ Some features are quite different from traditional media
 - ▶ very low barriers to entry
 - ▶ makes it harder to control
 - ▶ raises issues of the credibility of information
 - ▶ horizontal flows of information between individual users
 - ▶ increasing role of social influence

Social Media and Collective Action

Enikolopov, Makarin, Petrova (2016) "Social Media and Political Protests: Evidence from Russia"

- ▶ Estimating causal impact of social media is challenging:
 - ▶ endogeneity problem - social media usage is a choice variable
 - ▶ lack of geographical variation - protests in a small number of locations does not allow to study effects of availability of social media
- ▶ Russia in 2011-2012 is perfect example for the empirical investigation
 - ▶ unexpected wave of protests triggered by elections, first large-scale protests since the end of USSR
 - ▶ significant geographical variation
 - ▶ social media dominated by VKontakte (VK)
 - ▶ Russian version of Facebook with 55 million users in 2011
 - ▶ use information about the history of the creation of VK for identification

Background on VK

Timeline

- ▶ October 2006 – VKontakte (VK) created as a Russian clone of Facebook
 - ▶ founder - Pavel Durov, who was at that time a student of philology department
 - ▶ initially, by invitation only (through student forum, created also by Durov)
- ▶ First VK users
 - ▶ mostly students from SPbSU; different home cities
 - ▶ most of them never returned to their home cities, but still had networks of friends and relatives there
- ▶ End of November 2006 – open registration
- ▶ Later:
 - ▶ Summer 2008 – Facebook offered Russian interface
 - ▶ 2011 – 55 million VKontakte users, 6 million Facebook users

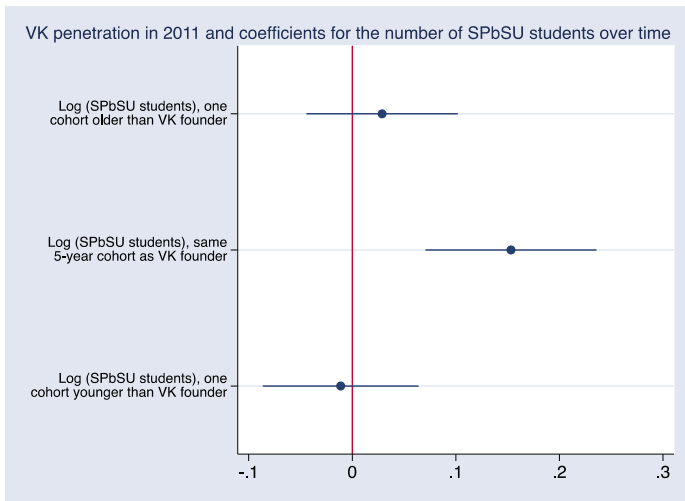
Source of variation

- ▶ Argument: idiosyncratic variation in the distribution of early users has a long lasting effect
 - ▶ attract new users through network externalities
 - ▶ deter opening Facebook accounts
- ▶ Instrument: fluctuations in inter-city student flows
 - ▶ Originally, accounts by invitation only
 - ▶ Early penetration can be correlated with unobserved taste parameter
 - ▶ We use information on city origins of the students studying in St Petersburg State University by cohort
 - ▶ separate cohort studying with the VK founder (+- 2 years) from older or younger cohorts

VK penetration and inter-city student flows

Coefficients for the number of students of different origin as determinants of 2011 VK penetration

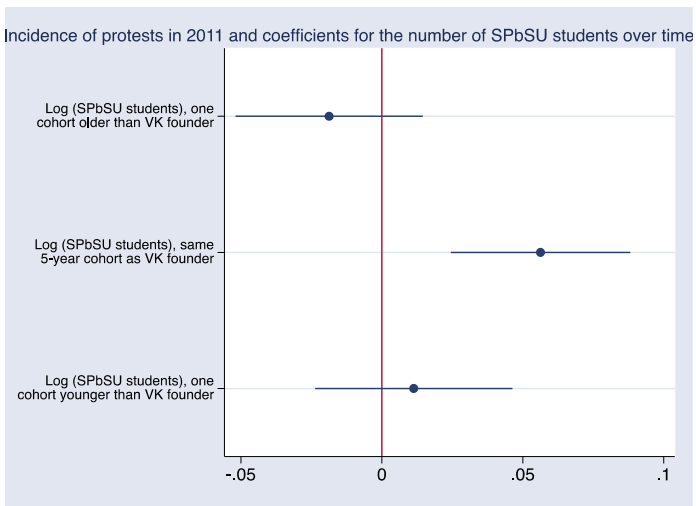
- ▶ in a regression with all baseline controls included



Probability of a protest and inter-city student flows

Coefficients for the number of students of different origin as determinants of dummy for protest

- ▶ in a regression with all baseline controls included



VK penetration and protest participation

Panel A. Number of protesters

	Log (number of protesters), Dec 2011			
Log (number of VK users), Aug 2011	1.912**	1.863**	1.920**	2.015**
	[0.900]	[0.862]	[0.886]	[0.906]
Log (SPbSU students), one cohort younger than VK founder	0.238*	0.231*	0.227*	0.252*
	[0.124]	[0.125]	[0.125]	[0.131]
Log (SPbSU students), one cohort older than VK founder	-0.106	-0.105	-0.108	-0.097
	[0.143]	[0.143]	[0.136]	[0.144]
Population controls	Yes***	Yes***	Yes***	Yes***
Age cohort controls	Yes	Yes	Yes	Yes
Education controls	Yes	Yes	Yes	Yes
Other controls	Yes***	Yes***	Yes***	Yes***
Electoral controls, 1995		Yes		
Electoral controls, 1999			Yes	
Electoral controls, 2003				Yes*
Observations	625	625	625	625
Effective F-statistics (Olea Montiel and Pflueger 2013)	276.8	274	274	274

Panel B. Probability of protests

	Incidence of protests, dummy, Dec 2011			
Log (number of VK users), Aug 2011	0.466***	0.446***	0.464***	0.481***
	[0.180]	[0.169]	[0.174]	[0.181]
Log (SPbSU students), one cohort younger than VK founder	0.033	0.030	0.031	0.034
	[0.025]	[0.026]	[0.026]	[0.027]
Log (SPbSU students), one cohort older than VK founder	-0.024	-0.023	-0.025	-0.021
	[0.029]	[0.029]	[0.028]	[0.030]
Population controls	Yes***	Yes***	Yes***	Yes***
Age cohort controls	Yes	Yes	Yes	Yes
Education controls	Yes	Yes	Yes*	Yes
Other controls	Yes***	Yes***	Yes***	Yes***
Electoral controls, 1995		Yes		
Electoral controls, 1999			Yes	
Electoral controls, 2003				Yes
Observations	625	625	625	625
Effective F-stat (Montiel Olea and Pflueger 2013)	276.8	274	274	274

Vote for the government

	Voting share for United Russia, 2007				Voting share for United Russia, 2011			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (number of VK users), Aug 2011	0.035 [0.050]	0.019 [0.041]	0.045 [0.046]	0.003 [0.037]	0.230* [0.128]	0.179* [0.099]	0.230* [0.118]	0.182* [0.104]
Log (SPbSU students), one cohort younger than VK founder	-0.007 [0.009]	-0.004 [0.008]	-0.006 [0.008]	-0.007 [0.007]	-0.002 [0.017]	0.002 [0.014]	-0.001 [0.016]	0.000 [0.013]
Log (SPbSU students), one cohort older than VK founder	0.002 [0.008]	0.001 [0.007]	-0.000 [0.008]	-0.003 [0.006]	0.004 [0.017]	0.006 [0.013]	0.001 [0.015]	-0.002 [0.013]
Population controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age cohort controls	Yes**	Yes**	Yes**	Yes**	Yes	Yes	Yes	Yes
Education controls	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**
Other controls	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**
Electoral controls, 1995		Yes**				Yes**		
Electoral controls, 1999			Yes**				Yes**	
Electoral controls, 2003				Yes**				Yes**
Observations	625	625	625	625	625	625	625	625
Effective F-statistics (Olea Montiel and Pflueger 2013)	276.8	274	274	274	276.8	274	274	274

	Voting share for Medvedev, 2008				Voting Share for Putin, 2012			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (number of VK users), Aug 2011	0.125* [0.071]	0.115* [0.062]	0.137** [0.067]	0.098* [0.054]	0.127* [0.073]	0.111* [0.065]	0.127* [0.067]	0.096 [0.058]
Log (SPbSU students), one cohort younger than VK founder	-0.005 [0.011]	-0.003 [0.009]	-0.005 [0.010]	-0.004 [0.008]	0.002 [0.011]	0.003 [0.010]	0.003 [0.010]	0.002 [0.008]
Log (SPbSU students), one cohort older than VK founder	0.001 [0.009]	-0.000 [0.008]	-0.003 [0.009]	-0.003 [0.007]	0.008 [0.011]	0.007 [0.010]	0.005 [0.010]	0.003 [0.009]
Population controls	Yes	Yes	Yes*	Yes**	Yes	Yes	Yes*	Yes*
Age cohort controls	Yes**	Yes*	Yes**	Yes	Yes	Yes	Yes	Yes
Education controls	Yes	Yes	Yes	Yes	Yes**	Yes**	Yes**	Yes**
Other controls	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**
Electoral controls, 1995		Yes**				Yes**		
Electoral controls, 1999			Yes**				Yes**	
Electoral controls, 2003				Yes**				Yes**
Observations	625	625	625	625	625	625	625	625
Effective F-statistics (Olea Montiel and Pflueger 2013)	276.8	274	274	274	276.8	274	274	274

Conclusions

- ▶ Social media does increase participation in political protests
- ▶ Consistent with reducing the costs of collective action
 - ▶ More pro-government vote with social media
 - ▶ Less people saying that they are ready to participate in protests
 - ▶ But more people actually going out on the streets

Dark Side of Social Media

Burzstyn, Egorov, Enikolopov, Petrova (2017) "Social Media and Hate"

- ▶ Same identification strategy as described above
- ▶ Hate crimes and xenophobia as outcomes
- ▶ Findings
 - ▶ Social media increases number of hate crimes in cities with high initial level of support of nationalists
 - ▶ Social media increases xenophobic attitudes in a survey in cities with high initial level of support of nationalists
- ▶ Potential mechanisms
 - ▶ Coordination
 - ▶ Persuasion
 - ▶ Reduction of stigma in expression