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ABSTRACT

Citizens have long taken to the streets to demand change, expressing political views that may otherwise be suppressed. Protests have produced change at local, national, and international scales, including spectacular moments of political and social transformation. We document five new empirical patterns describing 1.2 million protest events across 218 countries between 1980 and 2020. First, autocracies and weak democracies experienced a trend break in protests during the Arab Spring. Second, protest movements also rose in importance following the Arab Spring. Third, protest movements geographically diffuse over time, spiking to their peak, before falling off. Fourth, a country's year-to-year economic performance is not strongly correlated with protests; individual values are predictive of protest participation. Fifth, the US, China, and Russia are the most over-represented countries by their share of academic studies. We discuss each pattern's connections to the existing literature and anticipate paths for future work.

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1 Introduction

Citizens have long taken to the streets to demand change. Such protests go beyond the formal political system, allowing the expression of political views that may otherwise be suppressed — whether minority views in democracies or dissenting views in autocracies. While some are merely expressive, protests have in many cases have achieved meaningful changes at the local level (e.g., suspending plans for a polluting factory’s construction), at the national level (e.g., delaying the roll-out of nationalism curriculum in the schools), and even at the global level (e.g., fostering waves of regime change). In their most spectacular forms, protests have captured global attention, from Tiananmen Square to Tahrir Square, from the Prague Spring to the Arab Spring, and from the Velvet Revolution to Hong Kong’s Umbrella Revolution.

Given their importance, protests have been studied across the social sciences, and in recent years, increasingly so in economics. In this paper, we document five new empirical patterns describing protests, and we review the recent economics (and to a limited extent, political science) literature on protests. We discuss each pattern’s connections to the existing literature and anticipate paths for future work.

We begin by conducting a brief survey of existing datasets covering protests around the world. For our analysis, we make use of data from the GDELT Project, a global events-based database. We include all events identified as protests, amounting to 1.2 million protest events across 218 countries between 1980 and 2020. Relying on the GDELT data, we document the following five patterns.

First, in the time series, we observe that protests occurred at a much higher frequency in mature democracies in the early 1980s. Protests in autocracies and weak democracies then dramatically increased in the years around the fall of the Berlin Wall. Protests in mature democracies occurred at a similar rate to autocracies and weak democracies for over a decade, before another sharp increase in autocracies and weak democracies during the Arab Spring. This marked a trend break: autocracies and weak democracies have protested at a higher frequency ever since. This pattern is robust as we normalize protests by the occurrence of other politically neutral events, and validate this pattern with an alternative dataset on global protests since the 1990s. We hypothesize that this qualitative change in protest mobilization — especially in regimes with lower level of political rights and civil liberties — is at least in part induced by the proliferation of social media. More generally, the recent literature documents that technology plays a role in shaping protests: information technology fosters the emergence of protests, and helps overcome various coordination barriers. As new information technology lowers the threshold for collective

grievances to trigger protests, it also imposes new trade-offs between rapidly growing protests and sustained political change, which we discuss as a fruitful area for future research.¹

Second, a considerable share of the protests events are part of movements. We categorize movements as either *durable* — protests that occur for more than 10 days in a row in the same country — or *recurring* — protests that occur repeatedly on a specific date annually. We find that durable movements in our dataset last for 16 days on average; recurring movements last for 6 years on average. Autocracies and weak democracies are 50% more likely to have their protests take place within a movement when compared to mature democracies. We also see a rise in the importance of protest movements following the Arab Spring. While much of the literature focuses on protests as one-off events (or, considers the first episode of a sustained movement), it is also vital to study protests from the angle of sequences of events and sustained movements, which often are the hallmark of notable political, economic, and social change.

Third, protest movements spread geographically, with a long build-up to their peak and often a gradual decline. We find that following the peak day of protests (by number of cities protesting) within a protest movement, the proportion of protesting cities drops on average by 40% from the peak within a week. However, there remain a substantial number of persistent movements, in which even after a month, protests take place in 20% of cities relative to the peak. While the peak of a movement is usually anticipated by protests weeks beforehand, the rise to the peak itself is typically seen in a rapid spike. Interestingly, while we observe persistence of protests even in weak democracies and autocracies, we do find that in the first week following the peak of the movement, the proportion of protesting cities drops more in autocracies and weak democracies as compared to mature democracies, consistent with regime crackdowns. These patterns reflect a growing literature on the state's response to protests, especially in autocracies and weak democracies. Preventative efforts are made to deter, detect, detain individuals before protests grow to large movements. Suppression tactics are put in place to crack down on protests and lower the chance that protests recur across localities and turn into sustained, widespread movements. Relative to the evidence on how protests start, we know much less about how and why protests end.

Fourth, we find that while a society's economic performance has limited association with the occurrence of protests at the country level, a range of attitudes, preferences, personality traits, and social factors are strongly associated with individual protest partici-

¹The importance of social media in driving recent protests, and the challenges facing political movements fuelled by social media, are discussed by Tufekci (2017).

pation. We observe that the average level and growth of income, unemployment among youths, and the level of inequality can predict, albeit weakly, whether protests occur in a given country during a specific year. Such relationships are muted in autocracies and weak democracies. This is contrasted with a large literature that highlights the role of economic grievances in triggering political protests. At the same time, we find that attitudes (e.g., highly valuing liberty and democracy, strong interest in politics), personality traits (e.g., a low valuation of obedience and high prosociality), and social factors (e.g., sharing politics with friends and family members) are strong, robust predictors of individual protest participation, and this is true across regime types. While these patterns do not establish causal effects, they are broadly consistent with evidence documented in a variety of specific contexts. Our findings suggest the value of a more holistic investigation of factors explaining protest occurrence at the country level, as well as participation at the individual level.

Fifth, we compare the share of protests in countries around the world with the share of economists' and political scientists' studies of protests. We focus on papers published in top journals and relevant field journals in economics, working papers in economics, as well as top journals in political science since 1990. We find that the US, China, and Russia are among the most over-represented countries in terms of studies (relative to the observed occurrence of protests); Israel/Palestine, the UK, and Iran are among the most under-represented. Autocracies and weak democracies are roughly equally represented relative to mature democracies, but representation is still heavily skewed within regime type. While subject to limitations, we hope the availability of large, global datasets such as GDELT will allow researchers to study protest participation across a wider range of localities and regime types. In addition to geographic representation, we also note that as large, successful protests disproportionately capture scholars' attention, the majority of protests which are smaller and less successful are understudied. This may affect how we think about what triggers protests and what explains individual participation in protests.

Taken together, the literature we review has accumulated a remarkably rich body of evidence on protests. We hope that the facts that we present will spur exciting new work to further our understanding of protests. The remainder of the paper proceeds with a discussion of data on protests around the world. We then present the five empirical patterns and the related literature.

2 Data on protests around the world

Over the years, many different organizations have curated datasets covering protests around the world. In Table 1, we present 9 different publicly available datasets that record events covering at least 5 years of data and 25 countries.² Most of these datasets rely on international news sources to construct their lists of events. Half of them are constructed with human coders, while the other half primarily rely on machine learning and other automated methods. Most of these datasets focus on recent history.

For the remainder of this paper, we focus our attention on the Global Database of Events, Language, and Tone Project (GDELT). GDELT has the longest running coverage of events up to the modern day, while also maintaining global coverage of events. We believe this makes it the most comprehensive of the datasets surveyed.³

The GDELT Project records instances of events based on articles from a comprehensive, global set of news feeds.⁴ We restrict our analysis to events taking place between 1980 and 2020.⁵ Each event is classified by GDELT with a “Conflict and Mediation Event Observations” (CAMEO) code using machine learning. We restrict our analysis to CAMEO code “14: Protest” which includes a range of protest activities including demonstrations, rallies, strikes, and violent protests. In total, there are roughly 1.2 million protest events. Protests make up roughly 1% of all events.

We also make use of a number of other data sources in the analysis. These include the Polity IV dataset for regime types, Wikipedia for a list of protest movements, the World Values Survey for individual beliefs, attitudes, and protest participation, and the World Bank for country panel data on various socioeconomic variables.

²We are also aware of EMM News, which takes a similar approach to GDELT and ICEWS to develop a list of events. However, their website appears to have been under maintenance since 2019. See: <http://emm.newsexplorer.eu/NewsExplorer/home/en/latest.html>.

³Other work using this data source include Manacorda and Tesei (2020), Armand et al. (2020), and Beraja et al. (2023a).

⁴Text analysis and machine learning methods are applied to the contents of these articles to identify salient characteristics, such as event location, date of the event, and the nature of these events. See <https://www.gdeltproject.org> for a detailed description of the GDELT Project and its methodology.

⁵When multiple news sources cover the same event, GDELT records only one event.

3 A trend break since 2011: the role of information technology

3.1 Broad trends in protests over time

We begin by visualizing broad trends in protests over time. In Figure 1, Panel A, we plot the time series of protests in autocracies and weak democracies (in red) as well as mature democracies (in blue) at the daily level.⁶

Since GDELT draws its set of events from global newsfeeds, changes in the level of news coverage over time (or across locations) may bias the number of protests recorded by GDELT. Thus, we normalize the count of protests by dividing the number of protests by the number of all other events in a country \times year.⁷ We then smooth the data using a 2-year rolling average to plot the overall time trend in protests across regime types.⁸

One sees that the relative number of protests in mature democracies reached its peak in the early 1980s. In contrast, autocracies and weak democracies experienced a significant spike in the relative number of protests around 1990, coinciding with the dissolution of the USSR, and again in 2011, which marked the onset of the Arab Spring. In the last decade of the 20th century and the first decade of the 21st, the number of protests (per one thousand events) experienced by autocracies and democracies was extremely similar: 9.95 for autocracies and weak democracies and 9.96 for mature democracies, meaning roughly ten in every thousand events across the globe was a protest in this time. However, a notable shift occurred after 2011, as autocracies and weak democracies consistently saw 30% more (relative) protest events than mature democracies (13 vs. 10 per thousand), marking a substantial trend break in protest patterns. In Appendix Figure A.1, we reproduce Figure 1 with the ICEWS dataset instead of GDELT. Although this dataset only begins in 1995, we see the same trend break with autocracies and weak democracies experiencing explosive growth in relative protests following 2011.

Take Tunisia as an example. Between 1980 and 2010, the country experienced a protest

⁶We define mature democracies as countries with Polity scores greater than or equal to 7; weak democracies and autocracies have Polity scores below 7. This follows Marshall et al. (2016).

⁷The spirit of this exercise is similar to one conducted by the creator of GDELT (<https://foreignpolicy.com/2014/05/30/did-the-arab-spring-really-spark-a-wave-of-global-protests/>) who uses a similar normalization; to our knowledge, Gentzkow et al. (2006) were the first to take this approach using big data.

⁸GDELT also changed its methodology in monitoring news sources across the world in 2014, greatly expanding its coverage and using more sophisticated methods to classify its events. This creates a disruption in the data when they were transitioning across methods. We interpolate the number of protests between February 18, 2014 and February 18, 2015 to resolve this issue.

incidence of 9 per thousand, close to the global average across the time period. However, during the Jasmine Revolution (December 17, 2010–January 14, 2011, part of the Arab Spring), the incidence rate jumped by nearly an order of magnitude to 89 per thousand. Following the revolution, protest activity remained elevated, averaging 29 per thousand between 2011 and 2020. A similar story holds for other countries of the Arab Spring. Egypt had a protest incidence of 7 per thousand between 1980 and 2010, which leapt fivefold to 37 per thousand between the years 2011 - 2014, during the Egyptian Crisis when the Mubarak and Morsi governments were overthrown. Yemen also had a protest incidence of 7 per thousand between 1980 and 2010, rising to 32 per thousand between 2011 and January 2015, during which the Saleh and Hadi governments were overthrown. The actual number of protests likely rose by an even greater amount than that implied by these figures, as periods of political turbulence see increases in political events of all kinds, not just protests.

In Figure 1, Panel B, we map the relative number of protests across the world. Excluding countries that recorded fewer than 10 total protests, the four countries with the largest number of relative protests were all Arab Spring countries. In order, they were Bahrain (31 per thousand), Tunisia (30), Egypt (20), and Yemen (20). Other countries near the top of the list include Nepal (5th, at 19 per thousand), Nicaragua (7th, at 19), Venezuela (11th, at 17), and India (12th, at 17). The bottom of the list contains many small countries such as Greenland, Cape Verde, Luxembourg, and Fiji, with island nations composing most of the bottom 20. Appendix Figure A.1 confirms that a very similar set of countries experience a high number of protests in the ICEWS data. Overall, protests occur widely throughout the world, though some regions and countries experience a much greater intensity of protests than others.

3.2 The role of information technology

The trend break in 2011 among autocracies and weak democracies coincided with the Arab Spring, and coincided with the introduction of the community feature on Facebook and a revamped edition of Twitter that, among other changes, streamlined viewership of retweets and especially multimedia content. Many scholars of the Arab Spring have emphasized the pivotal role that social media, in particular Facebook and Twitter, played in the organization, coordination, and the spread of the protests (Tufekci, 2017).

Information technology, especially technologies that foster horizontal communication (e.g., mobile phones and the internet) as opposed to vertical communication (e.g., radio and TV), have been seen as possessing the potential to liberate unfree societies (Dia-

mond, 2015). Specifically, horizontal communication-enabling technology may stimulate protests because it helps resolve three challenges to protest mobilization (see, among others, Little (2016)). First, technology may communicate information about the regime that changes individuals' demand for political and social change, and may trigger emotions that push people over the participation threshold and into the street to express grievances. This could be differentially important in autocracies and weak democracies where negative information about the state is routinely censored (e.g., Edmond (2013)).

Second, information technology may inform citizens about each other's attitudes and support for the protests. As protests and collective action are often strategic decisions in nature, beliefs about others support for the protests crucially shape one's own participation decision, whether in a game of strategic complements (e.g., coordination game) or a game of strategic substitutes (e.g., public goods provision game). Again, this could be differentially important in autocracies and weak democracies where accurate information about others is lacking and misperception about others is more prevalent.

Third, information technology may facilitate logistical and tactical coordination by allowing protest organizers or spontaneous protest participants to communicate information about the location and time of protest gatherings. Such coordination could also involve specific information about barriers that protest participants may face so they are better prepared (e.g., those set up by the regime in order to suppress protest participation). To the extent that organizing protests is difficult and often actively prohibited on traditional communication technology platforms in weak democracies and autocracies, technologies such as social media could significantly ease the logistical and tactical coordination constraints.

The recent empirical literature has accumulated a range of evidence linking the introduction of new information technology to protests.⁹ Manacorda and Tesei (2020) study the roll-out of mobile phones in Africa and find that the mobilization of mass protests during economic downturns significantly increases with access to mobile phones. Enikolopov et al. (2020) show that the expansion of the social media platform VK in Russia increased the likelihood of protests. Qin et al. (2021) study how the social media platform Weibo in China established information connections across city pairs and promoted the spread of protests across connected cities.

⁹There also exists a large literature on the role of technology in get-out-the-vote campaigns and formal political participation (see, Campante et al. (2017), for example). This very much complements the literature on technology and protests, but is beyond the scope of the literature surveyed in this review.

3.3 Open questions

We see several areas for future research on the relationship between technology in general (and information technology in particular) and protests. First, studies described above use natural experimental designs that either exploit spatial and temporal variation in access to technology, or careful network-based specifications that exploit variation in pairwise connections via the technology. Such variation helps estimate the reduced form causal effect of media platforms on the occurrence of protests. While valuable, this variation is often limited in terms of credibly separating specific mechanisms through which technology facilitates protests. We think empirical designs (e.g., exploiting experimental variation) that aim to isolate mechanisms, and even quantitatively compare the magnitudes of distinct mechanisms, are an important area for future research.

Second, new technology, while facilitating protests against the regime in places with limited political rights and civil liberties, may also polarize society and promote protests and political mobilization more broadly in the pro-regime direction. For example, Enikolopov et al. (2020) show that pro-regime support rises alongside anti-regime protests due to social media in Russia. In the context of a weak democracy such as Russia in 2011, they argue, the coordination device function of social media (which facilitates both pro and anti-regime protests) dominates the information provision potential (which would favor the pro-democratic, anti-corruption forces). A more systematic investigation of the polarizing forces of social media and the consequent effects on protests is key to our understanding of the holistic impact of technology on both the rate and direction of political change.

Third, as new technology overcomes barriers that traditionally limited collective action, it also introduces new trade-offs between rapidly growing protests and sustained political change. On the one hand, “leaderless protests” that are coordinated on social media platforms without traditional (often charismatic) leaders make it more difficult for the regime to target its crackdown. On the other hand, the absence of a leader may prevent consensus formation among protesters themselves, hindering protesters from effectively negotiating policy concessions and thus achieving the changes the protests demand.

Advances in information technology have affected (and will continue to affect) protest occurrence along multiple margins: which grievances are expressed publicly as protests; the rate at which grievances develop into protests and then into movements; the organizational structure of these movements; and, counter-mobilization are all changing. We think it is extremely important to understand, both theoretically and empirically, how these multifaceted changes induced by technological innovations will interact to shape

protests and their outcomes in the years to come.

4 Protests as movements

4.1 Categorizing movements

While dramatic one-shot events may capture the public’s attention, political and social change have historically often arisen from long-running movements. Protest movements are linked sequences of protests in which sustained political engagement either spans many days in succession, or occurs across years, with events linked by action taken on specific dates. Historically significant protest movements include women’s suffrage movements around the world, the US civil rights movement, anti-colonial movements, and the anti-apartheid movement in South Africa.

We categorize each protest event recorded by GDEL as either a one-shot event or part of a movement. To do so, we develop definitions for two classes of movements: (i) *durable* protest movements, which occur for multiple consecutive days in the same country, and (ii) *recurring* protest movements, which are protests that repeat on a particular date each year. Specifically, we define *durable* protest movements as events in a country where, for at least 10 consecutive days, the number of protests exceeds twice the national average and the number of locations protesting is also at least twice the national average, skipping at most one day that does not fit these criteria. Any protest that occurs during this range of days in the country is considered part of the movement. We define *recurring* protest movements as events in a country where, for at least 5 years in a row, on the *same date*, the number of protests exceeds twice the national average and the number of locations protesting is also at least twice the national average. One-shot protests are the residual category. Our criteria of categorizing protests as movements is intentionally strict, as we hope to minimize the number of one-shot protests mistakenly assigned to a protest movement. Many movements are not characterized by continuous protests, but rather by occasional protests linked through ideology, political organizations, and other forms of political behavior between protests (e.g., the long-running movement for women’s rights described by Goldin (2023)). Thus, we think of the number of identified movements as a lower bound on the total number of protest movements.¹⁰

We present summary statistics using these definitions of protest movements in Table 2. While durable protest movements occupy a meaningful share of total protests, recurring

¹⁰In the following section, we confirm that these protest movements are unlikely to have been generated as a result of random variation in protest occurrence. In Appendix A, we also consider a top-down categorization of protest movements based on a comprehensive list of 750 protest movements from Wikipedia.

protest movements are much rarer in comparison. There are 6,014 distinct durable protest movements, 2,037 (33.9%) of which occur in mature democracies and 3,977 (66.1%) of which occur in autocracies and weak democracies. There are 595 distinct recurring protest movements, 259 (43.5%) of which occur in mature democracies and 336 (66.5%) of which occur in autocracies and weak democracies.

The median durable protest movement lasts for 15 days in our dataset and according to our definition. The longest running protest movements under this definition include the 1996–97 protests in Serbia (students and opposition parties protested against President Milosevic, with the movement lasting 41 days from Nov. 1996 to Jan. 1997 under our definition), the November 2016 Jakarta protests (against Governor Purnama for blasphemy against the Quran, lasting 40 days), and Chilean protests in 2019 (against rising public transport fares, lasting 38 days in Oct.–Nov. 2019).¹¹ The median recurring protest in our dataset and according to our definition lasts for 5 years in a row. The longest running recurring movements include the June 4th protests in China (lasting 32 years), the May Day protests in Germany (lasting 10 years), and the Dec. 28 protests in Russia against the invasion of Afghanistan (lasting 9 years).

In Figure 2, Panel A, we plot the time series for the share of protests belonging to movements. The share of protests that are part of movements appears to gradually rise from the beginning of the sample period to 2010. There are notable spikes in protest movements in autocracies and weak democracies, including at the time of the dissolution of the USSR and during, and ever since, the Arab Spring. Mature democracies, on the other hand, experience fewer protest movements following 2010, suggesting potentially different protest dynamics at play. On the whole, compared to those in mature democracies, protests in autocracies and weak democracies are more likely to occur as part of a protest movement, with 5.1% of protests in autocracies and weak democracies being part of a movement versus a share of 3.4% in mature democracies.

In Figure 2, Panel B, we map the share of protests belonging to protest movements, by country. We see that countries in the Middle East and North Africa consistently have a high share of protests that are part of protest movements: Algeria (26.3%), Oman (16.5%), and Egypt (15.4%) are all in the top 10 countries. Latin America also sees a relatively large proportion of its protests in protest movements: Brazil is at 7.4%, Venezuela at 13.1%, and the territory Puerto Rico tops the list at 38.2%. By contrast, the US as a whole sits at 2.6% of protests in movements, while China is at 4.3% and Russia at 1.3%.

¹¹In the Chilean case, the protest movement we identify was a subset of a longer-running sequence of related protests, indicative of our relatively conservative definition of movements.

4.2 Studying protests as movements

It is important to study protests both as distinct events and (when relevant) as part of sequences of linked events and sustained movements. Theoretical work studying protests has highlighted a number of conceptual distinctions between one-off protests and movements. Models of one-shot events are fundamentally concerned with the conditions under which successful coordination occurs, where the counterfactual is coordination failure and no protests take place at all (see, among others, Kuran (1997) and Morris and Shin (2001)). Such models can be applied to either one-shot protests themselves, or the first event within a protest movement. Models of protest movements, on the other hand, often ask a different set of questions, such as how protests persist (that is, how do subsequent episodes of protest movements occur), how protests grow in size and spread across locations, and how protest participants change over time and evolve in their composition.

Mechanisms that facilitate the coordination of (explosive) one-shot events may be different from those that sustain protests as movements. Early waves of protests may change attitudes among the population, shift their beliefs about others' political attitudes and support of the movement, and thus affect the turnout at subsequent events within protest movements (e.g., Chwe (2000)). Social ties among protest participants and the broader society could change during protest movements; such changes may take time and affect the outcomes of later waves of movements (e.g., Barbera and Jackson (2019)).¹² Learning-by-doing and improvements to protesters' tactics may also be relevant only when we consider protests as movements.

Thresholds for individual protest participation may also differ between one-shot events and sequences of protest events. On the one hand, costs could be substantially higher from participating in multiple events. On the other hand, early waves of protest movements could reveal information about the regime and about others in the population, which in turn could make participation in future movements more likely. As a result, the composition of protest participants may differ across different stages of protest movements (e.g., De Mesquita (2010), Shadmehr and Bernhardt (2019)).

A small strand of recent empirical studies examines protests as movements, in particular studying whether and how protests persist and evolve into movements. Madestam et al. (2013) use the impact of regional shocks in weather conditions on contemporaneous protest participation to study the collective (county level) persistence of protest participation. They find that, in the context of the Tea Party protests, a 1% increase in the strength

¹²Earlier work has also argued for the importance of individuals' sustained engagement, working through social structures. See, among others, Hirschman (1984) and McAdam (2010).

of the initial protests leads to a 0.79% increase in the size of subsequent protests in the same county. Bursztyn et al. (2021) use individual shocks to protest participation to study the individual level persistence of protest participation. They find that, in the context of the anti-authoritarian protests in Hong Kong, having participated in the protest in 2017 leads to a 46.7% increase in that individual's likelihood of participating in the next protest episode a year later. Both studies provide *causal* evidence of persistence, in the aggregate and the individual level, supporting the premise that a distinct protest event can become a movement.

4.3 Open questions

Studying protests as movements is an important and fruitful area for future research, as the existing evidence is scarce and many questions remain open.

First, as protest movements extend over days, months, and in many cases years, how does persistent individual and societal engagement with movements interact with background shocks in society? For example, do temporal shocks such as worsened economic conditions and tightened political controls exacerbate participation in the movement or change the nature the movement (e.g., the transition from peaceful protests to civil disobedience as described in Glaeser and Sunstein (2015))?

Second, as protest movements evolve and grow, how does their organizational structure change over time? Organizational economics research has advanced remarkably in a range of private and public sector domains (Gibbons and Roberts, 2013). Yet, both theoretical and empirical work on the organizational dimension of protest movements is lacking. For example, does the organization of a movement formalize as it handles increasingly complex personnel affairs, arranges logistics to accommodate larger fractions of the population, and manages finances to sustain its operations? Does it centralize? How have the spread of information technology and social media affected these processes?

Third, an ultimate question on protest movements is why and when one-shot protests turn into movements. As we demonstrate in the previous section, although movements are a non-trivial fraction of protests events that take place around the world, a large share of protest events remain one-shot events and do not evolve into movements. Understanding the conditions under which movements arise from an initial episode of protests is key to many of the underlying inquiries about the dynamic patterns of protest movements.

5 The duration and geographic spread of protest movements, and the potential role of state suppression

5.1 The persistence and diffusion of protest movements

Once protest movements begin, how long do they last? In Figure 3, Panel A, we plot the duration of durable protest movements. We separately plot those that occur in mature democracies (measured prior to the start of the movement) in dark blue, and in autocracies and weak democracies in dark red. The length of these protest movements rapidly decays: out of 6,014 distinct durable protest movements, there are 3,706 lasting between 10-15 days in length. However, there are only 1,114 movements lasting between 16-20 days, and only 188 last between 31-35 days. This difference is starker for autocracies and weak democracies, where there are 2,644 movements lasting 10-15 days and a reduction by three-fourths (down to 672 movements) in movements lasting 16-20 days, compared to mature democracies which have 1,062 movements lasting 10-15 days and a reduction by about half (down to 442 movements) in movements lasting 16-20 days. Only 33% of protest movements in autocracies and weak democracies last longer than 10-15 days, while 48% of protest movements in mature democracies last longer than 10-15 days. Overall, protest movements are much more persistent in mature democracies.

In Figure 3, Panel B, we plot the duration of recurring protest movements, again separately for mature democracies (in dark blue) and autocracies and weak democracies (dark red). The length of these protest movements also rapidly decays: among the 595 distinct movements, there are 385 (64.7%) lasting 5 years and only 108 movements lasting 6 years. Autocracies and weak democracies once again see a steeper drop in protest persistence, where there are 210 movements lasting 5 years and a reduction by three-fourths (down to 48 movements) in movements lasting 6 years, compared to mature democracies which have 175 movements lasting 5 years and a reduction by two-thirds (down to 60 movements) in movements lasting 6 years.

We next conduct a simulation exercise to show that the apparent persistence of these protest movements is unlikely to be due to chance (i.e., the random occurrence of high levels of protests on the same date year after year). We take the protest frequency data at the country-day level and randomly assign new dates for each observation. We then apply our definition of protest movements using the randomly assigned protest events.¹³ After repeating this procedure 1,000 times, we plot the mean number of protest movements by

¹³Specifically, we uniformly draw new dates between the first and last date observed in the data.

movement duration in Figure 3, Panels A and B, in light red and light blue. First, we observe an extremely small number of simulated durable protest movements: on average, there are only ≈ 42 simulated durable protest movements, evenly split between mature democracies and autocracies and weak democracies. Matching the empirical number of durable protest movements would require a simulated draw over 100 standard deviations away from the mean. Second, the observed level of persistence in durable protest movements is much higher than in the simulation: all of the simulated durable protest movements last between 10-15 days, with none persisting beyond this range. Third, a similar pattern holds for simulated recurring protests. On average, there are ≈ 66 simulated recurring protest movements, and 75% of all simulated movements last for only 5 years. Thus, the simulations indicate that we observe much more persistence of protest activity than chance alone would predict.

In Figure 3, Panel C, we plot the geographic spread of protests for each durable protest movement, showing the proportion of cities (within the country where the movement occurs) protesting on each day relative to the peak number of protesting cities. We plot the geographic diffusion for two large protest movements in light lines. In light orange, we plot the July 2016 Turkey anti-coup protests. This was a protest movement that was suddenly instigated by an attempted *coup d'état* on July 15, 2016, with the lack of prior protest activity confirming the unexpected nature of the event; these protests slowly dissipated over the next few weeks, with the level of protests returning to baseline levels within the month. In dashed green, we plot the Jan. 25, 2011, Egyptian revolution protests. During this protest movement, we observe a spike in protests on January 25, one week before the largest protest by geographic spread, with the proportion of protesting cities remaining at a consistently high level for the subsequent month. Protest activity only began to die down after February 11, when President Mubarak resigned from power.

Returning to the broader trends captured in the figure, one sees that up to 10 days before the largest protest, the proportion of protesting cities remains relatively stable and compact, at roughly 15-20% of the peak. This proportion steadily climbs over the following days, approaching the 30% mark 5 days before the peak, and reaching 44% the day before the peak. The day following the peak, the proportion of protesting cities is 51% of the maximum, which gradually declines to 40% 5 days after the peak and 30% 10 days after the peak. It is only 20 days out that the proportion of protesting cities falls below 20% of the peak. This highlights that the peak geographic diffusion in protest movements often does not suddenly appear out of nowhere, nor does it generally mark the end of a movement: rather, there is often a build up to the peak, followed by a long period of elevated protest activity. Strikingly, this pattern looks broadly similar across mature

democracies and autocracies and weak democracies, although in the first week after the peak, autocracies and weak democracies consistently see a 5% *smaller* proportion of cities protesting when compared to mature democracies.

5.2 The regime's response to protests

While there are many angles from which to examine the diffusion of protests (some of which were discussed in the previous section), we draw from the diffusion pattern of protests the importance of examining the regime's response to protests. While autocratic crackdowns on protests are well-known, it is striking to observe gradual diffusion of protests up to their peak, as well as a degree of persistence in diffuse protests, even in autocracies. Whether and how regimes — which typically control more resources and coercive capacity — respond to the occurrence of protests are critical determinants of protests' equilibrium outcomes. Andirín et al. (2022) highlight the political economic logic to these decisions: while crackdown may come with political benefits, it also typically comes at a cost. To shed light on the trade-off between squashing dissent and paying the costs of crackdown, the authors compare the distribution of *predicted* and *observed* protests under a regime. Relatively more observed protests suggest a higher tolerance for protest; relatively few protests observed (compared to what is predicted) suggests a willingness to suppress.

Suppression of protests can take many forms. Guriev and Treisman (2020) model the (modern) authoritarian regime's toolkit, distinguishing between *ex-ante* measures including censorship, propaganda, and co-optation that are aimed at preventing protests from happening in the first place, and *ex-post* measures of repression that diminish or crush the protests after their occurrence.

Empirical studies have documented the presence of a range of *ex-ante* measures that the state deploys to prevent protests from taking place. In the domain of media censorship, King et al. (2013) find that Chinese internet censors target social media posts that may induce collective actions and that those posts are deleted at a much higher rate by the censorship apparatus; Chen and Yang (2019) find that exposing Chinese students to uncensored content on the internet indeed changes their political attitudes and propensity to support collective actions that demand social and political change. Moreover, in the domain of surveillance and preemptive detection of upcoming protests, Qin et al. (2017) describe how social media posts on Weibo, prior to their censorship, can be used to predict protests days prior to their occurrence, potentially allowing the state to prepare for them.

A growing number of papers study how states react after protests have occurred, aiming to stabilize the situation and ensure that protests do not escalate or recur in the future. There are three broad categories of responses documented thus far. First, technology can be deployed in response to protest occurrence. In particular, as a technology that optimizes prediction, artificial intelligence (AI) has the potential to enhance surveillance and support regime stability. Beraja et al. (2023a) show that local governments in China procure facial recognition AI systems soon after the outbreak of protests in the region, and such technology tempers the likelihood of protest occurrence in the subsequent period. Beraja et al. (2023b) find that autocracies and weak democracies around the world are more likely to import surveillance AI technology from China, especially after the occurrence of political protests domestically.

Second, the state could change the incentives among potential protest participants, either aligning them with the regime or making protest participation more costly. Wen (2022) documents that male Uyghur citizens in China are significantly more likely to be employed by the state sector after the outbreak of ethnic conflicts and protests; such employment could act both as a carrot (employment benefits reduce grievances) and stick (threats of losing employment may deter future protest participation).

Third, the state could design its bureaucracy to incentivize local politicians to allocate resources in a manner that suppresses protests. Campante et al. (2023) find that in response to strikes and protests that resulted from an export slowdown, the Chinese central government replaced leaders from localities with levels of collective action above and beyond what could be explained by the export slowdown. This suggests that local leaders are rewarded (and punished) for their handling of local protests. Relatedly, Wang and Yang (2021) document that local protest occurrence significantly reduces local politicians' chance of promotion in China's political hierarchy, and the Chinese central government avoided localities that recently experienced protests when it introduces new policies and allocates experimentation opportunities.

5.3 Open questions

As we accumulate more evidence on regimes' responses to protests, a number of questions emerge as important avenues for future research.

First, many of the existing investigations of a regime's response to protests study the regime's tools of protest suppression in isolation. Future studies that study the regime's toolbox holistically would allow for a more sophisticated mapping of the cost function faced by protest participants. For example, to what extent are *ex-ante*, preventative tools

such as censorship and propaganda substitutable with *ex-post* repression? This question becomes empirically complicated as the use of certain tools, such as the use (or threat) of state violence, may not be observed in equilibrium.

Second, a limitation of studying the regime's responses in isolation is that it is difficult to gauge the questions of when the regime decides to respond in the first place, and under what conditions are these responses effective at tempering protests. It is important to note that authoritarian regimes — even if they are unconstrained by the institutional and constitutional protection of civil liberties — may not always be incentivized to suppress protests. Protests' occurrence can provide valuable information to the regime on grievances among the population, and the regime faces a fundamental trade-off between control and information (Lorentzen et al., 2013). Studying how regimes navigate such trade-offs and endogenizing states' responses accordingly would be an important step to our understanding of the political economy of protests.

Third, it may not be mere coincidence that an overwhelming fraction of the evidence of the regime's responses to protests comes from China, an authoritarian regime with exceptionally high state capacity. Many of the anti-protest tactics deployed by the state, such as targeted censorship and facial recognition AI, requires a high level of technological sophistication. We currently lack systematic evidence on how lower-capacity autocracies and weak democracies respond to protests. If they indeed respond to protests differently than regimes with strong state capacity, do protesters internalize such differences and do protests differ accordingly?

6 Factors associated with protest occurrence and participation

What factors are associated with protest occurrence at the country level, and protest participation at the individual level? These are questions that a large body of existing literature on protests has focused on. In this section, we categorize several groups of such factors that are conceptually important. For some of these factors, we provide new stylized facts using data that span protests around the world. We also discuss evidence documented in the literature on the roles that these factors play. Due to the size of this literature, we are unable to include all relevant papers here.

We begin by examining the effects of country-year level characteristics, splitting the sample of countries by regime types. In Figure 4, Panel A, we regress various economic, political, and demographic measures on the normalized number of protests (protests per

other event), including country and year fixed effects. We then turn to correlates of individuals' participation in protests.¹⁴ In Figure 4, Panel B, we use data from the World Values Survey (WVS), pooling data across all countries and survey waves, and regress (self-reported) participation in protests on individual attitudes, beliefs, preferences, and social factors, controlling for country and wave fixed effects.¹⁵ We again present results splitting the sample of countries by regime type. Throughout the Figure, all explanatory variables of interest and outcomes are standardized, allowing us to more easily compare estimated effect sizes.

6.1 Economic conditions

We observe that economic conditions are modestly associated with the occurrence of protests in a given year. Unemployment, especially among the youth, correlates with higher protests occurrence, which is consistent with the observation that "the youth" (especially students) often form the backbone of protest participants. Relatedly, low levels of income are predictive of protests occurring. It is interesting to note that the rate of income growth is noticeably less predictive of protests occurring. We also observe that heightened income inequality is associated with protests occurring.

Many studies have documented the impact of negative income shocks on protest participation. For example, Smith (2004) studies 107 developing states and shows that societal wealth accumulated from oil significantly lowers protest occurrence; Campante et al. (2023) study the effect of unemployment pressure in the export sector in China due to the global trade slowdown; Dube and Vargas (2013) examine how oil price shocks affect domestic protests; Ponticelli and Voth (2020) show that austerity measures, especially spending cuts, in 20th century Europe have led to more strikes, demonstrations, and riots; Braggion et al. (2020) finds that credit contraction and a resulting bank lending crisis led to protests in China during the 1930s.

The prospect of bleak future economic conditions could also shape protest occurrence and participation. Campante and Chor (2012) argue that an important driver of the Arab Spring was the mismatch between economic ambition resulting from educational attainment and a lack of economic opportunities, as well as weak labor market conditions in

¹⁴The country-level regressions exploit within country over time variation, which has the virtue of isolating the effects of changes in particular variables from other country characteristics and from broader time trends. However, this variation may be under-powered to estimate the relationships between protest occurrence and certain slow-moving characteristics such as demographic patterns.

¹⁵There are 7 waves of the WVS, spanning the time period 1981–2022. Not all questions are available in all waves. We harmonize questions across waves where possible and otherwise omit years in which the data are not available. We code an individual as participating in protests if they report ever participating in a protest, including lawful/peaceful demonstrations.

the Arab world. Bai and Jia (2016) document that the abolition of the Chinese Imperial Civil Service Exam in 1905 lowered expected upward mobility among the educated elites and led to widespread protests and uprisings. In the context of Britain during the Industrial Revolution, Caprettini and Voth (2020) show that the diffusion of new, labor-saving technologies led to mass riots.

It is interesting to note that while social scientists emphasize the role of class background in protests (Marx (1977); Acemoglu and Robinson (2006)), and many have speculated that economic dissatisfaction is of first-order importance (see, among others, Carothers and Feldman (2022)), such a relationship is relatively weak when we pool all countries together and examine protests throughout the past 40 years. This relationship is even more muted when we focus on autocracies and weak democracies, suggesting that adverse economic situation, while perhaps an important contributing factor, may not be sufficient to trigger protests.

6.2 Attitudes and preferences

We find that, among the questions consistently elicited by the World Values Survey, preferences for democracy and an interest in politics are particularly strong predictors of individual participation in protests. These relationships are somewhat muted in autocracies and weak democracies.

A growing literature analyzes the role played by attitudes and preferences in shaping individuals' protest participation. For example, Besley and Persson (2019) study the complementarity between values and institutions, pointing to an important force that values could play in citizens' demand for political change and society's ability to maintain changed equilibrium; Kostelka and Rovny (2019) investigate political ideology and protest participation across a range of democratic regimes and find that culturally liberal individuals are more likely to participate in protests; Arikan and Bloom (2019) show that private religious beliefs reduce an individual's protest potential while involvement in religious social networks fosters it; Claassen and Gibson (2019) document that cities with more politically tolerant individuals experience more protests; and Bazzi et al. (2021) find that "frontier culture" and individualism reduce collective action; Hoffman and Jamal (2014) find that readers of the Qur'an (but not mosque attenders) were more likely to participate in the Arab Spring, and that these readers were more sensitive to inequity; and, ? argues that political preferences and values played a driving role in the women's rights movement.

6.3 Personality and other individual traits

Moving to personality and other preferences and traits that are more “innate,” we observe that protest participants are substantially more likely to value independence and freedom, but not obedience, as well as exhibit pro-social characteristics. Again, this suggests that what motivates protest participation may go beyond economic and political motives; protest participants potentially view protests as an important platform for self-expression and for contributing to the broader good of society.

Similar patterns are documented in Cantoni et al. (2022) where a rich set of fundamental preferences and personality traits are elicited among the Hong Kong population during its anti-authoritarian movements. This study finds that fundamental economic preferences, particularly risk tolerance and pro-social preferences, are the strongest predictors of protest participation. Intriguingly, these strongest predictors are the same for modest and massive protests, with larger effects for massive protests. The prominent role of fundamental economic preferences, especially pro-sociality, in driving protest participation — both when protests are modest and massive — suggests that such behavior may be best thought of as the production of a political public good. Variation in turnout may reflect changes in the perceived benefits of the public good.

The role of personality traits in shaping political ideology and behavior has been the topic of a growing political science literature (e.g., Gerber et al. (2010)), but less evidence exists on the link between personality traits and protest participation. Mondak et al. (2010) find a weak negative correlation between conscientiousness and participation in protests in Uruguay and Venezuela. Cantoni et al. (2022) examine the role of (Big 5) personality traits in shaping protest turnout in Hong Kong, finding a quantitatively small effect. Gallego and Oberski (2012) find an association between personality traits and protest participation, mediated by one’s political attitudes.

6.4 Social factors: protests as collective action

Protests are by definition collective actions. Thus, an individual’s participation in protests could be shaped not only by their own circumstances, attitudes, preferences, and traits, but also by the people around them. Using the World Value Survey, we observe that discussing politics with friends and family is indeed a very strong predictor of one’s own participation in protests, and this is true for citizens across all regime types.

A number of recent studies document the role of social factors in shaping individuals’ protest participation decisions. Several studies find evidence of an amplifying effect of protest participation through social networks. González (2020) provides evidence, us-

ing partially overlapping networks, that peers' participation in Chilean student protests increased one's own. Bursztyn et al. (2021) randomly vary incentives to participate in protests across social networks among Hong Kong university students, and show that social networks play a key role in fostering sustained protest participation. In particular, the newly established or strengthened social ties among protest participants in an early episode of a protest significantly increase the likelihood of attendance in a subsequent episode. Enikolopov et al. (2023) find that, consistent with models of image concerns as a driver of pro-social behavior (Benabou and Tirole, 2006), such concerns played an important role for participants in protests in Russia in 2010-11; social media amplified the signaling mechanism.

Conceptually, social scientists have long viewed the social component of protest participation as strategic, with an individual's participation a function of their beliefs about others' turnout. Importantly, evidence of social complementarity does *not* imply strategic complementarity: the former may arise from common information sets (and thus shared preferences or beliefs about the regime) or reduced coordination costs, among others. Cantoni et al. (2019) aim to isolate the strategic component alone, conducting a field experiment in the context of Hong Kong's ongoing anti-authoritarian movement to identify the causal effects of positively and negatively updated beliefs about others' protest participation on subjects' own turnout. The paper finds evidence of strategic substitutability: as beliefs about others' participation increase, subjects become significantly less likely to participate in the protest themselves; as beliefs about others' participation decrease, subjects become significantly more likely to participate in the protest themselves.

6.5 Open questions

Studying social and individual drivers of protest participation is one of the largest strands of literature on protests. Yet, each empirical advance has opened additional questions for future work; we highlight several potential paths for future research in this area.

First, there exist reduced form causal effects that we do not yet fully understand. Why do social ties matter so much for protest participation? Are social ties instrumental for information flows, for persuasion, for the joint utility from shared political expression such as collective emotion, or, perhaps for social image concerns? If protests are (at least sometimes) games of strategic substitutes, what allows participants to overcome the temptation to free-ride? Future empirical work should aim to shed light on these important questions.

In doing so, the growing empirical literature should contribute to a second aim for re-

search: informing richer modeling on protest occurrence and participation. For example, can models incorporate the role of non-economic factors and their potential interaction with (negative) economic shocks to generate more precise predictions on when protests occur and who chooses to participate in them? Can models of strategic protest participation incorporate the possibility of strategic substitutability and consider protests as a public goods game, when the current workhorse models typically assume strategic complementarity? Does the strategic environment in protest participation switch from strategic substitutability to strategic complementarity, precipitating large protests? We hope a tighter dialogue between the empirical and theoretical literatures can generate new insights.

Third, to the extent that other forms of political participation are available (e.g., expression online; action in the formal political arena), it would be interesting to study protest participation alongside other political behaviors, and consider protests as one component of a large bundle of options for citizens to demand political and social change. Are protests substitutes or complements with respect to formal political participation, such as voting? Does protest participation share the same underlying drivers as turnout to other forms of political expression?

Finally, we hope more studies can examine the causes of protest participation in “real time”, which enables the elicitation of critically important variables such as first- and second-order beliefs, as well as emotions, that would not be feasible to elicit *ex-post*.

7 Protests in the world vs. protests in the social sciences literature

In this last section, we compare the the occurrence of protests around the world against the protests that recent empirical studies in economics and political science have focused on.

To measure the distribution of recent publications in economics and political sciences on protests, we set the following inclusion criteria: *(i)* the paper must have been published after 1990; *(ii)* the paper must have been published in a leading journal in economics or political science;¹⁶ and *(iii)* the paper must contain a keyword related to protests in its

¹⁶Specifically, this list of journals is: *Econometrica*, *American Economic Review*, *The Quarterly Journal of Economics*, *Journal of Political Economy*, *The Review of Economic Studies*, *Journal of the European Economic Association*, *The Review of Economics and Statistics*, *The Economic Journal*, the *American Economic Journals*, *American Economic Review: Insights*, *American Political Science Review*, *American Journal of Political Science*, *Quarterly Journal of Political Science*, *The Journal of Politics*, *World Politics*, *Comparative Political Studies*, and *Political Behavior*, as well as NBER working papers. You may note some papers

title, abstract, or keywords.¹⁷ The full list of the included papers is presented in Appendix Table A.2. We then code the primary country studied in the paper (if any) and compute the share of papers studying each country in the covered literature.

As in the previous sections, we use GDELT to measure the occurrence of protests around the world, using normalized protests (protests per other event), and compute the share of protests that actually occur in each country.

We note that neither measure is comprehensive, nor should our measure of protest occurrence be viewed as a normative benchmark of what “should be” studied. The purpose of this exercise is to stimulate conversations about the difference between (one measure of) where protest events have occurred and (one measure of) what scholars have chosen to study. We believe the comparison raises important questions about how to generalize findings from existing work, and where fruitful directions for future work might be.

In Figure 5, Panel A, we plot the difference between the share of protests in GDELT and the share of protests in the literature that each country receives. As one can see, the distribution of protest occurrence across countries does not exactly match the attention scholars have devoted to these countries’ protests. Among the countries that are over-represented in economic and political science research, the top ones are the US (over-represented by 18.0%), China (12.3%), and Russia (6.0%).¹⁸ Among the under-represented countries in studies, the top ones are Israel/Palestine (-6.1%), the UK (-3.2%), and Iran (-2.6%). Interestingly, over-representation in academic research is not systematically different in mature democracies compared to autocracies and weak democracies. Rather, differences in representation are largely driven by differences within regime types, with specific large countries receiving a disproportionate share of attention in the literature.

One might wonder whether the mainstream media’s featured reports of protests exhibit a similar pattern. In Figure 5, Panel B, we plot the difference between the share of protests in the *New York Times* (as classified by the Cline Center Historical Phoenix Event Data) and the share of protests in GDELT.¹⁹ The skew in the *New York Times*’ reports looks very similar to that in academic research. The top three countries by over-representation are the US (10.2%), Iraq (2.1%), and China (1.6%). Now, the most under-represented coun-

fall outside this list of journals, because they were published as NBER working papers prior to journal publication.

¹⁷The list of keywords is: revolution, collective action, revolt, (political) unrest, protest, riot, strike, and demonstration.

¹⁸Despite the large quantitative difference in representation, this difference is not so large in rank: the US, China, and Russia rank first, second, and third in the literature and first, fifth, and second in GDELT.

¹⁹Specifically, these are the *New York Times* articles from 1980–2018 provided by LexisNexis. Like GDELT, the Cline Center also uses the CAMEO classification scheme to code different types of events, but the two datasets use different underlying algorithms.

tries are Egypt (-1.5%), Pakistan (-1.4%), and India (-1.0%).

7.1 Open questions

A number of factors may drive the differential representation of protests in specific countries in recent empirical studies. Data limitations and both logistical and ethical constraints on scholars' ability to work in specific contexts may play an important role in shaping which protests receive attention. To the extent that protests differ in challenging research environments, the literature may miss important dimensions of protests. Finding ways to ethically conduct research in weak state environments, in contexts of violence, or in contexts with autocratic regimes is an important direction for future work on protests.

Differential representation could also arise from (either explicit or implicit) scholarly bias towards the study of protests that are large or successful. This sort of selection on outcomes could create significant distortions to our understanding of protests. Not only might drivers of protest participation differ between large and small protests, but also, the process of movement growth and diffusion will be difficult to understand without considering movements that stayed small or failed. Understanding the determinants of movements' development is, as emphasized above, an important area for future research; much more evidence is needed from protests that fail to reach the size and prominence that typically have directed our attention.

Finally, we note that the three over-represented countries — the US, China, and Russia — do represent a range of differing protest motives. In the US, many protests reflect the expression of grievances by political groups excluded from formal political power in a majoritarian political system. These may be racial or ethnic minorities, or groups with policy preferences that do not command majority support (e.g., environmental or anti-war activists). In Russia, many of the most salient protests are anti-regime protests in a weakly democratic context. In China, many protests arise against government officials who are unaccountable to local citizens. These countries usefully illustrate a range of drivers for public expression beyond the bounds of formal politics. Each type of protest may motivate different types of individuals to participate. Each one may present different challenges of coordination, organization, and movement development. However, we currently do not have much evidence on whether and how protests arising from these different motives differ. Systematic analyses — both conceptual and empirical — of these different protest types is another important area for future research.

8 Conclusion

Often at the root of far-reaching economic, social, and political change, protests have received a substantial amount of attention from across the social sciences.

In this paper, we document five new patterns of protests around the world. First, 2011 marked a trend break when protests began to occur in autocracies and weak democracies at a higher rate than mature democracies. Second, a meaningful share of protest events are part of movements. Third, protest movements spread geographically, with gradual build-up to their peak and often a gradual decline. Fourth, while economic performance weakly predicts protest occurrence, individuals' attitudes, preferences, personalities, and social factors are strongly associated with their participation in protests. Fifth, a subset of countries, namely, the US, China, and Russia, receive disproportionate attention among economists and political scientists who study protests, relative to their actual rates of protest occurrence.

We connect these patterns to the knowledge accumulated in the existing literature, and we point out promising avenues for future research. There are many areas of the literature that we omit in this review due to space constraints: for example, we regrettably do not systematically survey the literature studying the consequences of protests for political and economic outcomes. In light of the ongoing evolution of protests and political movements, alongside the emergence of new datasets and empirical tools, we anticipate an exciting next phase of theoretical and empirical economic research on protests.

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Tables and Figures

Table 1: Protest datasets

Dataset	Years covered	Locations covered	Method	Events covered	Variables
GDELT	2015-present (all variables), 1979-2014 (less complete)	Entire world, including subnational/lat-long	Scraping global media and machine learning to classify data	Many, classified in CAMEO codebook	Data on actors (name, country, affiliation); type of event, number of mentions, and tone
ACLED	Africa, 1997 - present, Middle East/SEA mid-2010s to present, Central Asia/East Europe/LatAm 2018/9-present, rest of world after 2020	Entire world, including subnational/lat-long	Media, with human review, intracoder reliability	Battles, remote violence, protests, riots, strategic developments	Data on actors (name, country, affiliation); type of event, scale and fatalities
Carnegie	2017-present	Entire world, country level	Mainstream English language news source only	Only antigovernment protests	Duration, size (# protestors), outcome (ex/ policy or leadership change), key participants, motivations, triggers (text data)
The World Handbook of Political Indicators III	1948-1982	Almost entire world (155 countries)	Human code New York Times and other international newspapers	Political events (38 types, including protest categories demonstration, riot, strike etc.)	Size of event, source, target (5 categories) and actor (10 categories), issue (6 categories), injuries, damage, duration, location (include capital/not/widespread), deaths
The World Handbook of Political Indicators IV	1990-2004	Entire world, country level	Reuters newswires, automated	Contentious politics (protest (6 kinds), violence, sanction, relaxation)	Type of actor
ICEWS	1995-2023 (POLCAT is the successor dataset)	Worldwide except for US domestic, subnational including lat/long	English, Spanish, Portuguese, and French news, then machine learning	Many, classified in CAMEO codebook	Type of actor, intensity/event
Cline Center Historical Phoenix Event Data	1945-2019	Entire world, including subnational/lat-long	NYT, WSJ, BBC, CIA sources, then machine learning	Many, classified in CAMEO codebook	Type of actor, intensity/event
Mass Mobilization	1990-2014	Almost worldwide (162 countries), subnational	Search LexisNexis, all news from major publications, hand code	Protests (demonstration, riot, mass mobilization) with at least 50 participants	Duration, violence, size, type of protestor, demand (7 types), state response (7 types)
NAVCO	1990-2019 (campaign level), NAVCO 2 (annual level, 1945-2006), NAVCO3 from 1990-2011 for daily events	NAVCO 1: 622 campaigns, NAVCO 2: 384+ campaigns, NAVCO 3: 26 countries; country level	Literature review, news and other protest databases, UCDP etc.	Campaigns (mass tactics for political objective), but only maximalist ones (meaning regime change, succession, self-determination as goal)	Target, violent, success in outcomes, purpose/demands
Mass Mobilization in Autocracies Database	2003-2019	Only autocracies, subnational	Hand code from AP, AFP, BBC Monitoring	Protests (political) vs. state, at least 25 participants	Actor type, size, issue, scope, violence

Notes: This table presents different datasets on protests, along with several characteristics of each dataset.

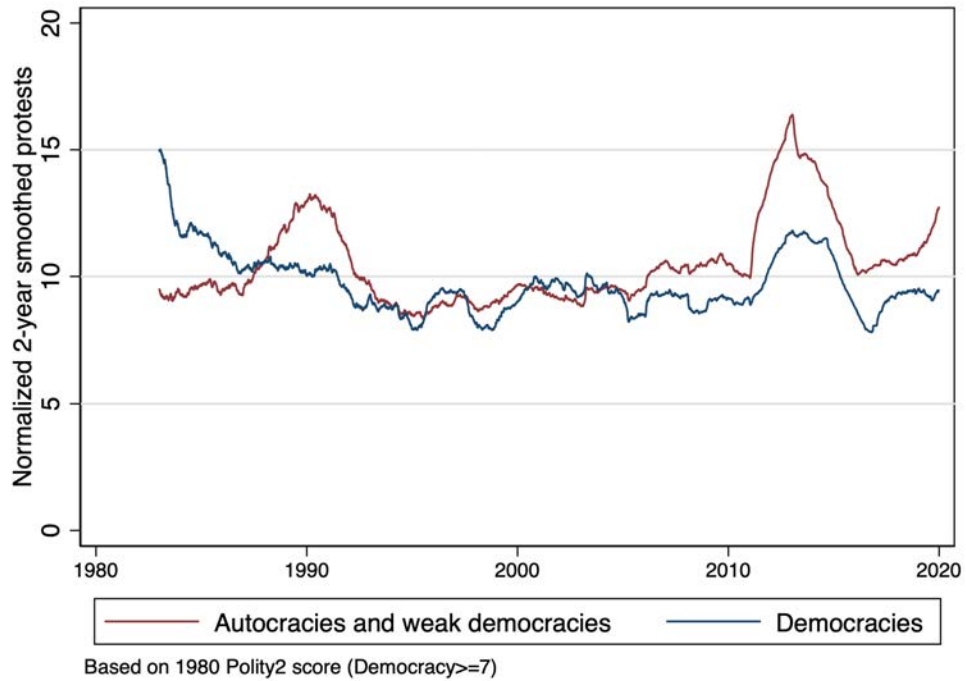
Table 2: Summary statistics

	Protest share	Protest count	Duration (percentile)			
			Mean	10th	50th	90th
	(1)	(2)	(3)	(4)	(5)	(6)
Durable protests	0.043	50,392	15.887	11	15	22
Recurring protests	0.002	1,938	5.934	5	5	7
One-shot protests	0.956	1,121,010	1	1	1	1

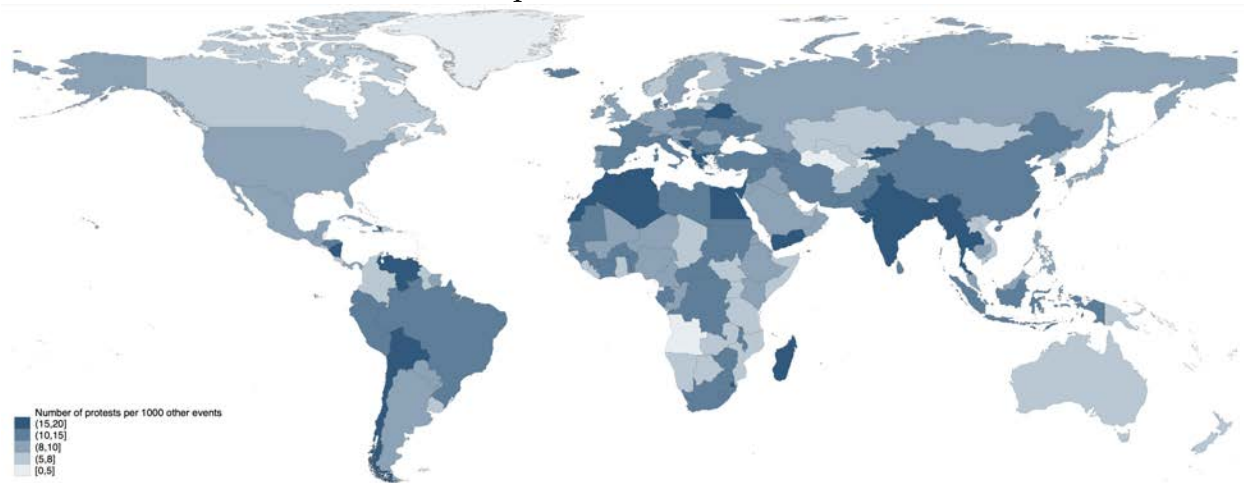
Notes: This table presents summary statistics for different kinds of protests. Protest movements defined as follows: durable protests are defined as protest movements in a country where, for at least 10 days in a row, the number of protests exceeds twice the national average and the number of locations protesting is also at least twice the national average, skipping at most one day that doesn't fit these criteria. Recurring protests are defined as protest movements in a country where, for at least 5 years in a row on the same date, the number of protests exceeds twice the national average and the number of locations protesting is also at least twice the national average. One-off protests are protests that fit neither category above. The duration of protests for durable protests and one-off protests is measured in days, while the duration of recurring protests is measured in years.

Figure 1: Protests over time and across countries

Panel A: protests over time



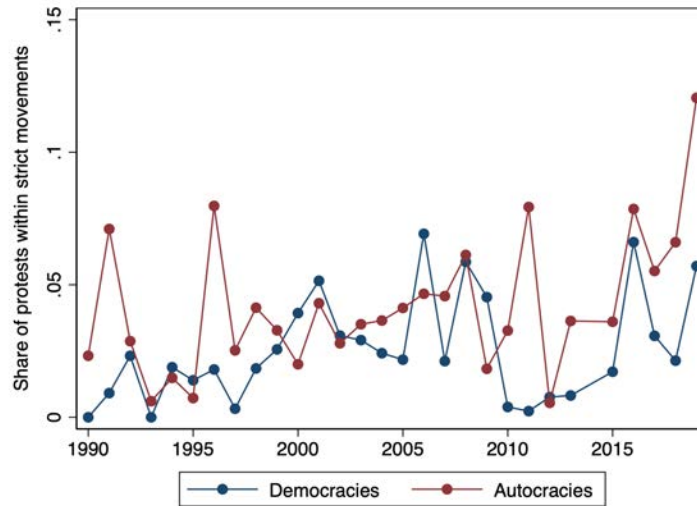
Panel B: protests across countries



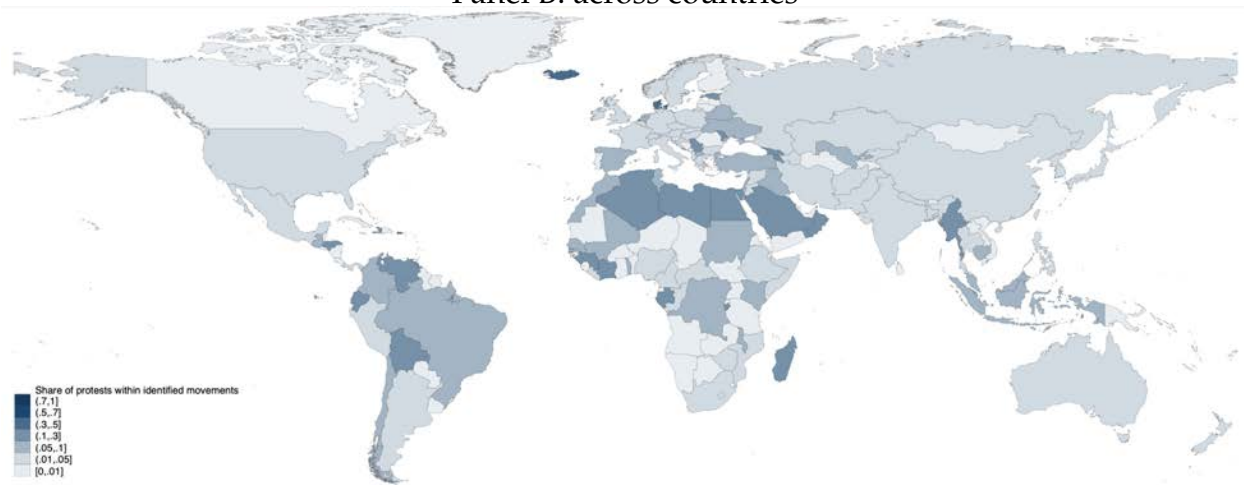
Note: This figure plots protests across the world, from 1980 to 2020, as measured by GDELT. Protest counts are per 1000 other events in the GDELT dataset. Panel A plots the time series of protests, split by mature democracies (polity score ≥ 7) and autocracies and weak democracies (polity score < 7). Panel B plots the average number of protests per thousand events by country.

Figure 2: The share of protests that are part of movements

Panel A: over time

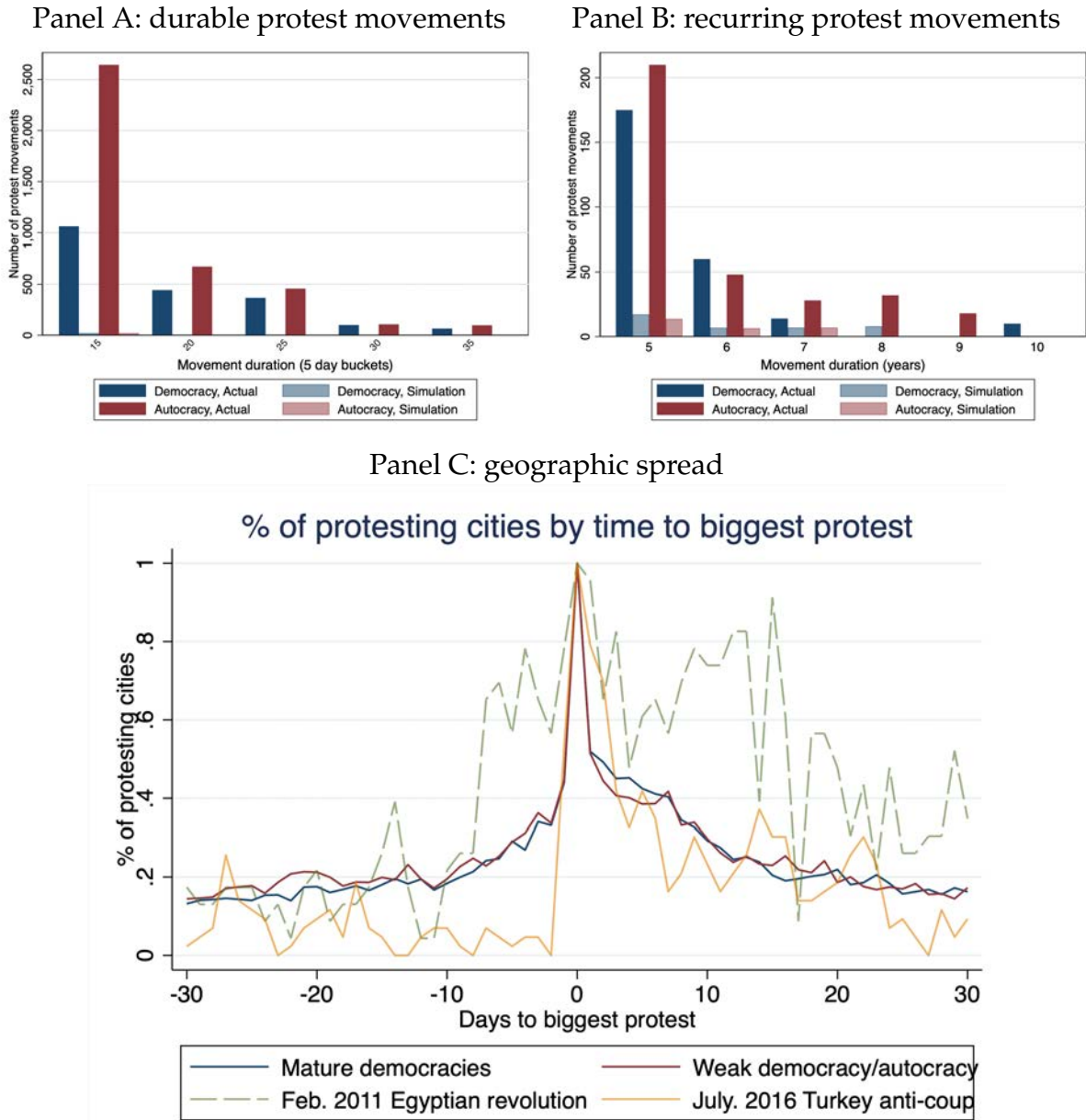


Panel B: across countries



Note: This figure plots the share of protests in GDELT that can be mapped to a protest movement. Protest movements are defined as periods of at least 10 consecutive days where the number of protests is at least twice the national average and there are protests in twice the average number of locations, skipping at most 1 day in the interim. Panel A plots the time series of this share, split by mature democracies (polity score over 7) and autocracies and weak democracies (polity score less than 7), excluding the United States. Panel B plots the average share of protests that are part of a movement by country.

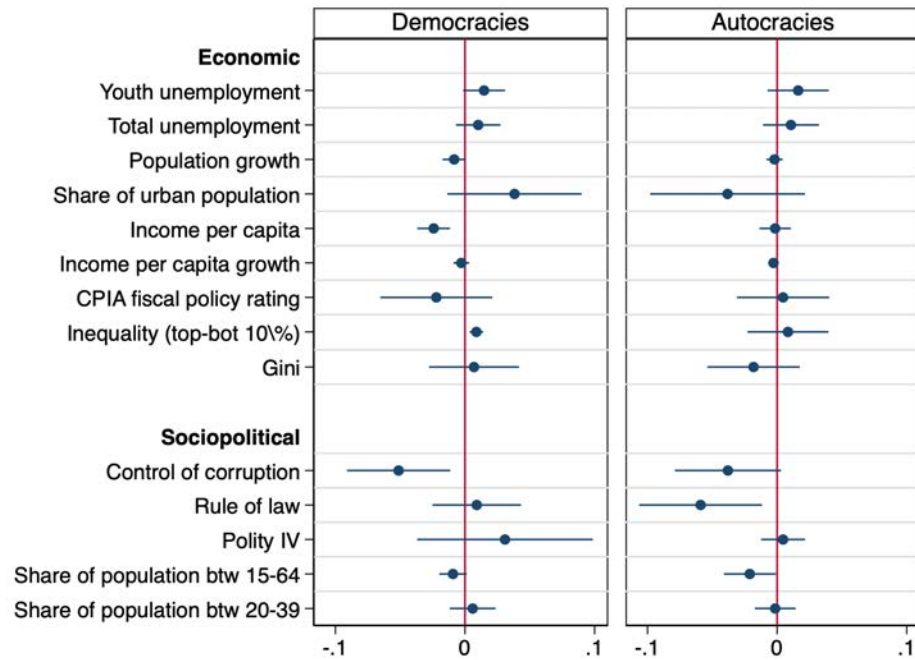
Figure 3: Duration and geographic spread of protest movements



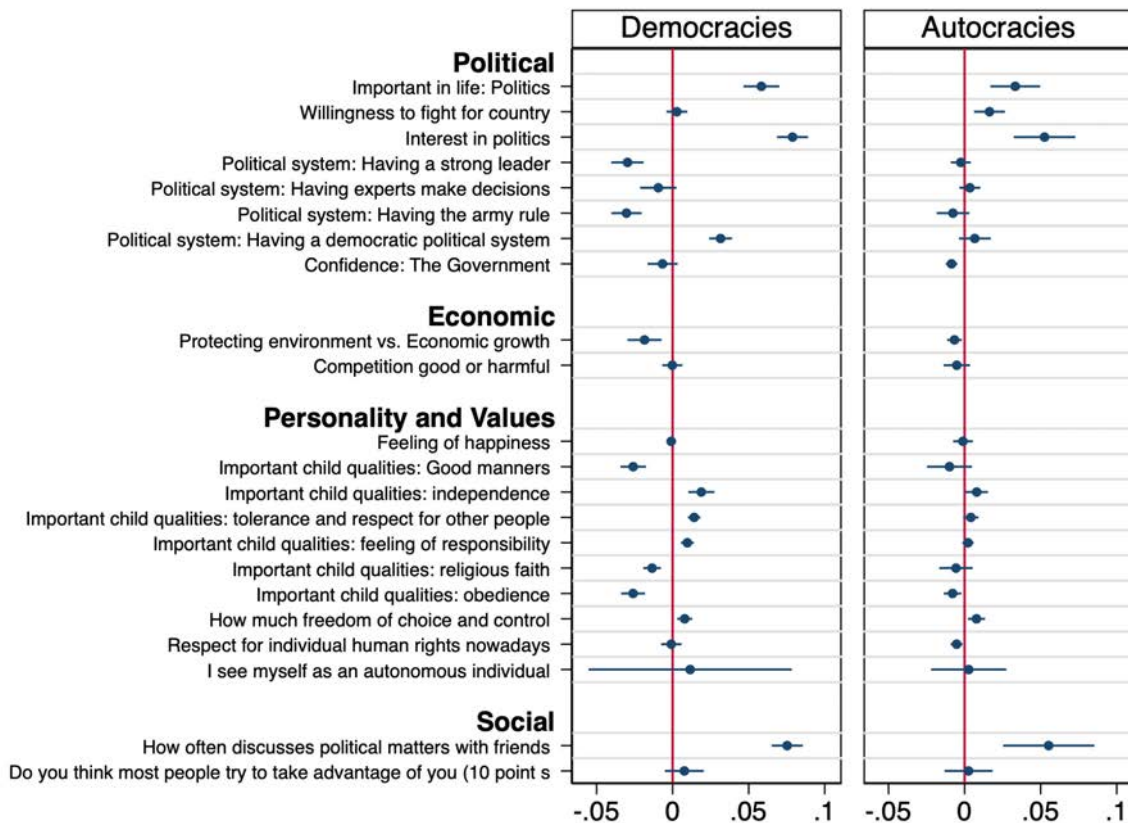
Note: This figure plots the duration and geographic spread of actual (dark) and simulated (light) protest movements. Panel A presents durable movements, which are defined as a period of at least 10 consecutive days where the number of protests is at least twice the national average and there are protests in twice the average number of locations, skipping at most 1 day in the interim. The x-axis groups protest movements by duration, rounded to the nearest 5 days. Panel B presents yearly protests, defined as protests on the same date of the year that exceed twice the national average and in twice the average number of locations for at least five years in a row. Panel C presents the share of protesting cities, relative to the peak within a durable movement. The average for mature democracies is plotted in dark blue and the average for autocracies and weak democracies is plotted in dark red. Two case studies are also shown: the 2011 Egyptian revolution protests are plotted in light green with long dashes, and the 2016 Turkey anti-coup protests are plotted in light orange.

Figure 4: Socioeconomic correlates of protests

Panel A: Society-level measures



Panel B: Individual-level measures

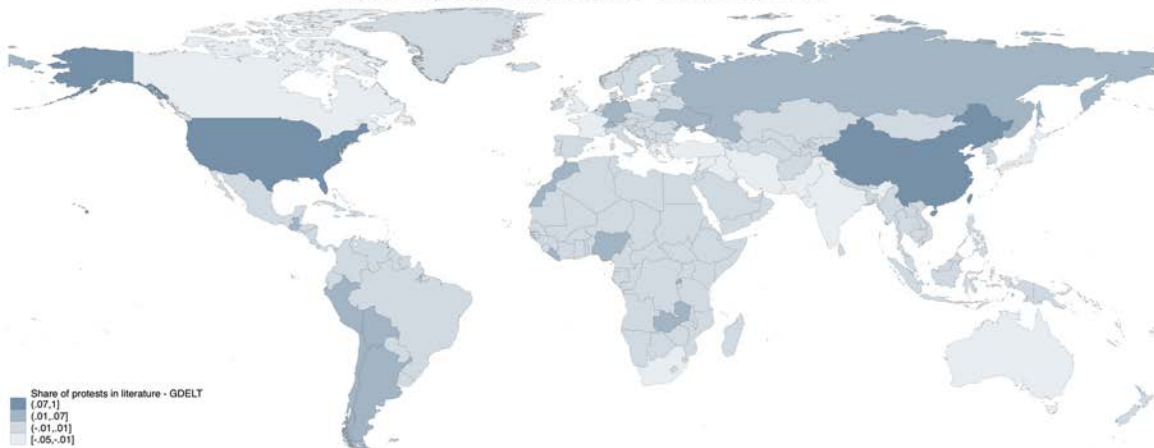


Note: This figure plots coefficients and 95% confidence intervals for various correlates of protests. In Panel A, an observation is a country-year, and the dependent variable is the normalized number of protests (measured by GDELT). In Panel B, an observation is an individual and the dependent variable is individual protest participation (as measured by the World Values Survey). All independent and dependent variables of interest are standardized to have mean = 0, standard deviation = 1. Each row represents a separate regression that controls for country and time period fixed effects and is two-way clustered on country and time period.

Figure 5: Protests in the literature vs. GDELT

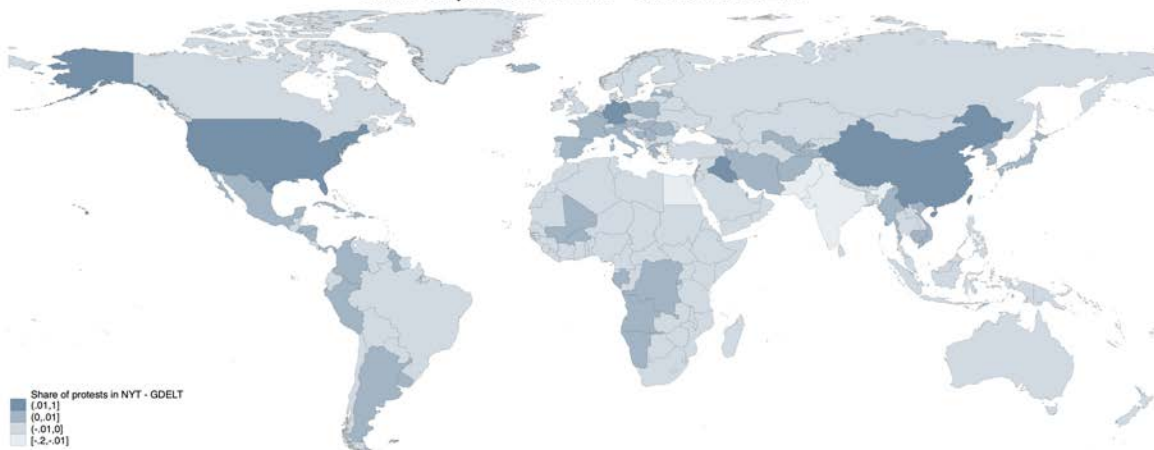
Panel A: Share of protests in literature vs. GDELT

Share of protests in literature - share in GDELT



Panel B: Share of protests in NYT vs. GDELT

Share of protests in NYT - share in GDELT



Note: Panel A maps the share of normalized protests in GDELT subtracted from the share of protest papers in the top economics and political science journals linked to each country. Panel B maps the share of protests GDELT subtracted from the share of protests in the New York Times linked to each country.

Online Appendix for: Protests

This appendix contains additional figures and tables for the article "Protests."

Appendix A An alternative definition for movements

We explore an alternative method of defining a protest movements. Instead of constructing protest movements bottom-up from the micro-data on protests, we instead take a comprehensive list of 750 protest movements from Wikipedia and match our protests to this list of movements. We once again separate the list of protest movements into two types: (i) *durable protest movements* that persist for many days in a row in a country, and (ii) *recurring protest movements* that repeat every year on a set day. We then match each protest event to a protest movement in Wikipedia using the date and country of the event. Events that we are unable to match are labeled as one-shot protests.

We plot summary statistics for the share of protests falling into each movement category and the duration of these movements in Appendix Table A.1. Unsurprisingly, given our relatively conservative definition of a protest movement compared to the Wikipedia definition, we classify a much larger proportion of protests as belonging to a durable protest with Wikipedia (31.5% versus 4.3% in the bottom-up definition). More surprisingly, we pick up on nearly ten times fewer recurring protests using the Wikipedia definition when compared to the bottom-up definition, suggesting that Wikipedia may systematically undercount these protests. Under the Wikipedia movement definition, the median durable protest movement lasts a month, while the median recurring protest lasts for 5 years in a row. The longest durable protest movements include Namantar Andolan (a Dalit Buddhist movement in India lasting 16 years), opposition to the US involvement in the Vietnam War (lasting 8 years), and a movement opposing open pit mining in Bangladesh (lasting 8 years), while the longest recurring protest movements are Germany's May Day (lasting 33 years) and Hong Kong's July 1st marches (lasting 23 years).

In Appendix Figure A.2, Panel A, we plot the time series for the share of protests that are part of a protest movement. Up until 2005, mature democracies, weak democracies and autocracies had a similar share (approximately 7%) of protest events that could be attributed to movements. Since 2005, a considerably larger share of protests has belonged to protest movements, peaking at 53% in 2011 in weak democracies and autocracies, and 33% in mature democracies in 2017 in mature democracies. In Appendix Figure A.2, Panel B, we map the share of protests that are part of a movement by country. The United States stands out as a country with one of the highest proportions of protests as part of a movement, at 88%. This reveals a weakness in using Wikipedia to define movements: without an effective way to match on subnational locations, too many protests will be assigned to any given protest movement. The same holds true for long-running protests: it is not the case that all protests in India between the years 1978 and 1994 were related to the Namantar Andolan movement. Furthermore, one may be concerned that Wikipedia may have a bias in covering protests in certain regions or time periods. It is for these reasons that we prefer our bottom-up definition of protest movements. However, though these different definitions of protest movements may highlight different trends in protest organization over time and space, they ultimately both point to the importance of protest movements in understanding the role that protests have played.

Appendix B Appendix tables and figures

Table A.1: Summary statistics — Wikipedia protest movements

	Protest share	Protest count	Duration (percentile)			
			Mean	10th	50th	90th
	(1)	(2)	(3)	(4)	(5)	(6)
Durable protests	0.315	354,141	231.698	2	31	572
Recurring protests	0.000	221	12.286	2	5	33
One-off protests	0.685	769,223	1	1	1	1

Notes: This table presents summary statistics for different kinds of protests. Protest movements as defined by Wikipedia. The duration of protests for durable protests and one-off protests is measured in days, while the duration of recurring protests is measured in years.

Table A.2: Papers on protests in leading economics and political science journals

Title	Author(s)	Journal	Year
A Glimpse of Freedom: Allied Occupation and Political Resistance in East Germany	Luis R. Martinez, Jonas Jessen, Guo Xu	American Economic Journal: Applied Economics	2023
Do Strikes Kill? Evidence from New York State	Jonathan Gruber, Samuel A. Kleiner	American Economic Journal: Economic Policy	2012
Rethinking Global Environmental Governance to Deal with Climate Change: The Multiple Logics of Global Collective Action	Daniel C. Esty	American Economic Review	2008
Ethnicity and conflict: An empirical study	Joan Esteban, Laura Mayoral, Debraj Ray	American Economic Review	2012
Leader Punishment and Cooperation in Groups: Experimental Field Evidence from Commons Management in Ethiopia	Michael Kosfeld, Devesh Rustagi	American Economic Review	2015
Connecting Student Loans to Labor Market Outcomes: Policy Lessons from Chile	Harald Beyer, Justine Hastings, Christopher Neilson, Seth Zimmerman	American Economic Review	2015
The Long-run Effects of the Scramble for Africa	Stelios Michalopoulos, Elias Papaioannou	American Economic Review	2016
The Logic of Insurgent Electoral Violence	Luke N. Condra, James D. Long, Andrew C. Shaver, Austin L. Wright	American Economic Review	2017
This Mine is Mine! How Minerals Fuel Conflicts in Africa	Nicolas Berman, Mathieu Couttenier, Dominic Rohner, Mathias Thoenig	American Economic Review	2017
Persistent Political Engagement: Social Interactions and the Dynamics of Protest Movements	Leonardo Bursztyn, Davide Cantoni, David Y. Yang, Noam Yuchtman, Y. Jane Zhang	American Economic Review	2020
Information Networks and Collective Action: Evidence from the Women's Temperance Crusade	Pinar Yildirim, Camilo García-Jimeno, Angel Iglesias	American Economic Review	2022
Democratic Values and Institutions	Timothy Besley, Torsten Persson	American Economic Review: Insights	2019

Oil Wealth and Regime Survival in the Developing World, 1960–1999	Benjamin Smith	American Journal of Political Science	2004
American Patriotism, National Identity, and Political Involvement	Leonie Huddy, Nadia Khatib	American Journal of Political Science	2007
Foreign Direct Investment, Regime Type, and Labor Protest in Developing Countries	Graeme B. Robertson, Emmanuel Teitelbaum	American Journal of Political Science	2011
Globalization, Regime Type and Labor Protest in Developing Countries	Graeme Robertson, Emmanuel Teitelbaum	American Journal of Political Science	2011
People Power or a One-Shot Deal? A Dynamic Model of Protest	Adam Meirowitz, Joshua A. Tucker	American Journal of Political Science	2013
Spatial and Temporal Proximity: Examining the Effects of Protests on Political Attitudes	Sophia J. Wallace, Chris Zepeda-Millán, Michael Jones-Correa	American Journal of Political Science	2014
Social Protest and Policy Attitudes: The Case of the 2006 Immigrant Rallies	Regina Branton, Valerie Martinez-Ebers, Tony E. Carey, Jr., Tetsuya Matsubayashi	American Journal of Political Science	2015
Sources of Authoritarian Responsiveness: A Field Experiment in China	Jidong Chen, Jennifer Pan, Yiqing Xu	American Journal of Political Science	2016
Strategies of Resistance: Diversification and Diffusion	Kathleen Gallagher Cunningham, Marianne Dahl, Anne Frugé	American Journal of Political Science	2017
Bankrolling Repression? Modeling Third-Party Influence on Protests and Repression	Olga V. Chyzh, Elena Labzina	American Journal of Political Science	2018
Born Weak, Growing Strong: Anti-Government Protests as a Signal of Rebel Strength in the Context of Civil War	Bahar Leventoglu, Nils W. Metternich	American Journal of Political Science	2018
Remittances and Protest in Dictatorships	Abel Escribà-Folch, Covadonga Meseguer, Joseph Wright	American Journal of Political Science	2018
The Persistent Effect of U.S. Civil Rights Protests on Political Attitudes	Soumyajit Mazumder	American Journal of Political Science	2018
Social Networks and Protest Participation: Evidence from 130 Million Twitter Users	Jennifer M. Larson, Jonathan Nagler, Jonathan Ronen, Joshua A. Tucker	American Journal of Political Science	2019
Policing the Organizational Threat in Morocco: Protest and Public Violence in Liberal Autocracies	Chantal E. Berman	American Journal of Political Science	2021

The Effect of Black Congressional Representation Participation	Claudine Gay Stanf	American Political Science Review	2001
Beyond Fractionalization: Mapping Ethnicity onto Nationalist Insurgencies	Lars-Erik Cenderman, Luc Girardin	American Political Science Review	2007
Technology and Collective Action: The Effect of Cell Phone Coverage on Political Violence in Africa	Jan H. Pierskalla G, Florian M. Hollenbach Duk	American Political Science Review	2013
The Semblance of Democratic Revolution: Coalitions in Ukraine's Orange Revolution	Mark R. Beissinger	American Political Science Review	2013
Transparency, Protest, and Autocrat	James R. Hollyer, B. Peter Rosendorff, James Raymond Vreela	American Political Science Review	2015
Reevaluating the Middle-Class Protest Paradigm: A Case-Control Study of Democratic Protest Coalitions in Russia	Bryn Rosenfeld	American Political Science Review	2017
Spontaneous Collective Action: Peripheral Mobilization During the Arab Spring	Zachary C. Steinert-Threlkeld	American Political Science Review	2017
Agenda Seeding: How 1960s Black Protests Moved Elites, Public Opinion and Voting	Omar Wasow	American Political Science Review	2020
Democracy by mistake	Daniel Treisman	American Political Science Review	2020
Do Violent Protests Affect Expressions of Party Identity? Evidence from the Capitol Insurrection	Gregory Eady, Frederik Hjorth, Peter Thisted Dinesen	American Political Science Review	2021
The Opinion-Mobilizing Effect of Social Protest against Police Violence: Evidence from the 2020 George Floyd Protests	Tyler T. Reny, Benjamin J. Newman	American Political Science Review	2021
India's Farmers' Protest: An Inclusive Vision of Indian Democracy	Natasha Behl	American Political Science Review	2022
The Causes and Consequences of Development Clusters: State Capacity, Peace, and Income	Timothy Besley, Torsten Persson	Annual Review of Economics	2014
Conflict and Development	Debraj Ray, Joan Esteban	Annual Review of Economics	2017
Social Networks in Policy Making	Marco Battaglini, Eleonora Patacchini	Annual Review of Economics	2019

Political Effects of the Internet and Social Media	Ekaterina Zhuravskaya, Maria Petrova, Ruben Enikolopov	Annual Review of Economics	2020
Why Does Globalization Fuel Populism? Economics, Culture, and the Rise of Right-Wing Populism	Dani Rodrik	Annual Review of Economics	2021
Media and Social Capital	Filipe Campante, Ruben Durante, Andrea Tesei	Annual Review of Economics	2022
Contending Theories of Contentious Politics and the Structure-action Problem of Social Order	Mark I. Lichbach	Annual Review of Political Science	1998
Political Consequences of Minority Group Formation	M. Hechter, D. Okamoto	Annual Review of Political Science	2001
Toward a Fourth Generation of Revolutionary Theory	Jack A. Goldstone	Annual Review of Political Science	2001
Women's Movements at Century's End: Excavation and Advances in Political Science	Karen Beckwith	Annual Review of Political Science	2001
State Repression and Political Order	Christian Davenport	Annual Review of Political Science	2007
The Mobilization of Opposition to Economic Liberalization	Kenneth M. Roberts	Annual Review of Political Science	2008
How Censorship in China Allows Government Criticism but Silences Collective Expression	Gary King, Jennifer Pan, Margaret E. Roberts	The American Political Science Review	2013
Regime Change Cascades: What We Have Learned from the 1848 Revolutions to the 2011 Arab Uprisings	Henry E. Hale	Annual Review of Political Science	2013
Regularizing Rioting: Permitting Public Protest in an Authoritarian Regime	Peter L. Lorentzen	Quarterly Journal of Political Science	2013
A Taxonomy of Protest Voting	R. Michael Alvarez, D. Roderick Kiewiet, Lucas Nuñez	Annual Review of Political Science	2018
Radicalization: A Relational Perspective	Donatella della Porta	Annual Review of Political Science	2018
Formal Models of Nondemocratic Politics	Scott Gehlbach, Konstantin Sonin, Milan W. Svoblik	Annual Review of Political Science	2016
Networks of Conflict and Cooperation	Jennifer M. Larson	Annual Review of Political Science	2021

The Consequences of Contention: Understanding the Aftereffects of Political Conflict and Violence	Christian Dav- enport, Håvard Mokleiv Nygård, Hanne Fjelde, David Armstrong	Annual Review of Political Sci- ence	2019
The Politics of the Black Power Movement	James Lance Taylor	Annual Review of Political Sci- ence	2021
The Rise of Local Politics: A Global Review	Patrick Le Galès	Annual Review of Political Sci- ence	2021
Political Control	Mai Hassan, Daniel Mattingly, Elizabeth R. Nu- gent	Annual Review of Political Sci- ence	2022
Civil Society as Social Control: State Power in Jordan	Quintan Wik- torowicz	Comparative Political Studies	2000
Group Size and Collective Action: Third-Party Monitoring in Common-Pool	Arun Agrawal, Sanjeev Goyal	Comparative Political Studies	2001
The Interaction Between Democracy and Ethnopolitical Protest and Rebellion in Africa	James R. Scar- ritt, Susan M. Mcmillan, Shaheen Mozaffar	Comparative Political Studies	2001
Democratization, Political Institutions, AND Ethnic Conflict: A Pooled Time-Series Analysis, 1985-1998	Stephen M. Saide- man, David J. Lanoue, Michael Campenni	Comparative Political Studies	2002
The Environmental Movement and the Modes of Political Action	Russell J. Dalton, Robert Rohrschnei- der	Comparative Political Studies	2003
Interpersonal Trust and the Magnitude of Protest A Micro and Macro Level Approach	Michelle Benson, Thomas R. Rochon	Comparative Political Studies	2004
Leading Labor Unions, Politics, and Protest in New Democracies	Graeme B. Robert- son	Comparative Political Studies	2004
Electoral Protests and Democratization beyond the Color Revolutions	Katya Kalandadze, Mitchell A. Oren- stein	Comparative Political Studies	2009
Enough!: Egypt's Quest for Democracy	Rabab El-Mahdi	Comparative Political Studies	2009
Foreign Media and Protest Diffusion in Authoritarian Regimes: The Case of the 1989 East German Revolution	Holger Lutz Kern	Comparative Political Studies	2011
The International Diffusion of Democracy	Johan A. Elkind	Comparative Political Studies	2011
Competitiveness, Partisanship, and Subnational Protest in Argentina	Moisés Arce, Jorge Mangonnet2	Comparative Political Studies	2012
Reconsidering the Robustness of Authoritarianism in the Middle East: Lessons from the Arab Spring	Bellin, Eva	Comparative Political Studies	2012

Pocketbook Protests: Explaining the Emergence of Pro-democracy Protests Worldwide	Dawn Brancati	Comparative Political Studies	2013
How Context Matters? Mobilization, Political Opportunity Structures and Non-Electoral Political Participation in Old and New Democracies	Kateřina Vrablıkova	Comparative Political Studies	2014
Social Spending Responses to Organized Labor and Mass Protests in Latin America, 1970-2007	Barbara Zarate Tenorio	Comparative Political Studies	2014
When Do Political Parties Protest Election Results?	Svitlana Chernykh	Comparative Political Studies	2014
Anti-Government Protests in Democracies	Yen-Pin Su	Comparative Political Studies	2015
It's Not the Left: Ideology and Protest Participation in Old and New Democracies	Filip Kostelka, Jan Rovny	Comparative Political Studies	2019
Religion and Political Protest: A Cross-Country Analysis	Gizem Pazit Bloom, Arikan Ben-Nun	Comparative Political Studies	2019
Students in the Streets: Education and Nonviolent Protest	Sirianne Dahlum	Comparative Political Studies	2019
Taking to the Streets: Protest as an Expression of Political Preference in Africa	Adam Harris, Erin Hern	Comparative Political Studies	2019
Chaos on Campus: Universities and Mass Political Protest	Sirianne Dahlum and Tore Wig	Comparative Political Studies	2021
The Generative Power of Protest: Time and Space in Contentious Politics	Dina Bishara	Comparative Political Studies	2021
Explaining Military Responses to Protests in Latin American Democracies	David Pion-Berlin, Igor Acacio	Comparative Political Studies	2022
Liberation technology: Mobile phones and political mobilization in Africa	Marco Manacorda, Andrea Tesei	Econometrica	2020
Social media and protest participation: Evidence from Russia	Ruben Enikolopov, Alexey Makarin, Maria Petrova	Econometrica	2020
Economics of Alliances: The Lessons for Collective Action	Todd Sandler, Keith Hartley	Journal of Economic Literature	2001
The Political Economics of Non-democracy	Georgy Egorov, Konstantin Sonin	Journal of Economic Literature	2020
Why Was the Arab World Poised for Revolution? Schooling, Economic			

Opportunities, and the Arab Spring	Filipe R. Campante, Davin Chor	Journal of Economic Perspectives	2012
Why Does China Allow Freer Social Media? Protests versus Surveillance and Propaganda	Bei Qin, David Strömberg, and Yanhui Wu	Journal of Economic Perspectives	2017
Is There Any Future for a US Labor Movement?	Suresh Naidu	Journal of Economic Perspectives	2022
Autocracy, Democracy and Trade Policy	Sebastian Galiani, Gustavo Torrens	Journal of International Economics	2014
Curriculum and Ideology	Davide Cantoni, Yuyu Chen, David Y. Yang, Noam Yuchtman, and Y. Jane Zhang	Journal of Political Economy	2000
Strikes, Scabs, and Tread Separations: Labor Strife and the Production of Defective Bridgestone/Firestone Tires	Alan B. Krueger, Alexandre Mas	Journal of Political Economy	2014
Emotions and Political Unrest	Passarelli, Francesco, and Guido Tabellini	Journal of Political Economy	2017
Labor Market Conflict and the Decline of the Rust Belt	Simeon Alder, David Lagakos, Lee Ohanian	Journal of Political Economy	2018
Economic Grievances and Political Protest	Thomas Kurer, Silja Hausermann, Bruno Wuest, Matthias Enggist	Journal of Political Economy	2019
Stability of Revolutionary Governments in the Face of Mass Protest	Dmitry Dagaev, Natalia Lamberova, Anton Sobolev	Journal of Political Economy	2019
The Democratization Process: An Empirical Appraisal of the Role of Political Protest	Maria Marino, Paolo Li Donni, Sebastiano Bavetta, Marco Cellini	Journal of Political Economy	2020
NGOs and Political Participation in Weak Democracies: Subnational Evidence on Protest and Voter Turnout from Bolivia	Carew E. Boulding	Journal of Politics	2010
Private Investment and the Institutionalization of Collective Action in Autocracies: Ruling Parties and Legislatures	Scott Gehlbach, Philip Keefer	Journal of Politics	2012
Protest and Congressional Behavior: Assessing Racial and Ethnic Minority Protests in the District	Daniel Q. Gillion	Journal of Politics	2012
Cities, Redistribution, and Authoritarian Regime Survival	Jeremy Wallace	Journal of Politics	2013

Mobilization, Repression, and Revolution: Grievances and Opportunities in Contentious Politics	Mehdi Shadmehr	Journal of Politics	2014
Popular Protest and Elite Coordination in a Coup d'état	Brett Allen Casper, Scott A. Tyson	Journal of Politics	2014
Religion in the Arab Spring: Between Two Competing Narratives	Michael Hoffman, Amaney Jamal	Journal of Politics	2014
Elections, Protest, and Alternation of Power	Andrew T. Little, Joshua A. Tucker, Tom LaGatta	Journal of Politics	2015
Institutions as Incentives for Civic Action: Bureaucratic Structures, Civil Society, and Disruptive Protests	Agnes Cornell, Marcia Grimes	Journal of Politics	2015
Legislatures, Cooptation, and Social Protest in Contemporary Authoritarian Regimes	Ora John Reuter, Graeme B. Robertson	Journal of Politics	2015
Communication Technology and Protest	Andrew T. Little	Journal of Politics	2016
The Four Faces of Political Participation in Argentina: Using Latent Class Analysis to Study Political Behavior	R. Michael Alvarez, Ines Levin, Lucas Núñez	Journal of Politics	2017
Social Signals and Participation in the Tunisian Revolution	David Doherty, Peter J. Schraeder	Journal of Politics	2018
The Pathology of Hard Propaganda	Haifeng Huang	Journal of Politics	2018
Elections, Protest, and Trust in Government: A Natural Experiment from Russia	Timothy Frye, Ekaterina Borisova	Journal of Politics	2019
Electoral Protests and Political Attitudes under Electoral Authoritarianism	Katerina Tertytchnaya, Tomila Lankina	Journal of Politics	2020
Unpopular Protest: Mass Mobilization and Attitudes to Democracy in Post-Mubarak Egypt	Neil Ketchley, Thoraya El-Rayyes	Journal of Politics	2021
How State and Protester Violence Affect Protest Dynamics	Zachary C. Steinert-Threlkeld, Alexander M. Chan, and Jungseock Joo	Journal of Politics	2022
International Pressure, State Repression, and the Spread of Protest	Mehdi Shadmehr, Raphael Boleslavsky	Journal of Politics	2022
Protest Participation and Attitude Change: Evidence from Ukraine's Euromaidan Revolution	Grigore Pop-Eleches, Graeme Robertson, Bryn Rosenfeld	Journal of Politics	2022
The Missionary Roots of Nationalism: Evidence from China	Daniel C. Mattingly, Ting Chen	Journal of Politics	2022

The Real Consequences of Symbolic Politics: Breaking the Soviet Past in Ukraine	Arturas Rozenas, Anastasiia Vlasenko	Journal of Politics	2022
Protests and Trust in the State: Evidence from African Countries	Marc Sangniera, Yanos Zylberberg	Journal of Public Economics	2017
Collective Action in Networks: Evidence from the Chilean Student Movement	Felipe González	Journal of Public Economics	2020
Rugged Individualism and Collective (In)action During the COVID-19 Pandemic	Samuel Bazzi, Martin Fiszbein, Mesay Gebresilasie	Journal of Public Economics	2021
Politics 2.0: The Multifaceted Effect of Broadband Internet on Political Participation	Filipe Campante, Ruben Durante, Francesco Sobbrío	Journal of the European Economic Association	2017
Media Freedom in the Shadow of a Coup	Raphael Boleslavsky, Mehdi Shadmehr, Konstantin Sonin	Journal of the European Economic Association	2021
None of the Above: Protest Voting in the World's Largest Democracy	Gergely Ujhelyi, Somdeep Chatterjee, Andrea Szabó	Journal of the European Economic Association	2020
Ballots Instead of Bullets? The Effect of the Voting Rights Act on Political Violence	Jean Lacroix	Journal of the European Economic Association	2022
Family Ties and Political Participation	Alberto Alesina, Paola Giuliano	Journal of the European Economic Association	2011
Racial Solidarity and Political Participation	Dennis Chong, Reuel Rogers	Political Behavior	2005
Some Children See Him...: Political Participation and the Black Christ	Laura A. Reese, Ronald E. Brown, James David Ivers	Political Behavior	2007
Collective Action and Citizen Responses to Global Warming	Mark Lubell, Sammy Zahran, Arnold Vedlitz	Political Behavior	2007
The First Time is the Hardest? A Cross-National and Cross-Issue Comparison of First-Time Protest Participants	Joris Verhulst, Stefaan Walgrave	Political Behavior	2009
Direct Democracy: Protest Catalyst or Protest Alternative?	Matthias Fatke, Markus Freitag	Political Behavior	2012
Personality and Political Participation: The Mediation Hypothesis	Aina Gallego, Daniel Oberski	Political Behavior	2012

Collective Resistance under Authoritarianism: Elite–Mass Strategies in an Experimental Game	Dennis Chong, Mingxing Liu, Qi Zhang	Political Behavior	2016
Protesting via the Null Ballot: An Assessment of the Decision to Cast an Invalid Vote in Latin America	Mollie J. Cohen	Political Behavior	2018
Black Politics: How Anger Influences the Political Actions Blacks Pursue to Reduce Racial Inequality	Antoine J. Banks, Ismail K. White, Brian D. McKenzie	Political Behavior	2018
Does Intolerance Dampen Dissent? Macro-Tolerance and Protest in American Metropolitan Areas	Christopher Claassen, James L. Gibson	Political Behavior	2019
Contentious Activities, Disrespectful Protesters: Effect of Protest Context on Protest Support and Mobilization Across Ideology and Authoritarianism	Raynee Sarah Gutting	Political Behavior	2020
The Resistance as Role Model: Disillusionment and Protest Among American Adolescents After 2016	David E. Campbell, Christina Wolbrecht	Political Behavior	2020
Mobilization Under Threat: Emotional Appeals and Pro-Opposition Political Participation Online	Lauren E. Young	Political Behavior	2021
From Inter-Racial Solidarity to Action: Minority Linked Fate and African American, Latina/o, and Asian American Political Participation	Nathan Kar Ming Chan, Francisco Jasso	Political Behavior	2021
Opinion Shift and Stability: The Information Environment and Long-Lasting Opposition to Trump’s Muslim Ban	Kassra A. R. Oskooii, Nazita Lajevardi, Loren Collingwood	Political Behavior	2021
Propaganda, Presumed Influence, and Collective Protest	Haifeng Huang, Nicholas Cruz	Political Behavior	2022
Increasing Youth Political Engagement with Efficacy Not Obligation: Evidence from a Workshop-Based Experiment in Zambia	Elizabeth Sperber, O’Brien Kaaba, Gwyneth McClen-don	Political Behavior	2022
Differentiation in Protest Politics: Participation by Political Insiders and Outsiders	Endre Borbáth	Political Behavior	2023
Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in Historical Perspective	Acemoglu, Daron and James A. Robinson	Quarterly Journal of Economics	2000

The Political Economy of Hatred	EL Glaeser	Quarterly Journal of Economics	2005
The Logic of Political Violence	Timothy Besley, Torsten Persson	Quarterly Journal of Economics	2011
The Political Economy of Indirect Control	Gerard Padró I Miquel, Pierre Yared	Quarterly Journal of Economics	2012
Do Political Protests Matter? Evidence from the Tea Party Movement	Madestam, Andreas, Daniel Shoag, Stan Veuger, and David Yanagizawa-Drott	Quarterly Journal of Economics	2013
Propaganda and Conflict: Evidence from the Rwandan Genocide	Yanagizawa-Drott, David	Quarterly Journal of Economics	2014
Public protests and policy making	Marco Battaglini	Quarterly Journal of Economics	2017
Protests as Strategic Games: Experimental Evidence from Hong Kong's Democracy Movement	Cantoni, Davide, David Y. Yang, Noam Yuchtman, and Jane Zhang	Quarterly Journal of Economics	2019
A Comparison of CVM Survey Response Rates, Protests and Willingness-to-pay of Native Americans and General Population for Fuels Reduction Policies	Armando González-Cabán, Andrea Rodriguez	Quarterly Journal of Political Science	2007
Corruption and Political Decay: Evidence from Bolivia	Daniel W. Gingerich	Quarterly Journal of Political Science	2009
Elections, Fraud, and Election Monitoring in the Shadow of Revolution	Andrew T. Little	Quarterly Journal of Political Science	2012
The Tea Party Movement and the Geography of Collective Action	Wendy K. Tam Cho, James G. Gimpel and Daron R. Shaw	Quarterly Journal of Political Science	2012
Can You Hear Me Now? How Communication Technology Affects Protest and Repression	Darin Christensen, Francisco Garfias	Quarterly Journal of Political Science	2018
Protest Puzzles: Tullock's Paradox, Hong Kong Experiment, and the Strength of Weak States	Mehdi Shadmehr	Quarterly Journal of Political Science	2018
Quitting in Protest: Presidential Policymaking and Civil Service Response	Charles M. Cameron, John M. de Figueiredo	Quarterly Journal of Political Science	2020
Friends Don't Let Friends Free Ride	Nicholas Eubank, Dorothy Kronick	Quarterly Journal of Political Science	2021

The Unintended Effects of Bottom-Up Accountability: Evidence from a Field Experiment in Peru	Renard Sexton	Quarterly Journal of Political Science	2022
Transparency and Stability	Mehdi Shadmehr	Quarterly Journal of Political Science	2022
The Effect of Education on Civil and Political Engagement in Nonconsolidated Democracies: Evidence from Nigeria	Horacio Larreguy, John Marshall	Review of Economics and Statistics	2017
Cohesive Institutions and Political Violence	Thiemo Fetzer, Stephan Kyburz	Review of Economics and Statistics	2021
Police Violence, Student Protests, and Educational Performance	Felipe Gonzalez, Mounu Prem	Review of Economics and Statistics	2022
Collective Action: Experimental Evidence	Abigail Barr, Truman Packard, Danila Serra	Southern Economic Journal	2016
When Unions "Mattered": Assessing the Impact of Strikes on Financial Markets: 1925-1937	John DiNardo, Kevin F. Hallock	Working Paper	2002
The Labor Market Effects of the 1960s Riots	William J. Collins, Robert A. Margo	Working Paper	2004
A Theory of Civil Disobedience	Cass R. Sunstein	Working Paper	2007
Public Action for Public Goods	Abhijit Banerjee, Lakshmi Iyer, Rohini Somanathan	Working Paper	2007
Strike Three: Umpires' Demand for Discrimination	Christopher A. Parsons, Johan Sulaeman, Michael C. Yates, Daniel S. Hamermesh	Working Paper	2007
The Economic Aftermath of the 1960s Riots: Evidence from Property Values	William J. Collins, Robert A. Margo	Working Paper	2007
Unfinished Business: Ethnic Complementarities and the Political Contagion of Peace and Conflict in Gujarat	Saumitra Jha	Working Paper	2013
Incumbency Advantage in Non-Democracies	Georgy Egorov, Konstantin Sonin	Working Paper	2014
How Modern Dictators Survive: An Informational Theory of the New Authoritarianism	Sergei Guriev, Daniel Treisman	Working Paper	2015
Labor Market Institutions in the Gilded Age of American Economic History	Suresh Naidu, Noam Yuchtman	Working Paper	2016
Women, Rails and Telegraphs: An Empirical Study of Information Diffusion and Collective Action	Camilo García-Jimeno, Angel Iglesias, Pinar Yildirim	Working Paper	2018

Black Lives Matter Protests and Risk Avoidance: The Case of Civil Unrest During a Pandemic	Dhaval M. Dave, Andrew I. Friedson, Kyutaro Matsuzawa, Joseph J. Sabia, Samuel Safford	Working Paper	2020
Social Groups and the Effectiveness of Protests	Marco Battaglini, Rebecca B. Morton & Eleonora Patacchini	Working Paper	2020
Ethnic Inequality and Poverty in Malaysia Since 1969	Martin Ravallion	Working Paper	2020
My Taxes are Too Darn High: Why Do Households Protest their Taxes?	Brad C. Nathan, Ricardo Perez-Truglia, Alejandro Zentner	Working Paper	2020
Rule of Law in Labor Relations, 1898-1940	Price V. Fishback	Working Paper	2020
When Coercive Economies Fail: The Political Economy of the US South After the Boll Weevil	James J. Feigenbaum, Soumyajit Mazumder, Cory B. Smith	Working Paper	2020
Eclipses and the Memory of Revolutions: Evidence from China	Meng Miao, Jacopo Ponticelli, Yi Shao	Working Paper	2021
Political Violence, Risk Aversion, and Non-Localized Disease Spread: Evidence from the U.S. Capitol Riot	Dhaval M. Dave, Drew McNichols, Joseph J. Sabia	Working Paper	2021
Leadership and Social Movements: The Forty-Eighters in the Civil War	Christian Dippel, Stephan Hebllich	Working Paper	2021
Measuring the Tolerance of the State: Theory and Application to Protest	Veli Andirin, Yusuf Negggers, Mehdi & Jesse M. Shapiro	Working Paper	2022
Who Protests, What Do They Protest, and Why?	Erica Chenoweth, Barton H. Hamilton, Hedwig Lee, Nicholas W. Pappageorge, Stephen P. Roll, Matthew V. Zahn	Working Paper	2022
Missing Discussions: Institutional Constraints in the Islamic Political Tradition	A. Arda Gitmez, James A. Robinson, Mehdi Shadmehr	Working Paper	2023
The Political Economy Consequences of China's Export Slowdown	Filipe R. Campante, Davin Chor, Bingjing Li	Working Paper	2023
From Populism To Neoliberalism: Labor Unions and Market Reforms in Latin America	M. Victoria Murillo	World Politics	2000
Ethnic Conflict and Civil Society: India and Beyond	Ashutosh Varshney	World Politics	2001

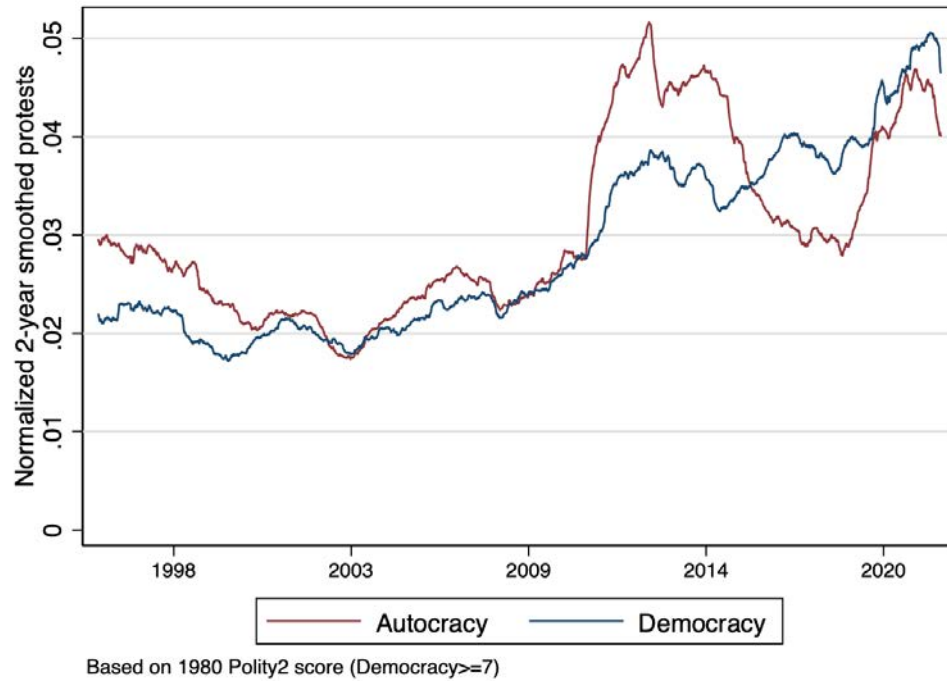
Ethnic Mobilization without Prerequisites: The East European Gypsies	Zoltan Barany	World Politics	2002
Rethinking Recent Democratization: Lessons from the Post-communist Experience	Valerie Bunce	World Politics	2003
The Dilemmas of Democracy in the Open Economy: Lessons from Latin America	Marcus J. Kurtz	World Politics	2004
Regime Cycles: Democracy, Autocracy, and Revolution in Post-Soviet Eurasia	Henry E. Hale	World Politics	2005
Secessionism from the Bottom Up: Democratization, Nationalism, and Local Accountability in the Russian Transition	Elise Giuliano	World Politics	2006
Ideas, Networks, and Islamist Movements: Evidence from Central Asia and the Caucasus	Kathleen Collins	World Politics	2007
Low-Intensity Democracy Revisited: The Effects of Economic Liberalization on Political Activity in Latin America	Moises Arce, Paul T. Bellinger, Jr	World Politics	2007
The Rise of Ethnopolitism in Latin America	Raúl L. Madrid	World Politics	2008
Bricks and Mortar Clientelism: Sectarianism and the Logics of Welfare Allocation in Lebanon	Melani Cammett, Sukriti Issar	World Politics	2010
Mobilizing Restraint: Economic Reform and the Politics of Industrial Protest in South Asia	Emmanuel Teitelbaum	World Politics	2010
Throwing out the Bums: Protest Voting and Unorthodox Parties after Communism	Grigore Pop-Eleches	World Politics	2010
Why Do Ethnic Groups Rebel? New Data and Analysis	Lars-Erik Cederman, Andreas Wimmer, Brian Min	World Politics	2010
Civil Society and the Legacies of Dictatorship	Michael Bernhard, Ekrem Karakoç	World Politics	2007
Formal Constitutions in Informal Politics: Institutions and Democratization in Post-Soviet Eurasia	Henry E. Hale	World Politics	2011
Pocket Protests: Rhetorical Coercion and the Micropolitics of Collective Action in Semiauthoritarian Regimes	Jason M. K. Lyall	World Politics	2011
Union Density and Political Strikes	Johannes Lindvall	World Politics	2013

Elections and Collective Action: Evidence from Changes in Traditional Institutions in Liberia	Kate Baldwin, Eric Mvukiyehe	World Politics	2015
Terrorism and the Fate of Dictators	Deniz Aksoy, David B. Carter, Joseph Wright	World Politics	2015
Political Repression and the Destruction of Dissident Organizations	Christopher M. Sullivan	World Politics	2016
Social Revolution and Authoritarian Durability	Jean Lachapelle, Steven Levitsky, Lucan A. Way, Adam E. Casey	World Politics	2020
Why Non-Democracy Engages with Western Democracy-Promotion Programs: The China Model	Sungmin Cho	World Politics	2021

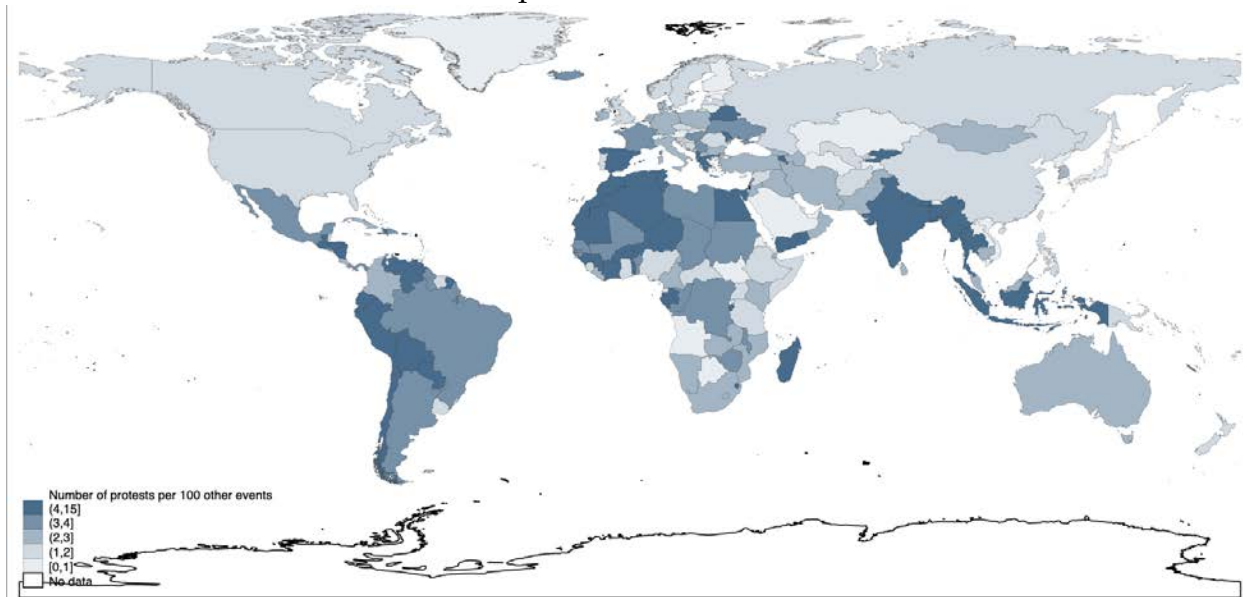
Notes: This table presents the papers analyzed in Figure 5. Papers included must meet the following three criteria: (1) The paper must have been published after 1990. (2) The paper must have been published in a leading journal in economics or political science. This list of journals is: *Econometrica*, *American Economic Review*, *The Quarterly Journal of Economics*, *Journal of Political Economy*, *The Review of Economic Studies*, *Journal of the European Economic Association*, *The Review of Economics and Statistics*, *The Economic Journal*, *the American Economic Journals*, *American Economic Review: Insights*, *American Political Science Review*, *American Journal of Political Science*, *Quarterly Journal of Political Science*, *The Journal of Politics*, *World Politics*, *Comparative Political Studies*, and *Political Behavior*, as well as NBER working papers. (3) The paper must contain a keyword related to protests in its title, abstract, or keywords. The list of keywords is: revolution, collective action, revolt, (political) unrest, protest, riot, strike, and demonstration.

Figure A.1: Protests in ICEWS over time and across countries

Panel A: protests over time



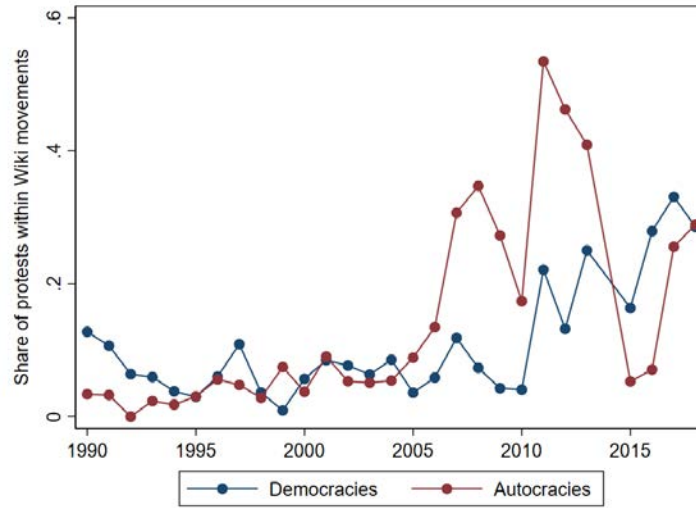
Panel B: protests across countries



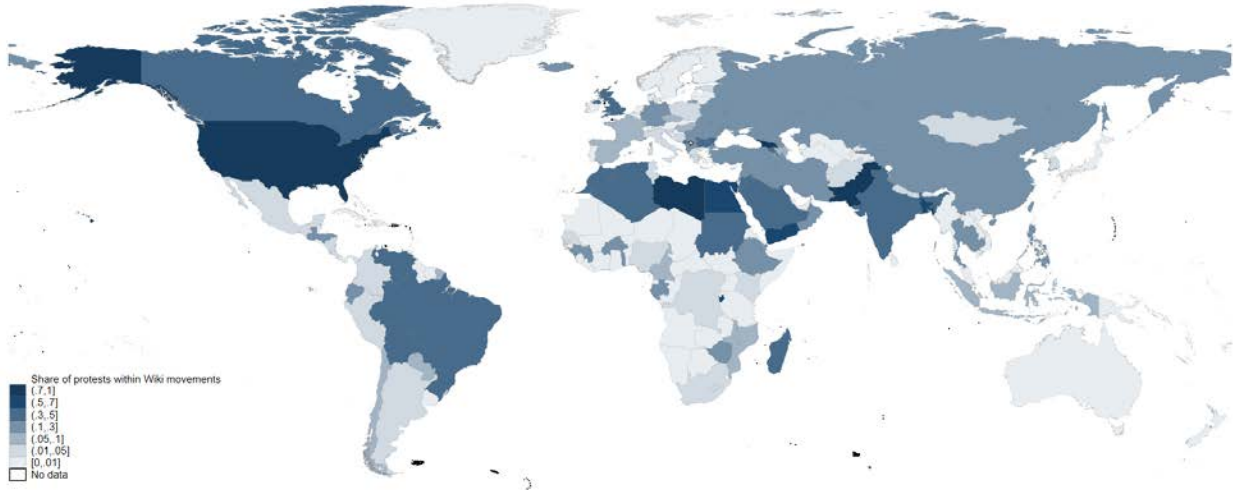
Note: This figure plots protests across the world, from 1995 to 2020, as measured by ICEWS. Protest counts are normalized by other events in the ICEWS dataset. Panel A plots the time series of protests, split by democracies (polity score of 7 or above) and autocracies and weak democracies (polity score less than 7). Panel B plots the average number of (normalized) protests by country.

Figure A.2: The share of protests that are part of Wikipedia protest movements

Panel A: over time



Panel B: across countries



Note: This figure plots the share of protests in GDELT that can be mapped to a protest movement. Protest movements are defined by Wikipedia. Panel A plots the time series of this share, split by democracies (polity score of 7 or above) and autocracies and weak democracies (polity score less than 7), excluding the United States. Panel B plots the average share of protests that are part of a movement by country.