Pricing Protest: The Response of Financial Markets to Social Unrest

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Research question

What are the effects of social unrest on stock markets across the world?

- We identify start days of 156 episodes of social unrest using a new measure of social unrest – daily Social Unrest Index, based on media reports.
- We conduct a cross-country event study with daily data (72 countries in 2011-2020).

Measuring social unrest

First, we extract the month of social unrest event from monthly RSUI by Barrett et al. (2020). Then, we compute daily Social Unrest Index:

$$SU_{it} = \frac{x_{it}}{m_{t} + \sum_{j=0}^{t-60} x_{jt}}$$ (1)

with

- k - country
- t - day, t ∈ [−60, 0], t = 0 the first day of event month
- x_{it} number of articles about social unrest in country k per day t

Finally, we use daily Social Unrest Index to identify the beginning and duration of social unrest events. The beginning of the event – day 0 – is the first day during the event month when SU index exceeds its country-specific mean by more than 15 times. Our daily media-based SU index dates social unrest events with high accuracy, which is confirmed by a series of validity checks against external sources.

Methodology

1. Event study: compute cumulative abnormal returns relative to normal pre-event returns using the market model. For each event t for days s ∈ [−30, −1]:

$$R_s = \alpha_s + \beta_1 R_{m,s} + \epsilon_s$$ (2)

where:

- R_s are the daily stock index returns, and R_{m,s} are the daily returns of the market index (MSCI ACWI).

Compute average abnormal returns:

$$\bar{AR}_s = \frac{1}{N} \sum_{t=1}^{N} A R_{s,t} = \frac{1}{N} \sum_{t=1}^{N} (R_{s,t} - \bar{R}_{m,s})$$ (3)

Sum up average abnormal returns over time to get cumulative abnormal returns (CAR).

2. Regression approach: FE panel regression with HAC standard errors. For each event t for days s ∈ [−30, −1]:

$$R_s = \beta_0 + \beta_1 \times I[Unrest_{st}] + S + S^2 + \gamma_1 + \delta_s + \epsilon_s$$ (4)

where:

- I[Unrest_{st}] = dummy equal to one if s ∈ event window
- S, S^2 - number of business days since day 0
- \gamma_1 and \delta_s - country FE and day of the week FE
- event windows: s ∈ [0, 30], \epsilon_s ∈ [0, 1]

Identification assumption: event date is correctly identified and not anticipated

Main result

- Social unrest leads to a significant reduction in stock market returns. Mean CAR drop by 0.72 pp three days after the unrest event relative to day -1, and by 1.4 pp two weeks after the event.
- Statistically significant effect over the whole event window.
- Economically meaningful effect: the unconditional probability of observing the decline of such a magnitude before the event is only 5 percent.
- Long-lived level effect: CAR remain significantly negative at least 25 business days after the unrest event.
- No anticipation: CAR on days before the event are not significantly different from zero.

Heterogeneities

- Duration of social unrest events matters: the longer the event, the larger is the stock market reaction. CAR decrease by 8 pp following a long-term social unrest event.
- Decrease in CAR in a cross-country sample is driven by events in emerging economies and low-income developing countries. CAR do not react to social unrest in developed countries.
- Social unrest that happens around elections increases stock market returns by 10 basis points.
- Heterogeneity in the level of financial development does not predict the effect of social unrest on stock markets.

The role of institutions

- The negative effect of social unrest on CAR is predominantly driven by countries with below median Polity Score: CAR drop by 3 pp in less democratic countries.
- Regulatory quality also plays a role: countries with below median regulatory quality display stronger reaction to social unrest.
- Event duration, country income group and institutional quality are all independently important in shaping the stock market response to social unrest.

Conclusions

- Social unrest events decrease stock market returns:
  - daily returns ↓ by 16.5 bp in three days
  - CAR ↓ by 1.4 bp in two weeks
  - This effect is long-lasting and robust.
  - The effect is driven by events:
    - with high duration
    - that happen in emerging and developing economies
- Quality of institutions matters. More effective democratic institutions provide a mechanism to reconcile divergent views and address the underlying issues in an orderly fashion. Social unrest in a country with low voice and accountability is a challenge to the system of governance itself.
- Increased uncertainty in the financial markets is an important transmission channel of the effect.

References


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