Market Response to Racial Uprisings

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Discussion

EBEN LAZARUS
UC Berkeley Haas

NBER Race & Stratification Working Group Meeting
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Outline

Recap

BLM's effects on policing policy & firms: Ambiguous ex ante, difficult to measure

1. Defund $\implies$ widespread decreases
2. Reform $\implies$ shifts across *distribution* of policing activities & products
3. Backlash $\implies$ widespread increases

▶ Policy changes are diffuse: long & variable lags, highly decentralized U.S. police system

This paper: Clever & convincing measurement approach

▶ 18,000 police agencies, but only **23** large firms with strong police contracting ties [text analysis of ann. reports]

▶ Long policy lags, but financial markets give evidence on **anticipated** effects in high-stakes setting

▶ Strong evidence in favor of **anticipated effects 2–3**

   ▶ High **average** stock returns, with strongest effects for **cameras/tech** and **crime control** suppliers

   ▶ Price increases were long-lasting & followed by significantly (200%) higher sales

Returns Analysis

▶ Stock return for firm j ($R_{t,j}$) gives info on expected effect of unanticipated event on date $t = 0$

▶ **Problem:** The market as a whole *also* moved on $t = 0$

  ▶ Should expect $R_{t,j} = \beta_{j,mkt} R_{t,mkt}$

  [e.g., Smith & Wesson has $\beta_{j,mkt} = 1.1$, so $R_{t,mkt} = +10\%$ but $R_{t,j} = +5\%$ suggests *underperformance*]

▶ **Standard approach:** Estimate *cumulative abnormal return*, accounting for $R_{t,mkt}$ & other risk factors

  1. Estimate typical exposure to market & other risk factors using pre-event returns
  2. Estimated exposure + post-event returns on market and risk factors $\implies$ abnormal returns

$$AR_{i,t} = R_{t,j} - \underbrace{\hat{\beta}_{j,mkt} R_{t,mkt} - \ldots}_{\widehat{R}_{t,j}}, \quad t \geqslant 0$$

▶ The authors implement this carefully, and in fact take things one step further

▶ Abnormal returns relative to synthetic control group of other firms [double DID]

Outline

Market Prices and Information About Fundamentals

▶ Idealized efficient market:

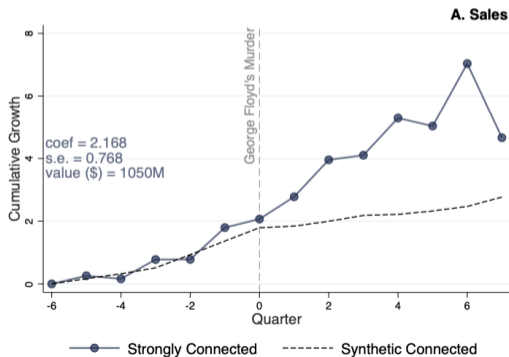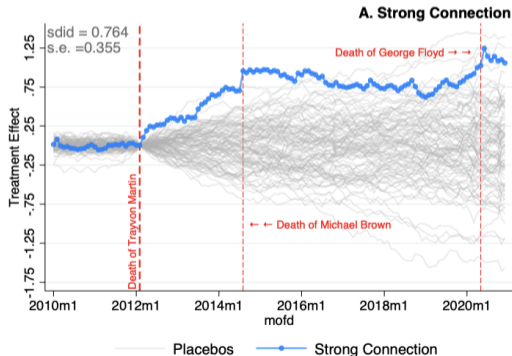$$\text{Price}_0 = \text{present value of expected future cash flows}$$

$$= \sum_{t=1}^{\infty} \frac{\mathbb{E}_0[\text{Dividend}_t]}{(1+r)^t}$$

$$\xrightarrow{\text{const. div. growth } g} = \frac{\text{Dividend}_1}{r-g}$$

▶ **Paper's interpretation:** Prices $\nearrow$ → expected future profits $\nearrow$ → dividends $\nearrow$

   ▶ *"As an information aggregator, the stock market provides insight into how events [...] are expected to influence firms' performance and future policy."*

▶ If markets are reacting to news "correctly," then their reactions tell us about expected future scope of policing-connected businesses

How Well Do Markets Incorporate News?

▶ Not perfect! Augenblick, Lazarus, Thaler (2023): Across a range of settings, evidence that markets **overreact to weak news** and **underreact to strong news**

▶ Typically, firm fundamental news classified as strong...do police violence & BLM protests fall under this umbrella? Paper does a nice job showing yes: little return reversion (←), huge sales increase (→)

A. Strong Connection

sdid = 0.764
s.e. =0.355

Death of George Floyd → →

← Death of Michael Brown

Death of Trayvon Martin

Treatment Effect

Placebos   Strong Connection

A. Sales

George Floyd's Murder

coef = 2.168
s.e. = 0.768
value ($) = 1050M

Cumulative Growth

Strongly Connected   Synthetic Connected

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▶ Plus some fantastic forensic work showing follow-up results consistent with true fundamental news

▶ Heterogeneity in firm performance by product line

▶ IV for police uptake in USDOJ survey of police departments

Outline

Market Prices Also Spur Changes in Behavior

▶ Previous interpretation: Markets as neutral information aggregator

  ▶ Prices $\nearrow \Longleftrightarrow$ future sales & dividends must have increased

▶ But market prices are also a **signal** to firms

▶ If you run a firm whose stock valuation just exploded, seems like a good time to raise funds by issuing new shares of stock

  ▶ Can then use those funds to invest in expanding the business

▶ Prices are not just an **outcome variable**, but also may help explain the big eventual increase in these firms' sales

▶ Initial price increases might in fact become self-fulfilling prophecy: Role of markets not just as neutral info aggregator, but as *active participant* in long-run effect

Did These Firms Raise Funds from Markets?

Axon Announces Proposed Public Offering of Common Stock

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SCOTTSDALE, Ariz., June 15, 2020 /PRNewswire/ -- Axon Enterprise, Inc. (NASDAQ: **AAXN**), the global leader in connected law enforcement technologies, today announced that it has commenced a proposed public offering of 3,000,000 shares of its common stock. The underwriters have a 30-day option to purchase up to 450,000 additional shares of common stock in the public offering. Axon intends to use the net proceeds from this offering for working capital and other general corporate purposes.

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Digital Ally Closes $5.4 Million Underwritten Public Offering Of Common Stock Consiting Of Base Deal And Over-Allotment

Closing of an underwritten public offering of 2,325,581 shares of its common stock

Digital Ally, Inc. (DGLY) (the œCompany）， which develops, manufactures and markets advanced video recording products for law enforcement, emergency management, fleet safety and security, today announced the closing of an underwritten public offering of 2,325,581 shares of its common stock at a price of $2.15 per share. The underwriters have elected to simultaneously close the over-allotment option consisting of 213,953 shares of common stock for gross proceeds to the Company of approximately $5.4 million, before deducting underwriting discounts and other offering expenses. The Company intends to use the net proceeds from this offering for working capital, product development, order fulfillment and for general corporate purposes.

Market Prices and the Cost of Capital

▶ Previous interpretation: Short-term dividends and/or dividend growth ↗

$$\text{Price}_0 = \text{present value of expected future cash flows}$$

$$= \frac{\text{Dividend}_1}{r - g}$$

▶ Big price increases also generally reflect **decreases in discount rate** $r \searrow$

▶ Discount rate is equivalent to **cost of capital** for firm to raise new funds

　　▶ Why might $r \searrow$? Firm cash flows may have become **safer**. . .or prices **overreacted** to info, and expected returns will be low as a result

　　▶ Either way, if cost of capital $\searrow$, then cheaper to raise funds to finance new investments

　$\implies$ r and g might **interact**: new investments increase firm production & future sales & profits

▶ Role of markets not just as neutral info aggregator, but as *active participant* in capital allocation to firms connected to contracting
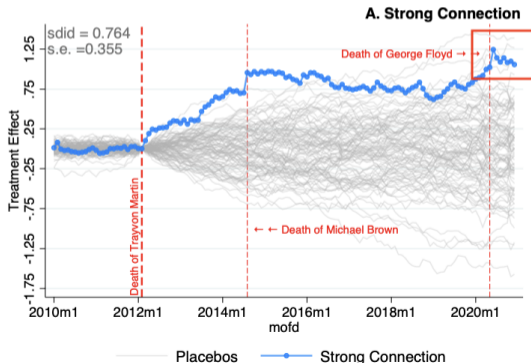
Decreases in the Cost of Capital

▶ Current prices + analysts' forecasts of future dividends can be used to back out the **implied cost of capital (ICC)** *r* for a given stock

▶ I got strongly connected firm IDs from the authors, and matched those to ICCs from Niels Gormsen as used in Eskildsen, Ibert, Jensen, Pedersen (2024). My calculations — sizable change in ICCs:

Changes in the Average ICC *r* for Strongly Connected Firms in 2020
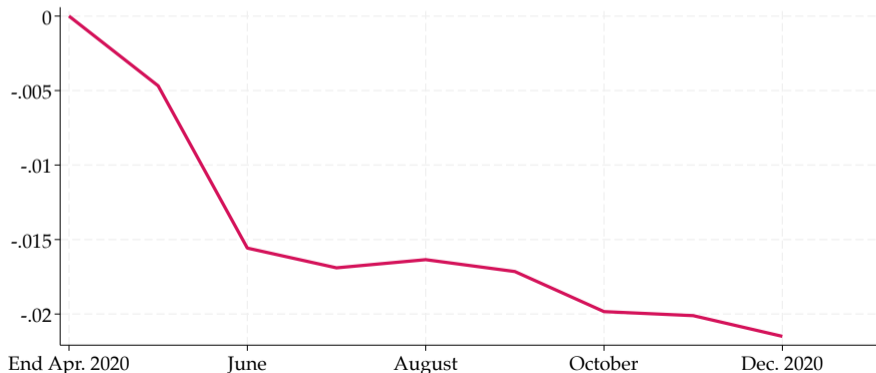
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- Tracks with apparent lower returns after big spike post-2020m4 $\iff$ temporarily high prices, good time to raise capital

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Treatment Effect

2010m1   2012m1   2014m1   2016m1   2018m1   2020m1
mofd

—— Placebos   —•— Strong Connection

. . .and Contracting Firms Took Advantage of Lower Cost of Capital *[Redux]*

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Final Notes

- ▶ Very well-executed paper on important questions

- ▶ Strong evidence that markets expected BLM protests to increase connected firm profits, and this expectation has been borne out so far

- ▶ Further suggestive complementary evidence for decreases in cost of capital for these firms

- ▶ This interpretation, if anything, **deepens** the importance of the paper's results

- ▶ Price increases are both outcome variable *and* potential channel for locking in long-run effect

Thank you!