Tremendous Dispersion in Firm-Level Stock Price Reactions to COVID News

IQR is 15 standard deviations greater than average IQR in 2019

Classifications from Baker et al. (2020)

Figure 1: Value-Weighted Mean and Cross-Sectional IQR of U.S. Equity Returns, Daily for 2019 and for Large Daily Jumps in 2020
Information about Reallocation from Firm-Level Stock Returns

- Davis, Hansen and Seminario-Amez (2020) apply text-analytic methods to pre-pandemic regulatory filings to (a) quantify firm-level risk exposures and (b) explain firm-level stock price reactions to market-moving news about COVID-19 and its fallout.

- Their models explain half of firm-level abnormal return variation on pandemic fallout days.

- They use the supervised machine-learning methods of Taddy (2013, 2015).

- Davis et al. also “unpack” the ML results to identify, characterize and quantify dozens of exposures that explain firm-level stock price reactions.
These effects on firm-level returns operate mainly within NAICS4 industries.

<table>
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<tr>
<th>Negative Exposures</th>
<th>Positive Exposures</th>
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<td>Traditional Retail</td>
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<td>Restaurants</td>
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**Table 1:** A Selection of Targeted Exposures for Explaining Returns on Pandemic Fallout Days
From Papanikolau and Schmidt (2020). The COVID-19 Factor overweights (underweights) industries in which (many) few employees can work from home.
COVID-19 Compelled Firms and Workers to Experiment at Scale with Working from Home

“If you’d said three months ago that 90% of our employees will be working from home and the firm would be functioning fine, I’d say that is a test I’m not prepared to take because the downside of being wrong on that is massive.”

– James Gorman, CEO of Morgan Stanley*

*Cited in Cutter (2020)
From Barrero, Bloom and Davis (2020b) based on surveys of 12,500 working-age persons across survey waves fielded in May, July, August, and September/October 2020. We re-weight responses to match the shares of working-age persons in the 2010-2019 CPS in each \{industry x state x earnings\} cell.
Why WFH Will Stick

1. COVID-induced shift overcame inertia and coordination challenges.
2. Experiments revealed information that alters the optimal working arrangements for many. (Think about the multi-armed bandit model.)
3. Survey evidence in Barrero, Bloom and Davis (2020b, BBD) says WFH productivity has exceeded expectations for most people.
4. COVID prompted investments that enable more effective WFH.
   - BBD estimate **at-home investments** during COVID = 1.2% of annual GDP.
   - How large are WFH-enabling investments on business premises?
5. BBD survey data show massive drop in stigma associated with WFH.
6. Many people say they will remain wary of mass transit, crowded elevators, and taxis even after COVID and after a vaccine (BBD survey evidence).
7. COVID knocked down regulations that had blocked virtual service delivery, especially in the healthcare sector.
8. Innovation efforts (as reflected in new patent applications) have shifted toward technologies that support remote interactivity (BDZ, 2020).
9. Network effects are likely to amplify many of the effects above.
COVID-19 Shifted Patent Applications to Technologies that Support WFH

From Bloom, Davis and Zhestkova (2020), updated
Worker Spending in Business Districts Will Decline

From Barrero, Bloom and Davis (2020b). Using our survey data, we estimate the implied spending is $10 billion per year in Manhattan, which is about 5.5% of pre-COVID annual taxable sales. (Some of that spending gets reallocated within Manhattan.)
Productivity Gain from the Shift to WFH

Relative WFH Efficiency and Implied Post-Pandemic Prod. Gain, Selection Adjusted and Earnings Weights

WFH (during COVID) relative to working on business premises

2.3
Productivity gain implied by employer WFH plans

2.7
Gain implied by employer plans with re-optimization

From Barrero, Bloom and Davis (2020b)


