# The COVID-19 Impact on Corporate Leverage and Financial Fragility

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*How is the Covid-19 experience changing finance?*

# This paper

**Empirics:**

- Net leverage decreased from 20% to 17%.
- Stronger de-leverage for firms exosed to rollover risk.
- De-leverage is not related to vulnerability to social distancing ("business risk").

**Model:**

- Optimal capital structure model (Leland and Toft 96).
- Estimated separately in the pre-COVID and post-COVID samples.
- Main changes: Reduction in expected growth & rise in asset return volatility.
- Optimal leverage reduced from 32% to 19%.
- Firms exposed to business risk have become over-leveraged.

# Comment #1: Reduction in leverage?

- Paper claims that leverage decreased post COVID-19.
- Measure of leverage:

$$\text{Net leverage} = \frac{\text{Debt} - \text{Liquid assets}}{\text{Assets}}$$

- Why focus on net leverage?
- What happened with the gross positions of debt and liquid assets?

THE WALL STREET JOURNAL. June 14, 2021


# Pandemic Hangover: $11 Trillion in Corporate Debt

Stressed companies piled on debt as interest rates plummeted, but could face a reckoning in the next economic downturn

## Corporate Debt Boom

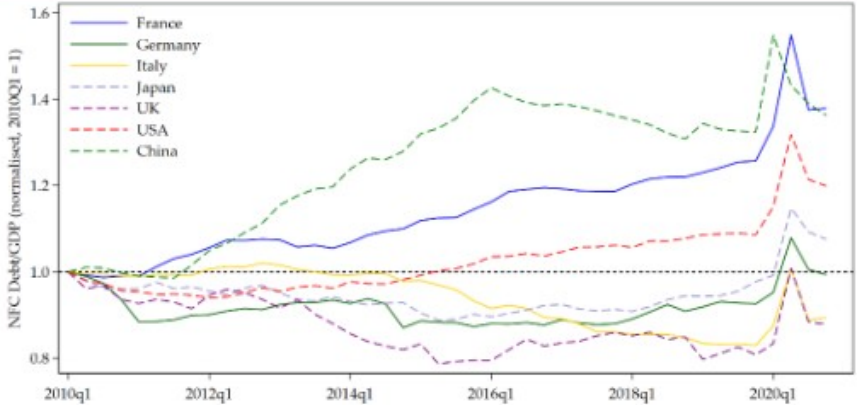
U.S. corporate bond issuance has surged to record levels during the pandemic, aided by low borrowing costs, pushing total corporate debt to the equivalent of half the size of the economy.


*2021 data through June 10

Sources: Dealogic (issuance); Bloomberg Barclays (yield); Federal Reserve Bank of St. Louis (corporate debt)

**Figure 3**

Change in corporate debt-to-GDP since 2010, selected countries




Notes: Calculations based on the BIS database on credit to the non-financial sector.

Source: Schularick 2021 (ECB Forum on Central Banking).

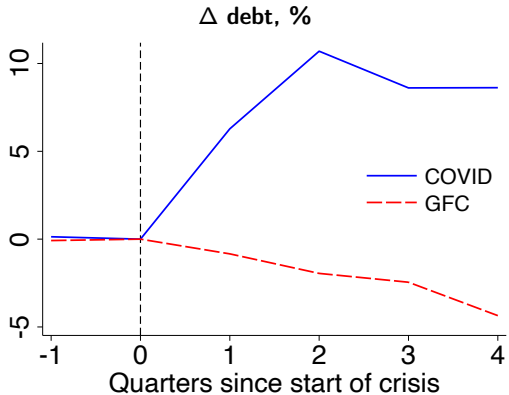
# Gross vs net leverage, a solution?

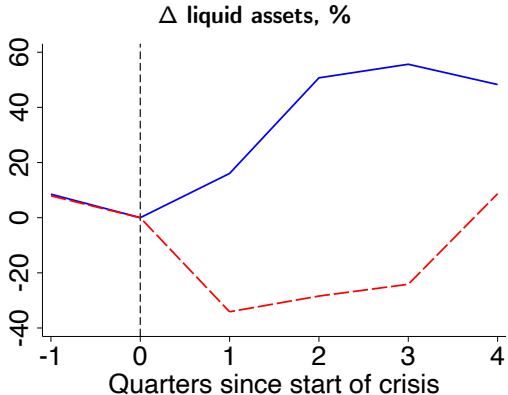
Table 1 from the paper:

| | Net debt/assets | Gross debt/assets | Liquidity/assets |
|---|---|---|---|
| Pre-COVID | 19.56 | 33.43 | 13.87 |
| Post-COVID | 16.99 | 33.91 | 16.92 |

- Author's interpretation: Reduction in leverage
- My interpretation:
  - Slight increase in gross debt (33.91 vs 33.43)
  - Large increase in liquid assets

# Debt and liquid assets




*Data for nonfinancial corporate business: Financial Accounts of the United States, FRB. See Ebsim, Faria-e-Castro Kozlowski and 2021.*

During COVID:

- Large increase in corporate debt
- Large increase in liquid assets

# Gross vs net debt

- Perhaps, looking at net debt hides important differences in debt versus liquid assets.
- Ebsim, Faria-e-Castro, Kozlowski 2021:
  - Liquid assets played an important role during the COVID-19 crisis.
  - Firms with high liquid assets holdings had a lower impact on credit spreads.

# Coment # 2: How can we measure business risk?

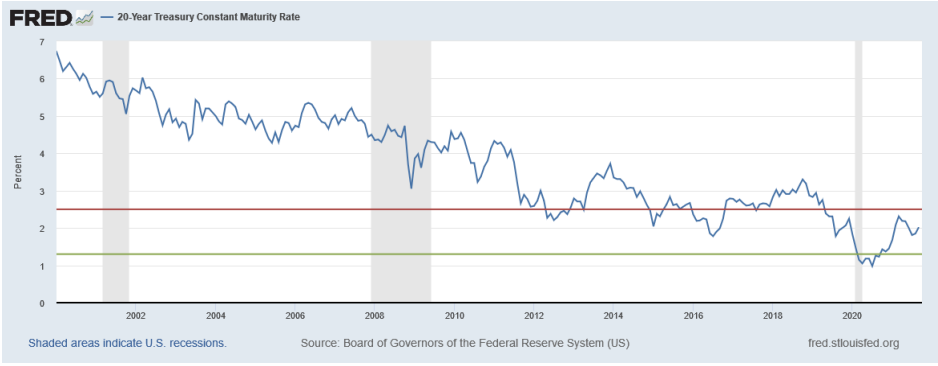
- This paper measures business risk as realized drop in sales.
  - Why not an exogenous measure e.g. Dingel and Neiman 2020?
- Main finding: Businesses most severely affected by social distancing did not reduce leverage, although they shortened their debt maturity structure.
  - This is not surprising. These firms are in trouble and really need to borrow to overcome the shock.
  - I suspect that if you look at credit spreads, those firms are borrowing at higher spreads. Or, in other words, should we look at quantities or also at prices?
  - Can you look at other moments for these firms?

# Comment #3: Calibration of model

- Estimate the model before and after COVID, separately.
- Risk free rate $\rightarrow$ model's proxy for expected growth rate.
- Calibrate the risk free rate outside of the model.
- Target: 20-year constant maturity U.S. Treasury yield.
- Calibration assumes that $r$ drops from 2.5 to 1.3.
- This is a key parameter for leverage.

# Comment #3: Calibration of model

- Calibration assumes that COVID reduced the risk-free rate by 1.2%. Seems large....




- What are the predictions of the model with a constant risk-free rate?

# Other comments

- Debt maturity
  - About 50% of empirical results are about debt maturity
  - However, debt maturity is fully exogenous in the model.
  - This a disconect between the model and data.
- Empirical strategy
  - The paper does not target leveage but instead leaves it as a non-targeted moment.
  - However, the model fails to match the data on leverage (eg pre-covid model is 31.5, vs 19.5 in the data).
  - Author's interpretaion "the model predicts that firms, on average, were under-leveraged prior to the COVID-shock".
  - My interpretation: the model fails to match this non-target moment, which is cental for the paper.
  - I would add this moment as a target, and/or study why the model is failing.
- Why two models, one for leverage and another for default–consider evaluating jointly.