Discussion of
"Macroecononomic Effects of Financial Shocks"
by Urban Jermann and Vincenzo Quadrini

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Interesting paper

- studies RBC model with “financial shocks” and frictions: standard statistics (std of output, investment, consumption, hours, TFP) but also equity payouts (dividends + repurchases − equity issuance) debt repurchases (− debt issuance)
- finds that productivity shocks alone do not account for recently observed fluctuations, do in conjunction with “financial shocks” and frictions
Main mechanism

- Single firm, prefers debt because of tax advantage $\tau$
- Firm pays factors *before* getting revenues, so mismatch
- Firm needs *intra-period* loans, on which it can default, faces enforcement constraint $\xi_t (V_t - d_t) \geq y_t$
- Negative financial shock $\xi_t$
  lowers the amount that firm can borrow
  - firm cannot issue equity, lowers dividend $d_t$
  but faces quadratic adjustment cost
    $$\varphi (d) = d_t + \kappa (d_t - \bar{d})^2$$
  - less employment
- debt repurchases countercyclical, equity payouts $d_t$ are procyclical
- Key parameters for the importance of frictions: $\tau, \kappa$
Stylized facts from corporate finance

- dividends, equity repurchases, equity issuance are all procyclical
  Choe, Masulis, Nanda 1993,
  Korajczyk & Levy 2003,
  Dittmar & Dittmar 2008

- composition effect: firms that want to repurchase do so in booms,
  firms that want to issue equity do so in booms

- here: equity payouts $= \text{dividends} + \text{repurchases} - \text{equity issuance}$
  are procyclical
Theoretical explanations for procyclical equity issuance

- Levy & Hennessy 2007, JME
  RBC model with agency problem: managers can divert earnings
- managers need to hold equity stake in their company
  to be able to raise external equity
- negative productivity shock/recessions:
  lowers wealth of the managers,
  can raise less external equity, raise debt
  (less affected by misreporting)
- positive productivity shock/booms:
  increases wealth of managers,
  raise more external equity, less debt
Theoretical explanations for procyclical equity issuance

- Levy & Hennessy 2007
- Choe, Masulis, Nanda 1993
- Covas & Den Haan 2006

Firms choose **equity over debt** in booms.

- Here, **opposite** effects:
  - Firm chooses **debt over equity** in booms,
  - Debt easier to issue.
Theoretical explanations (Cont’d)

- Levy & Hennessy 2007: **model with heterogeneous firms**
  have different diversion technologies,
  idiosyncratic productivity shocks
  face financing constraints that bind more or less
- less constrained firms issue more equity in booms
  than more constrained firms
- empirical evidence: Korajcek and Levy 2003
- **here: model with single firm**, always constrained
Measurement of financial shocks

- Measure productivity shocks $z_t$ as Solow residuals.
  How about financial shocks $\xi_t$?
- For representative firm, the borrowing constraint binds
  \[
  \xi_t (V_t - d_t) = y_t \\
  \rightarrow \text{get time series of } \xi_t
  \]
- $V_t =$ value of the stocks issued by the firm could use stock market data to measure $V_t$
- however, in the model:
  $V_t \approx $ book value of equity $= k_t - b_t / R_t$
  not like market value of equity
- so, instead use model implied value:
  \[
  \xi_t = c_z \hat{z}_t + c_y \hat{y}_t + c_k \hat{k}_t + c_b \hat{b}_t
  \]
Quadratic adjustment costs for equity

\[ \varphi(d) = d_t + \kappa (d_t - \bar{d})^2 \]

- reduced form for something else:
  costly to lower dividends, because of signalling
- symmetric??
- calibration of \( \kappa \):
  - key parameter for quantitative importance of frictions
  - match the volatility of equity payouts/GDP
  - \( \kappa = 0.25 \) high?? low??
  - lower \( \kappa \): financial shocks are less important for output, hours more volatile equity payouts/GDP

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Conclusions

- Theoretical explanation based on single firm: need preference for *debt over equity* in booms
- Empirical patterns for individual firms who raise external funds: preference for *equity over debt* in booms
- Compositional effects
- What happens if "financial shock" $\zeta_t$ is measured from data?
- Quadratic adjustment costs?
- Calibration of $\kappa$?