THE FINANCIAL ACCELERATOR AND FINANCIAL OVERSIGHT

MAY 4, 2009

FINANCING CONSTRAINT AND CAPITAL DEMAND

- **Firm-level demand for capital defined by the relation**

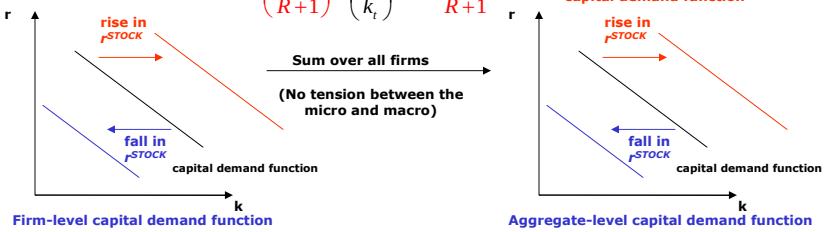
$$r = \left(\frac{R}{R+1}\right)\alpha k^{\alpha-1} n^{1-\alpha} + \frac{r^{STOCK}}{R+1}$$

Recall $\lambda = \left[\frac{r - r^{STOCK}}{1+r}\right] \cdot \frac{1}{R}$

Because exponent (a – 1) is a negative number, can move to denominator

$$r = \left(\frac{R}{R+1}\right)\alpha \left(\frac{n_t}{k_t}\right)^{1-\alpha} + \frac{r^{STOCK}}{R+1}$$

Rise (fall) in return on stock leads to shift out (in) of capital demand function



Firm-level capital demand function — Aggregate-level capital demand function

- **IMPORTANT: changes in financial market returns shift capital demand (and hence investment demand – recall $inv_t = k_{t+1} - k_t$)**

FINANCIAL ACCELERATOR FRAMEWORK

- **Four Building Blocks of the Financial Accelerator Framework**

1. **Firm Profit Function**

$$P_1 f(k_1, n_1) + P_1 k_1 + (S_1 + D_1)a_0 - P_1 w_1 n_1 - P_1 k_2 - S_1 a_1 + \frac{P_2 f(k_2, n_2)}{1+i} + \frac{P_2 k_2}{1+i} + \frac{(S_2 + D_2)a_1}{1+i} - \frac{P_2 w_2 n_2}{1+i} - \frac{P_2 k_3}{1+i} - \frac{S_2 a_2}{1+i}$$

= 0 = 0

2. **Financing Constraint**

$$P_1 \cdot (k_2 - k_1) = \quad S_1 \cdot a_1$$

3. **Government Regulation of Financial Relationships (imposition of *R* on financing constraint)**

$$P_1 \cdot (k_2 - k_1) = R \cdot S_1 \cdot a_1$$

4. **Relationship between firm profits and dividends**

NOW

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  - **Some industries' dividend policies subject to government regulation**
    - **Recently: financial companies receiving government funding have had dividend payments limited to $0.01 per share**
- **Recent average: ≈35 percent of profits disbursed as dividends**
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Macro Fundamentals

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$$D_t = P_t \cdot profit_t$$

← REAL profits of firm in period *t*

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(the $P_2 k_3$ term = 0; the $S_2 a_2$ term = 0)

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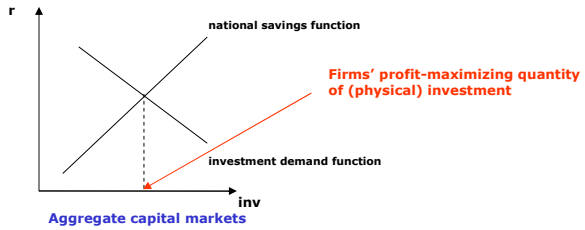

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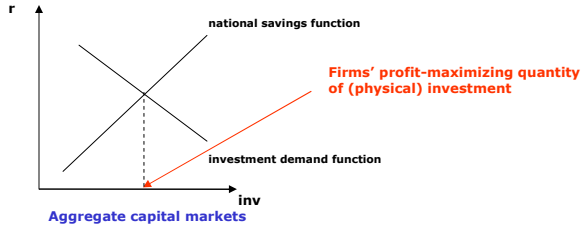

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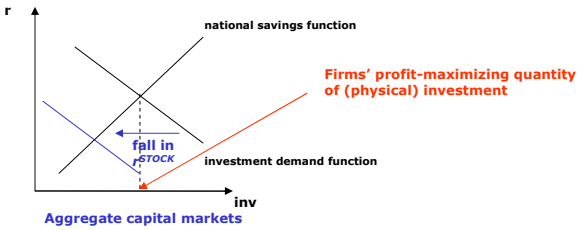

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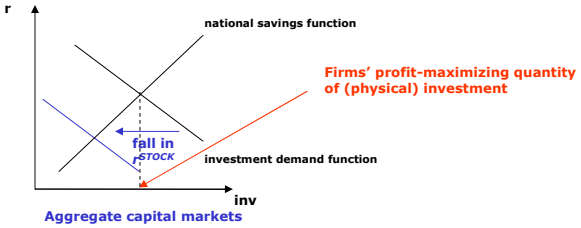

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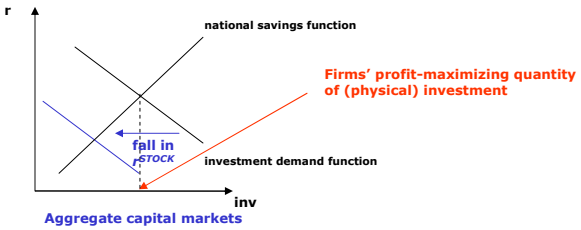

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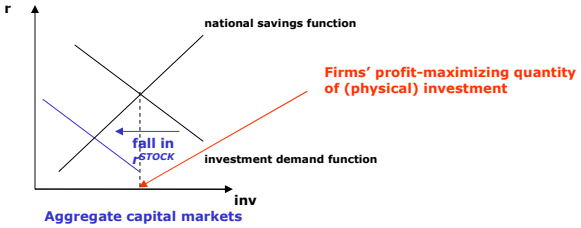

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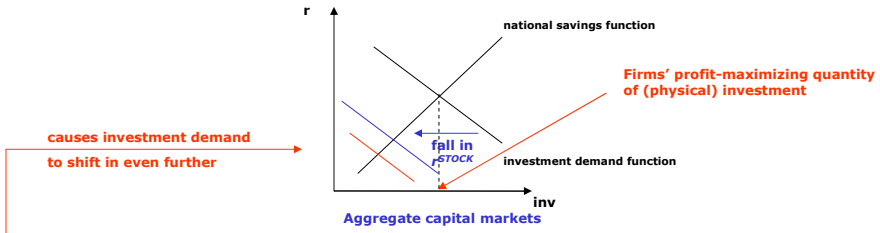

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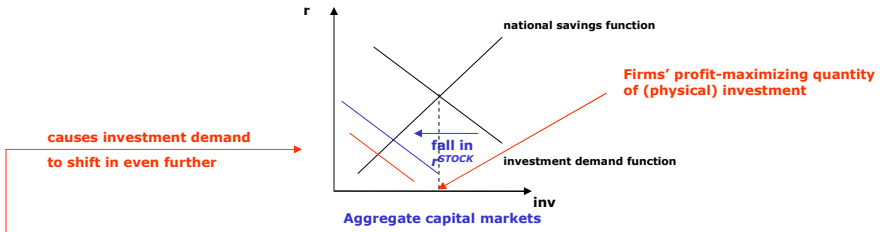

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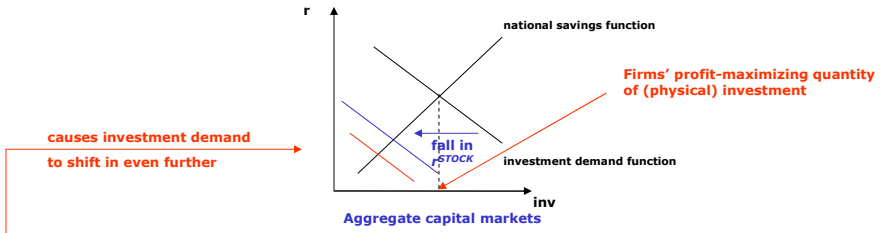

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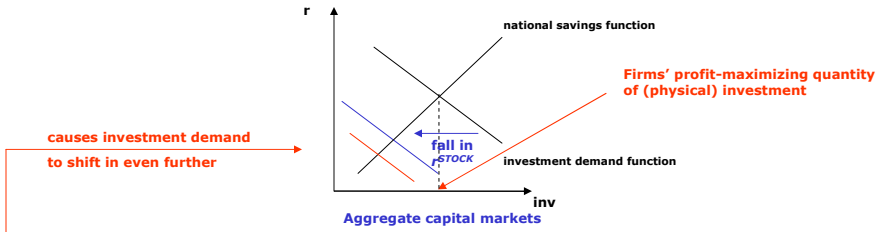

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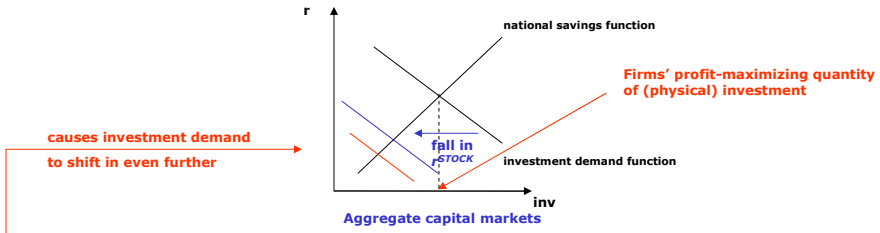

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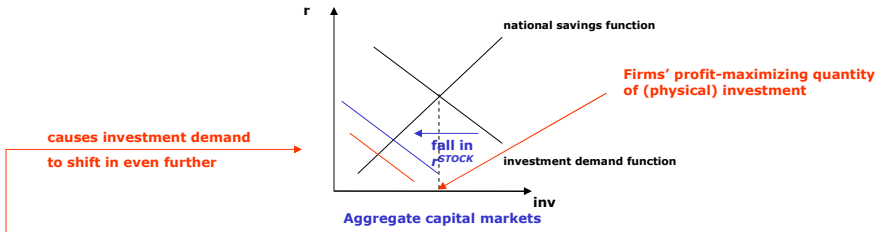

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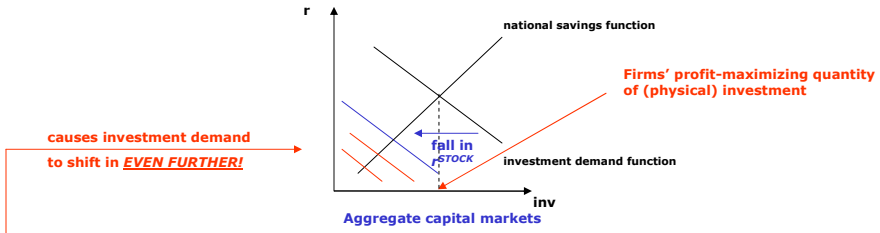

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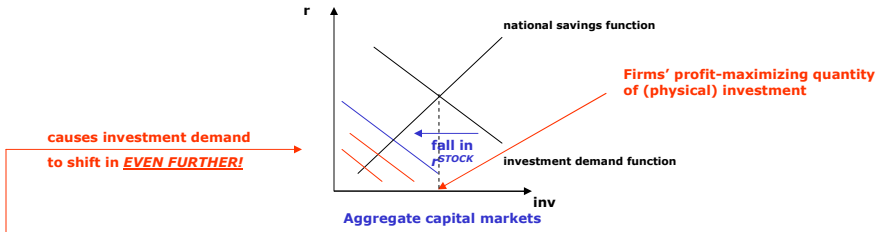

AND ON AND ON...

FINANCIAL ACCELERATOR

r^{STOCK} declines ← Initial decline a shock (i.e., unpredictable)

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Because of financing constraint →

Investment demand function shifts inwards

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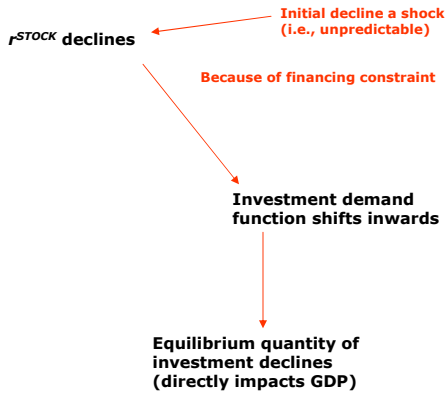

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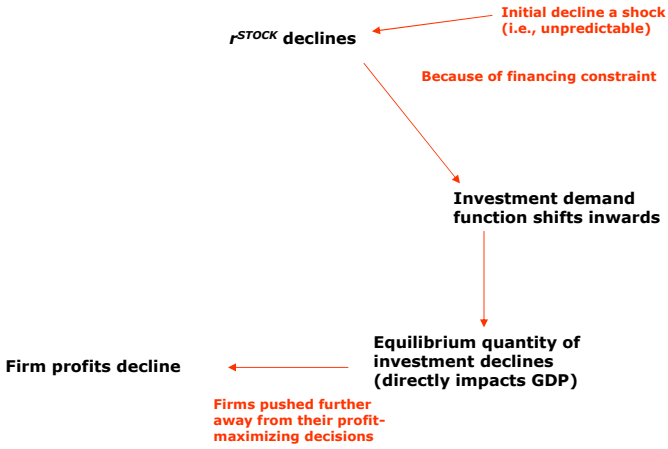

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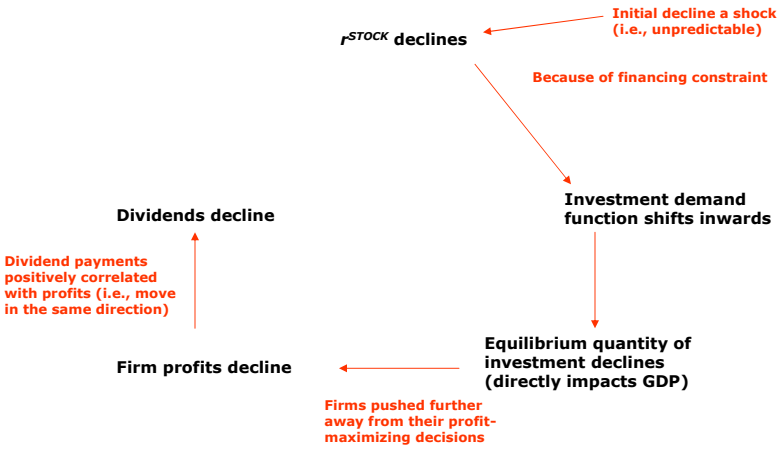

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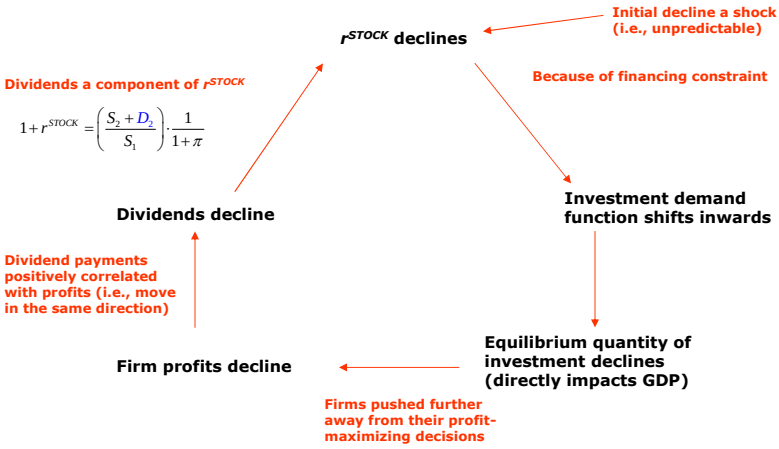

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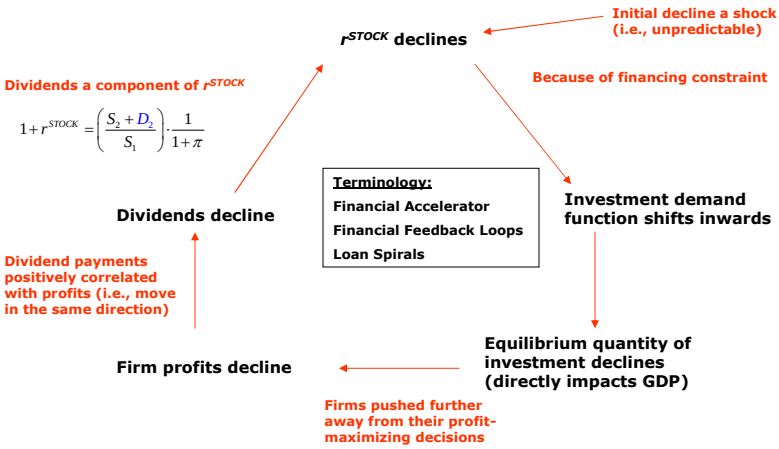

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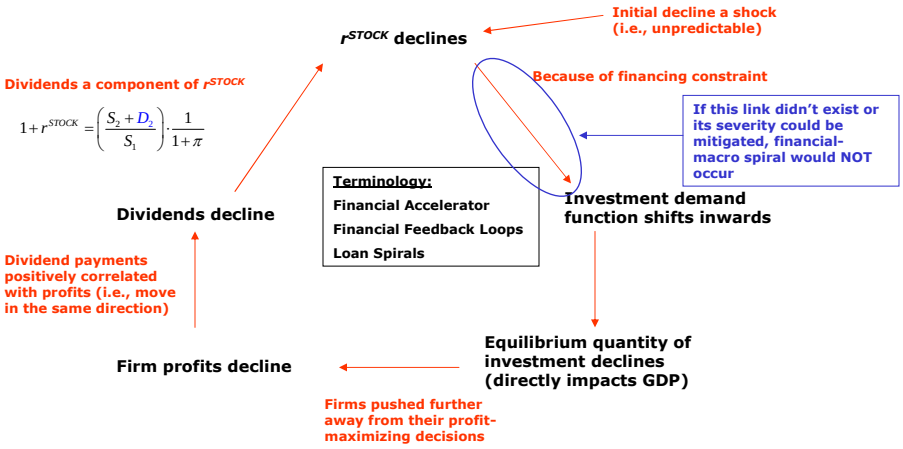

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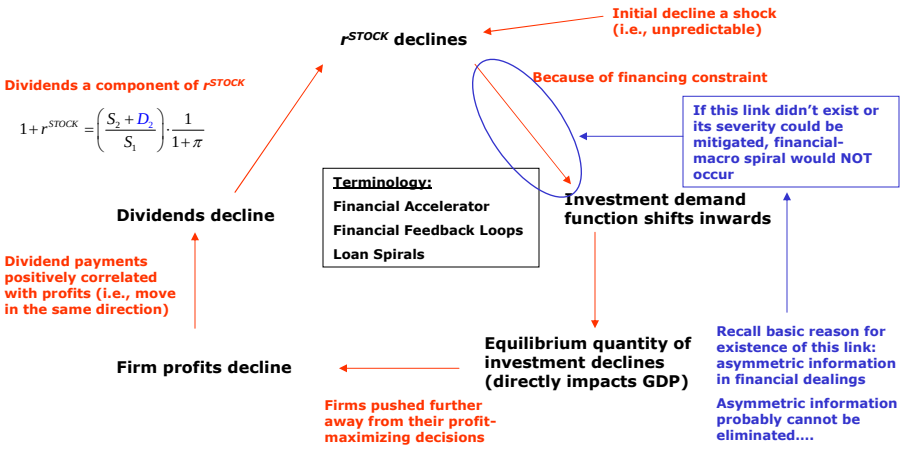

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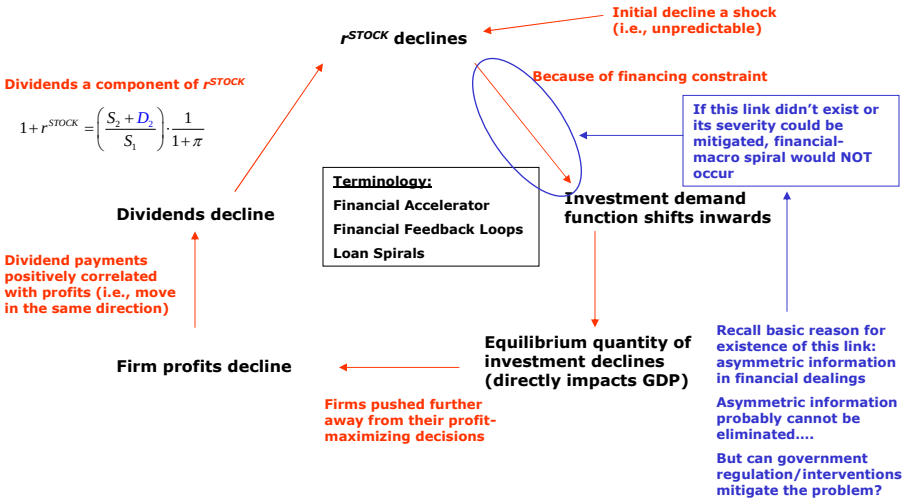

POLICY AND REGULATORY RESPONSES

- **Entire accelerator mechanism due to financing constraint**

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  - Exactly the intention of U.S. Troubled Asset Relief Program (TARP)
    - Direct purchases by Treasury of a wide variety of financial assets
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Government's Role in Finance

POLICY AND REGULATORY RESPONSES

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  - For a given market value of financial assets, $S_1 a_1$, a higher *R* allows firms to borrow more in order to purchase more (physical) capital
  - Allows firms to produce more for the same exact financial resources
- Changes in *R* can be time-consuming to implement
  - Simultaneously controlled by Federal Reserve, Treasury, Securities and Exchange Commission (SEC), Comptroller of the Currency, and several other regulatory agencies – huge coordination delays!
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Will these programs work as intended?

We'll see...

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- **Now: *r* also measures price/return of "risky" assets (i.e., stock) in "steady state"**
  - **If $r = r^{STOCK}$, financing issues don't affect (very much) macroeconomic outcomes**
  - **If *r* and r^{STOCK} deviate significantly**
    - **Financial conditions of firms matter for investment/output**
    - **And can matter very importantly!**

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