

Search For Yield

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- **Do low interest rates lead to lax lending standards?**
 - ▶ Trivially: low interest rates mean worse project receive funding
 - ▶ But is there something else?
- **This paper: yes!**
 - ▶ Low interest rates reduce monitoring across the board: higher risk
- **Simple intuition**
 - ▶ Low interest rates foster entry
 - ▶ Entry reduces return
 - ▶ Low return reduces incentives to monitor
- **Various extensions**

General reaction

- Very interesting and though provoking paper
- Simple, yet subtle model
- My discussion:
 - ▶ Mechanism
 - ▶ Suggestions
 - ★ Exposition
 - ★ Choice of extensions

Partial equilibrium

- Single entrepreneur invests 1 unit to obtain

$$R_p^E = \begin{cases} R_p & \text{with probability } 1 - p + m \\ 0 & \text{with probability } 1 - p \end{cases}$$

- No net worth: needs to borrow from bank
- Bank:
 - ▶ borrows from investors at rate R^D (risk-free rate R_0)
 - ▶ lends to entrepreneur at rate R^L
 - ▶ sets m , i.e., monitoring
- Assume bank has all bargaining power:
 - ▶ $R^L = R_p$

Partial equilibrium II

- No moral hazard: monitoring is contractible:

$$R^D(m) = \frac{R_0}{1 - p + m}$$

- Bank solves:

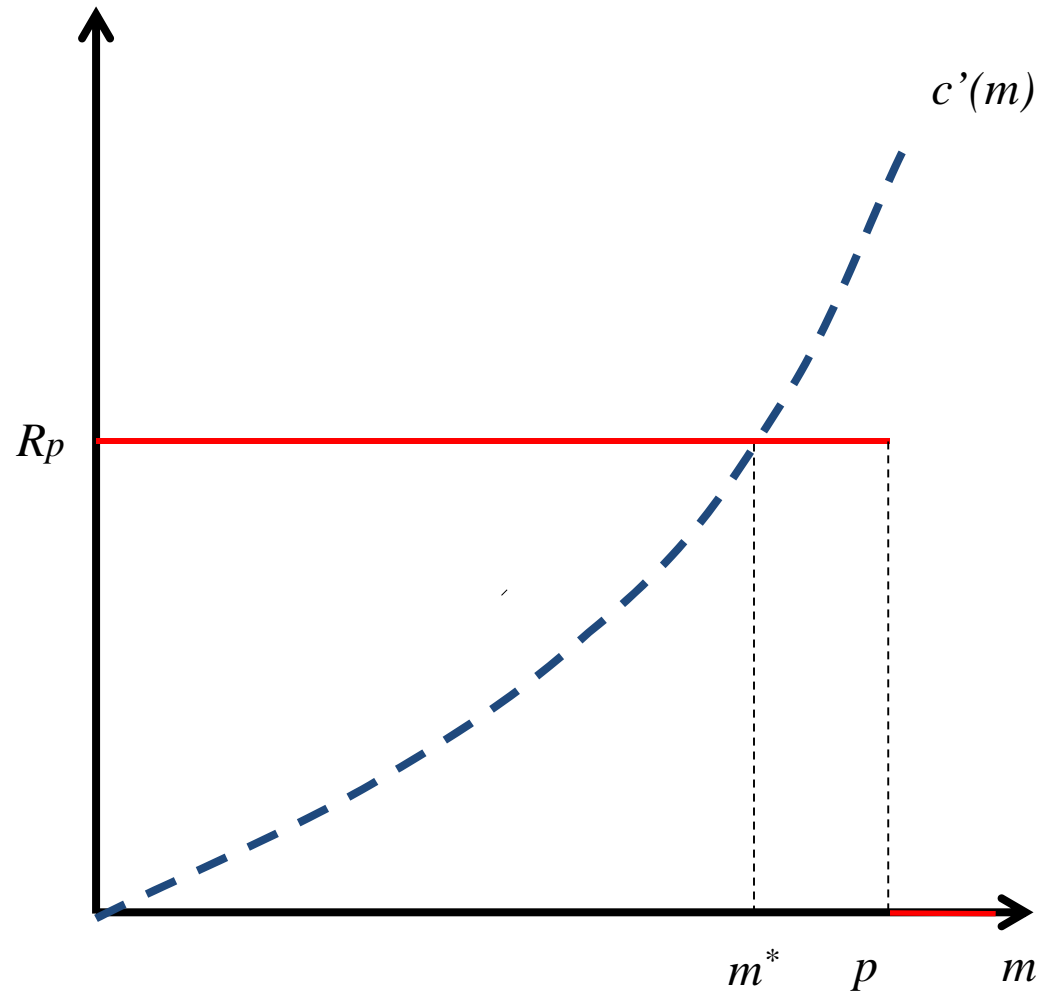
$$\max_m \{(1 - p + m) \cdot R_p - R_0 - c(m)\}$$

- Optimal monitoring given by m^* :

$$R_p = c'(m^*)$$

- ▶ Note: independent of R_0 (and thus of spread)

Partial equilibrium



General equilibrium

- Now suppose there are many entrepreneurs and many banks:
 - ▶ R_p decreasing in total investment
 - ★ Entrepreneurial entry reduces return
 - ▶ Bank lending market is contestable
 - ★ Acting bank can be undercut by entrant

- Equilibrium conditions $\{R_p, m^*\}$:

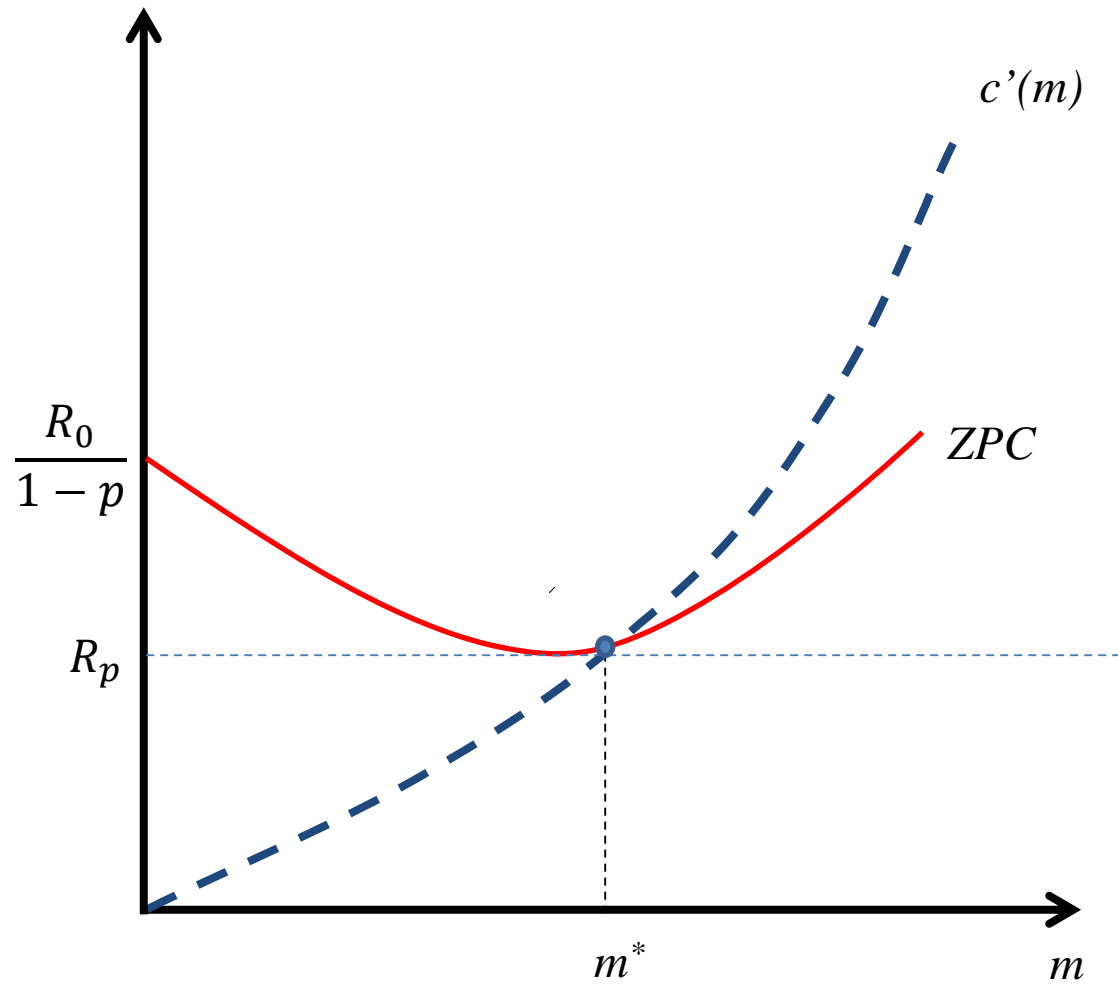
- ▶ Optimality

$$R_p = c'(m^*)$$

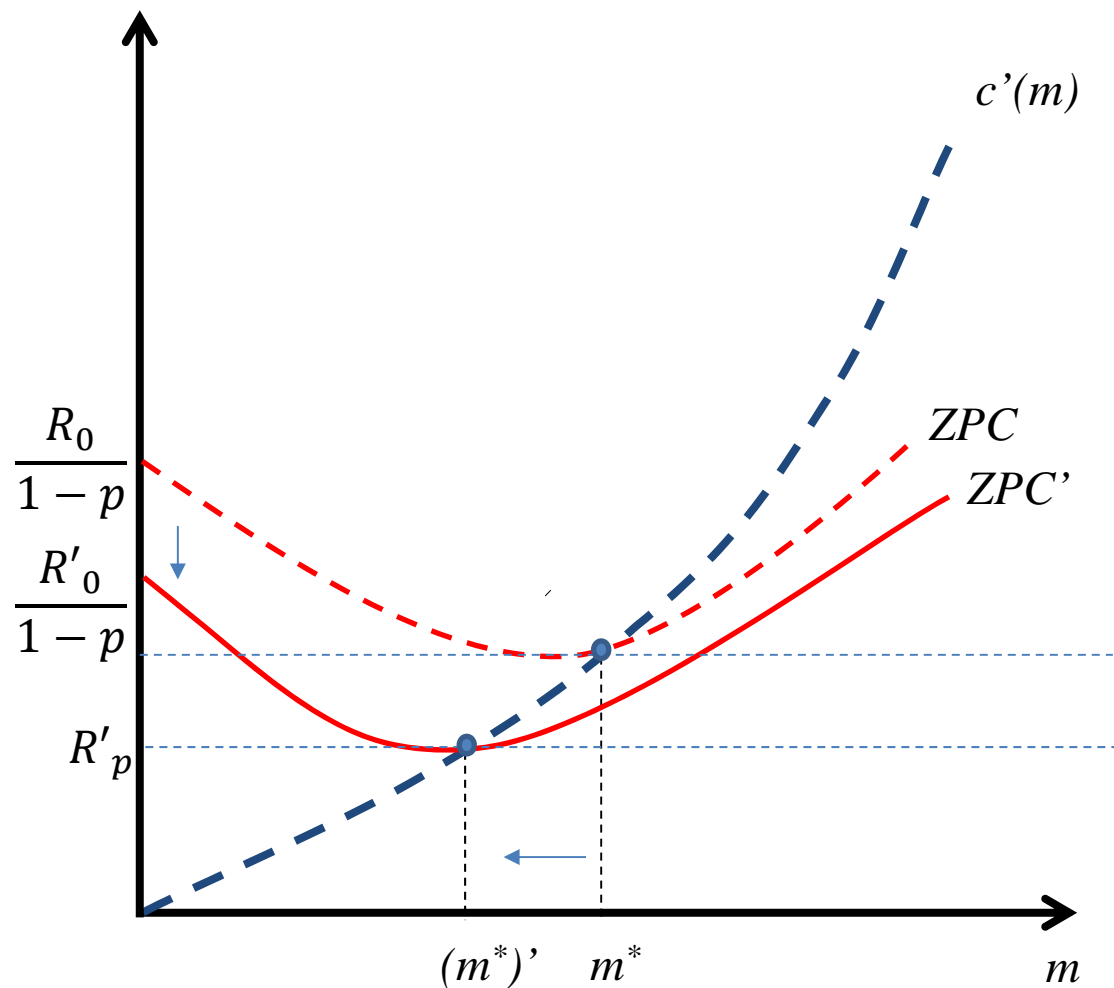
- ▶ Bank zero profit condition

$$R_p = \frac{R_0 + c(m^*)}{1 - p + m^*}$$

General equilibrium



General equilibrium: a fall in the interest rate



General equilibrium II

- A fall in R_0 :
 - ▶ Reduces m
 - ▶ Reduces the spread

$$R_p - \frac{R_0}{1 - p + m} = \frac{c(m)}{1 - p + m} \text{ which increases in } m$$

- Intuition:
 - ▶ Low interest rate increases investment
 - ▶ Higher investment reduces return to projects
 - ▶ Lower marginal return of monitoring
- How does the contract differ across p ?
 - ▶ Safer projects (low p) have lower monitoring
 - ▶ But monitoring always positive: all banks are originate-to-hold

What changes if monitoring is not contractible?

- Bank solves:

$$\max_m \left\{ (1 - p + m) \cdot (R - R^D) - c(m) \right\}$$

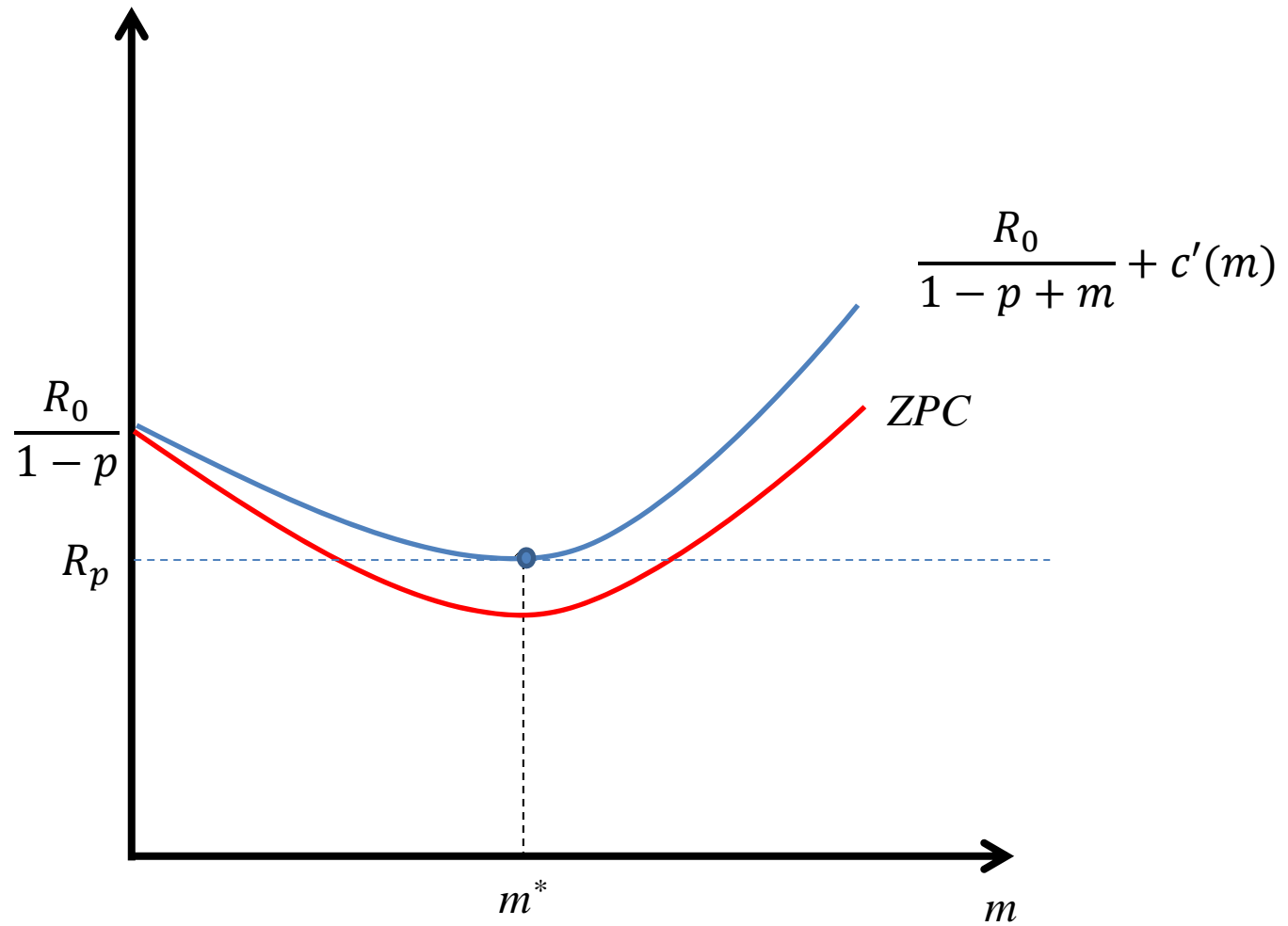
where

$$R^D = \frac{R_0}{1 - p + m}$$

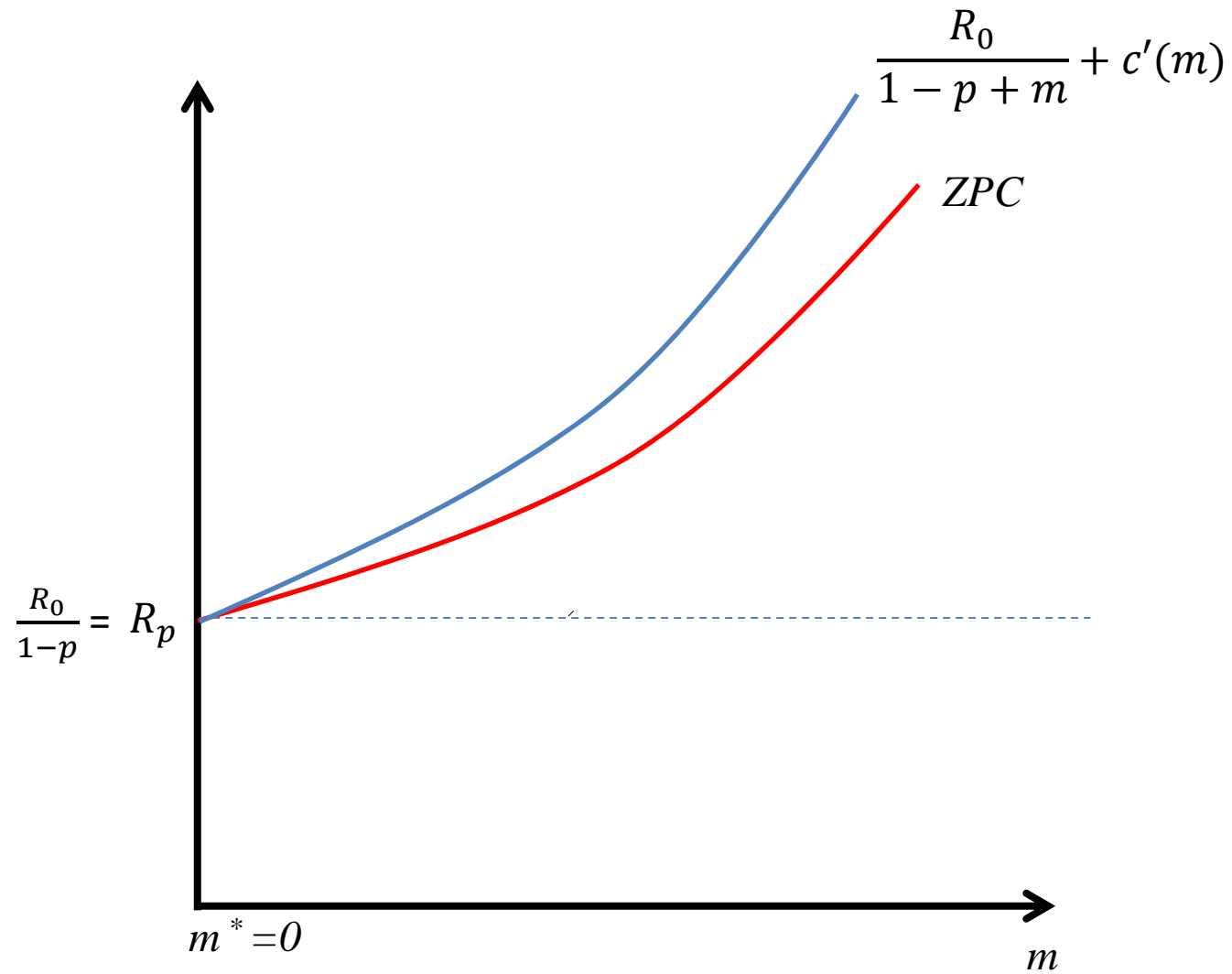
- Equilibrium given by $\{R_p, m^*\}$:

$$R_p = \min_m \left\{ \frac{R_0}{1 - p + m^*} + c'(m^*) \right\}$$

General equilibrium



General equilibrium: safe project



Main results

- Fall in interest rate leads to fall in monitoring: for $p \in [0, 1]$
 - ▶ **Intensive margin:** even if $m > 0$, it falls (originate to hold)
 - ▶ **Extensive margin:** $m = 0$ for some projects (originate to distribute)
- Overall investment is higher, but riskier
- Extensions:
 - ▶ savings glut
 - ▶ risk aversion
 - ▶ endogenous cycles

Comments

- Robustness
- Message
- Extensions

Comment I: is this how sfy happens?

- Main result: very interesting, but clearly shaped by assumptions
- Example 1: intensive margin for projects as well
 - ▶ Fall in R_0 raises project size → may raise incentives to monitor
- Example 2: fixed cost to upgrade monitoring technology
 - ▶ Fall in R_0 raises number of projects → raise incentives to upgrade monitoring
- Supporting evidence on main predictions?
 - ▶ Low R_0 → higher credit → lower return of **inframarginal projects**
 - ▶ Which sectors shift from traditional to shadow banking funding?
 - ▶ Ancilliary predictions: key role of bank competition (Ruckes 2004)
 - ★ Strength of effect depends on degree of competition

Comment II: if it is, is it bad?

- Implicit message: low interest rates are bad
- In the model, unclear
- Higher investment and lower monitoring (quantity/quality trade-off)
 - ▶ Effects on welfare?
 - ▶ Could be analyzed in simple extension
- Note optimal monitoring also falls when R_0 is low!
 - ▶ Unclear whether “monitoring gap” increases
 - ▶ Conjecture: depends on intensive vs. extensive margin
- For macro/policy message: perhaps more interesting than other extensions

Comment III: are there other effects of low interest rates?

- There are countervailing effects of low interest rates
- **Example 1:** suppose banks begin with some legacy debt
 - ▶ Debt overhang may dampen monitoring
 - ▶ Low interest rates reduce debt overhang \implies may increase monitoring
- **Example 2:** suppose banks endowed with some assets
 - ▶ Low interest rates raise asset prices
 - ▶ Higher bank net worth may increase monitoring
- In general: effects of low interest rates will depend on state of banks

For example, in a debt overhang environment it is not clear that accommodative monetary policy is inimical to balance sheet repair. In many countries low interest rates have in fact helped stabilise debt dynamics via reduced interest rate burdens, and thereby facilitated balance sheet adjustment.

Mario Draghi, 2015

Conclusion

- Interesting, relevant paper
- Takeaway message: low R_0 reduces monitoring and increases risk
- Nice illustration of mechanism
- When is this likely to be a concern?