

Discussion: “When Silicon Valley Meets Wall Street: A Theory of Financial Overengineering”

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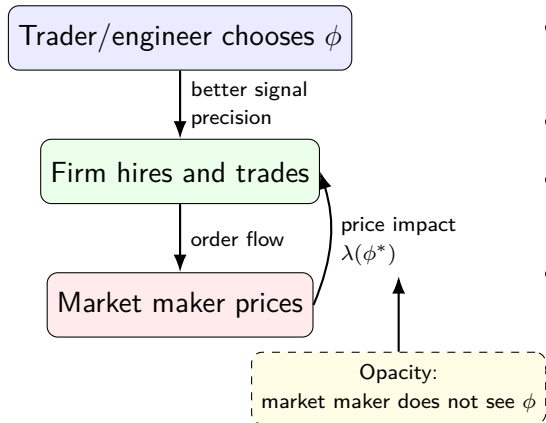
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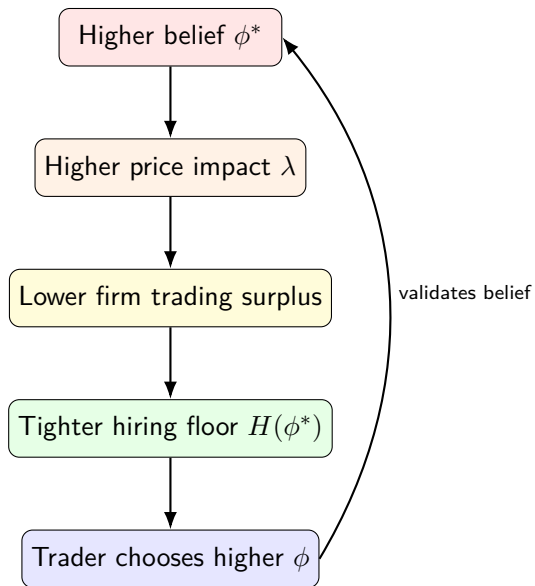
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Paper in One Slide



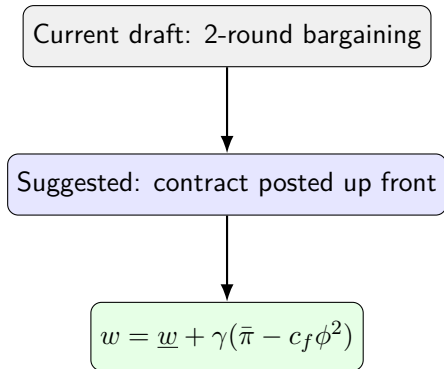
- Trader/engineer chooses costly technology ϕ that improves the firm's signal.
- Transparent case: unique equilibrium.
- Opaque case: belief about ϕ^* changes price impact, which changes the firm's hiring condition.
- This can generate a low-tech equilibrium and a self-fulfilling high-tech equilibrium.
- High-tech equilibrium: lower liquidity, higher volatility, higher technology cost, Pareto worse.

Main Mechanism in One Picture



- The paper's core object is the fixed-point problem $\phi = H(\phi^*)$.
- Multiple equilibria come from the upward-sloping hiring branch.
- The high-tech equilibrium is supported by a rent from being retained/hired.
- This is the part I would simplify and reinterpret.

Suggestion 1: Replace 2nd stage bargaining with base pay + bonus

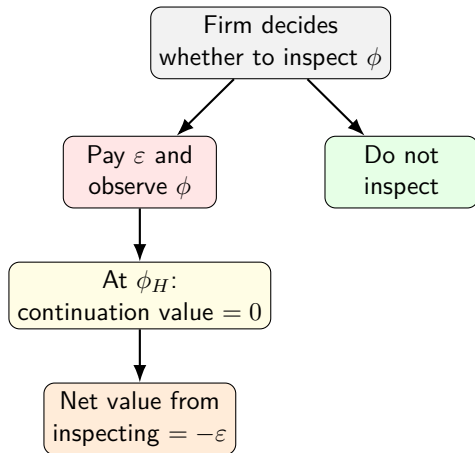


- Interpret the fixed term as base pay, with $\underline{w} \equiv \gamma \xi$.
- Then remove the second bargaining stage entirely.
- Same reduced-form payoffs, cleaner economic story:

$$U_f = (1 - \gamma)(\bar{\pi} - c_f \phi^2) - \underline{w},$$
$$U_t = \underline{w} + \gamma(\bar{\pi} - c_f \phi^2) - c_e \phi^2.$$

- This makes the key force transparent: a rent from keeping the job.

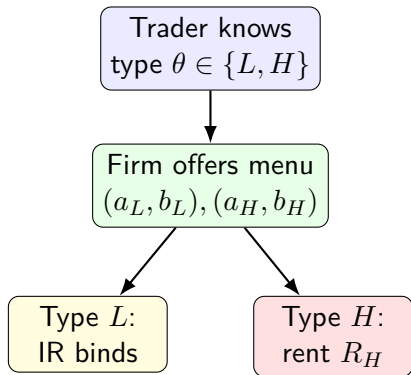
Observation 2: Any ε cost to observe ϕ kills the high-tech equilibrium



- High-tech equilibrium is a break-even hiring outcome for the firm.
- If the firm must pay $\varepsilon > 0$ to see ϕ , the ex-ante value of entering that continuation game is negative.
- So voluntary inspection breaks down:

$$V^{\text{inspect}}(\phi_H) = 0 - \varepsilon < 0.$$

Suggestion 3: Replace bargaining with screening



- Compensation:

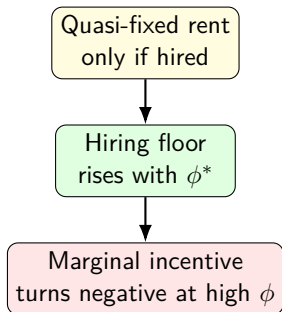
$$w_j = a_j + b_j(\bar{\pi} - c_f\phi^2).$$

- In the separating contract, the high type gets information rent $R_H > 0$.
- Then the paper's mechanism survives with the mapping

$$\gamma^\xi \leftrightarrow R_H, \quad \gamma \leftrightarrow b_H.$$

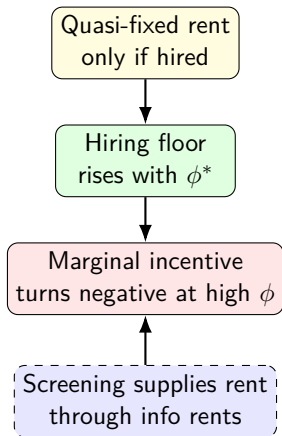
- The story becomes: opacity + screening rents $\Rightarrow$ overengineering.

What is doing the work



- The main mechanism does not require bargaining specifically.
- It requires:
 - ▶ a positive quasi-fixed rent that the trader gets if hired,
 - ▶ a hiring condition that tightens when the market maker expects higher ϕ^* ,
 - ▶ trader marginal incentives that eventually turn negative at high ϕ .

What is doing the work



- The main mechanism does not require bargaining specifically.
- It requires:
 - ▶ a positive quasi-fixed rent that the trader gets if hired,
 - ▶ a hiring condition that tightens when the market maker expects higher ϕ^* ,
 - ▶ trader marginal incentives that eventually turn negative at high ϕ .
- Screening can supply that rent naturally through information rents.

Summary

- Very nice core mechanism: technology opacity induces complementarity between the engineer's technology development and the market's belief through the firm's hiring condition.
- Suggestion 1: replace the bargaining tree with base pay plus bonus and keep the same reduced form.
- Comment 2: Any cost to observe ϕ kills the high-tech equilibrium through hold-up.
- Suggestion 3: a standard screening contract can generate the same rent in a more natural firm-trader interaction.