Competition for traders and risk

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The crisis and trader compensation

- Crisis attributed in part to traders' excessive performance pay, supposedly driven up by competition for scarce talent

- Martin Wolf (FT): "individual institutions cannot change their systems of remuneration on their own, without losing talented staff to the competition. So regulators may have to step in."

- Kashyap et al. (2008) "Retaining top traders, given the competition for talent, requires that they be paid generously based on performance."

- Acharya et al.(2009): "Given the fluid market for financial talent, no single firm can get very far on its own".

Calls to regulate banks' remuneration packages.



<u>Question</u>:

Why does competition on the labour market result in skewed incentives and not just high wages?

Idea

- When banks hire traders, they face moral hazard (choice of investment project) plus adverse selection over agents' abilities

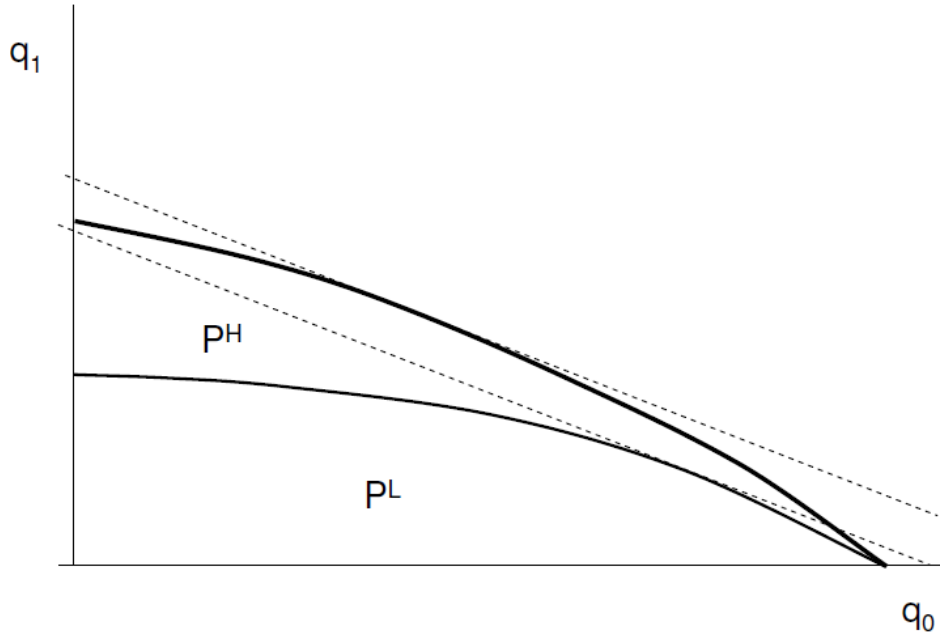
- Banks face dilemma: contain risk-taking with low-powered contracts or select efficient traders with high-powered contracts

Intuition

- Trade-off risk-taking versus selection alters with size of trader rents
- Increased competition for efficient traders increases efficient traders' rents, but by incentive compatibility this spills over to inefficient traders
- the need to reduce inefficient traders' rents forces banks to offer higher-powered contracts inducing high-risk trades.

The model

- Two types of traders (H,L)
- Set of projects with outcomes $x_1 > x_0 > 0 > -x_{-1}$.
- probabilities $q_1^{H,L}, q_0^{H,L}$ and $q_{-1}^{H,L} = 1 - q_0^{H,L} - q_1^{H,L}$ project and type dependent



The model

- Banks offer Wages w_1, w_0. Limited liability: $w_{-1} = 0$
- Traders maximize

$$\max_p q_1^{H,L}(p) w_1^{H,L} + q_0^{H,L}(p) w_0^{H,L}.$$

- Banks optimize profits by setting

$$R = \frac{w_1}{w_0}$$

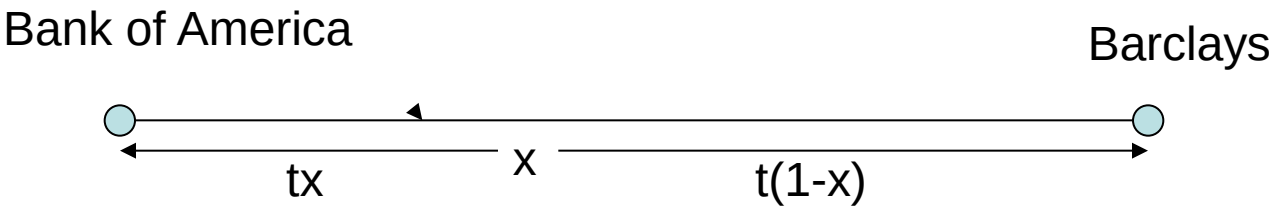
$$\Pi(R, \alpha) = q_1^H(p(R)) x_1 + q_0^H(p(R)) x_0 - \alpha q_{-1}^H(p(R))$$

- Incentive compatibility: make sure low type does not mimic high type

$$f(R) \equiv \frac{\hat{u}}{U} = \frac{q_0^L(p^L(R)) + R q_1^L(p^L(R))}{q_0^H(p^H(R)) + R q_1^H(p^H(R))} \leq 1.$$

$$\hat{u} = \max_p w_0^H \left(q_0^L(p) + R q_1^L(p) \right)$$

Hotelling competition for traders





We are interested in comparative statics in t_H

low types

high types

$$\max_{u,r,U,R} s(u,u_b)(\pi(r,\alpha)-u)+S(U,U_b)(\Pi(R,\alpha)-U)$$

$$\text{subject to } u \geq f(R)U$$

$$f(R)\frac{\phi}{2t_l}\left(\pi(r^*,\alpha)-Uf(R)-t_l\right)+\frac{1-\phi}{2t_h}\left(\Pi(R,\alpha)-U-t_h\right)=0 \qquad (U^{uc})$$

$$Uf'(R)\frac{\phi}{2t_l}\left(\pi(r^*,\alpha)-Uf(R)-t_l\right)+\frac{1-\phi}{2}\Pi_R(R,\alpha)=0 \qquad (U^{rc})$$

$$U^{ic}(R)=\frac{\pi(r^*,\alpha)-t_l}{f(R)} \qquad (U^{ic})$$

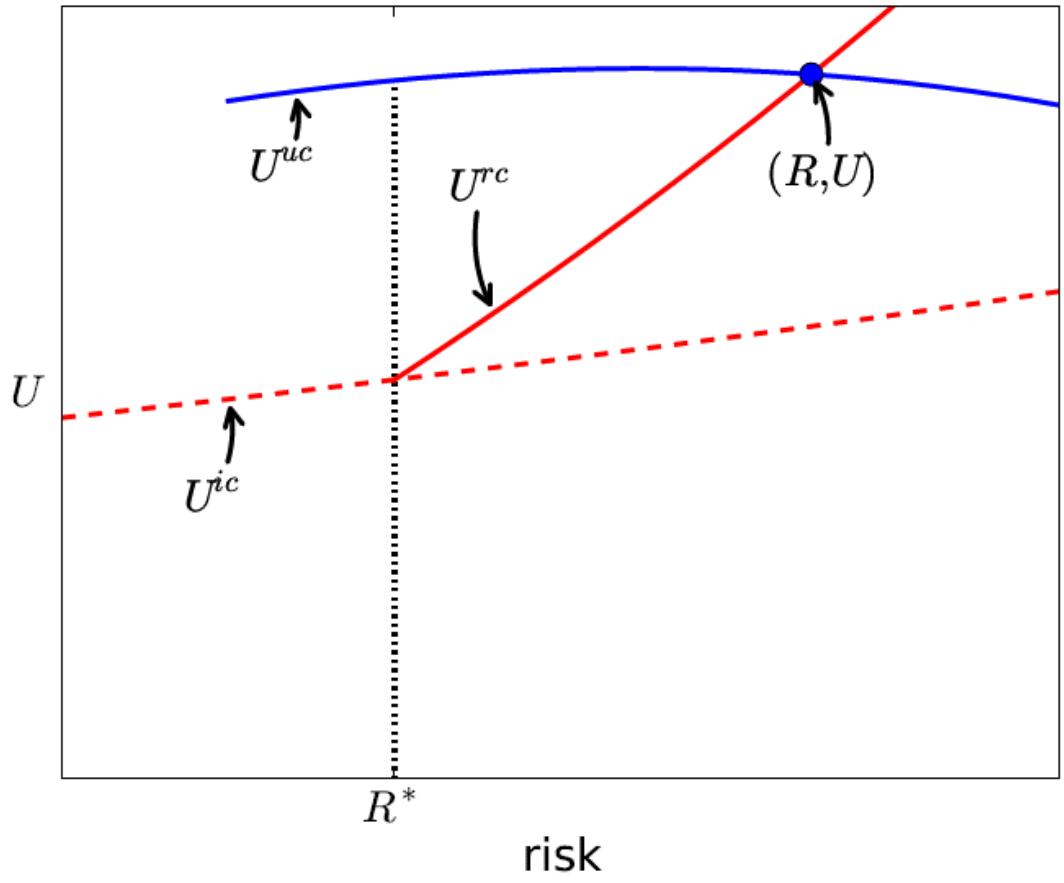
Lemma 1 *With R^* the unconstrained optimal R, defined by $\Pi_R(R^*)=0$, we have*

i) $U^{rc}(R^*)=U^{ic}(R^*)$

ii) $U^{rc}(R)>U^{ic}(R)$ *for all* $R>R^*$

iii) $U^{uc}(R^*)>U^{ic}(R^*)$

Equilibrium



Results

Proposition 1 *In equilibrium* $R > R^*(\alpha)$.

Proposition 2 *If competition for the high-type traders increases* (t_h *falls), banks induce these traders to take more risk by increasing* R.