Andreas Krause

Chapter 17.2

The impact on service quality

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Hiring employees of different abilities

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▶ Investment banks hire employees of differing ability

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▶ Investment banks hire employees of differing ability, but the quality is difficult to assess for clients

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▶ Partnerships share the profits they generate, while incorporated investment banks first pay their employees

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Ability of employees

Ability of employees

▶ Investment banks have employees with different abilities

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Ability of employees

▶ Investment banks have employees with different abilities, generating a surplus V for clients

Ability of employees

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▶ Investment banks can identify the ability of employees

Ability of employees

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- Investment banks can identify the ability of employees and hire employees of minimum ability V^* for incorporated investment banks and V^{**} for partnerships

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Price of services

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▶ Price partnerships charge: $P^{**} = E\left[V|V > V^{**}\right] = \frac{1}{1-F(V^{**})} \int_{V^{**}}^{+\infty} V\,dF\left(V\right)$

Price of services

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Investment bank profits

Investment bank profits

▶ A fraction p of clients know the quality of service and will pay P^*

▶ Profits: $\Pi_C = \left(p P^* \right.$

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Investment bank profits

▶ A fraction p of clients know the quality of service and will pay P^*, the remainder can only infer the quality and will pay $\hat{P}^*$, following their inference of the quality

▶ Profits: $\Pi_C = \left(pP^* + (1-p)\hat{P}^* \right.$

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▶ Investment banks pay wages w

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Investment bank profits

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Optimal ability threshold

Optimal ability threshold

▶ Investment banks choose the optimal ability threshold for hiring, V^*

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Optimal ability threshold

▶ Investment banks choose the optimal ability threshold for hiring, V^*, by solving $\frac{\partial \Pi_C}{\partial V^*} = 0$

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▶ This gives $w = pV^* + (1 - p) P^*$, assuming clients infer the threshold correctly and $P^* = \hat{P}^*$

▶ Profits of investment banks then are $\Pi_C = p (1 - F (V^*)) (P^* - V^*) - E$

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Profits of each partner

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▶ In a partnership only the partners joining are providing equity, with $1 - F(V^{**})$ employed, each bring equity $\frac{E}{1-F(V^{**})}$

▶ Profits: $\Pi_P = $ $\qquad\qquad -\frac{E}{1-F(V^{**})}$

¿ ▶ Given that we are looking at a partnership, the partners will receive the revenue the investment bank generates, which consists of the price paid by those knowing the quality of service that is provided,

   ▶ and those that make inferences about the quality of the service provided.

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▶ As partners, each obtains the full revenue of those knowing the ability, paying P^{**}

▶ Profits: $\Pi_P = pP^{**} \qquad\qquad - \frac{E}{1-F(V^{**})}$

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Optimal ability threshold

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▶ Profits of partnerships then are $\Pi_P = P^{**} - \frac{E}{1-F(V^{**})} = pV^{**} + (1-p)P^{**}$

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Comparing optimal skill levels

Comparing optimal skill levels

▶ Using the first order conditions we can get that $P^* = \frac{\Pi_C + E}{1 - F(V^*)} + w$

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Comparing optimal skill levels

▶ Using the first order conditions we can get that $P^* = \frac{\Pi_C + E}{1 - F(V^*)} + w$

▶ Assume $V^* = V^{**}$, then $P^* = P^{**}$

Comparing optimal skill levels

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Comparing optimal skill levels

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▶ Assume $V^* = V^{**}$, then $P^* = P^{**}$, then $\Pi_P = \frac{\Pi_C}{1 - F(V^*)} + w$

▶ As V^* is optimal for the incorporated investment bank we have $\frac{\partial \Pi_C}{\partial V^*} = 0$

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▶ F $\Pi_C > 0$, this derivative is positive and V^* cannot be optimal for the partnership

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Partnerships have higher skills

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Partnerships have higher skills

▶ This implies that $V^{**} > V^*$

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Partnerships have higher skills

▶ This implies that $V^{**} > V^*$ and partnership employees are more able

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▶ This implies that $V^{**} > V^{*}$ and partnership employees are more able

▶ Partnerships hold more equity per employee, E for incorporated investment banks

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Partnerships have higher skills

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- Partnerships hold more equity per employee, E for incorporated investment banks and $\frac{E}{1-F(V^{**})}$ for partnerships

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▶ This increases the incentive to be able to charge high prices, which requires high ability

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Partnerships are preferred over employment

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Partnerships are preferred over employment

▶ Partners will only join if they can earn more than as an employee: $\Pi_P > w$

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Partnerships are preferred over employment

▶ Partners will only join if they can earn more than as an employee: $\Pi_P > w$

▶ This gives $pV^{**} + (1-p)P^{**} \geq pV^* + (1-p)P^*$

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▶ Differentiating the right-hand side gives
$p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$
$> p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V^* dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$
$= p > 0$

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$$= p > 0$$

▶ If $V^* = V^{**}$, then $P^* = P^{**}$ and thus ${\color{red}\Pi_P = w}$

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Partnerships are preferred over employment

- Partners will only join if they can earn more than as an employee: $\Pi_P > w$
- This gives $pV^{**} + (1-p)P^{**} \geq pV^* + (1-p)P^*$
- Differentiating the right-hand side gives
  $$p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$$
  $$> p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V^* dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$$
  $$= p > 0$$
- If $V^* = V^{**}$, then $P^* = P^{**}$ and thus $\Pi_P = w$
- As $V^{**} > V^*$, then $P^{**} > P^*$, hence $\Pi_P > w$
- Being a partner is more attractive than being an employee

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Partnerships are preferred over employment

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▶ This gives $pV^{**} + (1-p) P^{**} \geq pV^* + (1-p) P^*$

▶ Differentiating the right-hand side gives
$p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$
$> p + \frac{(1-p)f(V^*)}{(1-F(V^*))^2} \int_{V^*}^{+\infty} V^* dF(V) - \frac{(1-p)V^* f(V^*)}{1-F(V^*)}$
$= p > 0$

▶ If $V^* = V^{**}$, then $P^* = P^{**}$ and thus $\Pi_P = w$

▶ As $V^{**} > V^*$, then $P^{**} > P^*$, hence $\Pi_P > w$

▶ Being a partner is more attractive than being an employee

Incorporated investment banks are viable

Incorporated investment banks are viable

▶ We can use the first order condition of partnerships to obtain
$$\Pi_C = p\left(\left(1 - F\left(V^*\right)\right)\left(P^* - V^*\right) - \left(1 - F\left(V^{**}\right)\right)\left(P^{**} - V^{**}\right)\right)$$

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▶ $\frac{\partial \Pi_C}{\partial V^{**}} = p\left(1 - F\left(V^{**}\right)\right) > 0$

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Incorporated investment banks are profitable

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Incorporated investment banks are profitable

▶ If clients are unable to identify the ability of investment banks, $p = 0$

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Incorporated investment banks are profitable

▶ If clients are unable to identify the ability of investment banks, $p = 0$, then
$\Pi_C = -E < 0$

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Incorporated investment banks are profitable

▶ If clients are unable to identify the ability of investment banks, $p = 0$, then $\Pi_C = -E < 0$

▶ Assume that for if all clients are able to identify the ability, $p = 1$

Incorporated investment banks are profitable

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Incorporated investment banks are profitable

▶ If clients are unable to identify the ability of investment banks, $p = 0$, then $\Pi_C = -E < 0$

▶ Assume that for if all clients are able to identify the ability, $p = 1$, then $\Pi_C > 0$

▶ There exists a $\hat{p}$ such that for $p > \hat{p}$ incorporated investment banks are viable

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Partnerships are more profitable

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Partnerships are more profitable

▶ If partners were paid wages w, then their excess profits are $\Pi_P - w$

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▶ Partnerships are more profitable if $\Pi_P - w \geq \Pi_C$

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Partnerships are more profitable

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▶ Holding shares in the incorporated investment bank would give Π_C

▶ Partnerships are more profitable if $\Pi_P - w \geq \Pi_C$

▶ This requires $p \leq \hat{\hat{p}} = \frac{P^{**} - P^*}{F(V^{**})(P^{**} - V^{**}) - F(V^*)(P^* - V^*)}$

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- If the ability of investment bankers is difficult to assess, partnerships are more profitable

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■ Problem and model assumptions

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■ Ability in partnerships

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Benefits of partnerships

▶ Partnerships are more attractive than being an employee

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Benefits of partnerships

▶ Partnerships are more attractive than being an employee

▶ Partnerships are more profitable than incorporated investment banks if clients are unlikely to identify the ability of investment banks

Benefits of partnerships

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Dominance of partnerships

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Dominance of partnerships

▶ Partnerships should dominate in markets where service quality is difficult to assess

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Dominance of partnerships

▶ Partnerships should dominate in markets where service quality is difficult to assess

▶ This can be in markets for complex products or services, or new products and services

▶ It can include markets that are generally difficult to analyse

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Dominance of partnerships

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