Andreas Krause



Chapter 17.1 Viability of partnerships

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

Outline

- Problem and model assumptions
- Associates joining the partnership
- Taking up partnership offers
- Not appointing unskilled partners
 - Mentoring of associates

Summary

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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Problem and model assumptions

Associates joining the partnership

Taking up partnership offers

Not appointing unskilled partners

Mentoring of associates



Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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- New partner buy a stake in the company

, commercial banks quickly become incorporated. Partnership survive to this day in many management consultancy firms, accountancy firms, and law firms, while investment banks have mostly been incorporated in the second lhalf of the 20th century.

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Mentoring asso	ciates				

▶ Partners can be either highly-skilled, generating surplus V_H

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- Each partner mentors N associates, who might become partners, but until then only generate surplus V_L
- Mentoring costs C and partners do not know the type of partner an associate will be without mentoring
- Profits to a partner consists of his own surplus V_H

 $\blacktriangleright \Pi_P = V_H$

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- Each partner mentors N associates, who might become partners, but until then only generate surplus V_L
- Mentoring costs C and partners do not know the type of partner an associate will be without mentoring
- ▶ Profits to a partner consists of his own surplus V_H and the surplus V_L of all associates he mentors, less the wages they are paid
- $\square_P = V_H + N \left(V_L w_A \right)$

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

- Partners can be either highly-skilled, generating surplus V_H, or low-skilled, generating surplus V_L
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$$\Pi_P = V_H + N \left(V_L - w_A \right)$$

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Problem and assumptions	Associates joining ●00	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

Problem and model assumptions

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Profits of joining	g a partnersh	ip			

Associates do not know if they are highly skilled and chosen as partners

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Profits of joining	g a partnersh	nip			

• Associates do not know if they are highly skilled and chosen as partners, they assign probability $\frac{1}{N}$ to this

Problem and assumptions	Associates joining ○●○	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

- ▶ Associates do not know if they are highly skilled and chosen as partners, they assign probability $\frac{1}{N}$ to this
- If appointed as partner



Problem and assumptions	Associates joining ○●○	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage

$$\blacktriangleright \frac{1}{N} \left(w_A \right)$$

Problem and assumptions	Associates joining ○●○	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner

$$\blacktriangleright \frac{1}{N} \left(w_A + \frac{\Pi_P}{\rho} \right)$$

Problem and assumptions	Associates joining ○●○	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs

$$\blacktriangleright \frac{1}{N} \left(w_A + \frac{\Pi_P - C}{\rho} \right)$$

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs
- If not appointed as partner

$$\blacktriangleright \frac{1}{N} \left(w_A + \frac{\Pi_P - C}{\rho} \right) + \left(1 - \frac{1}{N} \right)$$

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- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs
- If not appointed as partner, they obtain their initial wage and in the next time period gets paid his contribution

$$\blacktriangleright \frac{1}{N} \left(w_A + \frac{\Pi_P - C}{\rho} \right) + \left(1 - \frac{1}{N} \right) \left(w_A + \frac{V_L}{\rho} \right)$$

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs
- If not appointed as partner, they obtain their initial wage and in the next time period gets paid his contribution
 - $V_L + \frac{V_L}{\rho}$

If not joining the partnership, they obtain their contribution in the current and next time period

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs
- If not appointed as partner, they obtain their initial wage and in the next time period gets paid his contribution

- If not joining the partnership, they obtain their contribution in the current and next time period
- They join the partnership if this is more profitable

Profits of joining a partnership

- Associates do not know if they are highly skilled and chosen as partners, they assign probability ¹/_N to this
- If appointed as partner, they obtain their initial wage and in the next time period the profits of being a partner, less the mentoring costs
- If not appointed as partner, they obtain their initial wage and in the next time period gets paid his contribution

- If not joining the partnership, they obtain their contribution in the current and next time period
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Decision to join

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Decision to join					

• Associates join the partnership if
$$w_A \ge V_L - \frac{(V_H - V_L) - C}{N(\rho - 1)}$$

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Decision to join					

• Associates join the partnership if $w_A \ge V_L - \frac{(V_H - V_L) - C}{N(\rho - 1)}$

▶ If $C \le C^* = V_H - V_L (1 + (\rho - 1) N)$, we can set $w_A = 0$

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Decision to join					

- Associates join the partnership if $w_A \ge V_L \frac{(V_H V_L) C}{N(\rho 1)}$
- ▶ If $C \le C^* = V_H V_L (1 + (\rho 1) N)$, we can set $w_A = 0$
- If mentoring costs are not too high, the benefits from being a future partner are sufficiently high for associates to forego any remuneration

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- The surplus generated by highly-skilled partners have to be sufficiently high

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Decision to join					

- Associates join the partnership if $w_A \ge V_L \frac{(V_H V_L) C}{N(q-1)}$
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 \blacktriangleright Partners are paid wages w_P

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Value of partne	ership				

 \blacktriangleright Partners are paid wages w_P , reducing the profits of the partnership

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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- > Partners are paid wages w_P , reducing the profits of the partnership
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- Profits of the partnership is then $\hat{\Pi}_B = \Pi_B w_P = V_H + NV_L w_P$

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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- ► These profits accrue in perpetuity

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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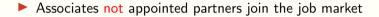
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Problem and assumptions Associates joining Accepting partnerships Unskilled partners Mentoring Summary 000 000 000 000 000 000 000 000 000 0	Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000
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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000



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Problem and assumptions	Associates joining	Accepting partnerships ○○○●	Unskilled partners 000	Mentoring 0000	Summary 0000



Problem and assumptions	Associates joining	Accepting partnerships ○○○●	Unskilled partners 000	Mentoring 0000	Summary 0000

- ▶ If joining the partnership they get $\Pi_P C$
- ► Highly skilled associates join the partnership if $\Pi_P C = V_H + NV_L C \ge \frac{M(N-1)V_L + V_H}{M(N-1) + 1}$

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- If mentoring costs are not too high, accepting a partnership is optimal

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Problem and model assumptions

Associates joining the partnership

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Unskilled associate accepting the partnership

Problem and assumptions	Associates joining 000	Accepting partnerships 0000	Unskilled partners ○●○	Summary 0000

Unskilled associate accepting the partnership

▶ If an unskilled partner is appointed the investment bank loses reputation

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners ○●○	Mentoring 0000	Summary 0000

Unskilled associate accepting the partnership

If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold

Problem and assumptions	Accepting partnerships 0000	Unskilled partners ○●○	Summary 0000

- If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold
- Unskilled partners will generate surplus V_L

 V_L

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Problem and assumptions	Accepting partnerships 0000	Unskilled partners ○●○	Summary 0000

- If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold
- Unskilled partners will generate surplus V_L and obtain surplus V_L from each associate

 $V_L + NV_L$

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- If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold
- Unskilled partners will generate surplus V_L and obtain surplus V_L from each associate and they have previously spent P to purchase the partnership

 $V_L + N V_L - \rho P$

- If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold
- Unskilled partners will generate surplus V_L and obtain surplus V_L from each associate and they have previously spent P to purchase the partnership, which cannot be recovered

 $V_L + N V_L - \rho P$

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- If an unskilled partner is appointed the investment bank loses reputation and it cannot be sold
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- \blacktriangleright If not a partner, the unskilled associate would obtain V_L

 V_L

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- Accept the partnership if $V_L + NV_L \rho P \ge V_L$

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- This requires $P \leq P^{**} = \frac{NV_L}{\rho}$

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- Accept the partnership if $V_L + NV_L \rho P \ge V_L$

• This requires
$$P \leq P^{**} = \frac{NV_L}{\rho}$$

	Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 00●	Mentoring 0000	Summar 0000
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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners ○○●	Mentoring 0000	Summary 0000
Avoiding appoi	nting unskille	d partners			

▶ If no highly skilled associate is available, M - 1 partners remain

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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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Avoiding appoi	nting unskille	d partners			

▶ If no highly skilled associate is available, M - 1 partners remain, the total value of the partnership is then $(M - 1) P^*$

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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Avoiding appo	inting unskille	d nartners			

- ▶ If no highly skilled associate is available, M 1 partners remain, the total value of the partnership is then $(M 1) P^*$
- \blacktriangleright If an unskilled associate is available, we retain M partners

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners ○○●	Mentoring 0000	Summary 0000
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- ▶ If no highly skilled associate is available, M 1 partners remain, the total value of the partnership is then $(M 1) P^*$
- If an unskilled associate is available, we retain M partners, the total value if the partnership is MP**

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners ○○●	Mentoring 0000	Summary 0000

- ▶ If no highly skilled associate is available, M 1 partners remain, the total value of the partnership is then $(M 1) P^*$
- ▶ If an unskilled associate is available, we retain M partners, the total value if the partnership is MP^{**}
- ▶ Unskilled associates are not appointed if $(M 1) P^* \ge MP^{**}$

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners ○○●	Mentoring 0000	Summary 0000

- ▶ If no highly skilled associate is available, M 1 partners remain, the total value of the partnership is then $(M 1) P^*$
- ▶ If an unskilled associate is available, we retain *M* partners, the total value if the partnership is *MP*^{**}
- ▶ Unskilled associates are not appointed if $(M-1) P^* \ge MP^{**}$
- This requires $w_P \leq w_P^* = V_H + \left(1 \frac{\rho 1}{\rho} \frac{M}{M 1}\right) NV_L$

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring ●000	Summary 0000

Problem and model assumptions

Associates joining the partnership

Taking up partnership offers

Not appointing unskilled partners

Mentoring of associates



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Problem and assumptions Associates joining Accepting partnerships	Unskilled partners	Mentoring	Summary
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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000



Partners must have incentives to mentor associates.

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000

- Partners must have incentives to mentor associates
- ► If a partner does not mentor and does not appoint an unskilled associate, there are only M 1 partners left

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000

- Partners must have incentives to mentor associates
- lf a partner does not mentor and does not appoint an unskilled associate, there are only M-1 partners left
- These M-1 partners generate future profits, but this is shared by M partners

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000

- Partners must have incentives to mentor associates
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- If mentoring associates, the value of the partnership is P^*

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000

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- If mentoring associates, the value of the partnership is P* and the partner faces costs C

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0●00	Summary 0000

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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
	000	0000	000	0●00	0000

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- ▶ These M 1 partners generate future profits, but this is shared by M partners, the value becomes $\frac{M-1}{M}P^*$
- ▶ If mentoring associates, the value of the partnership is P^* and the partner faces costs C, he receives $P^* C$

	Accepting partnerships	Unskilled partners	Mentoring	
			0000 -	

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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
	000	0000	000	00●0	0000

• A partner will mentor if $P^* - C \ge \frac{M-1}{M}P^*$

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 00●0	Summary 0000

• A partner will mentor if
$$P^* - C \ge \frac{M-1}{M}P^*$$

• This requires
$$C \leq C^{***} = \frac{V_H + NV_L - w_P}{M(\rho - 1)}$$

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 00●0	Summary 0000

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- ▶ If mentoring costs are sufficiently low, partners are mentoring associates

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring 00●0	Summary 0000

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`	Problem and assumptions	Associates joining 000	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000
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Conditions for partnerships to exist

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Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners	Mentoring	Summary
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Conditions for partnerships to exist

•
$$C \le C^* = V_H - V_L (1 + (\rho - 1)N)$$

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Problem and assumptions	Associates joining 000	Unskilled partners 000	Mentoring 000●	Summary 0000

•
$$C \le C^* = V_H - V_L (1 + (\rho - 1) N)$$

 $C \le C^{**} = \frac{M(N-1)V_H + (M(N-1)^2 + 1)V_L}{M(N-1) + 1}$

Problem and assumptions	Associates joining 000	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 000●	Summary 0000

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$$C \leq C^{***} = \frac{V_H + NV_L}{M(\rho - 1)}$$

$$\frac{V_H}{V_L} \geq 1 + (\rho - 1) N$$

	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000

$$C \leq C^* = V_H - V_L \left(1 + (\rho - 1)N\right)$$
$$C \leq C^{**} = \frac{M(N-1)V_H + (M(N-1)^2 + 1)V_L}{M(N-1) + 1}$$
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$$\frac{V_H}{V_L} \geq 1 + (\rho - 1)N$$
$$\frac{V_H}{V_L} \geq N \left(\frac{\rho - 1}{\rho} \frac{M}{M - 1} - 1\right)$$

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	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000

$$C \leq C^* = V_H - V_L \left(1 + (\rho - 1) N \right)$$

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Mentoring costs must be sufficiently low

	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000

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Mentoring costs must be sufficiently low

Surplus of highly-skilled partners must be sufficiently high

	Accepting partnerships 0000	Unskilled partners 000	Mentoring 000●	Summary 0000

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Mentoring costs must be sufficiently low

Surplus of highly-skilled partners must be sufficiently high

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary ●000

Problem and model assumptions

Associates joining the partnership

Taking up partnership offers

Not appointing unskilled partners

Mentoring of associates

Summary

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Chapter 17.1: Viability of partnerships Theoretical Foundations of Investment Banking

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0●00

Partnerships are viable if the cost of mentoring associates is not too high

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0●00

Partnerships are viable if the cost of mentoring associates is not too high and the differential between high-skilled and low-skilled associates is sufficiently high

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0●00

- Partnerships are viable if the cost of mentoring associates is not too high and the differential between high-skilled and low-skilled associates is sufficiently high
- Associates accept low wages as the prospect of future income as a partner compensates them

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners	Mentoring 0000	Summary 0●00

- Partnerships are viable if the cost of mentoring associates is not too high and the differential between high-skilled and low-skilled associates is sufficiently high
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- This leads to large income discrepancies within partnerships

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners	Mentoring 0000	Summary 0●00

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 00●0

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000
Demise of partr	nerships				

▶ The demands on partners have increased over time

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 00●0
Demise of part	nerships				

The demands on partners have increased over time, more involvement in client work left less time for mentoring

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000
Demise of partr	nerships				

- The demands on partners have increased over time, more involvement in client work left less time for mentoring
- ► The size of partnerships had to increase as business expanded

Problem and assur		Associates joining	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000
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- The demands on partners have increased over time, more involvement in client work left less time for mentoring
- The size of partnerships had to increase as business expanded, making identifying suitable associates more difficult

Problem and assumptions	Associates joining	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 00●0

- The demands on partners have increased over time, more involvement in client work left less time for mentoring
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- The costs of mentoring in terms of lost opportunities for business became too high

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners	Mentoring 0000	Summary 0000

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Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

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- Low pay as associate makes joining partnerships less attractive as other investment banks offer higher salaries to attract highly-skilled associates

Problem and assumptions	Associates joining 000	Accepting partnerships	Unskilled partners 000	Mentoring 0000	Summary 0000

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