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Chapter 16.2

Promotion practices

Outline

Hire and fire mentality

- Investment banks give high responsibilities to employees in early career stages
- Not performing well in the early srage of a career is easily a bar to promotion
- Successful employees are promoted quickly

Task types

- Investment banks have two types of tasks, low-risk tasks do not cause any losses if they are failing
- Such tasks might be located in the back office, involve market making or brokerage
- Failing high-risk tasks are causes the investment bank a loss
- This will include corporate finance and proprietary trading, but also middle office roles such as risk management

Benefits of tasks

- If the high-risk task is successful the investment bank obtains benefits V_H
- If the low-risk task is successful the investment bank obtains benefits V_L
- Employees exert effort to increase the probability of success, at some costs C
- Employees can be freely moved between tasks and we consider 2 time periods

Wage structure

- Wages are paid at the end of the second time period
- They will depend on the success in both time periods
- This might be due to claw-back clauses on boni or boni that are paid with delay
- Wages do not depend on which task has been completed

Optimal effort

- We consider the second time period initially, assuming that the employee has failed its task in time period 1
- His wages are w_{FS} if he is successful, if he fails again he gets w_{FF}, and he faces costs of effort
- Expected salary: $\Pi_M^2 = \pi_2 w_{FS} + (1 - \pi_2) w_{FF} - C_2$
- Employees are choosing the optimal success probability by solving $\frac{\partial \Pi_M^2}{\partial \pi_2} = 0$
- $\frac{\partial C_2}{\partial \pi_2} = w_{FS} - w_{FF}$
- Highest effort if $w_{FS} - w_{FF}$ is maximized as $\frac{\partial^2 C_2}{\partial \pi_2^2} > 0$
- Investment bank will set $w_{FF} = 0$ as this maximizes their profits

Investment bank profits

- Investment bank obtain the benefits V_i if successful, pays the wages, and for the high-risk task loses equity if not successful
- Low risk task: $\Pi_B^{2L} = \pi_2 V_L - (\pi_2 w_{FS} + (1 - \pi_2)\, w_{FF})$
- High risk task: $\Pi_B^{2H} = \pi_2 V_H - (\pi_2 w_{FS} + (1 - \pi_2)\, w_{FF}) - (1 - \pi_2)\, E$

Task allocation

- The low-risk task must be profitable $\Pi_B^{2L} \geq 0$, and with $w_{FF} = 0$ we need $V_L \geq w_{FS}$
- $\frac{\partial \Pi_B^{2L}}{\partial \pi_2} = V_L - (w_{FS} - w_{FF}) = V_L - w_{F_S} \geq 0$

$\Rightarrow$ Investment banks want employees to choose the highest success rate and hence $V_L = w_{FS}$

- For high-risk task: $\Pi_B^{2H} = \pi_2 (V_H - V_L) - (1 - \pi_2) E$
- If $E > \frac{\pi_2}{1-\pi_2} (V_H - V_L)$, then $\Pi_B^{2H} < 0$

$\Rightarrow$ If the losses are too high, the high-risk task is not allocated

$\Rightarrow$ After failure, the employee is allocated the low-risk task

Initial high-risk task

- Suppose after succeeding with the high-risk task, the employee is allocated the low-risk task afterwards
- If failing in period 1, he is allocated the low-risk task, hence success or failure in period 1 would make no difference
- The considerations in period 2 after failure apply and the employee is never allocated the high-risk task

$\Rightarrow$ Therefore, if succeeding in the high-risk task, the employee stays in this task

Initial low-risk task

- Which task has been allocated first is irrelevant for the incentives in the second time period
- If the task is successful, the employee will be allocated the high-risk task
- Similar to above, we get $w_{SF} = 0$ and $w_{SS} = V_L$

$\Rightarrow$ Employees failing in time period 1 will be allocated the low-risk task in time period 2

Employees succeeding in time period 1 will be allocated the high-risk task in time period 2

Period 2 profits

- Assume that employees failing in period 1 are making zero profits, this ensures employees putting maximum effort into succeeding in period 1
- Profits in period 2: $\Pi_M^2 = \pi_2 w_{FS} + (1 - \pi_2) w_{FF} - C_2 = \pi_2 V_L - C_2 = 0$
- This gives $C_2 = \pi_2 V_L$

Period 1 profits

- If allocated the low-risk task, the employee makes zero profits if he fails
- If he succeeds, he will be allocated the high-risk task in period 2 and obtains those profits, less the costs of effort in period 1
- $\Pi_M^L = \pi_1 \left(\pi_2 w_{SS} + (1 - \pi_2) w_{SF} - C_2\right) - C_1 = -C_1 < 0$

$\Rightarrow$ Allocating the employee the low-risk task, would not be profitable to him

$\Rightarrow$ The low-risk task is never allocated in time period 1

Optimal effort

- To incentivize employees, they are making profits if they succeeded in period 1
- Profits are again $\Pi_M^H = \pi_1 \left(\pi_2 w_{SS} + (1-\pi_2) w_{SF} - C_2\right) - C_1$
- Optimal effort levels are given from $\frac{\partial \Pi_M}{\partial \pi_1} = 0$ and $\frac{\partial \Pi_M}{\partial \pi_2} = 0$
- With $\Delta w = w_{SS} - w_{SF}$ we get
- $\frac{\partial C_1}{\partial \pi_1} = w_{SF} + \pi_2 \Delta w - C_2$

  $\frac{\partial C_2}{\partial \pi_2} = \Delta w$

Bank profits

- Allocating the high-risk task, investment banks obtain benefits V_H if the task succeeds and loose E if it fails
- If the task succeeds, the investment bank allocated the high-risk task in period 2
- This tasks pays V_H if it succeeds and the investment bank loses E if it fails and pays the wages
- If the task fails, the investment bank allocates the low-risk task in period 2
- This tasks pays V_H if it succeeds and the investment bank pays the wages
- $\Pi_B = \pi_1 V_H - (1-\pi_1) E + \pi_1 (\pi_2 V_H - (1-\pi_2) E - \pi_2 w_{SS} - (1-\pi_2) w_{SF}) + (1-\pi_1)(\pi_2 V_L - \pi_2 w_{FS} - (1-\pi_2) w_{FF})$

Optimal wages

- If $E \leq \frac{\pi_1(1+\pi_2)}{1-\pi_1\pi_2}(V_H - V_L)$ investment banks are profitable and the high-risk task will be allocated in period 1
- The optimal wages are given from $\frac{\partial \Pi_B}{\partial \Delta w} = 0$ and $\frac{\partial \Pi_B}{\partial w_{SF}} = 0$
- Combining this with the first order conditions of employees, $\frac{\partial C_1}{\partial \pi_1} = w_{SF} + \pi_2 \Delta w - C_2$ and $\frac{\partial C_2}{\partial \pi_2} = \Delta w$, we get

$$\Rightarrow \frac{\partial \Pi_B}{\partial w_{SF}} = \frac{\partial \pi_1}{\partial w_{SF}}(V_H - w_{SF}) - \pi_1 = 0$$

$$\frac{\partial w_{SF}}{\partial \pi_1} = \pi_2 \frac{\partial \Delta w}{\partial \pi_1}$$

- These can be solved for the wages w_{SF} and w_{SS}

7¿These expressions can now be solved for the optimal wages, but we will not do so here as there is no benefit in their derivation.

Success rates

- Assume $\pi_1 > \pi_2$, then marginal costs in period 1 are higher $\frac{\partial C_1}{\partial \pi_1} > \frac{\partial C_2}{\partial \pi_2}$
- Using the employee first order conditions, we get $w_{SF} > (1 - \pi_2)\,\Delta w + C_2$ and using $\Delta w = V_H + E$, we get

$\Rightarrow$ $\Pi_B < \pi_1 (\pi_2 V_H - C_2) - (1 + \pi_1 - \pi_1 \pi_2)\, E$

- As $\frac{\partial C_2}{\partial \pi_2} = \Delta w = V_H + E > V_H$, we have $C_2 > \pi_2 V_H$
- The first term is then negative and the second term is positive, hence $\Pi_B < 0$

$\Rightarrow$ If $\pi_1 > \pi_2$ investment banks would not be profitable

$\Rightarrow$ Success rates are increasing with experience

$\Rightarrow$] ¡5¿We can then show that the bank profits are limited as in the *formula*

High responsibilities for early career investment bankers

- New employees are allocated high-risk tasks and only demoted to low-risk tasks if they fail to succeed
- With experience the success rates increase
- The increase of the success rate is driven by the loosing the entire pay if failing in period 2, making this period more important
- Success in period 1 is only important to remain in high-risk tasks and retain the possibility of making profits

Pressure remains on experienced employyes

- Being given high responsibilities at an early stage, investment bankers will exert effort to retain these responsibilities and continue to obtain high salaries
- After initial success, investment bankers will increase their efforts to ensure their careers are not jeopardised by failure
- Investment banking put high pressure of success on career starters

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