

Chapter 7.2

Credit rationing caused by moral hazard



# Risk-taking by companies

- ▶ Companies can choose between investments with different risks
- ▶ Banks seek to provide incentives to choose investments with low risks
- ▶ They do so by setting loan conditions, the loan rate and the loan size

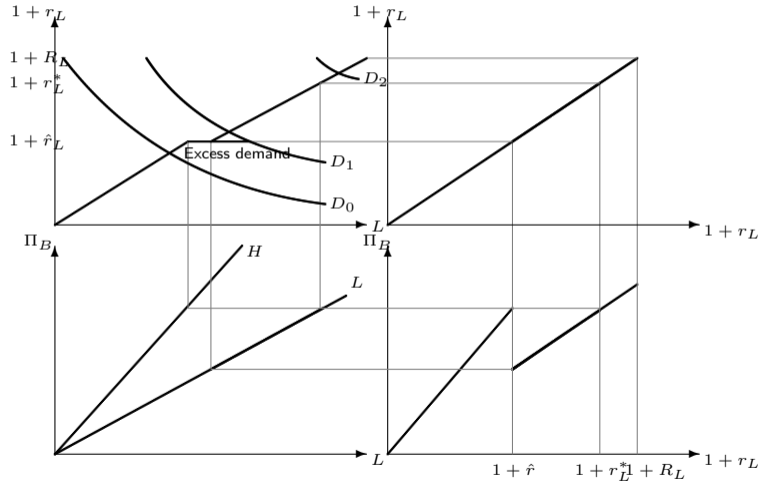
# Company profits

- ▶ If successful, companies obtain their return and repay the loan
  - ▶  $\Pi_C^i = \pi_i ((1 + R_i) L - (1 + r_L) L)$
  - ▶ Companies choose the low-risk investment if  $\Pi_C^H \geq \Pi_C^L$
- $\Rightarrow 1 + r_L \leq 1 + \hat{r}_L = \frac{\pi_H(1+R_H) - \pi_L(1+R_L)}{\pi_H - \pi_L}$

# Bank profits

- ▶ Banks are repaid the loan if the company is successful, and repay deposits
- ▶  $\Pi_B^i = \pi_i(1 + r_L) L - (1 + r_D) L$
- ▶ The success rate of the company will depend on the loan rate they charge
- ▶  $\Pi_B = \begin{cases} \Pi_B^L & \text{if } r_L \leq \hat{r}_L \\ \Pi_B^H & \text{if } r_L > \hat{r}_L \end{cases}$
- ▶ Low loan rates will induce low risks and high loan rates high risks

# Demand and supply



# Summary

- ▶ Banks do not increase loan rates above a threshold as this would induce companies to choose high-risk investments
- ▶ Banks ration loans as demand exceeds supply at this loan rate
- ⇒ Banks seeking large loans due to low loan rates may be rationed



This presentation is based on  
Andreas Krause: Theoretical Foundations of Banking, 2025

Copyright © by Andreas Krause

Picture credits:

Cover: Bernard Spragg, NZ from Christchurch, New Zealand, CC0, via Wikimedia Commons, [https://commons.wikimedia.org/wiki/File:Bank\\_of\\_China\\_Hong\\_Kong\\_\(9532283389\).jpg](https://commons.wikimedia.org/wiki/File:Bank_of_China_Hong_Kong_(9532283389).jpg)

Back: Florian Lindner, CC BY 2.5 <https://creativecommons.org/licenses/by/2.5> via Wikimedia Commons, [https://commons.wikimedia.org/wiki/File:Hong\\_Kong\\_Panorama\\_at\\_night.jpg](https://commons.wikimedia.org/wiki/File:Hong_Kong_Panorama_at_night.jpg)

Andreas Krause  
Department of Economics  
University of Bath  
Claverton Down  
Bath BA2 7AY  
United Kingdom

E-mail: [mnsak@bath.ac.uk](mailto:mnsak@bath.ac.uk)