Banking and Trading

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Banking vs. Trading

- **Bank scope: traditional vs. market-based activities**
  - Some well understood: Lending vs underwriting
  - This paper: Novel focus
- **Relationship banking**
  - **Private information, repeated long-term interactions with customers**
- **Trading**
  - **Short term, scalable, arm's length**
  - Prop trading, investing in securitized credit, standardized loans, etc.
  - Reflects a change in arm's length finance: marketable → trading
- **Banking vs. trading** fundamentally different from **lending vs. underwriting**

Trading grows, poses challenges

- **Growth 1997-2007:**
  - Trading assets and securities 20 → 30% of balance sheet
  - Non-interest income 35 → 50% of revenue
- **Trading by banks was a factor during the crisis**
  - European universal banks (UBS, Barings // Soc Gen, DB)
  - U.S. pre-Glass-Steagall: within NY investment banks, commercial banks
  - U.S. post-Glass-Steagal: BAML, JP Morgan
- **Empirical**
  - Trading is the most risky bank activity (volatile income)
  - Banks with more trading were more likely to fail in 1998, 2008
  - Arm's length mortgages are riskier than informed ones
  - Banks that combine lending and trading lose value

Paper in one slide

- **Banking:** **endowment of private information on customer base**
  1. **Not scalable, high franchise value** → not credit constrained
  2. **Long-term**
  3. **Relatively safe** (law of large numbers)
- **Trading:** **no informational endowment**
  1. **Scalable, less profitable** → credit constrained
  2. **Short-term**
  3. **Possible probabilistic return** (skewed bets)
- **Conglomeration:**
  1. **Use banks' spare capital to expand trading, but**:
  2. **Capital misallocation**: too much capital to trading ex-post
  3. **Risk-shifting**: trading can be used to gamble
- Distortions stronger when **trading more scalable** & **banking less profitable**
- **Conglomeration was benign before, destructive now**

Outline

1. Benchmark model
2. Introduce time inconsistency
3. Introduce risk-shifting
4. Conclude, implications

Setup

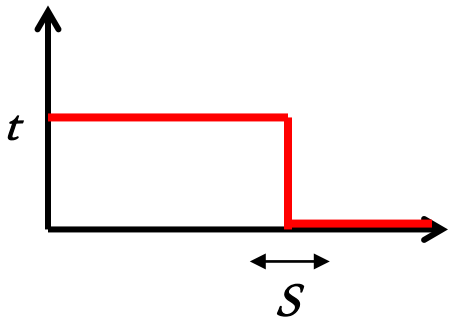
- **Credit constraints (Holmstrom-Tirole, 1997)**

$$\Pi \geq bA$$

- **Banking: not scalable, profitable**
  - Mass $\overline{R}$ of customers
  - Implicit equity R_0
  - Covering future funding needs: rR, $R \leq \overline{R}$
  - Not credit constrained ('spare capital'): $R_0 + r\overline{R} > b\overline{R}$

- **Trading: scalable, credit constrained**
  - Returns tT, $T \leq S$, S is maximum scale
  - Less profitable $t < r$
  - Credit constrained $t < b$

$tT < bT$

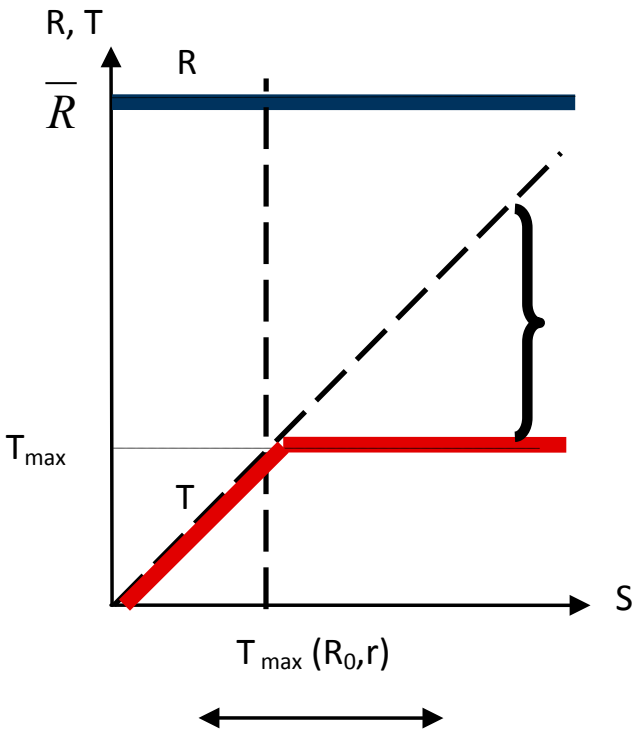


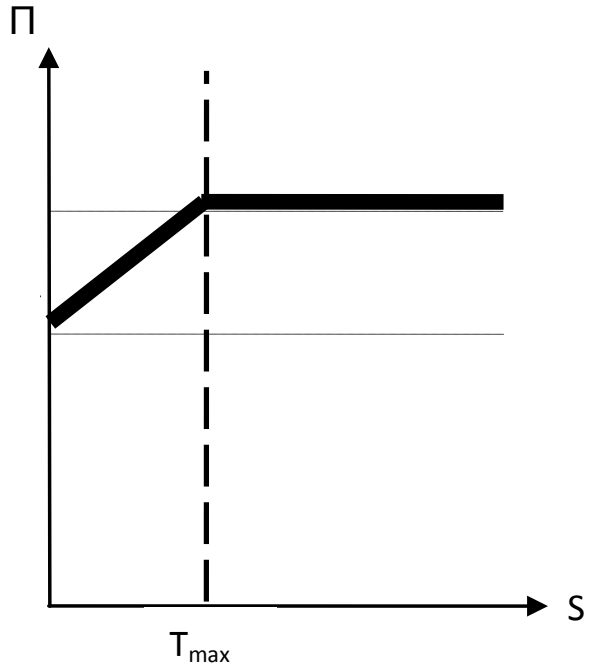
Benchmark: Benefits of conglomeration

- **"Use" bank balance sheet:**
  - Joint IC $R_0 + rR + tT \geq b(R+T)$ $(T \leq S)$

- **Banks can serve relationship customers and then trade some**
  - **Banking customers served first:** $R = \overline{R}$ because r>t
  - Then trade up to $T_{\max}(R_0, r)$ or S
  - Spare trading opportunities for $S > T_{\max}$

Benchmark





Distortion 1: Capital misallocation

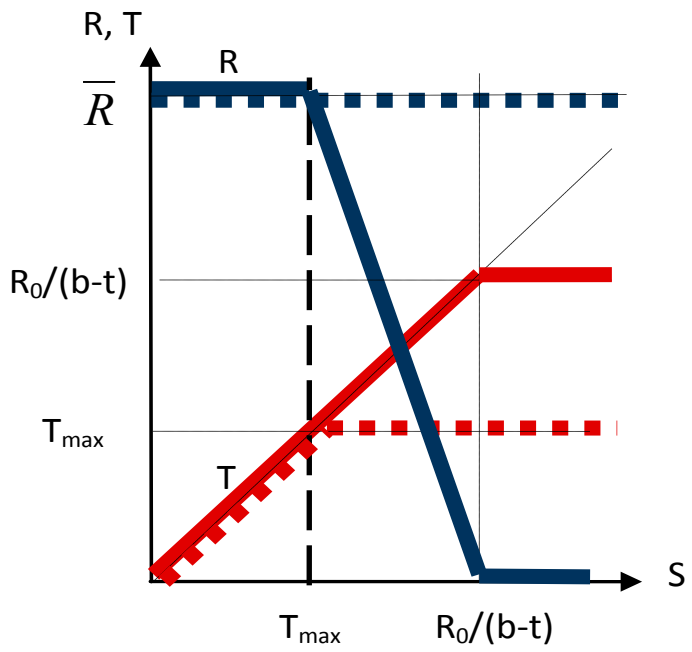
- **Banking is long-term:** **RETURNS DISTRIBUTED OVER TIME**
- **Informational capture: back-loaded earnings**
- **Funding insurance: front-loaded earnings**
  - **Credit lines** (70% of bank lending!)
  - **"Local banking"**
  - **Syndicated lending**
- Banks have discretion whether to make good → viability depends on incentives
- We model a credit line; represents a wider array of relationship banking arrangements

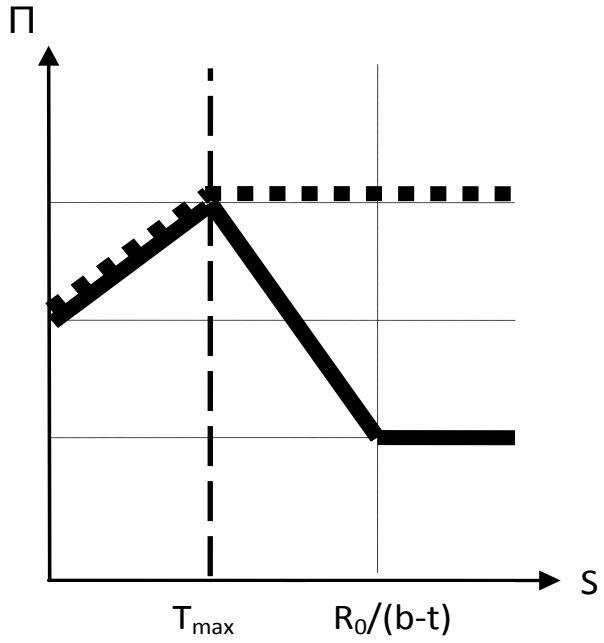
Distortion 1: Capital misallocation

- **Credit line**
  - Of earnings r:
    - ρ ***ex post***, at a time of the liquidity need (date 1)
    - $r-\rho$ ***ex ante***, as credit line fees (date 0)
  - All trading at date 1

- **Time inconsistency of capital allocation**
  - When $\rho < t <$ r **Allocate capital to trading first**
  - When $S > T_{\max}$ **Banking credit constrained ex-post** $R < \overline{R}$
  - Customers reduce credit line fees $(r-\rho)R < (r-\rho)\overline{R}$
  - Lower profits, borrowing capacity. In extreme, banking disappears

Distortion 1: Capital misallocation





- **When trading is scalable, while return to banking is low, a bank may misallocate capital to trading**
- Credit line fees decline, relationship banking franchise suffers
- **A bank trades "too much"**

Distortion 2: Risk-shifting

- **Trading for risk-shifting**
  - Banks are leveraged
  - Hard to generate probabilistic outcomes in relationship business
  - Trading can generate skewed best
- **Risky trading:**
  - **$T \rightarrow (1+t+\alpha)T$** with probability **p**, zero otherwise
  - NPV lower: **$0 < (1+t+\alpha)p-1 < t$** Ex-post return higher: **$t < p(t+\alpha)$**
- **When would a bank choose risky trading?**
  - Benefit of trading: earn extra **αpT**
  - Cost of trading: lose **R_0+rR** with probability **$(1-p)$**
- **When trading is scalable, while return to banking is low, a bank may use trading for risk-shifting**

Amplification

- **Risk shifting induces time inconsistency:**
  - **By increasing ex post return to trading (consider $t < \rho < p(t+\alpha)$)**

- **Time inconsistency induces risk-shifting:**
  - **By increasing the scale of trading (beyond T_{max}),**
  - **By reducing the relationship bank's franchise value**

Summary of results

- Two distortions:
  - Time inconsistency in bank capital allocation
  - Use of trading for risk-shifting
- Bank may trade too much and in too risky a fashion

- Both arise for deeper financial markets, less profitable banking
- These were in play in recent decades due to IT

- Trading by banks was benign and beneficial before, not now

Policy

- **Partial equilibrium, hard to judge desirability of trading by banks**
- **But highlight distortions; how do current proposals address them?**
  - **Capital charges (Basel III / Switzerland)**
  - **Restrictions (Volcker/ Vickers / Liikanen)**
    - Which activities?
    - Segregate or prohibit?
    - Exemptions for hedging
- **Other issues**
  - **Can trading move to the "shadow"?**
  - **What to do with standalone investment banks?**

Conclusions

- **Approach**
  - **Banking** (commercial/investment): not scalable, profitable, long-term, safe
  - **Trading**: scalable, credit constrained, short-term, can generate risks
- **Results**
  - Synergies: "use of bank capital" for trading
  - Conflicts: time inconsistency of capital allocation and trading as risk-shifting
- **Why has trading become distortive?**
  - Financial development: scalable trading, less profitable banking:
- **A general lesson**
  - Relationship banking depends on commitments to generate value. Short-term opportunistic opportunities destroy commitment.