

Banking and Trading



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Banking vs. Trading

□ Definitions

- **Banking**: relationships/repeated customers (commercial or investment)
- **Trading**: short-term activities (prop trading, structuring/securitization)
- Trading in banks grows; was important in the crisis

□ Trading in banks grows; was important in the crisis

- European universal banks (UBS, Barings)
- U.S. pre-Glass-Steagall: within NY investment banks, commercial banks
- U.S. post-Glass-Steagal: BAML, JP Morgan
- Volcker / Vickers rules

□ Different from the traditional lending vs. underwriting story

Paper in one slide

□ **Banking: endowment of private information on customer base**

1. **Not scalable, profitable** → not credit constrained
2. **Long-term** (ex-ante investments + earnings distributed over time)
3. **Relatively safe** (law of large numbers)

□ **Trading: no informational endowment**

1. **Scalable, less profitable** → credit constrained
2. **Short-term**
3. **Possible probabilistic return** (allows 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
- Balance depends on **the scalability of trading & profitability of banking**



Outline

1. Benchmark model
2. Introduce time inconsistency
3. Introduce risk-shifting
4. Conclude and policy

Setup

□ Credit constraints (Holmstrom-Tirole, 1998, 2011)

$$\Pi \geq bA$$

□ Banking: not scalable, profitable

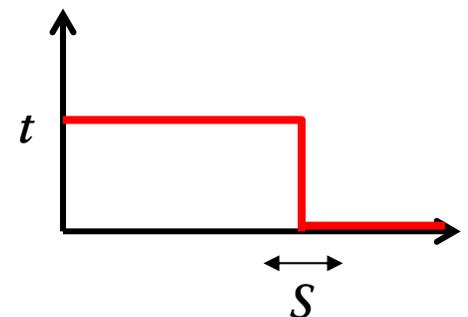
- Mass \bar{R} of customers
- Implicit equity R_0
- Covering future funding needs: $rR, R \leq \bar{R}$
- Not credit constrained ('spare capital'):

$$R_0 + r\bar{R} > b\bar{R}$$

□ Trading: scalable, credit constrained

- Returns $tT, T \leq S$
- Less profitable $t < r$
- Credit constrained $t < b$

$$tT < bT$$



Benchmark

□ Use of balance sheet

- Joint IC

$$R_0 + rR + tT \geq b(R + T)$$

$$(T \leq S)$$

□ Proposition 1 (no frictions)

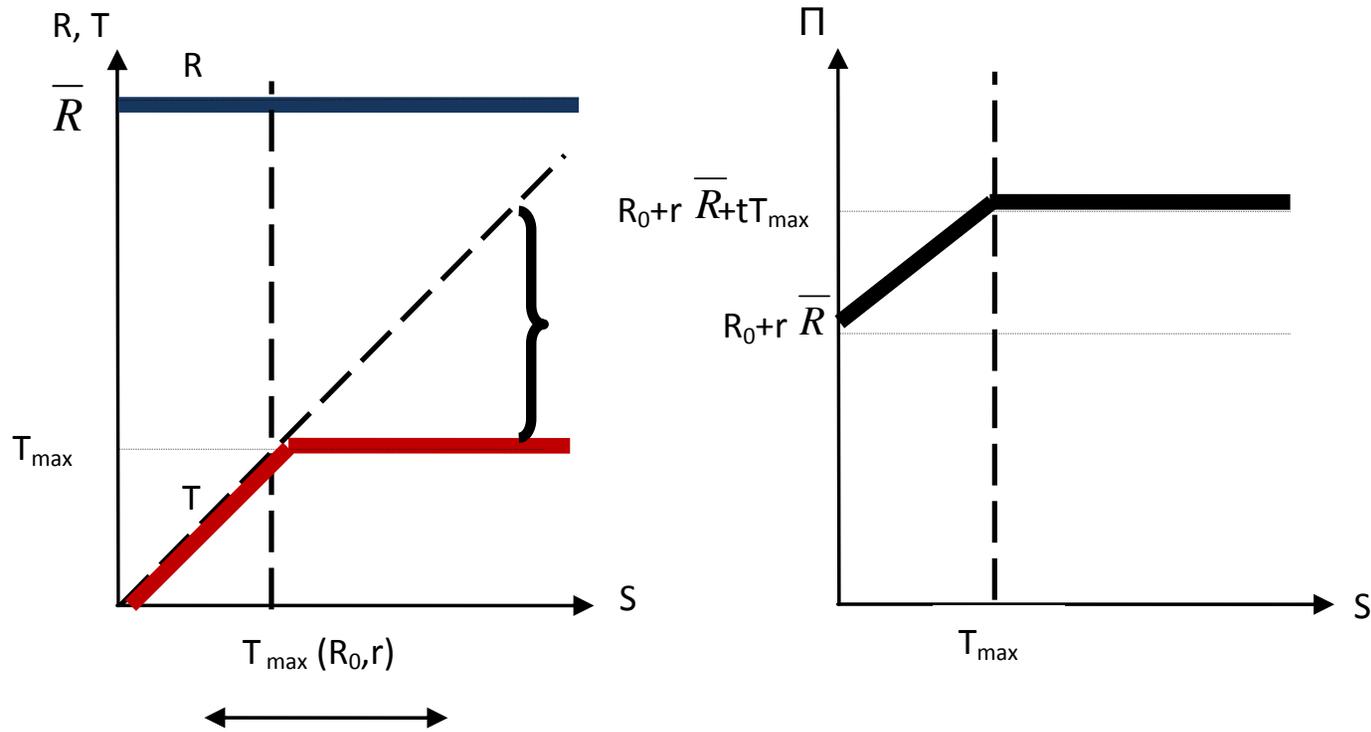
- Conglomeration allows more trading

- **Banking customers served first:** $R = \bar{R}$ because $r > t$

- Then trade up to $T_{\max}(R_0, r)$ $T = \min\{T_{\max}, S\} > 0$

- Spare trading opportunities for $S > T_{\max}$

Benchmark



Distortion 1: Capital misallocation

□ Banking returns are long-term

- Distributed over time (back- or front-loaded)

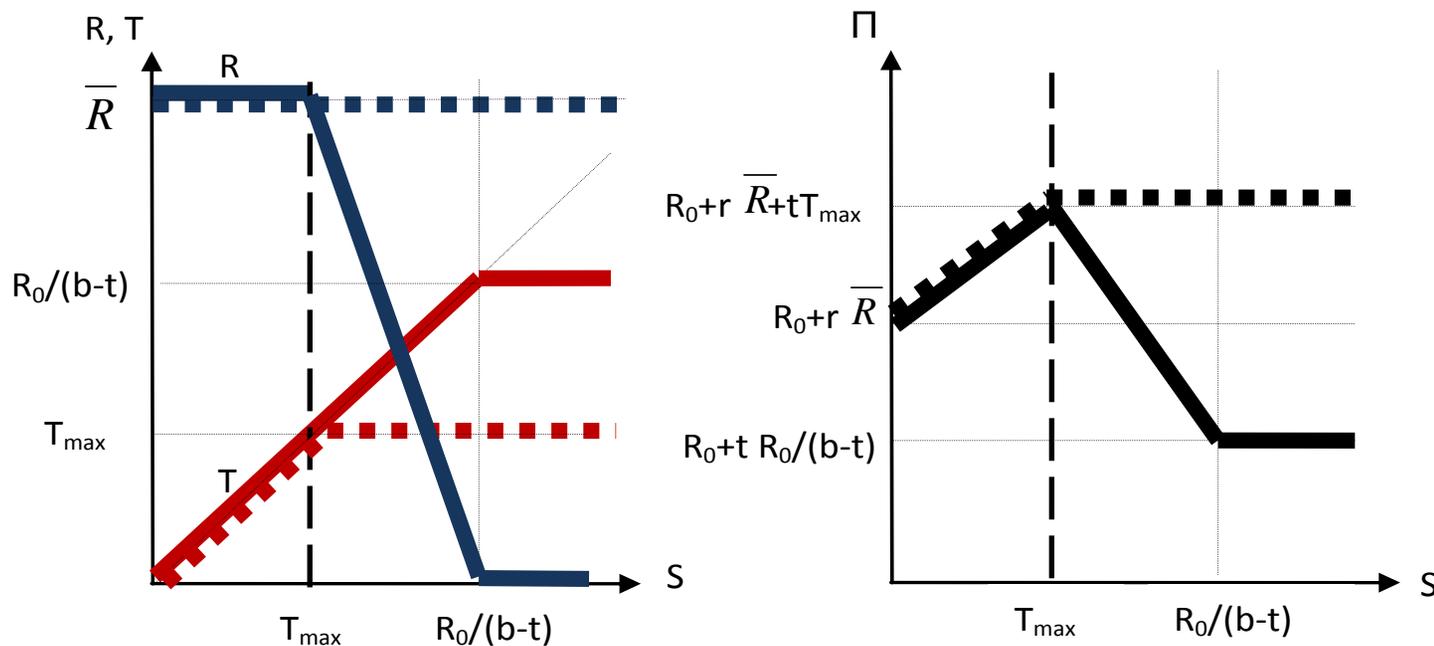
□ Credit line

- Of earnings r :
 - ρ ex-post, at a time of the liquidity need (date 1)
 - $r - \rho$ have to be ex ante 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** $R < \bar{R}$
- Customers reduce credit line fees $(r - \rho)R < (r - \rho)\bar{R}$
- Lower profits, borrowing capacity. In extreme, banking disappears

Distortion 1: Capital misallocation



□ Proposition 2/3 (time inconsistency)

- When trading is highly scalable and/or bank profitability is low:
A bank allocates too much capital to trading, too little for serving relationship customers
 → lower ex-ante investments in relationships, profits.

Distortion 2: Risk-shifting

□ Trading for risk-shifting

- Banks leveraged. But can't get 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: $t < p(t+\alpha)$
- Risk priced ex-ante

□ When would a bank choose risky trading?

- Benefit of trading: earn extra $\alpha p T$
- Cost of trading: lose $R_0 + rR$ with probability $(1-p)$

□ Proposition 4 (risk-shifting)

- When trading is highly scalable and/or bank profitability is low:
A bank engages in risky trading \rightarrow Lowers profits, borrowing capacity

Amplification

- Time inconsistency and risk-shifting arise when R_0, r low and/or S high
 - Informational technology affected both S and R_0, r : double effect

- Moreover, time inconsistency and risk-shifting amplify (Proposition 5):
 - Risk-shifting: higher ex-post return to trading \rightarrow time inconsistency more likely. E.g.: $t < \rho < p(t+\alpha)$
 - Time inconsistency: higher T (S instead of T_{\max}), lower R_0+rR ($<R_0+r\bar{R}$)
 \rightarrow risk-shifting more likely

- This explains rapid changes to the viability of European-type conglomerated banks (now some U.S. too)

Policy

- **Dealing with bank scope has become necessary**
- **Current proposals:**
 - Volcker: prohibit proprietary trading
 - Vickers: segregate non-lending activities
 - Basel/Swiss: more capital
- **This paper: distortions of trading = transactional activities in banks**
 1. Scope: Do not segregate relationship non-lending (underwriting).
Insufficient to deal only with prop trading (e.g. holding structured products)
 2. Instrument: Segregate to deal with risk shifting (to a point) but not time inconsistency. For time inconsistency, need to prohibit trading.
 3. Implementation: Allow trading on small scale (up to T_{\max}) to enable hedging
 4. Capital: Relationship banks need high capital (not for risk, but for lending capacity), but need to be able to draw down that capital

Summary

□ Approach / results

- **Banking** (commercial/investment): not scalable, profitable, long-term, safe
- **Trading**: scalable, credit constrained, short-term, can generate risks
- Synergies: “use of bank capital” for trading
- Conflicts: time inconsistency of capital allocation and trading as risk-shifting

□ Implications

- Financial deepening: scalable trading, less profitable banking:
Conglomerated bank business model has become not sustainable
- Policy to address bank scope