Topic 6 : The Theory of Financial Intermediation

EE431/438

Peter D. Spencer, Chapter 8 (available at the reserve section of the library, HG173 .S637)
Douglas W. Diamond, Financial Intermediation as Delegated Monitoring: A Simple Example. Federal Reserve Bank of Richmond *Economic Quarterly*, Volume 82/3 Summer 1996, pp 51 -66

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- Correction, Page 19 : The borrower will be forced liquidation if he/she pay ~~equal to or~~ lower than a specified amount.
- Page 28 (continued) : $E(X_i) - K \geq 1 + r$; Assumed that each lender requires an expected return of at least r (exogenously given). Suppose r = 5%=0.05, then each lender need a repayment of at least 1.05.
- From the example, $E(X_i) - K =$ .....or ..... each which is $> 1 + r = 1.05$. Depositors are satisfied. The bank can pay at least 5% deposit rate.
- Deposits are asymptotically riskless because of diversification.
- asymtotic : approaching a given value when the sample is large enough.
- Delegated monitoring without diversification does not succeed.
  - One-loan bank, a a banker montiors a single loans. The one-loan bank will fail whenever its borrower fails.
  - The one-loan bank will default and be liquidiated just as often as borrowers.
  - The bank in the model has to lend to many borrowers. It is assumed that the law of large number can be applied.

- Diamond (1996) provide numerical examples to Diamond's (1984) model.
  - Diamond(1996) provide a numerical example where diversification reduces the level of risk in the bank's portfolio.
  - However, the risk does not go down to zero. Deposits are not risk-free. (Anyway, it is less riskier than direct financing.)
  - This case is more realistic.
  - A student may read page 60 -63 in Diamond(1996) (not required). Questions are always welcome.
- Several criticisms have been expressed regarding Diamond's theory.
- There are many interesting contribution that builds on Diamond's (1984) model. (If you are interested, see Chapter 2 in ``Microeconomics of Banking'' by Freixas and Rochet (2000). Note that the material is not required.)

- Additional information for Page 8, By law, financial institutions can do only financial businesses.
- COMMERCIAL BANKING ACT

Section 9 bis17. Inaddition to undertaking the business of commercial banking,a commercial bank may carry on any business which is connected with or incidental to commercial banking business or any business traditionally regarded as commercial banking practice, such as, the collecting of money against bills, giving of aval to bills, acceptance of bills, issuing letters of credit, or giving guarantees or, if permission is obtained from the Bank of Thailand, any other business of a similar nature; but it shall not carry on any other trade or business. (Source: www.bot.or.th)

- Lenders should charge high interest rate to high risk customers, low interest rate to low risk customer. (Topic 5 : Credit risk management)
- Page 9, long term customer relationship benefits the bank by reducing asymmetric information problem. Banks are in a better position than individual savers. They can analyse credit risk better than individual savers.
- See an evidence from the real world next page.

average rates charged to those that remain good loans throughout each period. Comparing the average rates in these two columns, defaulted obligors were charged higher rates than their non-defaulted peers, hinting the possibility that Thai banks are capable of discriminating ex-ante bad from good obligors.

Table 12. Pricing differences of good and bad risks

	LR	Pricing		
		Overall	Defaulted	Non-Defaulted
2003	4.0%	4.84	7.74	4.10
2004	4.6%	5.23	7.48	4.76
2005	2.7%	6.30	8.62	5.93
2006	2.4%	7.35	9.01	7.13
2007 H1	3.9%	6.67	8.69	6.39

Source: authors' calculation

Source: BOT Symposium 2007, Structural Analysis on Bank's Corporate Loan Portfolio (Nakornthub et. al.)

Convexity and Concavity

- A function is strictly convex if $f(tx_1 + (1-t)x_2) < tf(x_1) + (1-t)f(x_2)$, for every $0 < t < 1$ and $x_1 \neq x_2$.
- A function is strictly concave if $f(tx_1 + (1-t)x_2) > tf(x_1) + (1-t)f(x_2)$, for every $0 < t < 1$ and $x_1 \neq x_2$.