Comments: “Japan’s Banking Crisis: Who Has the Most to Lose?”

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Summary

- Event study – Abnormal stock returns of borrowing firms around the date of an event
- Events related to the banking crisis – (1) Government actions, (2) Downgrading of banks' credit ratings, (3) Bank mergers
- Not all companies were equally sensitive to the events
- The most affected were small companies with low profits in low-tech sectors with high leverage and limited access to bond markets
- Firms in R&D-intensive sectors were less affected
- Misallocation of funds due to rollover of bad loans by banks to nonviable clients ("zombies") is not supported by the data

Comments (focusing on misallocation of funds)

The authors show: A negative shock to banks induces a negative response in the stock returns of the worst borrowers.

This result rejects the following "strong" hypothesis of zombie lending.

(Strong) Hypothesis

As banks' financial health deteriorates, they shift more and more of their loans to their worst clients (to hide the truth from bank regulators and depositors).

⇨ The authors' prediction: A negative shock to banks induces a positive response in stock returns of zombie firms.

⇨ The prediction is rejected by this empirical study.

But this result may not imply non-significance (or nonexistence) of economy wide misallocation of funds.

(1) The strong hypothesis may not validate the above prediction

(2) Theoretically, the rollover of bad loans to the worst clients may have been widespread and the amount of the loans rolled over may respond negatively to a negative shock to banks. (A “weak” hypothesis)

(3) Existing empirical studies point to widespread misallocation of funds

(1) The strong hypothesis may not validate the above prediction

- The motive for banks to extend loans to their worst clients is to conceal the true financial health of the banks from regulators and depositors.
- (Prediction 2) Banks shift more funds to the (nonviable) borrowers in response to a negative shock to the borrowers.
- In the case of negative shocks to banks (e.g., downgrading of banks), the banks cannot conceal the fact by increasing loans to zombies.

⇨ There may be no incentive for banks to increase zombie lending in response to a negative shock to banks themselves.

(2) A weak hypothesis: zombie lending is widespread and it negatively responds to a negative shock to banks.

A simple model of a bank

- Two periods: Today and tomorrow. No discount.
- The bank capital is C today.
- Today, an exogenous macro shock makes X units of loans bad. ($0 < X < 1$. Total amount of loans is one)
- The bank can choose z, where $X - z$ is disposed of today, and z is rolled over until tomorrow.
- Tomorrow, z loans remain bad with probability p and they turn good with probability (1-p). All remaining bad loans must be disposed of tomorrow.
- The bank manager suffers from private cost $\Psi(d)$ if d units of bad loans are disposed of. ($\Psi'(d) > 0$, $\Psi''(d) > 0$)

Bank manager's problem

$$\max_{z} W(z)$$
$$= -(X - z) - \Psi(X - z) - \Phi(z, C) + p\{-z - \Psi(z)\},$$

$\Phi(z, C)$: Social cost from rolling over bad loans z,
$\Phi_z > 0$, $\Phi_{zz} > 0$,$\Phi_{zC} < 0$.

- The solution: $z = z(\overset{(+)}{X}, \overset{(+)}{C})$
- $z(X, C) > z_o$, where z_o is the socially optimal amount of z, if $z_o < \frac{1}{2}X$.

⇒ Zombie lending may respond negatively to an adverse shock to bank health.

⇒ Zombie lending may have been widespread and it may have been socially costly.

(3) Existing evidence of fund misallocation

- Hoshi (1999)

  Public data shows that bank loans to the “bubble”-related sectors (real estate, construction, retail, wholesale, nonbank finance) increased throughout the 1990s. Bank loans to manufacturing decreased during the 1990s.

- Saita and Sekine (2001)

  Tankan survey of BoJ shows the (subjective) mismatch of fund allocation widened during the 1990s.

- Sekine, Kobayashi, and Saita (2002)

  Estimation of loan supply function implies that heavily indebted firms were likely to have easier access to bank loans than less indebted firms.

- Nishimura, Nakajima, and Kiyota (2003)

  Firms with high productivity exited and those with low productivity continued operating in the late 1990s.