

What Saved the Indian Banking System: State Ownership or State Guarantees?

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I

The global crisis which began in the fall of 2007, and progressively worsened in 2008, affected the Indian financial sector beginning only 2008. While Indian financial firms have been fairly resilient compared to their global counterparts, Indian private sector firms faced greater losses compared to public sector firms during 2008–09. This was *in spite* of private sector firms having lower exposure to the crisis based on pre-crisis market indicators. By relocating their deposits, investors seemed to reward public sector firms while penalising private sector firms with similar risk. This should not be interpreted as greater resilience of state-owned banks vis-à-vis the private financial sector. It was access to implicit and explicit government backing rather than ownership by the state that helped public sector banks perform better.

II

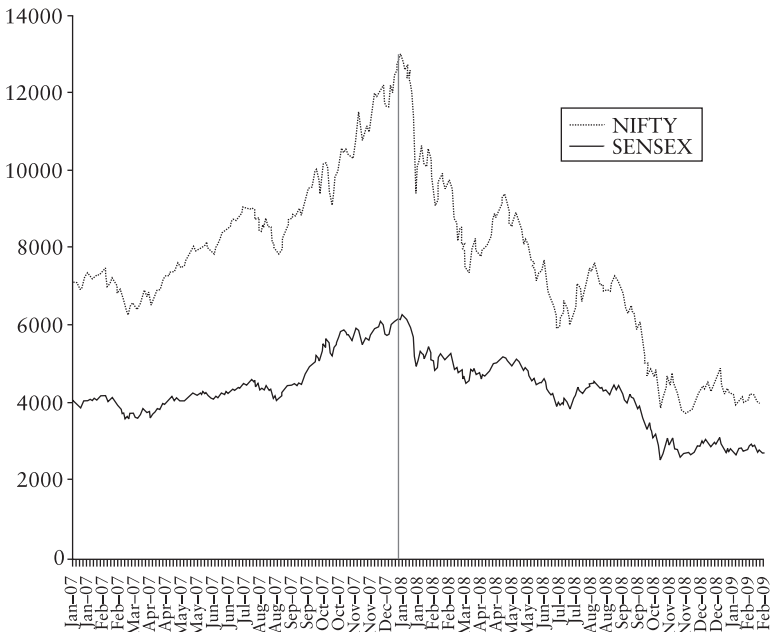
In 2008, the global financial crisis hit India with the Indian stock market losing more than 60 per cent of its peak valuation. Figure 1 shows that the stock market index—S&P CNX NIFTY index—declined sharply starting January 2008. Index prices fell from a peak

of 6,288 in January 2008 to 2,524 in October 2008, representing a decline of nearly 60 per cent. Another market index—the BSE index—similarly fell nearly 59 per cent from 20,873 in January 2008 to 8,510 in October 2008. Starting 2008, foreign institutional investors (FIIs) facing a liquidity squeeze from abroad, started pulling out capital from India resulting in a sharp decline in the stock market. In 2008–09, FIIs withdrew nearly Rs. 43,337 crores (approx \$9–10 billion).

Figure 1
Stock Index Performance

The figure shows stock index performance for the period from January 2007 to February 2009. Two indices, S&P NIFTY and BSE SENSEX, are represented. The S&P CNX NIFTY (or NIFTY; base level of 1000 defined as of November 1995) is a free-float market capitalisation index on the National Stock Exchange and consists of 50 companies. Bombay Stock Exchange Sensitive Index (BSE Sensex or Sensex) is a value-weighted index composed of 30 stocks with a base level of 100 in 1978–79.

Stock Index Performance for NSE NIFTY and BSE Sensex between Jan'07-Feb'09



Experiencing a dearth of capital from overseas markets, Indian banks and corporations had to turn to domestic markets for their funding requirements. At the same time, Indian banks and financial institutions facing uncertain market conditions started cutting back on credit, resulting in a liquidity crisis in 2008. Corporations, especially ones relying on foreign funding, feared further worsening of global market conditions and withdrew from money market mutual funds (MMFs). The MMFs, which were heavily invested in non-banking financial companies, were forced to liquidate their positions. It is estimated that MMFs withdrew nearly Rs 22,355 crores in 2008–09. As a result of the capital outflows, the rupee also came under pressure. There was further liquidity tightening as the Reserve Bank of India (RBI) intervened in the Forex market to manage rupee volatility. All these events resulted in a money market and credit squeeze which eventually spilled over into the real economy (Subbarao 2009). The global slowdown also resulted in a slump in demand for exports. This impact was felt economy-wide and the Indian GDP fell from 9 per cent in 2007 to nearly 6.1 per cent in 2008. Eventually, the Government of India, fearing an even rapid deterioration of the economy, announced wide-ranging stimulus packages in 2009 that appeared to restore the economy back to its pre-2008 growth.

An important observation during 2008 was the apparent weakness of private financial firms against the (relative) growing strength of public sector or state-owned banks. Historically, Indian banks had been wholly owned by the government. Though in the 1990s, after economic liberalisation, the government reduced its stake and allowed private banks and foreign players to enter the market, the Indian financial system retains a substantive public sector ownership. In fact, public sector banks dominate the Indian banking sector and, as of March 2009, they accounted for nearly 71.9 per cent of aggregate assets. This mixed model of public and private ownership, popular in emerging markets and also referred to as the Asian model, has been credited with the relative strength of the Indian financial sector compared to its global counterparts.

Consider three striking pieces of evidence illustrating this relative strength.

First, and as Figure 2 shows, the substantial gains made by the private financial firms in the period leading up to January of 2008 were almost entirely wiped out by February of 2009.

Second, market reaction to public versus private sector banks can also be gauged from the widening of credit default swap (CDS) spreads for two illustrative firms, namely, State Bank of India (SBI, a public sector bank) and ICICI Bank (a private sector bank) during the crisis of 2008. A CDS spread represents the cost of purchasing insurance against the default of an underlying entity (such as SBI or ICICI). From Figure 3, we see that the cost of purchasing 1-year protection on SBI and ICICI Bank were within the same range in 2007, suggesting that investors viewed both firms as being equally

Figure 2
Stock Performance for Public and Private Sector Firms

The figure shows the equally weighted average returns for public and private sector financial firms for the period from January 2007 to February 2009. The indexed value weighted returns for the private (public) sector represents the returns weighted by the market capitalisation of the private (public) sector firms used in the analysis. Both series use a base value of 100 as of 2 January 2007.

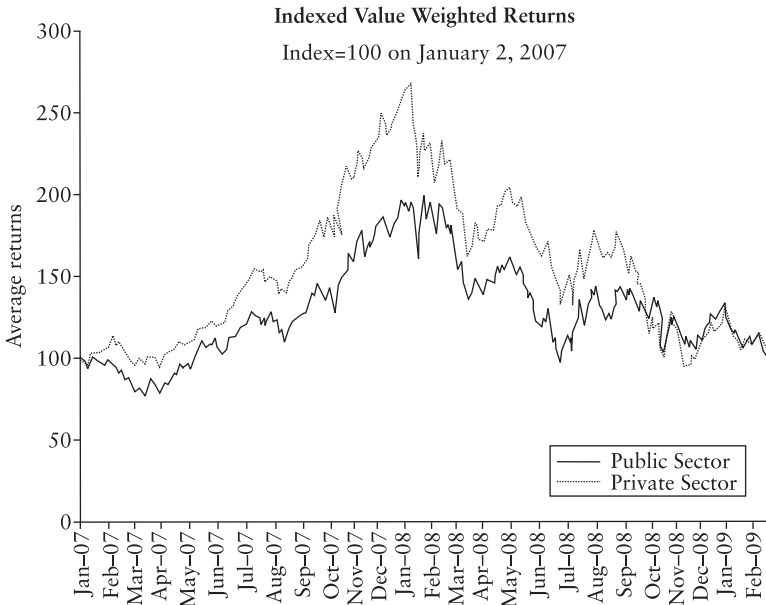
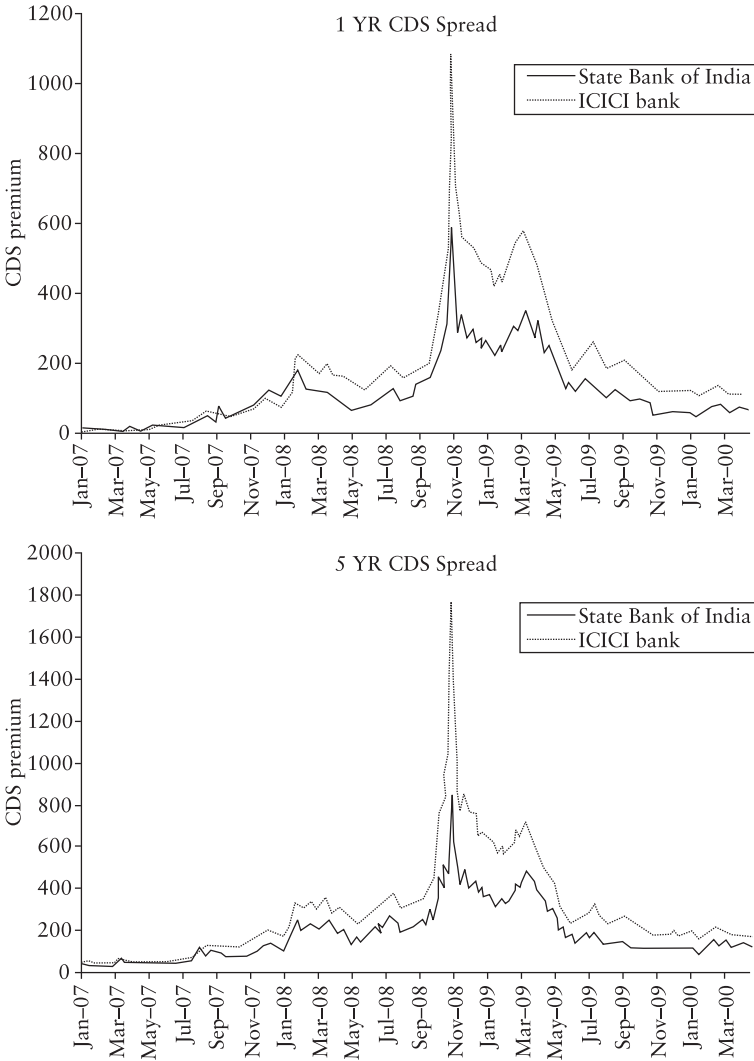


Figure 3
CDS Spreads for ICICI and SBI

The graphs below show the 1-year and 5-year CDS spreads for ICICI Bank (private sector bank with the largest MES) and State Bank of India (public sector bank with the largest MES). Market return is based on the S&P CNX NIFTY for the pre-crisis period from January 2007 to December 2007.



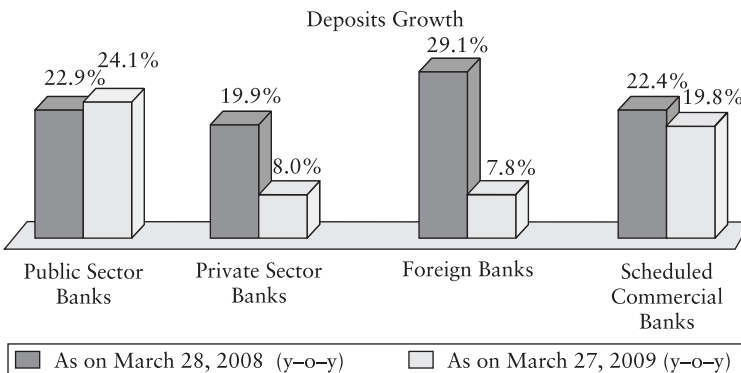
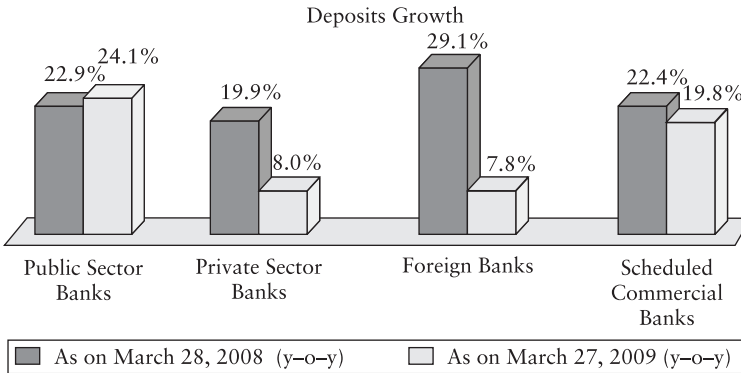
Source: Datastream.

risky. Beginning 2008, however, the difference between the spreads started widening in SBI's favour, indicating that investors possibly viewed the public sector financial firm to be healthier compared to the private sector firm.

Third, Figure 4 shows that while the banking sector as a whole experienced a slowdown in deposit growth, private sector banks were affected to a larger extent. According to RBI estimates, public sector bank deposits grew by 24.1 per cent in fiscal year

Figure 4
Deposit and Credit Growth

The graphs below show the group-wise growth in deposits and credit in banks. Growth rates are year-on-year as of 28 March 2008 and 27 March 2009.



Source: (RBI, 2009–2010).

2009 (March 2008–March 2009) compared to 22.9 per cent a year earlier. In comparison, private sector deposit growth slowed from 19.9 per cent to a mere 8 per cent for the same period. Credit growth showed similar trends: public sector bank credit grew by 20.4 per cent (compared to 22.5 per cent in 2008) while for private sector banks it grew by only 10.9 per cent (compared to 19.9 per cent in 2008).

This apparent strength of public sector banks has in fact strengthened the resolve to persist with them. Until recently, there had been a consistent trend towards privatisation of the Indian banking system. However, the recent underperformance of private sector banks has raised some doubts regarding this approach.¹ Such sentiments have important policy implications and could alter the timeline and extent of privatisation initially envisioned by the government. All recent evidence seems to suggest that government ownership in public sector banks will gradually decline but only after the ongoing crisis has subsided, and that it is unlikely the state-owned banks will be fully privatised as was previously envisioned.

There is good reason to guard against reaching such policy decisions. As explained later in this essay, it seems that it was access to government guarantees rather than ownership by the state that appears to have ensured greater stability of the public sector banks than their private sector counterparts. In fact, public sector banks appeared *more* risky in the sense of being vulnerable to a crisis, not less, than the private financial firms, and yet grew substantially in terms of their deposit base.

The conjecture is that the relative underperformance of private sector banks during the crisis, in spite of their superior pre-crisis risk–return profile, is attributable to the implicit and explicit sovereign backing of public sector banks. The Indian Bank Nationalisation Act provides an explicit guarantee that all obligations of public sector banks will be fulfilled by the Indian government in the event of a failure. It is conceivable that, as a result of this guarantee, private sector banks experienced a loss of confidence and capital gravitated to public sector banks during the crisis of 2008–2009—even when their exposures to an economy-wide crisis were *ex ante* similar—because investors believed that the public sector banks would be

bailed out by the government in the event of a failure. And that, given this expectation, capital (primarily deposits) flew from the riskier private sector banks to the more stable public sector banks resulting in a decline in equity valuations of the private sector financial firms during the crisis. If this were true, then public sector banks would outperform private sector banks in a crisis even if they were a priori, that is, in absence of government guarantees, more vulnerable to a crisis.

To examine if this conjecture is true, consider the *ex ante* (pre-2008) measure of vulnerability to a crisis (*systemic risk*) of public and private financial firms and how that relates to their *ex post* (2008–09) or realised performance—for instance, their deposit growth. We use the marginal expected shortfall (MES) measure to calculate the systemic risk of financial institutions in the Indian financial sector.² The MES measure essentially captures the tail dependence of the stock return of a financial firm on the market as a whole. It estimates, in a given past period (say one year preceding a crisis), for the worst 5 per cent days of the market or the financial sector index, the negative of the average market return of a given financial firm. The greater the MES, the more vulnerable to a crisis is the firm. The question then is whether riskier public sector banks as measured by *ex ante* MES fared better or worse than private sector banks with similar risk.

There are some interesting insights to be gathered from such analysis.

First, average MES value measured during January 2007 to December 2007 was higher for public sector banks (4.34 per cent) compared to private sector banks (3.58 per cent). That is, the public sector banks had, on average, negative 4.34 per cent returns on the days the market return (S&P CNX NIFTY) was below its 5th percentile for the pre-crisis period from January 2007 to December 2007. India Infoline (6.99 per cent), IFCI (6.80 per cent) and Indiabulls financial services (6.44 per cent) had the highest MES among the private sector financial firms. In the public sector, IDBI bank (6.67 per cent), Union Bank of India (5.41 per cent) and Dena Bank (5.23 per cent) had the highest MES. Focusing next on losses in terms of rupees, in the public sector banks, SBI had the highest

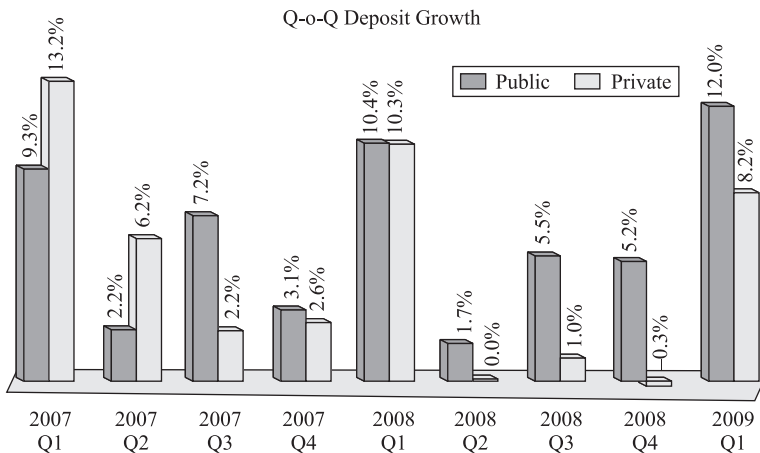
market capitalisation loss of Rs. 30 crores whereas for private sector banks, ICICI had the highest loss of Rs. 37 crores.

Second, public sector banks performed *better* than private banks during the crisis in spite of having *higher* systemic risk. While private banks with high MES prior to the crisis (such as ICICI Bank) suffered heavily during the crisis, equally systemic state-owned banks (such as the SBI) gained in a relative sense. For example, both ICICI and SBI had an MES of 5 per cent. However, during the crisis period from January 2008 to February 2009, ICICI stock fell by 73 per cent whereas SBI stock fell by a significantly lower 54 per cent.

Third, while private sector banks with higher vulnerability to a crisis experienced deposit contractions, the reverse was true for public sector banks. Using the RBI deposit flow data, Figure 5 shows the quarterly change in deposits for public and private sector banks. We see that when the crisis initially hit India in 2008, both public and private sector had similar deposit growth rates. In Q1 2008, deposits for both sectors grew by 10 per cent. However, as

Figure 5
Q-o-Q Deposit Amounts and Growth for Public and Private Banks

The graph below shows the quarter-over-quarter changes in deposit amounts for public and private sector banks. Deposit amount data is in INR crores for the period Q1 2007 to Q1 2009.



Source: (RBI)

the crisis worsened, the disparity between public and private sectors is evident. Public sector bank deposits grew by 1.7 per cent (Q2), 5.5 per cent (Q3) and 5.2 per cent (Q4) compared to a much lower growth of 0.0 per cent, 1 per cent and -0.3 per cent for private sector banks.³ This suggests that investors treated public and private firms differently during the crisis. In particular, there was a shift in deposits from private sector firms to the public sector.⁴

And fourth, perhaps most strikingly, Figure 6 confirms that public sector banks benefited from deposit growth even when they had greater vulnerability to a crisis.

Graph A shows that vulnerability to a crisis (MES) does a good job of explaining the growth in deposits for private sector firms. As we would expect intuitively, private sector banks with high exposure to a crisis experienced greater deposit contraction during the crisis. A few cases illustrate this point well. Indusland Bank with a high MES of 5.90 per cent had a deposit growth of 16 per cent in the crisis period. Compared to this, Axis Bank, with a relatively lower systemic risk exposure (MES of 3.75 per cent), had a higher growth rate of 34 per cent.

Graph B shows that, for public sector banks, there is a somewhat counter-intuitive finding: greater vulnerability to a crisis in fact led to greater deposit expansion! Looking at specific examples, we see that deposits for SBI (MES of 4.63 per cent) grew by 38 per cent whereas, in contrast, deposits for Andhra Bank (with a lower MES of 3.61 per cent) grew by only 20 per cent.

Is it possible that the government backing of public sector firms distorted investor and market behaviour during the crisis, rewarding public sector firms with greater vulnerability to the crisis, given the greater likelihood that more vulnerable banks will be bailed out in the event of a failure during the crisis? Evidence does suggest that weaker public sector banks received capital injections, in whose anticipation depositors and stock market investors rewarded riskier public sector banks while penalising private sector banks with similar risk.

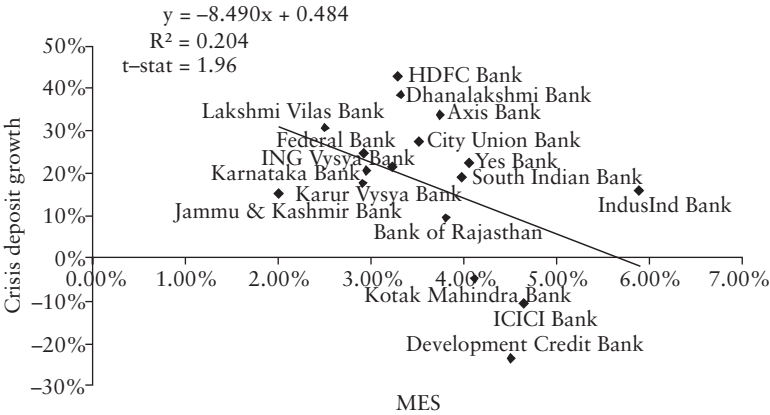
When the Indian government announced a number of wide-ranging stimulus plans to jumpstart the banking system, public sector banks were promised capital injections to help them maintain

Figure 6

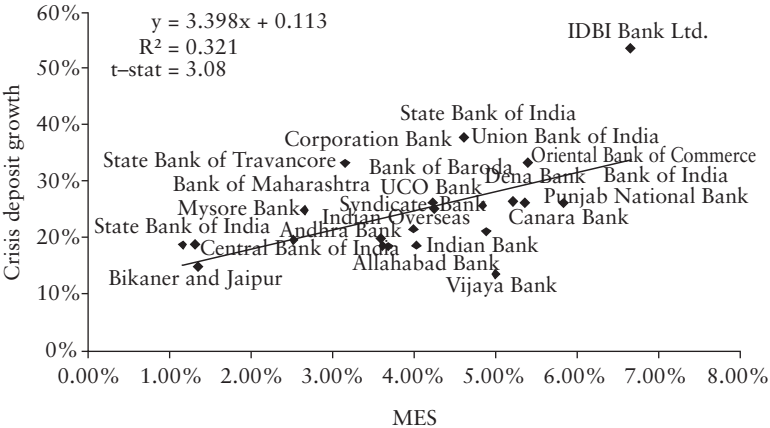
Deposit growth versus MES for Private and Public Banks

The graphs below show the scatter plot of the MES computed for the period 1 January 2007 to 31 December 2007 versus the deposit growth for public sector banks from 31 March 2008 to 31 March 2009. Market return is based on the S&P CNX NIFTY for the pre-crisis period from January 2007 to December 2007. Deposit growth for the crisis period is measured from 31 March 2008 to 31 March 2009. The 39 firms for which both MES data and RBI deposit growth estimates are available were used in this analysis.

Graph A: Private Banks



Graph B: Public Banks



a CRAR (risk-adjusted capital ratio) of 12 per cent. The government launched three fiscal stimulus packages during December 2008–February 2009. As part of the second stimulus package, the government recapitalised state-run banks and infused nearly Rs. 3,100 crores in 2008–09 as tier-I capital in a few public sector banks. In order to fulfill the funding gap, the government requested financing of Rs. 1,700 crores (\$3.4 billion) from the World Bank in December 2008. Importantly, the timing and size of the capital injections was left up to the discretion of the government. Capital injections were to be determined based on public sector banks' ability to access equity markets, capital requirements for growth, and existing capital resources (World Bank 2009). An additional infusion of Rs. 16,500 crores was projected for the year 2010-11 to help public sector banks maintain the minimum 8 per cent tier-I capital to risk weighted asset ratio (Government of India, press release, 2010).

Investigating who received support tells the familiar story of worst performers being propped up. In February 2009, the government announced a capital injection in three public sector banks: UCO Bank (Rs. 450 crores), Central Bank of India (Rs. 700 crores) and Vijaya Bank (Rs. 500 crores). For the 2008-2009 period the government injected a total of Rs. 250 crores into United Bank of India. The government also announced capital infusion of Rs. 6,121 crores in five more public sector banks: IDBI Bank (Rs. 3,119 crores), Central Bank (Rs. 2,016 crores), Bank of Maharashtra (Rs. 590 crores), UCO Bank (Rs. 375 crores) and Union Bank (Rs. 111 crores)

As of March 2009, all these banks (except Union Bank) had tier-I capital less than 8 per cent: Bank of Maharashtra (6.1 per cent), Central Bank of India (7.0 per cent), UCO Bank (6.5 per cent), Union Bank of India (8.2 per cent), Vijaya Bank (7.7 per cent) and IDBI Bank (6.8 per cent). Based on the MES measure of vulnerability to a crisis, these were also among the riskiest banks in our analysis. For example, IDBI had an MES of 6.67 per cent, Union Bank of India, 5.41 per cent and Vijaya Bank, 5.02 per cent. UCO had a relatively lower MES of 4.26 per cent. Indeed, IDBI with a high MES of 6.67 per cent received the highest capital injection of Rs 3,119 crores.

With such generous backing of the Indian government, public sector banks came out in the retail sector with inexpensive housing, auto and education loans. For example, they were the lead financiers in the Tata Nano auto purchases. They were also able to offer housing loans at lower rates than those charged by other banks and mortgage companies, such as Housing Development Finance Corporation (HDFC). Private financial firms in fact have complained that SBI schemes do not draw in new customers, but are instead targeted at existing customers and are thus targeted more to undercut competitors rather than stimulate the economy (<http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4376>). All this suggests that the state banking sector may have grown during the crisis at the expense of private banks. Measures taken by the government may have helped bolster public sector banks but they have also made it difficult for private sector financial firms to compete with them.

III

That financial firms with access to explicit and implicit government guarantees for public sector firms fared better *during* the financial crisis has in fact been the theme worldwide: these firms survived the crisis or even expanded post-crisis while the ones without such access have failed or shrunk. A striking case in point has been the growth of the government-sponsored enterprises (Fannie Mae and Freddie Mac) and commercial banks in the United States—both sets of institutions with explicit government support and ready access to central bank emergency lending. These institutions expanded their holdings of mortgage-backed securities during the crisis while investment banks and hedge funds de-leveraged and sold these securities. Fannie Mae and Freddie Mac were hardly the better-performing institutions of this crisis based on their pre-crisis risk-taking behaviour; they were in fact ‘guaranteed to fail’ (Acharya et al., forthcoming). While there is always a justification for greater presence of government institutions in the financial sector (or greater extent of government intervention in a crisis), this is likely associated with the misfortune of crowding out the private sector

in the long run unless the government intervention has a graceful exit attached to its tail.

At any rate, examining the performance of state-owned banks in a systemic crisis relative to private sector banks that have access to a weaker set of government guarantees is not a sound basis of assessing the overall attractiveness of state presence in the financial sector. Government bailouts—and investor and depositor anticipation of such bailouts—for public sector banks have deep consequences on competitive forces in the financial sector, potentially shaping their long-run form, and always stacking the odds against the flourishing of private banks.

NOTES

* This article is based partly on the NYU–Stern Working Paper ‘State Ownership and Systemic Risk: Evidence from the Indian Financial Sector during 2007–09’, which I co-authored with Anukaran Agarwal and Nirupama Kulkarni. I am grateful to Ajay Shah for providing the BSE and NSE stock market data.

1. The ruling party leader, Sonia Gandhi, claimed that ‘public sector financial institutions have given our economy the stability and resilience we are now witnessing in the face of the economic slowdown.’ Then finance minister, P Chidambaram, echoed these sentiments when he claimed that India’s public sector banks were strong pillars in the world’s banking industry (*Frontline*, ‘The Importance of Public Banking’ December 2008).
2. The strength of the measure lies in its ability to predict which firms are likely to be most negatively affected during a financial crisis, as demonstrated by Acharya et al. (2010a) in their analysis of the systemic risk of large US financial institutions around the financial crisis of 2007–09.
3. Towards the end of the crisis both sectors posted relatively higher growth rates of 12 per cent for the public sector and 8.2 per cent for the private sector, a fact that can be explained by government stimulus package discussed later.
4. Anecdotal evidence is consistent with this ‘flight-to-quality’: Infosys transferred nearly Rs. 10 billion of deposits from ICICI to SBI just after Lehman’s collapse in the third quarter of 2008 (*Economic Times*, ‘Deposits with SBI zoom past Lehman collapse’, 7 April 2009): ‘SBI was the biggest gainer in the ‘flight to safety’ phenomenon observed after the collapse of Lehman. With rumours about banks being in trouble, investors shifted funds away from foreign and private banks into government banks.... In the post-crisis quarter, even large corporates like Infosys moved their deposits to SBI. Infosys has disclosed that it transferred deposits of nearly Rs 1,000 crore from ICICI Bank to State Bank of India last year.’

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