Government guarantees and bank vulnerability during financial crises

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1 INTRODUCTION

The global financial crisis of 2007 -- 09 saw the widespread use of government guarantees to protect failing banks. While these guarantees keep markets well-functioning during stress times, they may also induce banks to take excessive risks. Globally, during the crisis, financial institutions with greater access to government guarantees survived the crisis or even expanded post-crisis while the ones without such access have failed or shrunk. For example, 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 access to central bank emergency lending expanded their holdings of mortgage-backed securities while investment banks and hedge funds deleveraged and sold these securities. Fannie Mae and Freddie Mac were not the better-performing institutions in this crisis; they were in fact “guaranteed to fail". While access to government guarantees may be a source of financial stability during a crisis, the question remains as to how these guarantees influence bank behavior during crisis periods.

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2 Our Study

One difficulty in analyzing the impact of government guarantees is also accounting for the counterfactual, that is, how would the absence of such guarantees impact bank behavior and outcomes? India with its mix of state-owned banks or public sector banks (PSBs) and private sector banks provides one ideal setting to explore this question. While state-owned banks in India are explicitly guaranteed by the government, private sector banks are not.

We analyze performance of banks in India during 2007-09 to study the impact of government guarantees on bank vulnerability to a crisis. We find that vulnerable private-sector banks performed worse than safer banks; however, the opposite was true for state-owned banks. To explain this puzzling result we analyze deposit and lending growth. Vulnerable private-sector banks experienced deposit withdrawals and shortening of deposit maturity. In contrast, vulnerable state-owned banks grew their deposit base and increased loan advances, but at cheaper rates, and especially to politically important sectors. These results are consistent with greater market discipline on private-sector banks and lack thereof on state-owned banks which can access credit cheaply despite underperforming as they have access to stronger government guarantees and forbearance.

We examine the impact of government guarantees on banks in India during the global financial crisis of 2007--09. We look at ex-ante heterogeneity in bank vulnerability to a market-wide shock, using a stock market-based measure of aggregate risk for the period preceding the crisis (January 2007 to December 2007). Then, separately for private sector banks and for public sector banks, we analyze during the financial crisis in 2008--09 the relationship between ex-ante bank vulnerability and (i) realized stock returns; (ii) deposit flows and corresponding deposit rates; (iii) loan advances and corresponding loans rates; and, finally, (iv) loan performance in the after-math of the crisis.

2.1 EFFECT ON REALIZED STOCK RETURNS

As a first step to determine the role played by government guarantees, we relate ex-ante measures of bank vulnerability to realized stock performance during the crisis. Our bank vulnerability measure, Marginal Expected Shortfall (MES) --- proposed by Acharya et al. (2010) --- 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 percent 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 is the firm to aggregate downturns. The question then is whether more vulnerable PSBs as measured by ex-ante MES fared better or worse than private sector banks with similar risk. We find that more vulnerable private sector banks had worse stock returns during the crisis as would be expected during crisis periods. In contrast, more vulnerable PSBs had *higher* stock returns compared to less risky PSBs. Figure 1, Panel A shows this graphically.

2.2 EFFECT ON DEPOSIT FLOWS AND DEPOSIT RATES

We hypothesize that it was the presence of explicit and implicit government guarantees that helped riskier public sector banks outperform private sector banks, and examine deposit growth and maturity to investigate this hypothesis. We find that deposit base growth of banks explains the cross-sectional variation in stock performance during the crisis period. While private sector banks with higher ex-ante bank vulnerability experienced deposit contractions during the crisis, riskier PSBs managed to grow their deposits. Figure 1, Panel B shows this graphically.[3] This is contrary to what a pure flight-to-quality story

[3] Anecdotal evidence supports this hypothesis. Following the credit crisis and the subsequent fall of Lehman, many depositors shifted capital out of private and foreign banks and moved it to government banks. For example, Infosys (a large Indian multinational corporation) transferred nearly Rs.10 billion of deposits from ICICI to SBI just after Lehman's collapse in the third quarter of 2008 ("Deposits with SBI zoom past Lehman collapse", April 7, 2009. http://articles.economictimes.indiatimes.com/2009-04-07/news/27639025_1_private-banks-bank-deposits-deposit-base). As direct evidence of government support during the crises period, the government issued a directive ordering public sector enterprises (firms other than banks) to move their surplus funds to public sector

would suggest under which safer PSBs should have grown deposits more than riskier PSBs. To understand this, we study deposit rates and find that PSBs were likely increasing deposit rates during the crisis in order to attract these deposit flows.[4]

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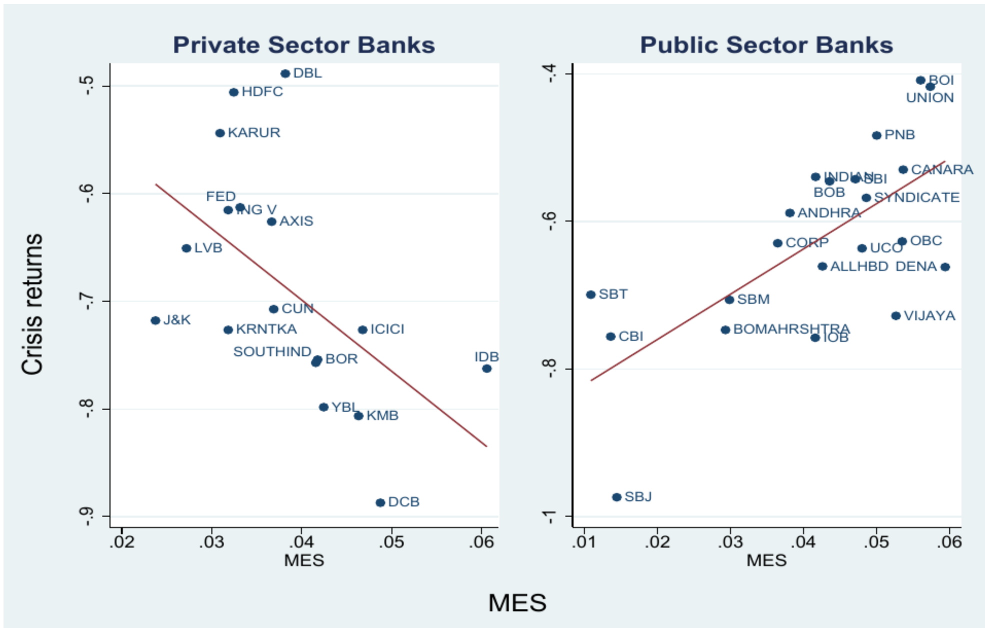
banks (“FM for parking of surplus funds with PSBs", Economic Times, November 11, 2008. http://articles.economictimes.indiatimes.com/2008-11-11/news/28423229_1_sector-banks-psu-banks-surplus-funds).

[4] During this period, PSBs started raising their deposit rates in order to attract these deposits and the finance ministry directed the public sector firms from asking for competitive bids “to stop undesirable competition among banks to prevent arbitrary hikes in deposit rates" (“Deposit funds with public sector banks, PSUs told", Business Line, November 11, 2008. http://www.thehindubusinessline.com/todays-paper/deposit-funds-with-public-sector-banks-psus-told/article1641219.ece).

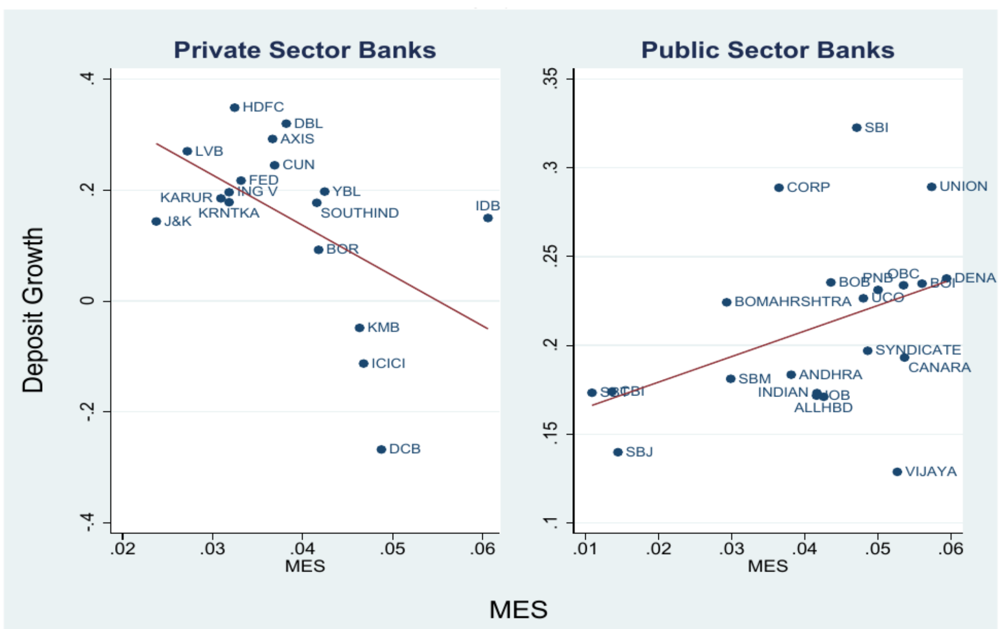
Figure 1

Stock performance and deposit growth versus MES

Panel A



Panel B



Panel A and Panel B plot crisis returns and deposit growth during the crisis respectively against MES for private and public sector banks. Crisis return is the stock return calculated from 1st January, 2008 to 24th February, 2009. Deposit growth is from March 2008 to March 2009. Ex-ante bank vulnerability is measured by MES which is the marginal expected shortfall of a stock given that the market return (S&P CNX NIFTY) is below its 5th- percentile during the period 1st January, 2007 to 31st December, 2007. All 38 banks for which data is available were used in the analysis.

2.3 Effect on loan advances and loan rates

One could argue that the increase in deposit base for public sector banks is good for the economy as a whole since they may be more willing to advance loans to the real economy resulting in much needed credit in times of recession. We do indeed find that riskier public sector banks increased lending during the crisis. However, PSBs increased lending in those sectors and to those firms that receive greater political backing namely, the priority sector (agriculture and small businesses) and state-owned firms. Further, PSBs did not increase their lending rates to account for the higher costs in borrowing (higher deposit rates. Furthermore, crisis time lending has an impact on subsequent loan performance. Riskier private sector banks tightened lending during the crisis and as a result had to restructure fewer loans in the period following the crisis. Riskier PSBs --- which increased lending but not at higher loan rates --- had to restructure more loans in the aftermath of the crisis.

3 Recommendations

In our study, we attempted to explain the relatively strong performance of public sector banks in India compared to their private sector counterparts during the global financial crisis of 2007--09. While the global impact on the financial sectors had been severe, Indian financial banks were relatively more stable during the period. During the period, much of this was credited to the public sector banks which lend stability during the crisis periods. Our analysis shows that while this may be true, public sector banks benefitted significantly from government guarantees. 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 PSBs but they also made it difficult for private sector banks to compete with them. The resulting strength of PSBs in fact strengthened the resolve to persist with them. Our results strike a note of caution against drawing such conclusions. Examining performance of state-owned banks in an aggregate crisis relative to private sector banks that do not have as great an access to government guarantees is perhaps not a sound basis of assessing the overall attractiveness of state presence in the financial sector. At any rate, government bailouts --- and investor and depositor anticipation of safety net for PSBs --- seem to 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. Thus, even though access to government guarantees might be considered a source of financial stability during a crisis, justifying a greater presence of government institutions in the financial sector (or greater extent of government intervention in a crisis), our results suggest that this is likely associated with the misfortune of crowding out the private financial sector in the long run.