Bank Recapitalisation: Bail-out or Bail-in?

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Abstract

Using sectoral T-accounts, this paper analyzes the implications of bank bail-outs and bank bail-ins. Contrary to popular opinion, bank bail-outs do not utilize taxpayers' money. Moreover, bank bail-outs funded through recapitalization bonds or deficit financing and bail-ins have similar net effects on sectoral balance sheets. There are, however, questions of moral hazard and normative issues of fairness that must not be ignored.

Key words: Bank recapitalization, Non-performing assets, Capital adequacy, Bail-out, Bail-in, FRDI

Introduction

The global financial crisis (2008) led to a collapse of many banks and financial institutions, plunging their net worth into negative territory. To restore their balance sheets and provide capital to meet adequacy norms, it was proposed that governments support bail-out packages. However, in mainstream economics discourse, it was argued that this implied "using taxpayers' money". Consider for example, these headlines:

British taxpayers face 27 billion pound loss from bank bailout (MacAskill and White, 2016)

Taxpayers are still bailing out Wall Street, eight years later (Merle, 2016)

The likely political consequences of this popular understanding of bank bailouts are clearly evidenced in a statement by former U.S. President, Barack Obama:

"So I know how unpopular it is to be seen as helping banks right now, especially when everyone is suffering in part from their bad decisions. I promise you – I get it." (Hecht,2009).

With bank bail-outs becoming increasingly unpopular, the alternative of bank bail-ins emerged. In case of bank bail-ins, depositors' money would be used to set off the loss accruing to banks from write-off of NPAs; in other words, the cost of bank failures is redistributed from taxpayers to banks' creditors. This seems to have found favour with governments. The first bank bail-in was implemented in Cyprus in 2013; however, the implications of the program were largely negative with a significant flight to cash and a low level of future confidence in banks, especially those that incurred a deposit and/or bond bail-in (Brown et al., 2018).

In spite of the criticisms levelled against bank bail-ins, we find its acceptance across the world. In 2015, the European Commission issued the Bank Recovery and Resolution Directive (BRRD) to 11 EU countries to rescue banks by implementing the bail-in process. More recently, bank bail-in rules have already been established or are in the process of being legislated in Canada, USA, Turkey and India.

The Indian Legislation on Bank Bail-Ins

With non-performing assets (NPAs) of Indian banks exceeding 10% of total loans (Vora, 2017) or an estimated Rs.10 trillion in 2016-17, the government's concern over the issue of bad debts in the commercial banking sector is palpable. Low private sector investment is widely accepted as *a* if not *the* chronic reason for India's sluggish growth; in this context, the inability of the banking sector to expand credit supply to fund private sector investment demand on account of capital inadequacy is attributed to the NPA crisis. In recent months, several possible solutions to the problem of NPAs have been discussed, including bank bail-outs with a bank recapitalisation scheme using unutilized reserves with banks and more recently, the proposed Financial Resolution and Deposit Insurance (FRDI) bill which allows for bank bail-ins.

A Sectoral Balance Sheet Macroeconomic Analysis of Bail-Outs and Bail-Ins:

In this commentary, the author attempts to study the difference in these proposals using T-accounts of four sectors, namely, the Government of India (GOI), the Reserve Bank of India (RBI), commercial banks and the non-banking private sector (NBPS), the latter consisting of businesses and households. T-account analysis shows changes that occur in the financial position of economic entities. Double entry bookkeeping necessitates that an increase/decrease in assets in balance sheets must be offset by a decrease/increase in another asset or an increase/decrease in liabilities on the same balance sheet so that equality in the sum total of assets and liabilities (including net worth) on a balance sheet is maintained. Moreover, changes in the balance sheet of one entity in an economy could have a corresponding impact on the balance sheet of other economic entities. As Hyman Minsky puts it:

"The alternative to beginning one's theorizing about capitalist economies by positing utility functions over the reals and production functions with something labeled K (called capital) as a variable is to begin with interlocking balance sheets of the economy" (Minsky, 1995).

By neglecting balance sheet changes across sectors in the economy, economic models are prone to stock-flow inconsistencies. Double entry bookkeeping ensures consistency; in other words, if you cannot put your reasoning in terms of a balance sheet, then there must be a problem in your logic (Tymoigne, 2016). Unfortunately, macroeconomists are by-and-large unfamiliar with the mechanics of accounting and therefore, end up with a fuzzy understanding of stock-flow analysis of money and credit in a modern economy. Economic commentators and the media too would rather ignore the dull grind of accounting in favour of reports that render the headlines more engaging.

Table 1 begins with a situation where promoters – say, 50% of whom are from NBPS and 50% GOI – buy equity capital in Bank A. The subscribed amount (say Rs.100) is transferred from their accounts in commercial banks (say, Bank B) and the RBI respectively. When payments of NBPS and GOI are realized by Bank A, its reserve account at the RBI will be credited by Rs.100 while Bank B's reserve account will be debited by Rs.50 and the GOI's deposit account at the RBI by Rs.50. Bank A's balance sheet now shows assets (reserve account at the RBI) of Rs.100 while its liabilities (equity capital) are also Rs.100. Bank B's balance sheet is, however, not shown in the table, which would show a fall in deposits of NBPS who held accounts in the bank by Rs.50 (liability) as well as a fall in reserves of Rs.50 (asset) when payment is made to Bank A.

Table 1: Bank's position prior to NPA and bail-out/bail-in

	Government		Central Bank (RBI)		Commercial Bank A		Non-banking private sector (NBPS)		Remarks
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
1.	Deposits -50 Capital +50			Reserves B -50 Deposit-G -50 Reserves A +100	Reserve +100	Capital +100	Capital +50 Deposit -50 (from Bank B)		Setting up of Bank A with promoters' (NBPS + GoI) contribution to capital transferred from Bank B and RBI respectively.
2.					Loan X +1000	Deposit X +1000			Bank A gives loan to X.
3.				Reserves A +1000 Reserves B -- --1000 Reserves B +1000 Reserves A --- 1000		Deposit Y +1000 Deposit X ----1000			Bank A gets a deposit from Y. At the same time, X draws cheque for Rs.1,000 deposited in Bank B.

Notes: 1) The term 'capital' appearing in the balance sheet of the GOI and NBPS is not used by accountants – the term used may be Investment or Equity Investment and 2) In the tables, I have referred to these physical assets as NPA. This may not be the term used by accountants, but it helps us track the impact of changes across sectoral balance sheets.

Once the bank is set up, it can give out loans. One of the biggest myths propounded by mainstream economists – knowingly or unknowingly – is that banks are mere intermediaries that lend the deposits of savers. Endogenous money theory, which has now been acknowledged by the Bank of England (McLeay et al., 2014) as the true depiction of modern banking, argues that banks create (credit) money *ex nihilo*. When a loan is given to a loanee, a deposit account is opened in their favour. In terms of balance sheets, the loan given out (to say Company X) for Rs.1,000 is matched by a deposit opened in favour of X with the same amount (Rs.1,000). The loanee X receives a cheque book which it can use as money to buy and sell goods and services in the economy, which raises the level of economic activity, generating output and employment. However, as X signs cheques in favour of other economic agents, Bank A will have to settle interbank transfers using reserve money in its account at the RBI. In this case, with only Rs.100 available, Bank A will not be able to meet its commitments and settle amounts drawn by X to the extent of Rs.1,000. In such a situation, Bank X will need reserve money – a credit balance in its reserve account at the RBI – from either of three possible sources: (a) current accounts and savings bank accounts (CASA) from other entities in the NBPS (b) borrow reserve money from other banks in the overnight money market at the interbank call money market rate (c) from the RBI or the lender of the last resort at a price called the repo rate. Given the low cost of CASA, banks compete in financial markets to attract depositors in the NBPS category to bring in reserve money from other banks through interbank transfers. In our example, let us assume that Bank A is able to attract enough depositors (say Y) to meet the payments made by X. If Y brings in Rs.1,000 worth of deposits while X draws cheques to the tune of Rs.1,000 from her deposit account, the balance sheet of Bank A will over time, end up with loans taken by X matched by (CASA) deposits of Y.

Table 1 also shows the leveraging that Bank A can engage in. With a capital of Rs.100, the bank can give loans up to a maximum of Rs.1,000. Although there is no theoretical limit to a bank's leveraging, certain prudential norms for lending have been adopted by most countries across the world. Basel III norms, for instance, require a capital adequacy of around 8% to 10.5% (Nicolas 2018).

Herein emerges the problem of capital adequacy due to rising NPAs; what if X (a company within the NBPS) defaults on its debt partially, say, to the extent of Rs.50? This amount is usually written off against capital of Bank A as shown in Tables 2(i) and 2(ii). Its balance sheet shows a reduction in its assets and an equivalent reduction in its capital, which, in turn, may mean inadequate capital (now Rs.50) to sustain the outstanding loans of Rs.950 and furthermore, constrain the bank from an expansion of credit. As assumed, if 50% of capital is owned by the NBPS and 50% by the government, writing off of NPAs from Bank A's balance sheet will also affect the balance sheets of both, the NBPS as well as GOI; in this case, the write-off of Rs.50 results in a loss in net worth (NW) of Rs.25 (i.e. 50% of Rs.50) to these entities. The burden of the remaining 50% of capital written-off falls on the net worth of the government. Moreover, the NPA write-off is also a reduction in outstanding liabilities of the NBPS and can be considered as a notional "gain" to it. However, at the same time, the physical assets owned by the NBPS will have to be written-off at least to the extent they lose their market value. Since Bank A has written these assets off as bad debts, we consider that the market value of these bad assets is reduced to zero.

In order to restore capital to its initial level of Rs.100, what are the available options to the bank? First, banks may attempt to raise capital in the market through a public issue of shares. However, a public issue of shares may not be adequately subscribed at a reasonable premium when the NPAs of banks are under question and large write-offs against capital of banks are imminent (Sharma, 2017). The second option, at least for public sector banks, is for the government to bail them out or allow a bail-in. Three options may be delineated here: (i) the government raising money for purchase of bank equity by way of issuing "bank recapitalisation bonds", which supposedly does not impact the fiscal deficit, except for interest payment on bonds (less any dividends from equity) or (ii) an outright bailout by the government through a budgetary allocation which, in turn, increases the fiscal deficit and is, therefore, considered as using taxpayers' money to bail out banks and indirectly benefit or transfer this as a benefit to the large companies, which had borrowed money from banks, and (iii) a bank bail-in wherein depositors may be forced to bear the brunt of NPA write-offs.

Table 2(i) is a continuation of Table 1 wherein after the write-off, the government begins the recapitalisation process by selling bonds to the commercial bank to mop up its reserves. The government's deposit account at the RBI is credited with the amount of bond sales (Rs.50) while Bank A's reserves are debited by the same amount. Bank A's assets are also altered with reserves being substituted by government bonds. In the next step, the government buys equity capital in Bank A; this involves debiting the government's deposit account and crediting Bank A's reserve account in the books of the RBI. The net effect of these

recapitalization transactions for Bank A is a mere increase in both, assets (bonds) and liabilities (equity capital). The government too has an increase in assets (equity capital) matched by an increase in liabilities (bonds). There is no net impact of these transactions on the RBI's balance sheet. However, the government will have to pay interest on bonds, provision for which must be made from its budget. While this will impact the fiscal deficit, it must be adjusted against any dividends received on equity capital from Bank A. This recapitalisation process *per se*, however, does not impact the balance sheet of the NBPS.

Table 2 (i): Bank bail-out through recapitalisation using Bank's reserves

	Government		Central Bank (RBI)		Commercial Bank A		Non-banking private sector (NBPS)		Remarks
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
1.	Capital - 25	NW -25			Loan NPA - 50	Capital - 50	NPA -50 Capital -25	Loan NPA ---50 NW ---25	NPA written off as bad debt against capital, 50% belonging to NBPS and 50% to government.
2.	Deposit -G +50	G-Bonds +50		Reserves A -50 Deposit-G +50	Reserves - 50 G-Bonds +50				Bank A buys G-Bonds.
3.	Deposit -G -50 Capital +50			Deposit-G -50 Reserves A +50	Reserves +50	Capital +50			Government buys equity in Bank A.

Overall, what is seen from Table 2(i) is that the loss from NPAs, or in other words, the physical assets being "extinguished", ultimately erodes the net worth of both, the NBPS and the government. The former could be called "taxpayers" although it does not imply that fresh taxes are levied upon them for the recapitalisation process. The banking sector ultimately does not bear the burden of this loss; its owners do.

Option (ii) is also a bank bail-out, but a more straightforward – or perhaps drastic – route; the government directly borrows from the RBI in order to infuse capital into Bank A. Of course, such direct borrowing from the RBI is disallowed by the Fiscal Responsibility and Budget Management (FRBM) Act of 2003, but let us assume that the government overrides the FRBM and goes ahead with its bailout through *deficit financing*. Does the fiscal deficit actually burden taxpayers? Table 2(ii) shows the simplicity of this argument against bank bailouts through deficit financing. We once again begin with a continuation of Table 1 with NPAs of Rs.50 being written off Bank A's capital, 50% belonging to NBPS and 50% to GOI. The NPAs also decrease the physical asset holding of the NBPS. The government then sells bonds to the RBI against which its deposit account at the RBI is credited. It now utilizes the amount in its deposit account to buy equity capital in Bank A whose assets (reserves held with RBI) increase along with its liabilities (equity capital). The RBI's books will show a net addition into Bank A's reserve account while GOI deposit account will reduce to a zero balance after the proceeds from sale of bonds is used for purchase of equity capital in Bank A. However, the additional reserves infused into Bank A will increase liquidity in the commercial banking system and exert downward pressure on interest rates in the interbank call money market. If the RBI decides to mop up the excess liquidity in the money market to ensure that its target interest rate is maintained, it would engage in a reverse repo transaction, exchanging the bonds it holds against reserves held by Bank A.

A comparison of Table 2(i) and 2(ii) clearly shows that there is absolutely no difference between the two options of bank recapitalisation insofar as the net position of the government, the RBI, Bank A and/or the NBPS is concerned. The hype that bank recapitalisation through deficit financing actually imposes some additional burden on taxpayers is unequivocally absent when we analyze the transactions involved in this process with a T-accounts framework. Nonetheless, there is erosion in the net worth of the NBPS – the "taxpayers" – just as in option (i).

Table 2(ii): Bank bail-out by government using deficit financing

	Government		Central Bank (RBI)		Commercial Bank A		Non-banking private sector (NBPS)		Remarks
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
1.	Capital - 25	NW ----25			Loan NPA - 50	Capital - 50	NPA - 50 Capital -25	Loan NPA --- 50 NW ---25	NPA written off as bad debt against capital, 50% belonging to NBPS and 50% to government.
2.	Deposit-G +50	G-Bonds +50	G-Bonds +50	Deposit-G +50					RBI buys G-Bonds from government.
3.	Deposit-G -50 Capital +50			Deposit-G -50 Reserve A +50	Reserves +50	Capital +50			Government buys equity in Bank A.
4.			G-Bonds - 50	Reserve A -50	Reserves -50 G-Bond s +50				RBI reverse repo operation to mop up excess reserves in commercial banks.

The third option (iii) is a bank bail-in wherein NPAs may be (at least) partially written off against deposits held by the Bank. Table 2(iii) illustrates the impact of this step on Bank A's balance sheet as well as changes that occur in the NBPS' balance sheet. Such a step will, however, unfairly burden the depositor vis-à-vis the equity shareholder in Bank A. A bank bail-in will therefore, most likely involve giving depositors equity shares in the bank. The increase in equity shares of depositors will be necessarily matched by a decrease in the equity shares belonging to the non-deposit holders (promoters), 50% belonging to the NBPS and 50% belonging to the GOI. If such a scheme is pursued, it can be seen that the *net* effect of options (i), (ii) and (iii) are essentially the same; a fall in net worth of both, the NBPS and government, by Rs.25, which arises from the physical assets being extinguished when NPAs turn into bad debts.

Table 2(iii): Bank bail-in

	Government		Central Bank (RBI)		Commercial Bank A		Non-banking private sector (NBPS)		Remarks
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
1.					Loan NPA - 50	Deposits -50	NPA -50 Deposits -50	Loan NPA - 50 NW -50	NPA write off as bad debt against deposits
2.	Capital (ND) - 25	NW -25				Capital (D) +50 Capital (ND) -50	Capital (D) +50 Capital (ND) -25	NW +25	Deposit holders given equity shares in lieu of loss in deposits. This results in a corresponding fall in equity holdings of non-deposit holders.

The above analysis of scheme (iii) requires a strong caveat; the depositor, even when s/he is compensated with equity shares, loses access to cash or readily usable money, a factor of considerable concern with a potential to lead to a major upheaval in the financial system. Moreover, although depositors and borrowers both belong to the NBPS, they are distinct entities and the normative question of fairness cannot be ignored.

Conclusion

This paper shows that a bank bail-out through deficit financing may be the simplest solution to the NPA problem even when banks do not hold excess reserves. This strategy will, however, have to be accompanied by regulatory measures to prevent a moral hazard fallout in future from such a bail-out. Moreover, the paper questions the simplistic notion of "using taxpayers' money" in the process of bank bail-outs.

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