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## The Bailout: A Primer

Steve Kaplan, 10.17.08, 12:01 AM EDT

### What is really happening?

In the latest chapter of the credit crisis, the U.S. Government announced this week that it would take equity stakes in the country's top financial institutions. As has been the case throughout the crisis, there has been a huge amount written about whether the Treasury's actions will be effective. Much of that writing, like the bank balance sheets that have helped cause the credit crisis, may be opaque to a non-expert reader.

To understand the crisis and to understand whether the solutions will work, it helps to look at a typical bank's pre-crisis balance sheet.

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Assets		Liabilities	
Loans and Securities	100%	Deposits	70%
		Short-term debt	10
		Long-term debt	10
		Equity	10
<b>Total Assets</b>	<b>100%</b>	<b>Total Liabilities</b>	<b>100%</b>

The bank's business is to make loans (e.g., mortgages and corporate loans) and, sometimes, buy securities (e.g., mortgage-backed securities that have been so problematic). A typical bank financed every \$100 of loans and securities with \$70 of deposits, \$10 of short-term debt, \$10 of long-term debt and \$10 of equity.

What happened? Banks and other financial institutions made bad loans and securities purchases. The losses on those investments have been meaningful relative to equity bases of levered institutions. So the true situation was more like:

Assets		Liabilities	
Loans and Securities	95%	Deposits	70%
		Short-term debt	10
		Long-term debt	10
		Equity	5
<b>Total Assets</b>	<b>95%</b>	<b>Total Liabilities</b>	<b>95%</b>

When [equity capital](#) is low, banks can do two things. They can raise more equity or sell assets. Banks usually sell assets, but only if they can sell assets for full book value. Doing so reduces leverage, because the bank has fewer loans on the same (lower) equity. Unfortunately, this depresses prices of other assets, which, in turn, reduces the equity capital of all banks. This is what has happened.

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More unfortunately, if the value of loans declines enough, investors become concerned about whether the bank is solvent--i.e., whether the equity has any value and whether the bank will go bankrupt. Once this concern becomes apparent, bigger problems ensue.

Assets		Liabilities	
Loans and Securities	90%	Deposits	70%
		Short-term debt	10
		Long-term debt	10
		Equity	0
<b>Total Assets</b>	<b>90%</b>	<b>Total Liabilities</b>	<b>90%</b>

When the providers of the short-term debt and depositors begin to question the solvency of a financial institution, they stop lending, they stop transacting and they withdraw deposits. This is a particularly big problem if the bank or institution relies heavily on short-term debt, as Lehman did. So you can have a "bank run" even if the institution is solvent (or would be solvent) under normal conditions.

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At the height of the crisis, everyone is suspicious of everyone else, because no one knows the real value of the equity. No one will provide short-term debt because they worry they will not get paid.

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The key issue, at any point in time, is what the loans are worth relative to the liabilities. There are three basic scenarios:

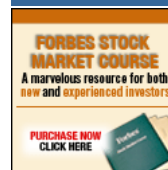
Assets		Liabilities	
Loans and Securities	100% / 90% / 80%	Deposits	70% / 70% / 70%
		Short-term debt	10 / 10 / 7
		Long-term debt	10 / 10 / 3
		Equity	10 / 0 / 0
<b>Total Assets</b>	<b>100% / 90% / 80%</b>	<b>Total Liabilities</b>	<b>100% / 90% / 80%</b>

The loans are either worth 100% (meaning they are at or close to their book values); 90% (where equity is worth roughly zero, but the bank can pay its debt holders); or 80% (where equity is zero and the bank cannot pay its debt holders).

Now let's look at the policy responses. The Treasury plan initially called for buying back loans at market prices. This made sense if the loans were really worth 100%, but were not trading at 100% because of some market failure or fear. As we know, that initial Treasury plan was not well-received by the markets. This suggests that the market believes that the [bank loans](#) are not worth 100%, but are really worth in the low 90s or lower.

The new Treasury plan (as well as the interventions by the European governments) puts equity capital back into the banks. It also guarantees short-term debt to banks.

Assets	Liabilities
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Loans and Securities	100% / 90% / 80%	Deposits	70% / 70% / 70%
Cash	5 / 5 / 5	Short-term Debt	10 / 10 / 10
		Long-term Debt	10 / 10 / 5
		Equity	15 / 5 / 0
<b>Total Assets</b>	105% / 95% / 85%	<b>Total Liabilities</b>	105% / 95% / 85%

Notice what this does. Guaranteeing the short-term debt leaves the value of the short-term debt at 10% no matter what the loans are worth. This will encourage banks to trade with each other.

Whether the plan solves the problem, however, depends vitally on the value of the loans. If the value of the loans is at or above 90%, then the Treasury plan is very helpful. The bank in our example is solvent and should be able to recover.

If, however, the value of the loans is below 90%, much of the value of the new equity will go to pay off the long-term debt investors, and the bank still will be close to insolvent. In that case, there are two possible solutions. One is to put in more equity, but this only subsidizes the long-term debt investors. The second and more appropriate solution is to force the long-term debt to convert into equity, leaving the bank solvent.

The new Treasury plan, then, is clearly a step in the right direction. The initial plan did not solve the problem, and that is why we had a crisis. The key (and unresolved) question, is whether the new plan goes far enough.

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