

Resolution Procedures for the Crisis of the U.S. Banking Industry

A Review of the U.S. Treasury's Financial Stability Plan of 2009

Teoman Gonenc
Majeure Finance, HEC School of Management

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Under the supervision of:

Evren Ors
Associate Professor of Finance, HEC School of Management

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Address: Korukent Sitesi B-Blok Daire: 3
Levent 34340 Istanbul Turkey
Telephone: +90 532 594 54 78
E-mail: teomangonenc@gmail.com

Table of Contents

ABSTRACT	4
I. INTRODUCTION	5
II. DIAGNOSIS OF THE FINANCIAL CRISIS	7
A. PRE-CRISIS OUTLOOK	7
B. TIMELINE	10
C. GOVERNMENT INTERVENTIONS	12
1. ECONOMIC STIMULUS	12
2. BANKING FAILURES AND GOVERNMENT INTERVENTIONS	14
III. FINANCIAL STABILITY PLAN	20
A. DESCRIPTION	20
1. PRESENTATION OF THE PLAN	20
B. PUBLIC-PRIVATE INVESTMENT PROGRAM (PPIP)	24
1. THE PAULSON PLAN (TARP) REVISITED?	24
2. PRESENTATION OF THE PPIP	25
3. THE DETAILS OF THE PROGRAMS	27
4. RATIONALE	32
5. PRICE DISCOVERY	34
6. WHAT IF IT DOES NOT WORK?	40
C. REGULATION AUTHORITY FOR NON-BANK FINANCIAL INSTITUTIONS	42
IV. SOLVENCY	45
A. TYPES OF SOLVENCY	45
B. ROLE OF ACCOUNTING TREATMENTS IN BANK SOLVENCY	47
1. MARK-TO-MARKET ACCOUNTING	47
2. CHANGES IN ACCOUNTING PRINCIPLES	48
V. FAILURE RESOLUTION	52
A. RESOLUTION PROCEDURES AS PER THE FDICIA	52
1. STRUCTURED EARLY INTERVENTION AND RESOLUTION (SEIR)	52
2. ARE UNINSURED INVESTORS REALLY UNINSURED?	53

3.	THE TOO-BIG-TO-FAIL PROBLEM	55
B.	PREVIOUS RESOLUTION EXPERIENCES DURING BIG FINANCIAL CRISES	56
1.	THE S&L CRISIS AND THE RTC	56
2.	THE JAPANESE EXPERIENCE	58
3.	THE SWEDISH EXPERIENCE	60
4.	THE BRIDGE BANK MODEL	62
C.	WHICH RESOLUTION PROCEDURE FOR THE CURRENT SITUATION?	64
D.	IS THE BRIDGE BANK METHOD EQUIVALENT TO NATIONALIZATION?	66
<u>VI.</u>	<u>RECAPITALIZATION</u>	<u>67</u>
A.	PLAUSIBLE WAYS OF RECAPITALIZING THE BANKS	67
1.	RECAPITALIZATION THROUGH CAPITAL MARKETS	67
2.	RECAPITALIZATION THROUGH OWN EARNINGS	68
3.	RECAPITALIZATION THROUGH THE CLEANSING OF TOXIC ASSETS	68
4.	RECAPITALIZATION THROUGH CONVERSION OF DEBT OR PREFERRED SHARES	69
5.	COMBINATION TO BE USED BY THE FINANCIAL STABILITY PLAN	70
<u>VII.</u>	<u>CONCLUSION</u>	<u>71</u>
<u>VIII.</u>	<u>TABLES</u>	<u>73</u>
<u>IX.</u>	<u>REFERENCES</u>	<u>74</u>

Resolution Procedures for the Crisis of the U.S. Banking Industry: A Review of the U.S. Treasury's Financial Stability Plan of 2009

TEOMAN GONENC

Abstract

This paper examines the economic and financial crisis that started in 2007 with the bursting of the U.S. housing bubble, with a focus on the U.S. banking system and the policies followed by the U.S. government and Treasury officials in order to recover the banking industry and the economy as a whole. The Financial Stability Plan and its chances of success are evaluated. Also, previous bank failure resolution experiences in other countries are analyzed, and compared to the current practice in order to test the viability of the policies that are being followed.

Resolution Procedures for the Crisis of the U.S. Banking Industry: A Review of the U.S. Treasury's Financial Stability Plan of 2009

I. Introduction

The economic and financial crisis that started in 2007 with the bursting of the U.S. housing bubble, and expanded throughout the world, has lead the economists and researchers to reconsider the fundamentals of economic and financial policies that are being followed in the largest economies of the world. The crisis has put into question some of the most basic assumptions and called for a reevaluation of public authorities and their duties as regulators of the financial markets.

The banking industry, viewed by many as the main culprit for the crisis, is going through a turbulent and destructive period of transformation. The number of failing banks is increasing, and perhaps more importantly, banking systems are thought to be insolvent in most major economies. The U.S. banking industry, in particular, is central to policy discussions as it is where the crisis was originated due to the American banks' large exposure to the U.S. housing market. Despite the absence of official recognition, many U.S. banks are thought to be insolvent and economists call for prompt action to be taken by the regulators before the situation worsens, which constitutes the focal point of this paper.

This study first concentrates on the fundamental reasons of the crisis, in order to have an adequate understanding of the problems the U.S. government's rescue plans aim to solve. After a first diagnosis of the problems, an overview of the government interventions is provided in order to see whether the regulators have been following any discernable pattern in terms of intervention to bank failures.

The analysis then focuses on the recently announced plan of the U.S. Treasury, that aims to confront the problems on multiple fronts, through fiscal stimulus, fixes for the banking sector, and preventive measures to prohibit recurrence of a similar crisis. This paper

concentrates on the measures targeting the banking sector, notably those that concern capital injections and the disposition of troubled assets that sit on bank balance sheets.

The Public-Private Investment Program (PPIP), the centerpiece of the Financial Stability Plan, is analyzed in detail to estimate possible scenarios that may result from its implementation. The reason for the particular emphasis put on this part of the plan stems from the fact that the issue of non-performing loans has always been central to the resolution of previous similar banking crises in the world, including the U.S. The way the plan aims to address the issue is viewed by many as flawed, as it sits on unjustifiable assumptions such as the one that suggests that the market pricing mechanisms do not currently function because of a crisis-driven illiquidity. This, along with many other details of the plan, is thoroughly analyzed in this section.

Before analyzing the failure resolution practices, the problem of insolvency is introduced, covering the types of solvency measures and their implications for today's markets. The role of the accounting treatments in capital adequacy measures and their impacts on bank balance sheets during big financial crises are considered. Views of both parties to the ongoing debate on the necessity of fair value accounting are set out. And finally a very recent change to the fair value accounting principles is presented, with an analysis of its potential consequences and contradictory nature with the government's toxic asset plan.

In the fifth section, the evolution of failure resolution procedures before and after the FDICIA is considered. The analysis concentrates on the too-big-to-fail (TBTF) problem, which seems to be the soft spot of the FDICIA. The implicit full coverage resulting from the TBTF exemption is considered, and its potential costs are evaluated. Before moving on into the details of the current situation, four selected models of bank failure resolution are presented for these to constitute a basis for further analysis of the current resolution practices. In the following part of the section, the question of why the U.S. officials have adopted a different approach despite remarkable similarities of the current crisis with previous experiences is attempted to be answered, along with the very important considerations concerning political obstacles for temporary nationalization of failing banks.

Finally, the plausible ways of recapitalization of troubled banks are set out, along with the combination that is intended to be used for the current situation by the U.S. Treasury.

II. Diagnosis of the Financial Crisis

A. Pre-Crisis Outlook

An overview the pre-crisis financial environment is necessary in order to put things in perspective before proceeding to a more detailed analysis of the current financial crisis. The financial crisis that the world is experiencing today takes its roots from the economic policies that have been followed in the world over the last decade, since the bursting of the dotcom bubble in particular.

While there is a lively and ongoing debate on the issue, critics mainly focus on a specific factor that is considered to be core to the preparation of the “favorable” grounds that made the world economy go in the way of excessive leveraging over this period of time. This factor is the *low-interest-rate environment* that prevailed around the world, which originated from the lax monetary policies that were adopted by the Fed, and spread around the world as a natural consequence of a globalized and integrated financial industry.

As a side note and support to this argument, we can cite the recent news article¹ about the U.S. Treasury Secretary Tim Geithner acknowledging the role that the Fed has played in keeping monetary policy as being “too loose too long”. Tim Geithner also admits that this policy created a boom in the asset prices, the bursting of which created several problems to be dealt with in the current markets.

Although mainly aimed at stimulating the economy, low-interest-rate policies come with certain costs. Typically, a lingering low-interest-rate environment is likely to cause an inflationary period, which would normally be followed by an increase in interest rates to cool off the economy and stave off a possible inflation. However, this was not what happened in the U.S. between 2001-2007. One argument to explain such a policy is that the Fed feared the possibility to face a deflation, especially in house prices.² This actually makes sense and also comes somewhat ironic when one thinks about the implications of the bursting of the housing

¹ Wall Street Journal, Geithner's Revelation, May 12, 2009

² The Independent, Deflation fear keeps Fed rates on hold, October 29, 2003

bubble, which stemmed from another source, and that was exacerbated by a policy that initially aimed at preventing it.

In parallel to changes in the way financial players took risks tied to a low-interest-rate environment, there has been a lot of changes to the traditional banking model. The banking industry entered into an era where banks started to offload risk from their balance sheets, by the use of securitized products. These securitized products, such as CDOs and CLOs, allowed the banks to put their loans into packages which they would later resell to other institutions that were looking for securities that would provide them with a certain rate of return in turn for taking a certain –and precisely determined– amount of risk. This process has translated into a big change in the way the risk was distributed in the industry, and eventually in ever-greater potential spill-out effects as big financial institutions came to the brink of bankruptcy. We will see later in this work that spill-out effects have been central to the too-big-to-fail problem that the regulators are currently facing. It is also worthwhile to mention that several number of big banks were purchasers of these securities (cf. Duffie, 2008), which has prevented the impendent default risk from leaving the banking sector altogether.

However, an even more crucial impact of this practice has been the important deterioration in lending standards. This practice, often referred to as the “Originate and Distribute Model”, eliminated the incentives for banks to look for better credit quality in counterparties as they would ultimately package these loans and resell to a third party. This practice was especially very apparent in the loans provided in the form of mortgages, as this type of loan has typically had the largest share in overall loans in the U.S. banking system.

This was a very important factor that fed the housing bubble by providing cheap loans to borrowers with low credit quality, which eventually made the house prices reach unprecedented levels. In fact, the very first signs of the crisis came after the bursting of this bubble, which was caused by delinquencies in the subprime mortgage market in mid-2007. As mentioned before, the impact of these defaults have not only been contained in the banking sector, but have also been spread all over the economy via securitized products that were sitting on the balance sheets of any institution who had invested into these products.

Another very important change to the traditional banking model has been the increased *off-balance sheet activities* of most of these financial institutions. Although covered by Basel I capital adequacy regulations, the riskiness of off-balance sheet assets tend to be

easier to “game” than assets on the balance sheet. To illustrate this, one can take the example of credit lines, which became a popular practice among banks in the structuring of securitized products. Typically, providing a credit line to a pool of loans contained in a securitized product would serve two primary goals: it would increase the rating of the securitized product to, say, AAA. It would also enable the bank to hold less capital as the provision of credit lines would greatly reduce the asset base that is subject to capital charges. These benefits gave the banks a lot of incentives to embrace off-balance sheet activities, and added to the complexity of supervision of these institutions.

Changes to the traditional banking model, including the examples above, had a very important impact of moving the risk off-balance sheet and even off the entire sector which eventually made it very difficult to assess the risk taken by these institutions and spill it over many other sectors in the economy. One of the several problems posed by the inability to assess this risk is that it made it very hard for regulators to determine the necessary amount of capital banks needed to keep as a cushion against future losses. This was actually one of the main reasons banks were caught unprepared in the crisis and are thought to be potentially insolvent.¹ The other important consequence of this problem in measuring the risk was the mispricing of government guarantees that have been provided to deal with the crisis², which will also be covered later in a dedicated section in this work.

¹ The issues of efficiency of capital adequacy rules and insolvency will be touched upon more thoroughly in the following sections of this work.

² Viral V. Acharya and Julian Franks draw attention to the problem of heavy costs associated with mispriced government guarantees in their article “Guarantees: A Double-Edged Sword”.

B. Timeline

First traces of the credit crunch date back to early 2007 as delinquencies in subprime mortgages started to increase significantly. Mortgage-related products lost substantial value following these defaults, and downgrades from rating agencies have added to the negative perception market participants had of these securities.

This would mean substantial write-downs for banks, but even before that they had a more tangible problem, which was the liquidity dry-up that emerged in the interbank market. The credit spreads that were at historical lows during the *credit bubble* had become to widen considerably starting from mid-2007. The uncertainty in the markets as to what banks were the most exposed to mortgage securities resulted in an *adverse selection* situation where funding became extremely expensive for all the banks regardless of their credit quality.

As a consequence of an ever-worsening situation, central banks around the world had to step in to take measures in an attempt to provide banks with the financing they needed to stay afloat. However, concerned about the potential bad signal that discount-window borrowing would send to markets, the problem had to be dealt with in a different way. A remedy to the problem was the anonymous lending adopted thereafter. The Term Auction Facility (TAF) was designed by the Fed to this end, namely to “address elevated pressures in short-term funding markets”.¹

Meanwhile, in the last quarter of 2007, banks had to post a series of write-downs, especially on their mortgage-related loans. However, as the valuation of these loans and securities were based on estimates, which were themselves not based on reliable data, these write-downs remained very discretionary and this added to the uncertain behavior of investors with respect to banks. As a mechanical consequence, banks incurred a lot of losses related to mortgage-backed securities that they held, and to mortgages they retained.

Banks had huge hits on their capital levels that were obviously not ready to take such losses and, as mentioned before, the efficiency of capital adequacy rules and regulations have been put into question. Strained both in terms of capital and unavailability of new funding, leveraged at excessive levels with balance sheets of enormous sizes, large financial

¹ Board of Governors of the Federal Reserve System, 12 December 2007

institutions started to fail one by one, putting a lot of pressure to their counterparties and the market as a whole. The largest of these failures was that of Lehman Brothers, the third largest U.S. investment bank prior to its failure, on September 15, 2008, which totally destabilized the financial markets and put the viability of the traditional investment banking model into question. The fall of Lehman raised a lot of other questions, including the one relating to systemic risk posed by the failure of such a large institution on the economy. The too-big-to-fail protection started not to be taken granted by the market anymore. The question as to whether this was a one-off incident interestingly relates to what Mishkin proposed in (Mishkin, 1999) and (Mishkin and Strahan, 1999) and will be further elaborated in this work. Mishkin suggested that letting the first bank fail “would encourage uninsured depositors and creditors to monitor large banks because they would have to worry that it might be the first one to fail and so would not be bailed out”.¹

On September 25, 2008 Washington Mutual was seized by the United States Office of Thrift Supervision (OTS) and was placed into the receivership of the Federal Deposit Insurance Corporation (FDIC). The deposits of WaMu were later sold to JPMorgan Chase with the intermediary role of FDIC during the resolution process. Wachovia was purchased by Wells Fargo on December 31, 2008. Citibank received important capital injections, which have thus far resulted in 36% of the bank being owned by the government.

The crisis became truly self-reinforcing as its dynamics started to heavily affect all parts of the economy. As the financing became very hard and expensive for businesses, the contagious effects of the crisis were now discernable throughout the whole economy. Hit by the inability to find financing on one hand, and the declining consumption caused by lower household wealth on the other, businesses started a series of layoffs across the board. This further pulled the income of households that were already suffering from the inability to refinance mortgages.

¹ Mishkin, 2006. How Big a Problem Is Too Big to Fail? A Review of Gary Stern and Ron Feldman's "Too Big to Fail: The Hazards of Bank Bailouts"

C. Government Interventions

1. Economic Stimulus

The crisis has had several economic consequences as well as financial. As mentioned in the previous section, the effects of the financial turmoil were quickly passed on to the economy, which made the problem become much more persistent. Towards the end of 2007, some economists started arguing that the slowdown in the economy had actually taken the form of a much-feared recession in the U.S.¹

Addressing the problems in the order they occurred was definitely not the right approach. Namely, there is a clear consensus among economists that trying to solve the crisis by first tackling the housing market, and then by dealing with the securitized product markets and the banks would not be helpful in recovering the whole economy. This crisis is one that requires prompt and comprehensive actions; both to heal the markets and to make some fundamental changes to the way things had been working thus far. Additionally, the actions should not only address the financial sector from which the crisis had originated, but also make sure to bring the *economy* back to health for an enduring stability.

The actions taken by the U.S. government are viewed by many as fairly timely and wide-ranging in terms of the extent of the problems they are aimed to tackle. The consequences of an ill-timed stimulus can be counterproductive and “add instability to the economy, potentially exacerbating rather than damping businesses cycles” (Friedman, 1953).

a) *Economic Stimulus Act of 2008*

Accordingly, the U.S. government put a lot of emphasis on the timing of the stimulus plan to recover the economy, and came up with the *Economic Stimulus Act of 2008* on February 13, 2008, a project with a total estimated cost of \$152bn for 2008. This initial response aimed at warding off a recession by stimulating the economy. It involves tax rebates to low and middle-income taxpayers, tax incentives to encourage business investment, and

¹ The Times, Top economist says America could plunge into recession, December 31, 2007

increases in the maximum amount of mortgages the government-sponsored enterprises are allowed to purchase.

While the first two points of action of the law targets consumers and businesses, the last one aims at the persisting consequences of the subprime crisis. The concerned parties are not only the consumers or homeowners, but also banks and other financial institutions holding mortgage-backed securities.

b) Housing and Economic Recovery Act of 2008

Another act designed to deal with the economic consequences of the subprime crisis was passed on July 24, 2008. *The Housing and Economic Recovery Act of 2008* allowed the Federal Housing Administration (FHA) to endorse up to \$300bn in 30-year fixed rate mortgages for subprime borrowers who write-down their holdings to 90 cents on the dollar. The law was also aimed at backstopping the GSEs Fannie Mae and Freddie Mac.

c) American Recovery and Reinvestment Act of 2009

However, the most comprehensive and planned economic stimulus package has been the American Recovery and Reinvestment Act of 2009. The law was passed on February 17, 2009, and was estimated to cost around \$787bn to the U.S. government (cf. Table 1). The stimulus package covers a wide range of industries and is aimed at stimulating the economy by investments into these specific areas.

In the package, the lion's share was given to tax relief, in an attempt to help individuals and businesses to surmount the crisis. The rest is partitioned among other industries, as a result of which around 3.5 - 4.0 million jobs are expected to be saved and created.¹

¹ Recovery.gov

	<i>\$ Bn</i>
Tax Relief	288
State and Local Fiscal Relief	144
Infrastructure and Science	111
Protecting the Vulnerable	81
Health Care	59
Education and Training	53
Energy	43
Other	8
Total	787

Source: Recovery.gov

2. Banking Failures and Government Interventions

Northern Rock

As mentioned in the pre-crisis outlook, on top of the funding constraints banks started to run out of capital as they started to incur losses related to the asset-backed securities they had in their balance sheets. However, the first casualty of the subprime crisis was a British mortgage lender, Northern Rock, and not because the institution was insolvent, but because it found itself short of funding in a market where no participant was willing to fund institutions that were exposed to the mortgage lending market.

This example actually points to an important characteristic of the crisis; a solvent bank or financial institution could very well be the victim of the crisis. Even though it had been forced to borrow around £3bn from the Bank of England in the first few days of trouble¹, the mortgage lender did not manage to find funding from private investors and was nationalized on February 22, 2008. The UK government turned down two proposals to take over the troubled institution, stating that neither offered "sufficient value for money to the *taxpayer*",

¹ Financial Times, £3bn lent to Northern Rock, February 22, 2008

and that the taxpayers would be better off if the government held on to Northern Rock until the market recovers as it would likely reach a higher valuation.¹

a) Failure Resolutions of non-FDIC Financial Institutions

The reason a European example is cited above is because it can constitute a starting point and benchmark to compare to future government interventions that happened in the U.S. later on. The example of Northern Rock appears to be a taxpayer-friendly solution, and could constitute a model for future failures. However, one needs to consider the problem of too-big-to-fail when we analyze what happened in the U.S. banking system. This problem was even more apparent with financial institutions that were not covered by the FDIC, and the government officials had serious difficulties in dealing with the problems related to these institutions, as it was too late when they found out that they had too little authority over the resolution of such entities.

Bear Stearns

Bear Stearns was the next big victim of the crisis. The problem was the same: illiquidity. However the primary reason why Bear Stearns was the first among other big financial institutions was the fact that the bank was heavily relying on the repo market, which is a very short-term source of funding. This had actually become a common sort of funding in the market, and implied a very high risk for a bank as it gives the creditors the right to call in their investment at the end of any day. Moreover, Bear Stearns was heavily invested in mortgage-related credit default swaps (CDS) and mortgage-backed securities, which the markets were very concerned with at the time. However, especially the CDS contracts written by Bear Stearns made the bank central to the health of the financial system, i.e. put it into the too-big-to-fail category. A failure could have disastrous consequences. To this end, the Fed provided the bank with financing, through JPMorgan, as Bear Stearns was not entitled to receive lender-of-last-resort support from the Fed since it was an investment bank. Later, the bank was sold to JPMorgan on May 30, 2008, the government providing *guarantees* on \$29bn of Bear Stearns' *toxic assets* through a *non-recourse loan*. This kind of loan actually provided

¹ BBC News, Northern Rock to be nationalized, February 17, 2008

JPMorgan with some sort of insurance, and this kind of insurance is important, as it will be touched upon in the section about the Public Private Investment Plan later in this work.

Freddie Mac and Fannie Mae

Publicly-listed and privately-run government-sponsored enterprises (GSE), Freddie Mac and Fannie Mae were soon discovered by the market to be overwhelmingly exposed to subprime mortgages. The largest mortgage lenders in the world, their primary role was to facilitate mortgage lending and trade mortgages in the secondary market. Fearing a major catastrophe that could result from their failures, the government had to nationalize these institutions on September 7, 2008. The main justification given by the Treasury authorities for the nationalization was the fact that the business model of these institutions were flawed and major changes were required for a full recovery.

Lehman Brothers

A week after the nationalization of the GSEs, what is a real milestone in the finance history happened. Lehman Brothers was suffering from the same main problems: heavy exposure to real-estate mortgage markets combined with a very high leverage. As the market's focus was on Lehman Brothers, there was a widespread anticipation that the bank would be bailed-out because its failure would without any doubt pose a big systemic risk. However, the U.S. Treasury officials were in a sense biased this time, as the main motivation behind the last bailout of an investment bank was perceived by the market as the too-big-to-fail problem.

The Treasury officials tried to have other investment banks acquire Lehman Brothers, but they did not manage to convince any of them since this time the government did not want to provide the kind of insurance that was provided in the case of Bear Stearns. The government eventually let Lehman Brothers fail, which created a big turmoil in the markets, resulting in billions of dollars lost in market capitalizations. It is still argued, however, that the cost of a bail-out in the form of government guarantees, would by large outweigh the costs that the system has incurred related to Lehman's collapse.

b) FDIC Resolutions

Washington Mutual

Washington Mutual experienced a severe bank run in the period following Lehman's fall, and this pushed the bank into the receivership of the FDIC on September 25, 2008. The FDIC, through the use of the Purchase and Assumption (P&A) procedure, transferred the banking subsidiaries, excluding the unsecured debt and equity claims, to JPMorgan Chase. This failure marked the largest bank failure in U.S. financial history, with \$307bn in assets.¹

The way the OCC dealt with the problem created a lot of controversy among the shareholders and uninsured depositors of WaMu. They claim that despite the run that amounted to 9% of the deposit held by June 30, 2008², the bank was liquid enough to meet all its obligations. However, the FDIC was fearing another big hit on the fund after the failure of Indymac Bank in July 2008 (which was put into the receivership of the FDIC, marking the fourth largest bank failure in U.S. history³), and did not want to take any risk with an institution that was "unique in its size and exposure to higher risk mortgages and the distressed housing market"⁴ as Sheila C. Bair, the chairwoman of the FDIC, stated after the FDIC action.

Wachovia

Another commercial bank that was heavily affected by the subprime mortgage loans was Wachovia, the 4th largest bank in the U.S. prior to the crisis. The bank incurred a lot of losses, notably from its adjustable mortgage loan holdings, and announced a higher-than-expected loss of \$8.9bn in the second quarter of 2008.

On September 26, 2008 alone, following the seizure of WaMu, the bank faced a so-called "silent run", a run on the uninsured parts of the deposits, amounting to c.\$5bn. In

¹ Press Release: JPMorgan Chase Acquires Banking Operations of Washington Mutual, FDIC.gov, September 25, 2008

² Press Release: OTS 08-046 - Washington Mutual Acquired by JPMorgan Chase, OCC.treas.gov, September 25, 2008

³ Reuters, Factbox: Top ten U.S. bank failures, September 25, 2008

⁴ The New York Times, Government Seizes WaMu and Sells Some Assets, September 25, 2008

response to the deteriorating situation, the OCC called for a merger to be arranged between Wachovia and an acquiring bank. Although a run as big as 1% of the assets of a bank would typically not trigger an action by the regulators, the crisis context implied important contingencies in case the problem aggravated, as the bank would most likely be left with no short-term funding in the interbank market. Taking this argument as their starting point, the authorities forced the sale of Wachovia to Wells Fargo on October 10, 2008.

It is worthwhile to note that his intervention significantly differs from what happened to WaMu, as the shareholders and uninsured creditors were not completely wiped out since Wachovia did not go through receivership before being sold to Wells Fargo. The FDIC's justification for this difference in treatment is that wiping out Wachovia's creditors would have caused a bigger shock as the bank had much more short-term debt than WaMu.¹

c) Implications for Future Actions

As it can be clearly observed in the above government interventions, there is an apparent lack of consistency in the way the U.S. government has been reacting to troubled banking institutions. As we will analyze further in the upcoming sections, consistency in government interventions is key to market discipline. Even though there is still room for discretion, the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) embedded prompt corrective action (PCA) into the U.S. banking regulation, which requires avoiding forbearance and minimizing the cost for the FDIC fund ("least-cost resolution").

However, despite criticism, mostly due to the bad reputation it gained during the S&L crisis in the 80s, the discretion for using forbearance may be necessary to some extent in some specific situations. This is typically the case for "large complex financial institutions" (LCFI) that are considered too-big or too-interconnected-to-fail. When systemic risk is significant, the government may find it more suitable to diverge from the least-cost resolution and provide insurance to uninsured creditors as well as insured creditors.

The bailout policy followed by the U.S. government since the bailout of Bear Stearns is viewed by some as "haphazard", as it lacked a discernable pattern and raised a lot of questions in terms of future actions. However, it should be noted that there is an implicit

¹ The Economist, Rethinking Lehman Brothers: The price of failure, October 2, 2008

consensus in the market that the government officials cannot afford letting another big institution fail, which initially resulted in “implicit guarantees” for the institutions that currently operate in the market, and later in guarantees explicitly provided by the officials. This in turn has enabled banks to get cheaper funding and to avoid any potential run on their funds.

The issue of implicit guarantees resulting from the government’s recent policy decisions are going to be evaluated later in this work, with an emphasis on their costs and their perception among taxpayers and the community as a whole.

III. Financial Stability Plan

A. Description

The severe financial crisis that the world economy has been facing since 2007 required a comprehensive but more importantly well-planned and well-implemented set of actions.

The new U.S. government, which came to power in January 2009, started to work on the problems of the U.S. economy in tandem with the previous government, even prior to the official takeover of power. Both parties worked and built on the *Emergency Economic Stabilization Act of 2008*, a law that was enacted in 2008 in response to the global financial crisis. This law led to the creation of the Office of Financial Stability under the U.S. Treasury, whose main function was to manage and operate a program called the Troubled Asset Relief Program (TARP).

The Financial Stability Plan was seen by many as “TARP II”, however, at the time the Financial Stability Plan was announced, half of that money that was raised for the TARP (\$350bn) had been committed, “including \$250 billion in the form of direct capital injections for troubled banks”.¹ The Financial Stability Plan would make use of the remaining fund sources but, unlike the TARP, the Financial Stability Plan did not merely aim at curing the apparent problems of the financial markets but also targeted a fundamental change in the way the markets were regulated as loose regulations, and inadequate authority were seen as primary causes leading to the current crisis.²

1. Presentation of the Plan

The plan is therefore designed to tackle the problems on multiple fronts. The plan, as laid out on its dedicated website³, puts in place the following tools to reach economic recovery:

¹ Financial Week, Goodbye TARP, hello Financial Stability Plan, February 10, 2009

² Wall Street Journal, Geithner on a Resolution Authority, March 24, 2009

³ Financialstability.gov

a) Capital Assistance Program:

This part of the program aims at preparing the nation's largest banks in a way that they remain capable of lending and surviving during a potential severe economic downturn by recapitalizing them through private capital or public resources.

The government acknowledges that the problems the banks are facing are mainly the uncertainties pertaining to their toxic assets, creditworthiness, and the adequacy of their capital. These have, in turn, translated into a dramatic slowdown in lending and an important lack of confidence keeping the private investors from participating in the recapitalization of the banking institutions.

In order to deal with capital-related issues, the Treasury will implement a program called the "Capital Assistance Program", which will rely on resources already committed by EESA to the TARP. The stakes that the government will acquire through the use of these resources will be placed into a separate entity called the "Financial Stability Trust".

However, the first aim of the Capital Assistance Program is to attract private capital to banks. Under the plan, banks with assets exceeding \$100bn have undergone comprehensive "stress tests" that will help the government judge what banks would be in need of further capital in case of a more severe downturn in the economy. As a result of these tests, 10 banks have been found in need of capital, and have therefore been asked to find private capital within a period of 6 months. The banks that are unable to do so by the end of this period will have access to government resources allocated to the TARP.

A very important point that should be noted at this point is that the Capital Assistance Program was designed to work *in tandem with the Public-Private Investment Program (PPIP)*; banks that will need to raise capital from private investors will have to participate in the PPIP in order to cleanse their balance sheets from toxic assets and thus alleviate private investors' main concern. However, the three banks with the largest recapitalization requirements (Bank of America, Wells Fargo, and GMAC) have already indicated that they will not participate in the PPIP, raising doubts about the overall participation in the plan.¹ The important point to note here is, as will be further analyzed in the following section, that for

¹ American Banker, Do the Stress Test Results Scuttle PPIP?, May 11, 2009, Vol. 174 Issue 89, p1-4

the purpose of the whole plan, troubled banks are supposed to participate in the PPIP to rid themselves of their toxic assets, regardless of their capital positions that might be adequate at the time of stress tests.

b) Public-Private Investment Program:

The PPIP is considered by many as the centerpiece of the Financial Stability Plan, and also the part that attracts a lot of criticism for being very costly to the taxpayer.

While the Capital Assistance Program tries to cure the problems of the banks on the liability side, the PPIP is designed to deal with the problems on the asset side. Namely, the PPIP aims at cleaning the bank balance sheets of so called toxic assets, in order to stem losses that banks are incurring from defaults on these loans and securities, and to enable them to raise capital from private investors.

Broadly speaking¹, the government will incentivize private investors to buy toxic assets sitting on the banks' balance sheets, by having the FDIC provide them with non-recourse loans. The inclusion of private investors came after the fierce critics received about potential price discovery problems the initial version of the TARP was likely to encounter.²

The stress tests that make part of the Capital Assistance Program mentioned above were expected to be an additional incentive for banks to cleanse their balance sheets by participating in this plan, but as mentioned above, this is now highly doubtful.

c) Consumer and Business Lending Initiative:

The Treasury believes that one of the main causes for the decline in consumer and business lending is the freeze that is being experienced in the secondary markets for securitized products. Indeed, securitized products enable the banks to bundle loans and resell them into secondary markets, creating new resources for further lending. To this end, the Financial Stability Plan come with amendments on the Term Asset-Backed Securities Loan Facility (TALF), which is not implemented yet.

¹ This part of the program will be discussed in a comprehensive fashion in the following sections.

² Please refer to Section I.B.2 for critics about the TARP's approach to toxic assets

In tandem with the Fed, the Treasury expands the size of the TALF from \$200bn to \$1tn. Furthermore, the reach will be expanded to cover commercial mortgage-backed securities (CMBS).

d) New Era of Transparency, Accountability, Monitoring, and Conditions:

One of the most debated and criticized features of the TARP was that it did not impose any accountability on government actions with regards to the use of the fund (\$350bn). To address this issue, to comfort taxpayers about the proper use of the funds, and to ensure that entities receiving TARP money would adhere to a set of specific regulations and restrictions, the Financial Stability Plan has rolled out an important set of measures regarding transparency and accountability.

It should be noted, however, that these strict restrictions and increased government scrutiny caused dissent among a number of institutions that were initially forced¹ to take TARP money, and prompted many to repay it as soon as they were allowed. This, in turn, is expected to free up funds for future subsidies to other banks.

e) Affordable Housing Support and Foreclosure Prevention:

The TARP had been criticized for not having offered a remedy to the starting point of the crisis, the housing market. This incentive was included in the Financial Stability Plan in line with the government's goal to backstop the housing market and to prevent further delinquencies in mortgage loans.

- Lower rates are expected to free up additional funds for households and eventually help trigger consumption.
- Additional financial subsidies on monthly payments of owner-occupied middle class homes are expected to prevent "avoidable foreclosures".
- Stepping up of efforts to address the foreclosures by establishing loan modification guidelines and standards, and to offer loan modifications to a larger number of households.

¹ The Canadian Press, Paulson forced 9 bank CEOs to take TARP, May 14, 2009

f) Small-Business and Community Lending Initiative:

As the credit crunch is observable not only in the interbank market, but also in the real economy, the government has adopted a strong focus on commercial loans. Capital constraints of banks, a quasi-absence of secondary markets for SBA loans, and the weakening economy are seen as the major drawbacks in the lending markets. To confront these obstacles, the government aims at reviving the secondary markets for these loans by financing the purchase of AAA-rated loans, and providing increased guarantees (90% from 75%) for SBA loans.

B. Public-Private Investment Program (PPIP)

1. The Paulson Plan (TARP) Revisited?

The previous secretary of the U.S. Treasury, Henry Paulson, wanted to tackle banks' current problems by first attacking the asset side, i.e. the toxic assets, instead of following the conventional way of injecting capital into these institutions. The primary goal was to restore lending in the interbank market again, to avoid future collapses caused by illiquidity and eventually to restore the lending in the overall economy. Constrained in terms of equity, and constantly incurring losses tied to toxic assets they held on their balance sheets, banks did not have the wherewithal to lend out. Another major reason that paved the way for the liquidity dry-up in the markets was the *adverse selection* caused by the uncertainty as to what banks were more exposed to the mortgage-market. The prevailing distrust led to banks lending each other at other unreasonably high rates, if any.

Out of the two possible rescue scenarios, Paulson initially focused on that of cleansing bank balance sheets of the toxic assets. To illustrate these scenarios with real-life examples; one can think of cleaning bank balance sheets as a very risky surgery, which, if successful, would bring the patient back to his normal health. On the other hand, in broad terms, injecting new equity into these banks could be compared to giving the patient painkillers, hoping that the problems will be gone when the effect of the painkillers go away, i.e. when the government sells back its stake. Nevertheless, it should be noted that the doctor knows very little about what he will be facing during the surgery, which is at the core of the problem with respect to the first kind of solution.

The TARP would allow the U.S. Treasury to purchase up to \$700bn of the banks' toxic assets. For reasons that will be discussed further later on in this section, the TARP attracted a lot of controversy in the markets and in the Senate. Many economists, including Paul Krugman, advocate the benefits of injecting equity into these institutions against trying to buy their toxic assets. Another strong argument against Paulson's toxic asset plan was that the government would not be able to discover the fair values of these assets¹ as it was neither a trader nor a market maker for these assets.

To this end, the Treasury was quick to change its roadmap, and to inject equity into banks instead of buying up their toxic assets. In return for its equity injections, the government received preferential shares in these banks. It is reported that Gordon Brown, the British prime minister, had an important influence on the U.S. authorities in that he convinced them on the benefits of injecting capital into banks just like he opted for doing in the U.K., which has also influenced other European countries.²

Therefore, the purchasing of toxic assets was a pending action until the Financial Stability Plan. Along with other modifications, the new U.S. Treasury Secretary Timothy Geithner came up with a new proposal to implement Paulson's plan, in which private investment would be invoked, and claimed that there would no longer be any problem to implement the plan thanks to the new way the problem of *price discovery* would be handled.

2. Presentation of the PPIP

The Financial Stability Plan's most debated part is certainly the Public-Private Investment Program (PPIP). As mentioned above, this program came with modifications on the TARP, in order to deal with the problems related to price discovery and critics as to the government virtually taking all the risk in these investments.

The PPIP's solution to these problems is mainly the involvement of private investors into the new plan. The starting point is that private investors have better knowledge about the market and the price mechanisms, and would therefore be more capable of determining the fair value of the toxic assets.

¹ The New York Times, Wall Street Voodoo, January 18, 2009

² The New York Times, Gordon Does Good, October 12, 2008

The main idea being the same, the plan offers two different mechanisms for 2 different asset classes:

- a) *Legacy Loans*: These are troubled loans that are sitting on bank balance sheets and that typically carry high risk of default, a precise measure of which is however not available as future default rates are based on banks' individual estimates. These loans are one of the major factors that keep private investors from providing banks with funds they need to recapitalize themselves, and banks from lending out. As will be discussed later, these loans have been impaired by banks since the beginning of the subprime crisis, and according to the accounting rules that apply to loans, impairments have been discretionary, as opposed to those of securities. So, one can make the assumption that the book values of these troubled loans are probably more inflated with respect to the values of the securities, and that the bids would have to be relatively higher to convince banks to sell them.

- b) *Legacy Securities*: These are structured products that are made out of the bundling together and selling of loans to third parties. The absence of a secondary market for these securities, as contended by the Treasury, has many implications. First of all, it makes it impossible for banks to issue new products, which would enable them to free up funds to keep lending. Additionally, as some banks were purchasers of these securities, many banks still have these toxic assets on their balance sheets, and have to *mark them to market*, as by accounting standards these are considered *tradable securities*. This, in turn, means repetitive losses that eat up the already-thin capital of banks, as the prices of these securities are at historical lows.

It is therefore the aim of the government to unfreeze the secondary markets by stimulating the purchase of these securities by private investors. To do so, the Legacy Securities Program will build on the existing Term Asset-Backed Securities Loan Facility (TALF), which was designed to stimulate the secondary markets for these assets by subsidizing the purchasing of newly originated assets. The Treasury, as part of the PPIP, extends this coverage to existing securities that are already sitting on the balance sheets of the holders

of these securities. This is expected to bring further liquidity to the secondary markets for these securities.

3. The Details of the Programs

a) The Legacy Loans Program (LLP)

In an effort to cleanse bank balance sheets from troubled loans, the Treasury and the FDIC will work in partnership to provide private investors with funds and guarantees to incite them to buy these risky assets. Private investors participating in the program are expected to be investors with a long-term horizon, from a variety of sectors such as hedge funds, pension plans, insurance companies, et cetera.

Instead of creating one large “bad bank”, the program involves the setting up of individual “Public-Private Investment Funds” that will be managed by private investors who own them, and supervised by the FDIC.

The Treasury will provide equity financing for 1/14 of the fund, which will help the government have a share in the upside in the event of an appreciation in the value of the loans in the future, and the FDIC will provide guarantees on the bonds that will be issued by the private investor for 12/14 of the fund. The remaining 1/14 will be the equity investment of the private investor. It is important to note that, the guarantees provided by the FDIC make the bond a non-recourse loan for the private investor, meaning that the investor would only be liable with the assets purchased for that specific fund. As will be elaborated later, this is equivalent to saying that the FDIC provides the private investor with a *free put option*.

Another hidden *put* in the program is the put option granted to the selling banks for free: the banks, after volunteering for auctioning their toxic assets, have *the right but not the obligation* to sell their assets should they not like the bid price. This is likely to create trouble in a situation where bids come in too low and the banks find themselves insolvent with the asset valuations emerging from the bids. There will likely be strong pressure on banks to impair their securities, which brings along the risk of regulatory insolvency.

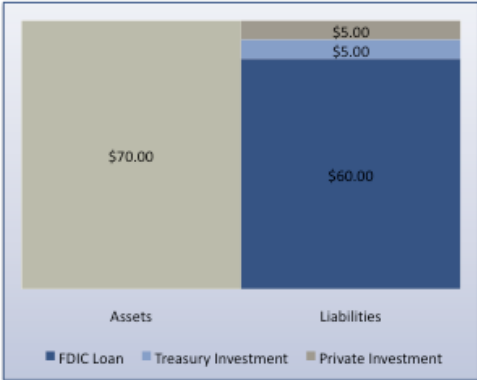
To illustrate the process with a numerical example (where the bank is happy with the bid price), the following scenario can be considered:

- ✓ The bank decides to divest a pool of loans with a face value of \$100, and that had recently been impaired to \$60 of carrying value, approaches the FDIC;
- ✓ The FDIC auctions the pool, and receives bids from private investors. If the bid is, say, \$70¹, the bank is naturally more than happy to sell the assets and gives its approval for the creation of a fund;
- ✓ Of this \$70, $70 * (12 / 14) = \$60$ would be FDIC-guaranteed non-recourse loan, $70 * (1 / 14) = \$5$ would be the equity investment of the Treasury and the remaining \$5 would be the private investor's equity investment;
- ✓ Through this sale, the bank has recapitalized itself as it sold the assets at a premium.

Table 2: The balance sheet of the bank before and after the sale



Table 3: The structure of the fund after this sale



¹ It will be explained, in a following section, why it would be possible that the bid comes higher than the carrying value with an options-based approach.

Possible scenarios at maturity:

➤ If things go awry:

The government has taken a big risk by paying for the assets a high price, which, at maturity, could prove to be worth less. This will mean losses for the government in case the loans turn out to be worth less than $6/7$ ($\approx 85\%$) of the price paid; the equity that was put by the Treasury will be wiped out and the government will incur losses on the debt it guaranteed.

However, banks will have nothing to worry about as they will have clean balance sheets, so the losses will be passed on to the taxpayer.

➤ If the loans pay off at maturity:

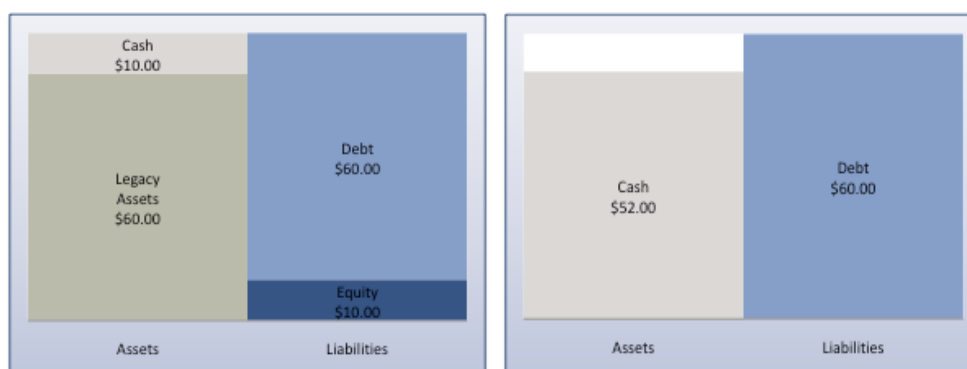
In this scenario, the debt is totally paid off. So the government gets a share in the upside with its $1/12$ participation, and a marginal interest income on the guarantee provided via the FDIC.

However, while the government only gets $1/12$ of the price appreciation on the upside, it can lose as much as $11/12$ in a downside scenario. Therefore, the upside potential can be considered marginal taking into consideration the big stake the government has on the downside.

This unproportioned nature of the deal has attracted a lot of criticism and put into question the acceptability of the proposal from a taxpayer standpoint. Although the above technique was merely a superficial look at the problem, it raises a lot of questions and signals some problems about the plan. A deeper and more comprehensive analysis will be conducted in the section dedicated to price discovery, and the risk profile of the plan will then be more apparent.

Let us now consider a scenario where the bank is not satisfied with the bid price. Namely, carrying on with the above example, if the bid price coming out from the auction is \$42, instead of \$70, the bank will use the free put option it has been granted, and will never accept to sell the assets at this price. As a matter of fact, if it did so, this would reveal its insolvency.

Table 4: The balance sheet of the bank before and after the sale (if it accepts the bid):



As can be seen in the above diagram, the bank becomes insolvent should it accept the bid. Therefore, we can assume that it will never accept bids that will further deplete its capital.

However, rejecting the bid is not the end of the story. Many economists point out that the market will perceive the bids as a price recovery method, and will therefore expect the banks to impair their loans down to these values. This market pressure is another factor that jeopardizes the success chances of this plan.

b) The Legacy Securities Program (LSP)

This part of the PPIP mainly aims at recovering and unfreezing the secondary markets for securitized products. Differently from loans, these products are kept at market values on the balance sheet. The prices that will result from the price discovery process are therefore more likely to be close to the carrying values of these assets. However, the implicit assumption, and probably wish, of the government is that the program will prove that these products are worth more than their carrying values, resulting in automatic recapitalization for banks, and unfreezing of the secondary markets at the same time.

As mentioned above, the Treasury claims that the absence of secondary markets makes these securities trade at below fundamental values. Accordingly, a well-functioning secondary market is supposed to uncover fair values for these securities, also helping banks to issue new securitized products and eventually resume lending.

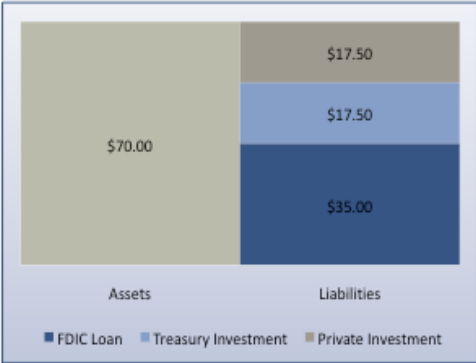
As this program builds on the existing TALF framework, with extensions in the coverage and size, it has different incentive mechanisms compared to the loans program. It is

currently being criticized for offering too low a leverage, and therefore struggles to attract enough participants, leading to an extension of the deadline for applications for this part of the program.

The original addressees of this program are fund managers. The number of managers was initially set to five, but was subject to increases depending on the quality of applications.

In a typical process, eligible fund managers raise funds from private investors. For illustration purposes, if we assume that the fund aims at buying a pool of securities worth \$70 (the bid price), it will have to raise \$17.5 from private investors, which will be followed by a \$17.5 equity investment from the Treasury, and a \$35 non-recourse loan from the FDIC.

Table 5: The structure of the fund after this sale:



In the above example, the leverage is going to be as low as 1:2, which is considerably lower than the 1:6 that is being offered for legacy loans. Despite the attractive proposal of providing non-recourse loans, the level of leverage is considered by some fund managers as being too low to entice participation into the program.¹

Another concern over this part of the program is about the limited number of fund managers that will be eligible to participate in it. The fact that the number is going to be limited to five may raise some conflicts of interest with the government. As the success of the whole program will depend on these fund managers, they might be influenced by the

¹ New York Post, Bridgewater opts out of PPIP, April 2, 2009

government in the decisions they will have to take. This may keep private investors from providing these managers with funds needed to participate in the program.

Political risk is another turn-off for potential participants in that it raises a lot of uncertainty as to what the government's reaction will be in case these funds reap a lot of profit out of this program. What happened to the TARP recipients in terms of constraints and restrictions has made the markets quite skeptical about potential consequences that can emerge in such a scenario.

4. Rationale

The main idea behind the PPIP is pretty straightforward when one thinks from the government's standpoint. The banks cannot lend out because they have a thin capital cushion that cannot possibly handle any more losses, and have assets that are highly likely to default. This combination puts into question the survival chances of the banks in the eyes of private investors, which therefore do not want to provide any resources to recapitalize these institutions. Moreover, the interbank lending was and would still be frozen without implicit and explicit government guarantees as no bank can be sure of other banks' health because of the toxic assets that make them exposed to a number of sectors, notably and primarily the housing market.

The question to ask is why there is a need for government intervention. And, the most plausible answer is, although a very strong assumption, that market pricing mechanisms are not functioning properly because of exceptional liquidity issues prevailing in the markets. The government therefore feels the necessity to incentivize private investors to buy these assets, *ideally* at prices higher than their carrying values.

If this happens, i.e. if private investors bid higher than carrying values, the program will serve a dual purpose: That of cleansing the balance sheets on one hand, and that of recapitalizing banks on the other. However, thinking from the banks' standpoint, the opposite scenario is virtually impossible. The majority of banks have no more room to incur losses, which they would have to in case bid prices remained lower than the carrying values.

Let us consider at this point the possible reasons why a bank would shy away from selling an asset at a price lower than its carrying value. Firstly, assuming the asset is marked down to its fair value (fair in the bank's view), the bank would not be willing to sell the asset

because it believes it is worth more, in other words, because it estimates a lower default rate on the loans.

A second possible explanation could be the fact that the bank knows that the fair value of its assets would reveal its insolvency. In this case, the bank would never be willing to sell the asset at a lower price, or even to participate in the program at all. This brings to mind a possible signaling effect that can be leveraged through the use of a *differentiation mechanism*. If the government can find a way to only incentivize the first type of banks (solvent banks) to participate in the program, the insolvent banks will have no means to disguise their insolvency anymore.

Even though it may not be initially aimed at creating such a differentiation mechanism, the government is currently mulling a plan to incentivize the solvent type of banks to participate.¹ By giving banks an equity interest in loans they sell as part of this program, the government aims at providing them with a share in the upside, leaving little reason for not selling the assets at moderate discounts, unless they are insolvent.²

Banks have another incentive to participate in the plan: to attract private investors. As mentioned before, bank balance sheets are no different than a “black box” to private investors. Banks will sooner or later need to raise capital from private sources, and it is practically impossible to do so without ridding themselves of these toxic assets. Even though participation is discretionary, the results of the stress tests have made it mandatory for some banks to raise capital from private sources within a six-month period. So it is to their own interest to participate in this program in order to convince private investors on the health of their balance sheets.

Finally, it is important to touch upon the question of timing for this program. The government was quick to come up with a modification to the TARP, which in essence tried to do the same thing with different techniques, and this demonstrates how much importance they devote to the urgency of the situation. As they state in the PPIP fact sheet³, “simply hoping

¹ Bloomberg, FDIC May Let Banks Share Profit From Distressed Loans They Sell, April 2, 2009

² This step alone is convincing enough to me to reject the hypothesis that the government is trying to avoid revealing insolvent banks to the market.

³ http://www.treas.gov/press/releases/reports/ppip_fact_sheet.pdf

for banks to work legacy assets off over time risks prolonging a financial crisis, as in the case of the Japanese experience”. This means that the U.S. government is trying to avoid experiencing a similar “lost decade” because of a lingering problem in the banking sector. This will be elaborated further in the section on previous resolution experiences.

5. Price Discovery

a) Reasons for the Current Low Market Prices of Legacy Assets

A very strong and important assumption that the PPIP is built on is that the market pricing mechanisms are not working properly, as they are impacted by the current crisis. In fact, without this assumption, the PPIP would merely mean an indirect subsidy to the banks, as most economists contend. So it is very important to lay out the possible reasons why this might be true.

Firstly, secondary market illiquidity is considered to be the main cause of the discount at which these assets currently trade. The deleveraging tied to declining asset prices caused some market participants to exit the markets, resulting in prices that remain below the fair values of these assets because of lack of liquidity.

Furthermore, related to the above argument, it is believed that the panic atmosphere that still prevails in the financial markets cause some market participants to require substantial profits to commit any resources to a project or investment, again because of liquidity concerns. However, there is ongoing research conducted on the subject, indicating that there is actually a market for these securities, and that there the market is not experiencing fire-sales.¹

b) Maximum Price Private Investors Would Pay – An Options-Based Approach

In light of the above reasons for low asset prices, and taking their validity granted, one reaches the conclusion that the government expects the PPIP to entice private investors to bid higher than the carrying values of the toxic assets. We will now try to see, with the help of options theory, how it would be possible to have private investors do so.

¹ Joshua D. Coval, Jakub W. Jurek, and Erik Stafford, March 30, 2009, The Pricing of Investment Grade Credit Risk during the Financial Crisis

Let us first break down the PPIP in terms of free options granted by the government to different parties:

Non-recourse loan: The provision of a non-recourse loan to private investors is equivalent to the provision of a put option in that gives them the option to “put back” the asset to the government in case the assets are worth less than the strike price at maturity.

3-year horizon: This constitutes the maturity of the put option, as the loans will have to be repaid in 3 years, and the value of the assets at that specific date will determine whether the option is going to be exercised or not.

Non-recourse loan equal to 10/12 of the bid price: This ratio constitutes the strike price for the put option. For example, for an asset that is purchased at \$84, the strike price would be \$70.

The two other inputs that we need in order to compute the value of the guarantee provided by the FDIC is the volatility of the assets subject to the sale and the distribution of possible values at maturity. As we do not have precise information on the assets, we will need to make some vague assumptions based on what we already know about these assets.

Volatility: We know that these toxic assets are by definition risky assets carrying high volatility. It would be therefore coherent to use a high value for this input.

Distribution: Even though these assets, loans in our example, probably have complex distribution characteristics that would typically involve skewness towards the lower bound, we will proceed with normal distribution for the sake of simplicity.

In the framework of the Black-Scholes option-pricing model, almost all the above inputs point to a very valuable put option. Namely, higher volatility means a higher value for the option, a 3-year horizon also considerably increases the value, and finally and most importantly, a strike price that is tied to the bid price ($\approx 85\%$ of the bid price) means that the higher the bid the higher the value of the put option.

To illustrate this with a numerical example, the following scenarios can be considered:

Table 6: LLP Price Discovery Scenarios Through Option Pricing

	Low	High	E[V]
Value Interval	\$30.00	\$100.00	\$65.00
FDIC Loan	85.7%		
Treasury Participation	7.1%		
Private Participation	7.1%		
	Low Scenario	Base Scenario	High Scenario
Price to Pay for the Asset	\$50.00	\$70.00	\$90.00
FDIC Loan	\$42.86	\$60.00	\$77.14
Treasury Investment	\$3.57	\$5.00	\$6.43
Private Investment	\$3.57	\$5.00	\$6.43
Probabilities - Normal Distribution			
Lose all the investment	28.4%	50.0%	71.6%
Lose some of the investment	3.8%	6.1%	6.3%
Gain additional return	67.8%	43.9%	22.1%
Payoff for Investor			
Expected Gain	\$15.86	\$3.93	-\$3.70
Value of the Put Option	\$7.37	\$10.32	\$13.27
Total Payoff	\$23.23	\$14.25	\$9.57
Pricing of the Put Option with Black's Model			
Asset Price	\$50.00	\$70.00	\$90.00
Strike Price	\$42.86	\$60.00	\$77.14
Maturity	3 years	3 years	3 years
T-Bond Rate	2.0%	2.0%	2.0%
Volatility	0.4	0.4	0.4

In the example above, the value interval is set in line with the example used earlier in the description of the Legacy Loan Program. The higher bound is set equal to the face value (\$100), and the lower bound is set equal to the price similar assets currently trade at on the market (\$30, i.e. 30 cents on the dollar).

Considering the three scenarios used in the examples, the results are quite telling about the incentive mechanism embedded in the government's proposal. First of all, it is very striking that private investors are encouraged to outbid each other, as the total payoff is almost always positive up until the face value of the assets. In the high scenario, when the bid is above the carrying value, and very close to the face value, the private investor would normally expect a loss of -\$3.70 in the absence of government guarantees. However, with the inclusion of the non-recourse loan, i.e. the put option, the total payoff turns out to remain

largely positive. As the higher the bid price, the higher the strike price and the higher the value of the option will be, no matter what is used for the inputs of the model, the mechanism will in essence be similar to that of this example. In other words, this plan makes sure that private investors remain profitable no matter how high they pay for the assets.

All these findings point out to the fact that the guarantee that will be provided by the government is indeed very costly, and on the other hand, it would be virtually impossible to entice private investors to buy these assets at above market prices.

Whether the size of these guarantees are determined in a way that the plan will indeed help the market reach the real fair values of these assets and that it can avoid inflating them is a very important and delicate question that remains to be answered. The government assumes that the current market prices are flawed, and attempts to artificially cure the problem with this kind of subsidies. However, it is obvious that in case this “price discovery” process goes beyond the fair values and ends up inflating the prices, this will certainly mean a big *value transfer* from taxpayers to the banking institutions. Higher bid prices will mean higher default rates on the government-guaranteed debt, and hence higher losses for the government.

c) *Minimum Price Banks Would Settle For – An Options-Based Approach*

To have a complete picture of what will happen as a result of this program, we also need to consider the process from the banks' standpoint. It was mentioned earlier that insolvent banks would never accept bids that are lower than the carrying values of their assets, and that solvent banks would require a share in the upside in order to sell their assets at a slight discount to carrying values.

Using an options-based approach, we can go further into the details of what factors would keep solvent banks from participating in the program, and at what level they would be willing to sell their assets.

Let us first start by explaining what *options* an investor is provided by being a shareholder of, say, a bank. Shareholders have a call and a put option written on the value of the assets of the bank, with a strike price equal to the amount of debt outstanding. Namely, the put represents shareholders' right to put all the assets back to creditors in the event of bankruptcy. The call, on the other hand, represents the unlimited upside and limited liability that shareholders are entitled to in the bank.

- In a healthy bank, the value of the put is very close to zero as it is by large out of the money when the value of the assets is considerably higher than the value of the debt. On the other side, the value of the call, which is also the value of the equity, is equal the difference between the assets and the debt of the company, reflecting its intrinsic value as the call option is by large in the money.
- However, in a troubled bank, the put has an important value for a couple of reasons. Firstly, as the bank is nearly insolvent, the value of the assets is very close to the strike price. Second, as we experience in the current crisis, the highly volatile nature of the assets adds to the value of the put. On the other hand, the equity has a marginal option value stemming from the time value of the call option.

Wilson¹ makes the point that this very reason is likely to create an additional cost for private investors willing to bid for these assets. However, it is very important to note that this

¹ Wilson, 2009, The Put Problem with Buying Toxic Assets

will only be the case for *insolvent* banks. The put option has a value only if the bank is distressed.

This leads us to conclude that, in addition to what we discussed earlier about the potential unwillingness of insolvent banks to sell assets at below carrying value, insolvent banks would even require a *premium* over the carrying value in order to sell the toxic assets. The premium is required to compensate for the loss in the assets of the insolvent bank, which after the sale will result in a decrease in the stock price of the bank as the put will be worth less because the risky assets will be replaced by cash on the asset side.

The conclusion about solvent banks, however, remains unchanged as the part of the value of their stock that is tied to the value of the put option is close to zero. Therefore, they would not necessarily require a substantial premium to be willing to sell their toxic assets.

In light of the above factors, one may doubt the success of the plan based on the idea that it is likely to fail to get troubled banks, the actual main target, into the program. Wilson and Wu (2008) point to the problem associated with the put option that the selling banks will be granted. As mentioned earlier, banks have the right but not the obligation to sell their toxic assets after receiving bids resulting from auctions. This discretion undermines the effectiveness of the plan, as shareholders of a troubled bank would have many reasons not to sell their assets in the above conditions. The elimination of such discretion could eventually mean *haircuts* for shareholders and uninsured creditors, which should be a natural consequence of a bankruptcy procedure, as we will discuss later in the section dedicated to failure resolutions.

6. What If It Does Not Work?

a) *Potential Cost to the Economy and Political Capital Concerns*

We stated earlier that the government provides very valuable guarantees to private investors, as shown by the option value of these guarantees. Politically speaking, government guarantees are a safe way of bailing out companies without attracting too much public criticism because of their complex structures.

Although the FDIC officials have already expressed their view that they expect this program to be profitable¹, taking into consideration all possible contingencies, it is clear that there are chances that the government will incur substantial losses at the end of this program. The question is, at this point, who will eventually bear such a cost.

The prospects of profit or loss to the FDIC will heavily depend on the purchase prices that private investors will come up with and, unless there are non-public collusion agreements as some suspect^{2,3}, no one will know about it before the auctions take place. It is therefore important to consider what may happen in a downside scenario.

Economists are concerned that the potential losses are likely to weigh on the Deposit Insurance Fund (DIF). This would be in contrast with the *raison d'être* of the FDIC, as the PPIP or LLP do not normally make part of the FDIC's primary and paramount deposit insurance responsibilities. Even though the FDIC will receive a risk-based fee in return for guarantees it will provide, there is still a risk that losses go well beyond the amount that will be collected.

In such event, the FDIC's plan is to recover these additional losses through a *systemic risk assessment*, which will require *all* the banks, irrespective of whether they have participated in the LLP or not, to pay a fee that will be determined based on their total assets.

¹ See, e.g., Transcript of the Press and Technical Briefing Conference Call on Legacy Loans Program, available at <http://www.fdic.gov/llp/transcript033009.html> (quoting FDIC Board Member Arthur J. Murton: "We don't expect to take losses. We expect this program will result in a positive return to the FDIC.")

² The Wall Street Journal, Banks Aiming to Play Both Sides of Coin, May 27, 2009

³ Bloomberg, Wall Street's 1929 Scams Return in Geithner Plan: Jonathan Weil, April 23, 2009

This plan has attracted a lot of criticism from the banks that have chosen not to participate in the program. These banks state that they should not be penalized for the actions of other banks, or a potential failure of the program. In a statement, the American Bankers Association (ABA) stresses that such treatment would be unfair, and that they think any excess revenues from the LLP shall be placed into the DIF.

The FDIC, on the other hand, is convinced that it is a fair treatment to charge all banks including those that will not participate, because all these rescue programs are being carried out for the recovery of the overall banking sector. It is, however, the FDIC's intent to place excess revenues of the LLP into the DIF.

In the current economic and political context, the U.S. government has been heavily blamed for trying to rescue the banking sector, which was one of the main actors behind the crisis. Throughout the period since the bursting of the housing bubble, the government has had several trial-and-errors to fix the current economic problems, most of them being considered too hasty and, more importantly, costly.

Many economists, including Paul Krugman¹, point out the fact that the government may only have one last chance to solve the problem, and that a potential failure could lead to depletion of political capital. In the event of failure, not only the abovementioned costs will unsettle the market, but also it may be too late for another kind of government intervention, which would greatly prolong the crisis across the board.

It is therefore to the government's best interest to make sure this program is the best possible approach to the problem, as there may be no second chance.

¹ The New York Times, More on the bank plan, March 21, 2009

C. Regulation Authority for Non-Bank Financial Institutions

One of the important lessons that all the economists and government officials have learnt from the crisis is that non-bank financial institutions could also pose immense amounts of systemic risk, and thus have to be regulated and supervised in a more careful and strict manner.

To this end, regulatory reforms have been made central to the Financial Stability Plan, in an attempt to bring fundamental changes to the regulations in order to prevent a possible recurrence of systemic risk of similar magnitude in the future. The Treasury Secretary Timothy Geithner and the Fed Chairman Ben Bernanke have expressed their frustration and disappointment with the limited scope of the current regulation authority over non-bank financial institutions. Timothy Geithner was quoted saying: “No legal means existed to resolve AIG to the way FDIC resolves a bank.”¹ Indeed, as recent experience has shown, the government officials had very little authority over the fate of a non-bank financial institution, AIG, when this company was found to be carrying extreme systemic risk in its operations in wake of Lehman’s bankruptcy filing. The bailout of AIG, which mainly consisted of nationalization through capital injections, was very costly to the government, but was considered absolutely necessary because the insurer’s liabilities were at such levels that it could jeopardize the health of the whole financial system in case of default.

Similarly, a large investment bank, Lehman Brothers, was victim of not being under the authority of the FDIC. Namely, it could neither receive financial assistance from government bodies as it did not qualify as an eligible bank for that practice, nor could it be put into conservatorship or receivership for an orderly and least-cost resolution of the bank as it was not an FDIC-insured institution. Consequently, Lehman was allowed to go under, which brought along a very high cost to the overall economy, as it was highly interconnected with other market participants.

The Treasury is therefore working towards an expansion of the current regulation authority, which would give the FDIC (or a new regulatory agency), the right to treat other financial institutions, such as bank holding companies and insurance companies, with resolution methods that will build on the existing structure that is being used.

¹ CNN Money, Lawmakers lash out over AIG, March 24, 2009

As part of the Financial Stability Plan, the government devotes a great importance to the systemic risk problem¹, and if it manages to pass these new regulations, this would provide the government with “sweeping powers to dismantle or reorganize failing companies that pose a threat to the country's financial system”.²

In fact, this approach is totally in line with what has been proposed in the academia about how to treat the too-big-to-fail (TBTF) problem. It is a well-known fact that authorities often face a big dilemma when they have to deal with large troubled institutions. A possible way to deal with this, as Mishkin (2006) points out, is to have a strong oversight and authority over companies that are likely to pose systemic risk.

Mishkin (2006)³, points out that:

“In order to reduce the too-big-to-fail problem, the incentives for policymakers to renege on a no bailout commitment has to be reduced, which requires policy measures that reduce the costs of a failure of a large bank to the financial system by reducing the spillovers from such a failure. With less of an incentive for policymakers to renege on no bailout pledges, uninsured creditors will worry that large risk-taking banks will expose the creditors to losses and so creditors will pull funds from these banks, thereby imposing market discipline that will reduce moral hazard risk taking by these banks.”

This approach would indeed be a big step forward towards eliminating the forbearance problem that becomes inevitable when the whole economy is at stake. As Stern and Feldman (2004)⁴ point out, adopting a TBTF policy is very costly as it leads the banks to increased risk taking, and to misallocate their resources. Mishkin (2006) cites the striking example that banks have an incentive to grow in size to be granted the implicit TBTF protection, which in turn aggravates the risk-taking problem. According to Mishkin, this implicit guarantee is even

¹ U.S. Department of the Treasury, Press Release: Treasury Outlines Framework For Regulatory Reform, March 26, 2009

² Businessweek, Geithner Outlines 'Resolution Authority', May 25, 2009

³ Mishkin, 2006, How Big a Problem is Too Big To Fail? Journal of Economic Literature, pp. 988 – 1004

⁴ Stern and Feldman, 2004, Too Big to Fail: The Hazards of Bank Bailouts, Brookings Institution Press

factored in by the market into the stock price, as evidenced by the premium resulting from merger of two big banks to form a TBTF institution.

It is worthwhile to note that there will likely be considerable resistance to this bill, especially from conservatives, as it is inevitably evocative of a new kind of system in which government will be more active, and will be equipped with wide-ranging intervention rights, which could turn private investors off these institutions. There is already opposition to the bill from republicans, which points to a political debate that could slow down this part of the program.¹

¹ Wall Street Journal, Rep. Frank Slows Market Regulation Bill, April 23, 2009

IV. Solvency

It is worthwhile to touch upon some specificities of bank solvency before moving on to the failure resolution considerations in the current markets.

A. Types of Solvency

We can approach the question of whether banks are solvent under the framework set out by John Hempton¹, which can be helpful in our further analyses about insolvency and failure resolution:

Hempton states that there are 5 types of solvency for banks:

- “
1. Regulatory Solvency
 2. Positive net worth under GAAP
 3. Positive economic value of an operating entity
 4. Positive liquidation value
 5. Liquidity
- ”

Let us now consider the troubled institutions against the first three types of solvency that are relevant to our analysis, and try to assess which one resolution authorities should take as the starting point for their actions.

Regulatory Solvency: This type of solvency refers to the adequate capital level a bank needs to hold based on the net worth of its equity capital as a percentage of its assets. It is important to note that, as per the FDICIA, the closure rules are based on *book value of capital*. We can therefore assume that this type of solvency measure would typically lag behind solvency measures based on market value accounting in troubled markets. As will be discussed later, this has several implications in terms of resolution method and timing.

¹ Bronte Capital, Bank Solvency and the “Geithner Plan”, February 16, 2009

Positive Net Worth: Net worth of a financial institution is the difference between the market values of its assets and liabilities. This is therefore a more volatile measure of solvency, as the assets of a financial institution are consistently marked to market. Under this solvency measure, there is consensus in the market that a number of big U.S. financial institutions may be insolvent, as they have incurred large losses on their mortgage-backed securities holdings. Mortgage-backed loans, on the other hand, are another source of problem dragging down capital levels. However, since they are typically held until maturity their impairments tend to be discretionary, which is likely to keep them at levels closer to their face values.

Albeit this could well constitute a relevant measure for solvency in well-functioning markets, there is currently mutual agreement in the market that market value accounting does more harm than good in the current environment where the proper functioning of the markets is severely in question. This very argument has recently led to new regulations in this field, which we will discuss later in this section.

Positive Economic Value of an Operating Entity: This method relies on the earning power that even insolvent banks might still have, and that time will be the cure to solvency. Time, in this context, is the equivalent of *regulatory forbearance*, a word that most dislike because of the bad experiences in the U.S. during the S&L crisis, and in Japan in 90s.

However, there are a number of economists and investors, including Warren Buffett¹, who contend that banks, regardless of their solvency positions at the time, have the earning power to turn themselves around and to start building up the amount of capital they need to keep operating. The main argument is that spreads are large enough for banks to make profit even in the current market. Namely, banks are able to get cheap funding mainly thanks to the temporary² government guarantees and the Fed discount window borrowing, while they can lend out with an important spread on top of these rates. Additionally, as banks typically fund long-term loans with short-term financing, the current cheap financing also benefits the existing loans (which are quite problematic, however). Moreover, cutting dividends is another source of recapitalization, as will be discussed later. In fact, all these are actually mandatory

¹ The New Yorker, Is Warren Buffett Crazy? March 12, 2009

² FDIC, Press Release: FDIC Extends the Debt Guarantee Component of Its Temporary Liquidity Guarantee Program, March 17, 2009

steps that need to be taken as per the FDICIA, when banks fall under the “undercapitalized” zone¹, in order to enable them to earn their way out of [regulatory] insolvency.

Based on the above, we can conclude that the banking system as a whole has actually high chances to be solvent in terms of economic value.

B. Role of Accounting Treatments in Bank Solvency

1. Mark-to-Market Accounting

Mark-to-market (MtM) accounting has been one of the most debated subjects since the beginning of the crisis. While it gives a more realistic picture of a bank’s operations and solvency, in some situations it can pose problems, as it may not perfectly reflect the fair value of the securities.

There is little doubt that this accounting principle has many benefits. This was especially obvious after the S&L experience where assets were kept at book values and consequently the authorities were too late to react before the market value of assets fell below the value of debt claims. The same was true for the banking crisis in Japan from 1996 through 2000, where bad loans were kept at book values for very long time, only postponing the problem and eventually resulting in a lingering recession.²

As mentioned earlier, MtM accounting basically requires banks to keep assets that are classified as “available for sale” at market values, i.e. “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date”.³ However, it is clear that this definition is based on the assumption that there is a well-functioning market and price mechanism. In the absence of these, typically during economic downturn situations such as recessions, banks may find themselves marking their assets to below fair values, engendering an insolvency situation.

¹ When the total risk-based ratio falls below 8%, or the tier I risk-based ratio falls below 4%, or the leverage ratio falls below 4%.

² Saunders, Cornett, 2004, *Financial Institutions Management: A Risk Management Approach*, pp. 572 – 573

³ FASB, FAS 157

On the other hand, banks have discretion over the way they treat loans that they intend to hold until maturity. Even though they have little incentive to do so, they impair the value of their loans to what they believe reflects the most likely default rate that the loan will have at maturity.

On the potential cost the MtM accounting has had on the economy, former FDIC chairman William M. Isaac argues that “the SEC has destroyed \$500 billion of bank capital by its senseless marking to market of these assets for which *there is no market*, and that has destroyed \$5 trillion of bank lending”.¹ Similar arguments, especially from bank managements, have recently led to the FASB relaxing the MtM accounting rules. However, this has come as a shock for many, as it is likely to undermine the efforts that are being put by the Treasury to deal with toxic assets^{2,3}, as will be discussed further in this section.

2. Changes in Accounting Principles

a) Rationale and Potential Implications

From a bank’s standpoint, MtM accounting can be considered an “early execution” as it does not leave any room for a bank to turn itself around, and this especially during a downturn. To illustrate this argument, one can think of what happened in the 80s in the U.S. with money center banks. These banks held loans to developing countries, which at the time were worth around 10 cents on the dollar. The bank regulators’ approach to these loan holdings was not at all pro-MtM or impairment, which would mean insolvency for all these banks. Instead, they let them carry those loans at what the regulators believed was the right value, which eventually proved to be the right approach as most of the money was ultimately collected.

Based on the assumption that there is indeed no market for certain asset classes in crisis situations, the FASB has recently amended market value accounting rules in a way that

¹ U.S. House of Representatives, Testimony of William M. Isaac, March 12, 2009

² The Wall Street Journal, Move to ease 'mark' rule may subvert Treasury plan, April 2, 2009

³ Euromoney, FASB and mark to market: A lack of joined-up thinking, April 2009

gives banks an important amount of discretion over the valuation of their securities.¹ Broadly speaking, the new regulation lets banks to assess the value of a security for which there is no market price readily available by using valuation methods based on the fundamentals of the security and the counterparties. This is why some call this new treatment as “Mark-to-Model”, arguing that it leaves too much discretion to banks in their reporting.

In fact, to give an idea about what the market is likely to experience as a result of these amendments, we can take the example of Wells Fargo. The bank has reported record profit of \$3bn for the first quarter in 2009, around half of which stems from marking the values of their assets at values they consider fair, already benefiting from the new accounting rules.² However, as we will consider later in this section, implications on the bank rescue plan are likely to be the real focus of the market in the near future.

Shooting the Messenger

In a recent report to Congress about MtM accounting³, the SEC officials touched upon what investors thought about the current treatment, which points to the general view that investors do not see MtM accounting as the primary cause of the trouble the banks are in at present. Investors point out that banks are liable from the losses they incurred not because the accounting treatments call for early action, but as a result of bad quality loans they made prior to the crisis. The fair value accounting being aimed at merely providing investors with an unbiased and reliable picture of the health of institutions, officials argue that “suspending the use of fair value accounting [...] would be akin to "shooting the messenger" and hiding from capital providers the economic condition of a financial institution”.

b) Previous Experience in Japan

Although deemed necessary by many, this new treatment is likely to diminish the transparency of the banks vis-à-vis investors. Already “paranoid” about toxic asset holdings of banks, private investors will now have even more concrete reasons to be extremely

¹ For details, c.f. FASB, Staff Proposition No. FAS 157-4, April 9, 2009 (accessible at http://www.fasb.org/pdf/fsp_fas157-4.pdf)

² The New York Times, Wells Fargo Posts \$3 Billion in 1st-Quarter Profit, April 22, 2009

³ SEC, Testimony Concerning Mark-to-Market Accounting: Practices and Implications, March 12, 2009

skeptical about the real financial health of these institutions. Many people underline the fact that this is reminiscent of the disastrous mistakes that were done during the S&L crisis in the U.S., and during the 90s in Japan.

In the Japanese example, the authorities were not responsive enough to the crisis in the banking sector, which was suffering from non-performing loans as in the case of the U.S. banks now. Banks were carrying loans and securities at cost, and were therefore not keen on recognizing losses for solvency matters. Furthermore, because of lack of transparency, it was not clear what banks were the most exposed to the crisis. This self-reinforcing mechanism led to delayed response by the government, and a so-called “lost decade” for the Japanese economy. As will be discussed later in the failure resolution section, the recovery did not happen until an aggressive and decisive framework for resolution was put in place from 1998 on.

c) Do the new rules undermine the PPIP?

What is really shocking is that this comes at a time when the U.S. Treasury has a massive rescue plan that was designed based on MtM values and assumptions. Changing the rules midway through the game will only make the plan irrelevant. Carrying on with the previously cited example of patient-doctor relationship: the patient will now contend he is not sick and therefore does not need any kind of cure.

The building block of the PPIP was the assumption that banks were suffering from the fact that the secondary market for the legacy assets was frozen, which made them carry these assets at below fair values as per MtM accounting rules. Accordingly, the goal of the plan was to purchase these assets at fair values that would be revealed through a price discovery process. Taking the success prospects of the plan granted, the ultimate aim was therefore to provide the markets with certainty about fair values of these assets.

However, the large discretion that the banks now have over their reporting is likely to severely undermine the efforts to set up fair grounds for the industry to operate on, as they are fundamentally contrasting each other. The banks now have a big incentive to mark prices back to above fair values, which will only postpone losses, while still keeping them from lending out as much as they would as healthy institutions.

On the other hand, banks will no longer have sufficient incentive to rid themselves from toxic assets, and therefore to participate in the PPIP. Considering our previous assumption that most banks would only be willing to sell their assets at a premium, expecting private investors to pay substantial premia on assets that are not marked-to-market would be wishful thinking. Even if they end up doing so, this would only mean higher chance of default on government-guaranteed debt, i.e. higher losses for the government.

It is therefore hard to interpret these conflicting actions of the government. This change to the accounting principles will probably only increase the ambiguity of the potential outcome of the PPIP.

V. Failure Resolution

A. Resolution Procedures as per the FDICIA

The U.S. has been regularly modifying its regulatory framework for bank resolutions, typically building on past experiences acquired during economic and financial crises. The Federal Deposit Insurance Corporation Improvement Act (FDICIA), considered by some as the most important banking regulation since the Glass-Steagall Act of 1933 (which created the deposit insurance system), came in the wake of the Savings & Loan debacle and important bank failures that followed in early 90s.

Since the adoption of deposit insurance following the Great Depression, the greatest challenge has been managing the tradeoff between deposit insurance coverage levels and moral hazard resulting thereof. Kaufman (2006)¹ argues that “the usual attempts to correct these problems [moral hazard] by directly changing the structure of deposit insurance through coinsurance, risk-sensitive premiums, etc, have been largely unsuccessful.”

Resolution procedures have therefore become the main focus of policy changes, and the FDICIA was designed, among other things, to bring a structured approach to these, by decreasing the discretion of regulators vis-à-vis their actions during bank failures, in an attempt to make their actions more consistent and ultimately to discipline bank shareholders and creditors.

1. Structured Early Intervention and Resolution (SEIR)

To understand why the current actions of the FDIC are attracting a lot of criticism, it can be useful to first consider the original policy recommendations that prepared the FDICIA that has been in effect since 1991. The “authentic” version of the FDICIA, as proposed in late 80s as a response to important flaws identified during the S&L crisis, was called the “Structured Early Intervention and Resolution” (SEIR). Even though the related bill proposed some regulations that some people nowadays wonder why lack in the FDICIA, the act underwent several easing modifications before it was enacted under the name of FDICIA (c.f.

¹ Kaufman, 2006, Using efficient bank insolvency resolution to solve the deposit insurance problem, *Journal of Banking Regulation* Vol. 8, 1 40–50

Benston and Kaufman, 1994). By definition, this act was a result of lessons taken from the regulatory forbearance seen during the S&L crisis. Although some have remained unchanged, some proposals were taken out as being possibly too hard to manage. One of the most important ones was the regulators' initial attempt to base capital adequacy requirements on market values of assets. Another fruit of lessons learned from the S&L crisis, and possibly a promising feature that could prevent large losses before a bank goes insolvent; this practice was viewed not feasible by agencies. Benston and Kaufman (1997) therefore describe the FDICIA as "a limited enactment of the principles of structured early intervention and resolution, relabeled as "prompt corrective action" (PCA) and "least-cost resolution" (LCR) in the act".

2. Are Uninsured Investors Really Uninsured?

One of the fundamental changes to the deposit insurance system was the "least-cost resolution" approach mandated by the FDICIA. The FDIC having incurred substantial losses during the banking and S&L crises in the 80s, the emphasis was made on passing on more costs to uninsured creditors and shareholders. This was not only aimed at lifting pressure from the fund economically, but also at exerting more discipline over uninsured creditors. This was in turn expected to have the same impact on banks, by having uninsured creditors ask higher interest rates from riskier institutions.

In order to do so, the FDIC was provided with another tool in addition to the existing failure resolution procedures, which were accused for being too costly to the fund. The new method, called "Insured Depositor Transfer" (IDT), came as an additional type of Purchase and Assumption (P&A) procedure.

While with the existing two types of P&A (Clean P&A and Total Bank P&A) uninsured depositors were *de facto* insured depositors, IDT was designed to pass only insured deposits to the acquiring bank. It was therefore a big step forward disciplining uninsured depositors. This type of resolution became very popular, and has been used in many resolution processes since then.

Perhaps the most important feature of the FDICIA was the prompt corrective action (PCA) that it originally inherited from the SEIR. This new feature was aimed to diminish and even eliminate the *forbearance* option that regulators typically found themselves inclined to

when they faced complex situations. To this end, effective as of December 18, 1992, the FDICIA introduced the PCA capital zones, according to which regulators were responsible for taking specific actions (c.f. table below).

Table 7: Capital Categories for PCA and PCA Provisions of the FDICIA

<i>Zone</i>	<i>Total Risk-Based Ratio</i>	<i>Mandatory Provisions</i>	<i>Discretionary Provisions</i>
Well Capitalized	10% or above		
Adequately Capitalized	10% or above	1. No brokered deposits except with FDIC approval	
Undercapitalized	Under 8%	1. Suspend dividends and management fees 2. Require capital restration plan 3. Restrict asset growth 4. Approval required for acquisitions, branching, and new activities 5. No brokered deposits	1. Order recapitalization 2. Restrict interaffiliate transactions 3. Restrict deposit interest rates 4. Restrict certain other activities 5. Any other action that would better carry out prompt corrective action
Significantly Undercapitalized	Under 6%	1. Same as for Zone 3 2. Order recapitalization 3. Restrict interaffiliate transactions 4. Restrict deposit interest rates 5. Pay of officers restricted	1. Any Zone 4 discretionary actions 2. Conservatorship or receivership if fails to submit or implement plan or recapitalize pursuant to order 3. Any other Zone 5 provisions if such action is necessary to carry out prompt corrective action
Critically Undercapitalized	2% or under	1. Same as for Zone 4 2. Receiver/conservator within 90 days 3. Receiver if still in Zone 5 four quarters after becoming critically undercapitalized 4. Suspend payments on subordinated debt 5. Restrict certain other activities	

Source: Federal Reserve Board of Governors, September 10, 1993

In the table above, although there are discretionary provisions that apply to each zone, mandatory provisions leave little room as to what action needs to be taken in each case. The zones that we are concerned with in the current situation are the “Significantly Undercapitalized” and the “Critically Undercapitalized”, since they require (mandatory in the critically undercapitalized scenario) the bank to be placed under receivership or conservatorship. The objective of a receivership is to “provide for orderly liquidation of the institution”, while the objective of a conservatorship is to “take actions that are necessary and

appropriate to restore the institution to a position of solvency so that it can carry on its business”.¹

Even though the rules of the game seem to be crystal clear and to have eliminated forbearance, there is one exception that makes things complicated, especially in the current situation. The FDICIA allows regulators to diverge from the use of the “least-cost resolution” method when the failure of the institution in question could pose systemic risk to the economy, i.e. too-big-to-fail (TBTF). Even though the use of this systemic risk exemption required approvals from many regulatory bodies including the president of the United States, it was very plausible to assume it could be used in a big crisis.

This exemption had not been tested until the current crisis, as there had been no failure of any institution carrying systemic risk since the fall of Continental Illinois Bank in 1984, whose resolution method will be compared later in this section to the current practice.

3. The Too-Big-To-Fail Problem

Considered by many a misnomer, in the deposit insurance context the TBTF guarantee actually refers to full coverage of creditors, both insured and uninsured, to avoid systemic damage to the economy. As Stern and Feldman (2004)² argue, the TBTF problem has gotten worse fueled by the consolidation in the banking industry, especially in post-crisis periods. They also cite the growing complexity in banking operations, which has made them “too-complex-to-fail” as Richard Herring (2002) has put it. Another very relevant reason that we have largely experienced during the current crisis is the involvement of banks in a wide range of services that go beyond traditional banking, especially since the enactment of the Financial Modernization Act of 1999. For these reasons, and many others, the number of TBTF institutions in the markets keeps increasing, and choosing the right policy becomes increasingly challenging.

What we have been seeing since the beginning of the crisis in terms of resolution practices has been sending mixed messages to the market, as the FDIC’s approach to troubled institutions was seriously lacking consistency. To remind the interventions mentioned in the

¹ Treasury.gov

² Stern and Feldman, 2004, Too Big to Fail: The Hazards of Bank Bailouts, Brookings Institution Press

beginning of the text, in the order they happened: in Indymac only the insured depositors were protected; in Washington Mutual both insured and uninsured depositors were protected but the bondholders were left out; and in Wachovia there was full protection.

This inconsistency in FDIC's actions creates uncertainty and anxiety in the market over their possible approach for the next troubled institution. All of these three interventions were triggered by runs to these banks' deposits. However, there is widespread consensus that there is an important amount of insolvent banks in the market, even if not yet so by book values. The government's initial and ongoing reaction to these banks has been to overlook the situation, and work on plans to *prop up* the industry as a whole instead of executing what the prompt corrective action (PCA) requires, under the premise of TBTF problems.

We can argue that this is, in other words, *regulatory forbearance*. The same approach was experienced during the S&L and the Japanese crises, and the result was the same: prolonged and more costly crises, which both took decisive and structured measures to be implemented to come to an end. Let us now briefly consider how these countries got themselves into these situations, and how they managed to work their way out of these crises, before proceeding to what can be done in the current situation.

B. Previous Resolution Experiences During Big Financial Crises

1. The S&L Crisis and the RTC

Even though different in size and scope, the mistakes that were done before, and the resolution procedures adopted during the S&L crisis are considered by many as a good model and starting point to solve the current crisis.¹

It can be useful to give a brief background of the crisis², before going into the details of resolution procedures. The primary factor preparing the necessary grounds for the crisis was unexpected increases in interest rates in late 70s. The Savings and Loan institutions were

¹ For an example, c.f. American Banker, Viewpoint: RTC Provides a Blueprint for Solving Crisis, February 27, 2009

² For a more comprehensive background, c.f. National Commission on Financial Institution Reform, Recovery and Enforcement, Origins and Causes of the S&L Debacle: A Blueprint for Reform, 1993; Mayer, 1990; Kane 1985

caught unprepared because they held large piles of long-term fixed-rate mortgages, and financed themselves mainly by short-term deposits. Rising interest rates had devastating effects on these two: fixed-rate mortgages severely declined in value, while the deposits started to fly in large amounts to other institutions providing for higher rates on deposits. Even though most of them were known to be insolvent by market values of their assets, none of them was taken into receivership or conservatorship. Instead, a great deal of forbearance was shown to these institutions, in part because insurance funds were running insolvent on one hand, and also due to the regulators bet on “mean-reverting” interest rates on the other.

The Federal Home Loan Bank Board (FHLBB) even chose to relax capital adequacy levels in order to decrease the number banks that were insolvent by regulatory measures (book values). This kind of forbearance only made matters worse, by letting “zombie institutions” keep operating, and even worse by letting them make risky loans, with increasingly low credit quality. This system of paying high interest on deposits and lending to borrowers whose only intent was to be able to pay the interest on their former loans perpetuated and amplified the insolvency problem. The regulators’ bet paid off, as interest rates fell and most S&Ls recovered, but nevertheless a large part of the industry were far from being healthy, now largely because of defaulting loans they had made to low-quality borrowers.

The losses ultimately had to be recognized in early 90s, and a comprehensive resolution framework had to be set in order to deal with the tremendous disarray regulators were facing. Some deposit funds already having gone insolvent, a cost-efficient resolution procedure was key to solving the problem. To this end, in 1989 the Resolution Trust Corporation was founded to seize insolvent S&Ls through conservatorships and then followed resolution processes that would later become a model for future resolutions of large and complex financial institutions.

Troubled S&Ls were neither too complex nor as large as to pose systemic risk. However, the conservatorship process was the RTC’s only option, as it needed the time to analyze the problem, design a roadmap and, most importantly, find adequate funding that was required to deliver these procedures.

The conservatorship process consisted of wiping out shareholders, changing senior management, appointing an asset manager to deal with the disposition of assets, and

ultimately carrying out the final resolution through a sale or a deposit payoff. Through this means the RTC had control over the management and operations until final resolution, thereby inhibiting any excessive risk-taking or fraud like those that had happened during the forbearance period in early 80s. From 1989 through 1995, the RTC managed and resolved a total of 706 institutions, successfully disposed of \$394.7bn out of \$402.6bn of real-estate-related assets through comprehensive asset disposition plans.¹

Asset disposition and marketing strategies pursued by the RTC were key to the success of the resolution procedures, and can constitute alternative approaches to what is being implemented currently to dispose of the toxic assets. A number of then-innovative techniques, including securitization of real-estate loans, helped the RTC sell large amounts of assets at reasonable prices in the market.

2. The Japanese Experience

Strikingly similar to the S&L crisis in terms of forbearance practices, the banking crisis that Japan experienced in the 90s and the policies followed during its first years constitute for many a guideline of what not to do when dealing with a banking crisis.

Bad loans were again the root of the crisis, and the question was the same: when to recognize the losses? The Japanese government pursued forbearance-based policies from 1991 through 1998. Non-performing loans stayed on bank balance sheets, and focus was not on getting rid of these but rather on recapitalizing banks through cheap financing, providing guarantees and protection, and other sorts of bailout activities that attracted a lot of public criticism. The aim was to bring the industry back to health by giving banks the chance to earn money on the large spread they were provided with as a result of the 0% cost of financing.

Takeo Hoshi and Anil K. Kashyap (2004)² state:

“The low interest rates have partially helped keep the banks alive, and the deficit spending has partially propped up aggregate demand, but neither of these policies has

¹ FDIC: Managing the Crisis: The FDIC and RTC Experience, Vol. 1, pp. 113 – 144

² Takeo Hoshi and Anil K. Kashyap, 2004, Japan's Financial Crisis and Economic Stagnation, The Journal of Economic Perspectives, Vol. 18, No. 1 (2004), pp. 3-26

focused on closing down the insolvent banks and their zombie borrowers that are strangling the economy.”

This is actually reminiscent of the policies that are being followed in the U.S., with the difference that the U.S. has also put emphasis on cleansing bank balance sheets of non-performing loans.

Even though the crisis did not seem severe during these first years, in 1997 several failures gave the first signs of a systemic risk. It was then obvious that no matter how much resource is devoted to prop up the industry, as long as banks continued having troubled loans on their assets, and continued to lend in an unfavorable economic environment, recovery would be impossible. To this end, from 1997 on, the government policies completely changed shape, now focusing on more prompt and decisive actions to deal with the NPL problem.

Two government-owned entities, the Resolution and Collection Corp. (RCC) and the Industrial Revitalization Corporation of Japan (IRCJ), were established in 1993 and 1998 to deal with the disposition of these troubled loans. The RCC focused on low-quality NPLs, while the IRCJ focused on higher quality NPLs. They purchased assets from troubled institutions for later resale to investor groups.

Simultaneously, 36 banks received capital injections in the form of preferred shares or subordinated loans from the government (amounting to c.¥9.3tn¹), while two other banks with more severe problems were temporarily nationalized. At the same time, banks were given targets levels for the disposition of their NPL holdings, subject to strict deadlines. Troubled banks were ultimately consolidated into other relatively healthier major banks.

In the end of the crisis, the losses were considered to be much larger than what the country would have incurred had it reacted much earlier with prompt actions. Furthermore, it was clear that the regulatory framework with respect to accounting standards and failure resolutions were not capable of propelling banks or regulators for an early detection and intervention to the crisis.

¹ Nomura Asset Management, Asian Market Views based on Japanese Market Bubble Experiences, November 10, 2008

As in the previous example, the ultimate solution boiled down once again to asset disposition practices. It is clear that it is a burdensome and complex task to do, but it was now clear that this was central to bringing the banking industry back to good health.

3. The Swedish Experience

The last of the three consecutive banking crises experienced by Scandinavian countries in the 80s and 90s, the Swedish banking crisis also came as a result of the bursting of the housing bubble. In early 90s, real estate prices plunged 50%, while the currency lost 30% of its value in a short period of time. The Swedish experience is often considered a successful model to modern banking crises, as prompt and appropriate actions were taken at the outset of the crisis.

The Swedish banking sector was very consolidated, with the largest six banks accounting for 75% of the system. Following the first bank failures in 1991, dissatisfied with the results obtained from ad-hoc measures, the regulators decided to take over troubled banks and recapitalize them. The liquidation was out of question because of the large portion troubled banks had in the economy. A possible sale to another bank like the FDIC does with the P&A transactions in the U.S. was not possible either because there was no other healthy institution big enough to afford such transactions. The main approach the regulators had was based on restructuring these institutions with a focus on profitability, as Arne Berggren puts it at a symposium held by the FDIC: “We felt that a successful approach would be to act as an aggressive equity investor focused on profit maximization. That would be the only way to recover some or all of the taxpayers’ expenditures.”¹

This restructuring actually involved the “good bank – bad bank” model that we will see in the “bridge bank” model used by the FDIC. The officials took over the management, took structural decisions that went as far as to cut some unprofitable business lines, and to remove non-performing loans transferring them to bad banks that were established to manage these assets and eventually carry out their divestiture.

The asset disposition practice was again very important, and the innovative way the Swedes handled it deserves a closer look. As in most crises, there was no market for certain

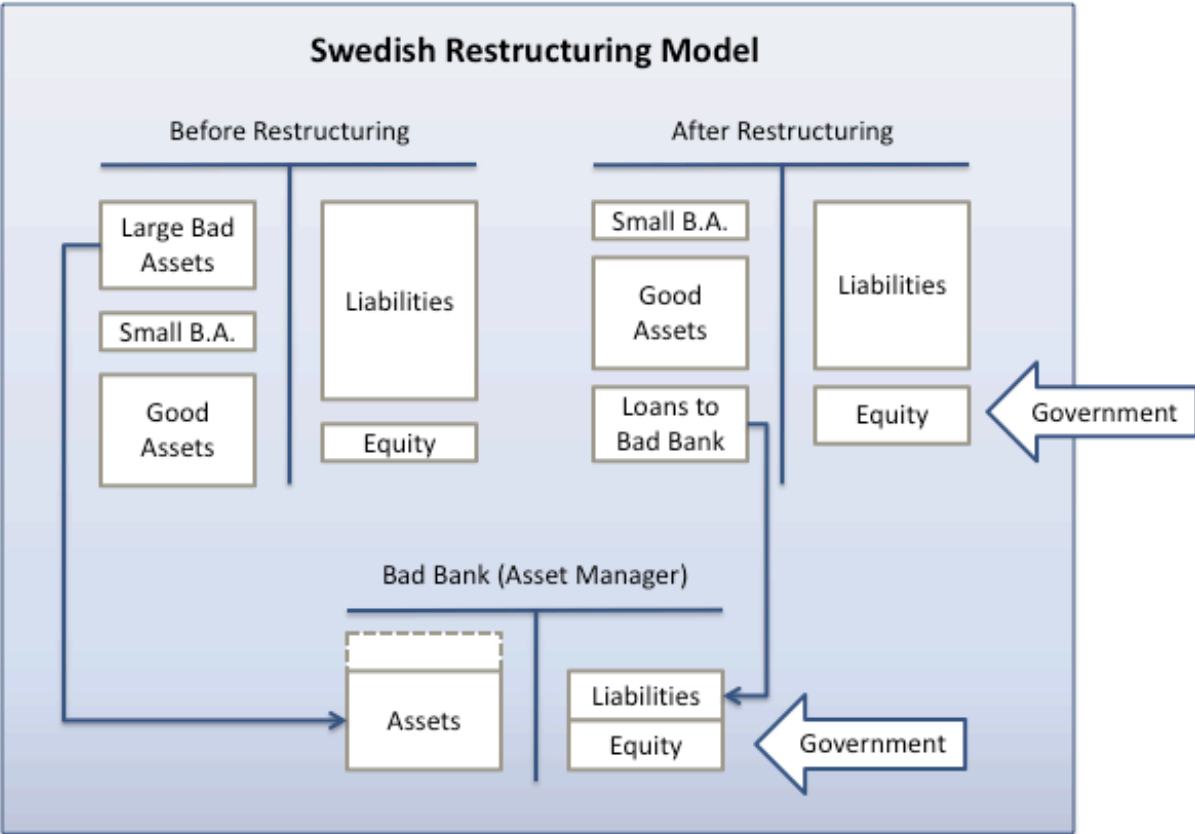
¹ FDIC: Managing the Crisis: The FDIC and RTC Experience, Vol. 2, pp. 93 – 98

assets, which made it very difficult to price and to sell these assets on the market. Moreover, because of the size of the Swedish economy and the depth of its financial markets, it was not possible to securitize these loans as the RTC had done during the S&L crisis. Therefore, the Swedish regulators adopted an active management style that mainly consisted of restructuring these assets on loan-by-loan and even collateral-by-collateral bases. Acting as a quasi-private-equity company actually proved to be the right approach in that situation, as the sale process only took 6 years, instead of the first estimate of 10 years.

The below diagram sets out the details of the restructuring model applied to nationalized Swedish banks. The most interesting point is, perhaps, the loans provided by the good bank to the bad bank. This actually makes the bank put skin in the game, so the risks stemming from bad assets are shared between the bank and the government. However, the government is the only one to have a share in the upside.

We should remind at this point that, in its current version, the PPIP does not include any participation of the bank itself in the funds that will be created to manage the assets.

Table 8: The Swedish Restructuring Model for Failure Resolution



Source: FDIC: Managing the Crisis: The FDIC and RTC Experience, Volume 2, pp. 216

4. The Bridge Bank Model

The last resolution example that will be considered is actually a tool that is already available to the FDIC since 1987, and that has been used many times when dealing with large and complex bank failures. Introduced in 1987 by the Competitive Equality Banking Act (CEBA), a bridge bank is “a temporary national bank chartered by the OCC and organized by the FDIC to take over and maintain banking services for the customers of a failed bank”.¹

In essence, the main role of this method is to fill the gap between the failure of a bank and its acquisition by a third party, typically via a P&A transaction, or its IPO. This is actually quite similar to what has been described in the Swedish model in terms of both structure and implementation. This method has been frequently used by the FDIC in the resolution of large institutions, one of which will be examined in further details in this section.

The bridge bank, with slight differences, is very similar to the conservatorship system used by the RTC during the S&L crisis. The idea is the same: eliminate a large part of the shareholders, change the senior management, put bad assets into a bad bank, restructure and ultimately reprivatize the bank.

As was the case for Continental Illinois in 1984, a Purchase and Assumption transaction may not always be a plausible option at the time of failure. The main reason is that failures typically occur during economic downturns or financial crisis situations. In these circumstances, other financial institutions may want to follow a defensive strategy, and therefore may not be interested in acquiring problem banks without government guarantees (as in the case of Bear Stearns – JPMorgan Chase). Moreover, non-performing loan holdings of failing institutions constitute another major problem turning other banks off this kind of acquisitions. On the other hand, a resolution through payoff for institutions of this size is almost always prone to cause spillover effects in the economy because of the large number of counterparties that could be affected. The bridge bank solution is therefore a very useful alternative for the FDIC to use instead of offering open bank assistance (OBA) when it has to deal with a troubled TBTF institution.

¹ FDIC: Managing the Crisis: The FDIC and RTC Experience, Vol. 1, pp. 171

What was done in the case of Continental Illinois in 1984 was technically a bridge bank solution. Although it did not exist then, the kind of OBA that Continental received was equivalent to what was later called a bridge bank.

The Continental case was also interesting because of the innovative approaches it brought to asset disposition, which have become a basis for future resolutions. The way the FDIC dealt with Continental's problem assets was through servicing agreements between the bank and the FDIC. Namely, the FDIC mandated existing employees of Continental, along with FDIC officials who worked onsite, to handle the sale of large volumes of assets. The process worked out very well as the FDIC used incentivization mechanisms for people who were in charge of the disposition activities.

Let us now consider the example of Bank of New England to set out the characteristics of a typical resolution process through bridge banks.

a) Resolution of Bank of New England

The resolution of Bank of New England (BNE) is considered by many as a very successful example of a bridge bank implementation. BNE was neither TBTF nor its resolution was one of the biggest in terms of deposit size. However, the bridge bank solution was thought to be the most suitable one as the FDIC had decided to provide full insurance to its creditors.

BNE and its two sister banks, Connecticut Bank & Trust Company and Maine National Bank, failed in 1991 with \$19.1bn of deposits in total, as a result of deteriorating economic conditions and rising delinquencies mainly in their real estate loan holdings. \$2bn of these deposits were uninsured, and the FDIC determined that their coverage was important to the society. The P&A and payoff options were therefore ruled out. Instead the FDIC decided to put in place the bridge bank option. Below is the sequence of events during the resolution process, which can also give a good idea of a typical bridge bank process.

1. The OCC closes the banks and appoints the FDIC as receiver.
2. The FDIC creates bridge banks for each of these banks, under new names. It also replaces the senior management with a new management. The asset allocation at this point is important to understanding the resolution process. The FDIC puts the "good assets" and covered depositors into the newly created bridge banks. On the other hand, problem

assets, along with uncovered depositors, are put in the part of the bank that is under receivership, if any. Uncovered depositors then share the proceeds of the bad assets on a pro-rata basis with the FDIC.

3. Banks open for business the day after, meaning that there is no interruption in the daily operations.

4. The FDIC injects the required amount of capital for the bridge bank to be able to continue operations.

5. In tandem with the new management, the FDIC operates the bank in a conservative fashion, considerably curtailing lending activity and any other risky practice, while offering not-very-aggressive rates on deposits. The bank undergoes an important restructuring in its problem areas.

6. The FDIC eventually sells the banks through a P&A transaction. In BNE's situation, an interim management agreement and a servicing agreement (for the management and disposition of the bad assets) were signed with the winning bidder, valid until the closing of the transaction.

Although it was subject to some changes after the enactment of the FDICIA, the bridge bank solution largely remained intact. In the context of the above transaction, the acquiring bank was provided with put options on the bad assets, a practice that has been prohibited by the FDICIA absent systemic risk.

C. Which Resolution Procedure for the Current Situation?

In light of the above resolution experiences, one tends to be surprised to see how much controversy there is in the market over what is really obvious. Past experiences have shown that a typical course of actions are indeed very effective in solving crises of the kind we are experiencing today, even though none of them matches the current crisis in size or scope.

What is being done today, speaking in the FDIC resolution framework, is an intense process of OBA to troubled institutions, providing them with financing, capital injections, but with no fundamental impact on their management or ownership structures. In other words, the banking system is being propped up, with no apparent intention to penalize parties

responsible for the crisis. The FDICIA prohibits resolution procedures favoring uninsured depositors¹ absent systemic risk. However, there is a clear consensus in the market that especially shareholders are supposed to be subject to heavy haircuts as a result of their failure of delivering their duties as owners, and the management team to be replaced with a new one as a consequence of their bad management.

There is strong public criticism to the fact that public funds are given to the same management teams that brought their institutions to the brink of bankruptcy. Furthermore, from earlier experiences, it was an evidenced fact that if an insolvent bank is allowed to operate with the existing management, the management tends to take excessive risks to turn around the institution, which only magnifies the actual losses that will ultimately need to be incurred.

As mentioned earlier, in the current situation, the government has not yet sent a clear message to the markets as to what his approach will be in specific situations. The only certainty, perhaps, is about the government's use of the TBTF guarantees. The way the FDIC has been dealing with TBTF institutions (since Continental Illinois) has been thus far through bridge banks. Continental was not let fail, however, this was only because the bridge bank solution did not exist at the time. What was done, as mentioned previously, was technically a bridge bank solution through the use of OBA measures. Furthermore, even though the systemic risk exemption applies and the FDIC is not bound to the least-cost provision, using a bridge bank seems to be the least costly solution over the long run. If managed successfully, bridge banks could allow the FDIC to minimize the haircuts to uninsured creditors and bondholders, therefore diminishing the systemic risk problem.

This effective means, used in tandem with the asset disposition practices followed by other countries in similar crises, could constitute a way out of this banking crisis, and could also be the least-cost solution for taxpayers.

¹ FDIC: Managing the Crisis: The FDIC and RTC Experience, Vol. 1

D. Is the Bridge Bank Method Equivalent to Nationalization?

It should be admitted that the main factor that enabled other countries, especially Sweden, to implement bold resolution procedures that involved temporary nationalization, was ideological pressures that were relatively accommodating to this kind of practices.

The word “nationalization” is obviously not very welcome in the U.S., and especially so when large trademark institutions are in question. However, as stated in the FDIC regulations, bridge banks are interim rather than permanent solutions for failing banks. The FDIC initially establishes the bridge bank for 2 years, with the possibility of up to three 1-year optional extensions.¹

Besides the political obstacles, there are some people who worry about a government-sponsored institution’s performance. This worry is actually groundless, as the management team appointed by the FDIC are professionals who already have experience in the market, and who will work to turn around the company to the best extent possible, in a regulatory framework set by the FDIC. However, despite the success of the takeover and sale process, the former CEO of Continental Illinois who served during the period when the bank was under government control notes: “It is inevitable that politicians and regulatory agencies, acting at the behest of various interest groups, will try to interfere in bank decisions concerning capital allocation.”²

¹ FDIC: Managing the Crisis: The FDIC and RTC Experience, Vol. 1, pp. 171

² American Banker, Theobald Led Nationalized Continental In 1980s, March 12, 2009

VI. Recapitalization

A. Plausible Ways of Recapitalizing the Banks

The U.S. Treasury's plan primarily focuses on keeping the banks alive, and doing so obviously requires recapitalizing them. As discussed earlier, banks have incurred large losses since the outbreak of the crisis due to rising loan delinquencies tied to a deteriorating economy. They need to have an adequate level of capital in order to survive even more severe economic downturns, and keep their lending activity.

Even though the Treasury officials recently claimed that the banking industry is solvent in aggregate terms, some banks are more in need of capital than others as evidenced by the results of the recently conducted stress tests. The main challenge, at this point, is to make sure that new capital that banks are going to raise will not be depleted as quickly as previously experienced. To this end, the government has to make sure that these banks operate in a healthy banking system where uncertainties among players are minimized and private investors are more willing to participate in funding these institutions.

Accordingly, a combination of the following recapitalization options will have to be put in place in order to reach this very goal.

1. Recapitalization Through Capital Markets

The government has iterated several times its intention to have banks recapitalize themselves primarily via private investors. However, private investors have long ceased to provide equity capital to banks, with some exceptions, for reasons pertaining to the uncertainty over their toxic asset holdings and their solvency positions. Another important constraint, however, is that private investors have become very skeptical because of inconsistent resolution procedures the government has implemented so far during the crisis. In order to eliminate these uncertainties, the government has to come up with a clear resolution mechanism, whereby market participants can be sure of the causalities of government interventions.

Furthermore, the stakes that the government currently has in some banks through preferential shares, e.g. Citigroup, constitute an important risk for "backdoor nationalization".

Timothy Geithner cited these shares as an option for banks to recapitalize themselves should they have problems raising funds from private investors. Another major drawback with recapitalization through capital markets is that bank shares are at historical lows and a capital increase at these levels would severely dilute existing shareholders.

It would therefore be plausible to conclude that a healthy banking system is key to effective recapitalization through capital markets.

2. Recapitalization Through Own Earnings

Some people believe that banks still have considerable earning power to keep themselves as going concerns over the long term, and this especially with the large spread they currently have thanks to cheap financing from the government. However, it is known that the government financing will not be provided forever, and that banks need to be able to survive by their own means.

The defenders of this view argue that although possibly insolvent by market values of their assets, these institutions have the capacity to build up capital through earnings when provided with temporary government guarantees. This is actually quite similar to what happened in Japan in 90s. The banks could find financing at 0%, and made profits through the significant spread at which they were lending.

However, as in the example of Japan, this approach would require considerable amount of time to achieve results, and time would mean forbearance in that government is supposed to let “zombie banks” to continue operating until they fill the gap between their assets and liabilities. Therefore, this method, if applied alone, is likely to take a long time as long as toxic assets lie on bank balance sheets, eating up capital on their side. This is exactly what the U.S. Treasury is trying to avoid, given the importance they devote to cleansing bank balance sheets of toxic assets.

3. Recapitalization Through the Cleansing of Toxic Assets

As analyzed thoroughly in previous sections, the Treasury’s plan to cleanse bank balance sheets is central to the rescue plans. This is a very important yet tricky part of the recovery plan. Many economists oppose to it, claiming it is desirable but practically

impossible to clean these assets without a value transfer from taxpayers to shareholders of these banks.

As discussed earlier, for banks to be recapitalized through this means, investors will have to bid higher than carrying values of these assets. That is a plausible scenario given that the FDIC provides an important subsidy for the program. If it turns out to be as expected, banks would have double benefit from this plan. On one hand, they would be recapitalized by the difference between the carrying values and the bid prices, and they would get rid of risky assets, thereby opening up the doors for private investment on the other.

If successful, this type of recapitalization, despite widespread public criticism, would do a good job revamping banks to recapitalize themselves through capital markets. Indeed, Timothy Geithner have stated for the above reasons, [solvent] banks have several incentives to participate in this program.

This was actually what was missing in the crisis experienced in Japan in 90s. The authorities failed for a long time to incentivize banks to realize losses on their non-performing loans, which prolonged the crisis and had severe implications on the economy.

However, it should be noted that the whole mechanics of the plan would change if banks would use the recent changes in accounting principles to mark their assets up to values close to par, as some already have.

4. Recapitalization Through Conversion of Debt or Preferred Shares

Recapitalization through conventional means is indeed a real challenge for the banks in the current situation; as uncertainties are likely prevail for some time in the market. Acknowledging this fact, the Treasury has offered the banks, though as a last and temporary option, to convert existing preferred shares, including those belonging to the government, into common equity to serve as a cushion for future losses. Although this was viewed by some as quasi-nationalization, the government has repeatedly stressed that this would merely be a temporary solution, and that they would divest their participation as soon as the institution in question comes back to normal health. We should also note that, in a liquidation process preferred shares come second in line for losses. So, the only point here in converting these shares into common equity seems to reinforce banks' Tier I capital ratio. In other words, the

government is trying to make it legitimate for these banks to continue operating by showing them solvent by regulatory requirements.

There are some other economists pointing to a debt overhang problem keeping private investors from providing funds. They claim that debt-for-equity swaps are necessary to remove the debt overhang problem and save the banks from insolvency. However, this proposal seems easier said than done, given that it would be very hard to renegotiate contracts with creditors who do not have any fear with regards to their claims thanks to implicit government guarantees. If successful, however, this stands as one of the most taxpayer-friendly solutions as it does what a fair resolution procedure is ultimately supposed to do: it applies haircuts to both uninsured creditors and shareholders.

5. Combination to be Used by the Financial Stability Plan

The Financial Stability Plan appears to be the product of an in-depth analysis of the above options and potential consequent scenarios. It is intended to make use of the three first options, and possibly the fourth as a last resort.

The plan attempts to tackle serious impediments preventing recapitalization simultaneously, by readying bank balance sheets for private participation, eliminating uncertainties prevailing in the market, and by giving banks the chance to earn their way out of capital constraints by providing them with favorable grounds to generate income.

However, this kind of recapitalization heavily relies on the success of the PPIP, which is without any doubt a risky premise, and on the long term, on the health of the overall economy. This last factor is actually very important, as a sound banking system does not necessarily lead to borrowers with better credit quality, but usually the other way around. The timing is therefore a crucial component of the economic and financial recovery plans of the government, as the banking system, even if it totally recovers at some point, will not be able to remain healthy for long in a lingering recessionary environment.

VII. Conclusion

In light of the analyses that have been conducted throughout this paper, it is possible to draw conclusions about the rationale followed by the U.S. regulators in coming up with the Financial Stability Plan. First of all, it is obvious that the set of actions and policy recommendations proposed by the plan are the result of an elaborate consideration of the resolution procedures and rescue efforts already undertaken in other crises and countries. The U.S. Treasury, working in close connection with the FDIC and the Fed, is presumably conscious of the potential consequences of its actions; however its short track record during the current crisis has sent mixed messages to the market, and raised doubts over its understanding of the situation.

The failure resolution practices undertaken in previous crises leave little uncertainty over what actions the Treasury needs to take in the current situation. Taking prompt and decisive actions is essential, but the actual content and aim of the actions are even more important. Indeed, compared to previous financial crises, this crisis was marked by relatively more comprehensive and timely interventions by the U.S. government. However, the actions lacked consistency, which has severely damaged the public perception of the government's plans to deal with the problems, and its credibility.

The resolution model that clearly stands out among others is the one that involves temporary nationalization of banks, which was successfully implemented by Sweden in 90s, and the FDIC in some instances during 80s and 90s. This model, called a bridge bank under the FDIC framework, is based on the fundamental premise that uninsured creditors and especially shareholders ought to undergo haircuts as a result of a bank failure. This disciplining mechanism is actually central to the long-term sound functioning of the deposit insurance system and the banking industry as a whole. In the absence of this, government guarantees, a very overlooked yet costly issue, become a norm as they are now. These guarantees are proven to be very burdensome for the government, especially in the long run, as it impairs depositor discipline in large institutions and eventually leads to overleveraging of banks as a result of mispriced [implicit] government guarantees. Therefore, there is little doubt that the government is currently doing things in the most costly manner.

However, to assess the viability of the Treasury's plan, one needs to acknowledge the implicit political constraints the regulators are facing. The world's largest free-market economy, the U.S. is paradoxically not as free as some other countries in pursuing certain policies that are in contradiction with the fundamentals of its ideology. It would therefore be more appropriate to gauge the viability of the Financial Stability Plan under this framework that rules out nationalization as an option.

When considered in isolation, the Financial Stability Plan does a good job in attributing a predominant importance to the troubled asset problem. This kind of incentivization mechanism is an innovative approach to the problem, yet brings along a fair amount of uncertainty as to its outcome. The discretion given to participating banks over the sale of assets depending on the bid price heavily diminishes the effectiveness of the plan, and undermines its very purpose of working these toxic assets out of bank balance sheets. Recent announcements about the subject indicate that even the most troubled banks are not incentivized enough to participate in the plan. On top of this, the recent changes in the fair value accounting principles have struck many as extremely contradictory to the purpose of the PPIP. I therefore think that the chances of success of the PPIP, as it is now, have diminished significantly. In my view, the fact that the most crucial part of the plan is in question casts doubts over the viability of the whole plan, as without a successful asset disposition plan the plan would merely be akin to previous unsuccessful rescue attempts.

All in all, I still believe that the Financial Stability Plan, even though very costly and controversial in some respects, has chances to succeed if important components of the plan are well executed, and most importantly, if the banks are willing to cooperate with the government to recover their own industry.

VIII. Tables

Table 1:	Composition of the ARRA Investments by Industry	14
Table 2:	The balance sheet of the bank before and after the sale	28
Table 3:	The structure of the fund after this sale (high price scenario)	28
Table 4:	The balance sheet of the bank before and after the sale (if it accepts the bid)	30
Table 5:	The structure of the fund after this sale (low price scenario)	31
Table 6:	LLP Price Discovery Scenarios Through Option Pricing	36
Table 7:	Capital Categories for PCA and PCA Provisions of the FDICIA	54
Table 8:	The Swedish Restructuring Model for Failure Resolution	61

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