Safe Banking

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ABSTRACT

Capital market gurus plead for universal banking with theoretically sound but practically fragile firewalls around special purpose vehicles (SPV) like financial conduits and trusts, while regulators continue to noose banks and massive risks pile on taxpayers due to credit derivatives. Fragile firewalls destroyed Enron and MCI-WorldCom and may implode banks. The solution proposed here is to create enough *safe banks* to serve panic-prone depositors, and to let the rest of the banks operate as universal banks without regulation. Safe banks invest exclusively in government securities, accept no more deposits than liquidation value of assets, and issue no liabilities (like debt) except common stock and preferred stock.

HOW DID GOVERNMENT GET TO REGULATE BANKS?

Why should the government regulate commercial banks as in the U.S. and most other countries? American commercial banks were not regulated prior to 1933. In principle, a deregulated banking system should operate like any other industry in which companies raise debt and equity capital to fund business operations, return a fixed pre-set coupon interest to bondholders and distribute the residual profits to shareholders as dividends. Bondholders and shareholders take risks consistent with expected rates of return on investments. The expected rates of return may differ from promised coupon interest rates on debt or dividend payment rates on common stock. Investors choose how much to invest depending on their expected returns and risk tolerances. Like any other business, banks have stakeholders. A bank's stakeholders include depositors, bondholders and shareholders who consciously choose investments like those in non-banking businesses. How are banks then different from non-banks? Does the difference naturally lead to regulation of banks?

Banks fund their operations by borrowing very liquid demand deposits and other debt maturing in relatively shorter periods of time than the terms of projects they fund. Banks must pay claims from demand depositors, whenever such claims are submitted. Banks use some equity funds with indefinite maturity, but they fund real assets (projects) which are highly illiquid. Typical bank assets include home mortgage loans and business loans extended over as long as thirty years. Unless borrowers become delinquent, banks cannot demand repayment of outstanding balances on such loans, making these assets illiquid. To liquidate assets, a bank generally incurs large legal and other transaction costs. To sum up, banks realize returns from assets over longer terms, whereas they need to commit repayments to depositors and bondholders over shorter terms. This creates mismatch between maturities of bank assets and liabilities, unlike in non-banks.

If all depositors and short-term bondholders of a bank withdraw their funds at the same time out of panic, the bank can have serious difficulty in meeting these obligations and may even fail due to lack of sufficient funds. Panic at the level of one bank may spread to other banks, causing a run on bank deposits and a systemic collapse of the banking system as it happened in the U.S. in early nineteen-thirties. In many instances, banking panics may be irrational. But, once a run spreads over the entire banking system, there may be serious repercussions of credit squeeze and depression in the economy. To contain the irrational fear, the U.S. Congress instituted a system of providing government guarantees for bank deposits.

While a government guarantee of bank deposits circumvents irrational banking panics and runs, it can engender *moral hazard* in the banking industry. Once insured, depositors simply relax and stop monitoring banks, as the government stands by to pay them off should their bank fail. Moral hazard means that banks can take government guaranteed deposit funds to invest in highly risky bets. Although bank

shareholders can lose their equity if such bets do not turn favorable, they can leverage to benefit enormously when the bets turn out successful. For example, suppose that a bank has $10 in equity funds, $90 in demand deposits and no other stakes. Then the leverage (equity-to-debt ratio) is 1:9. This is a relatively high degree of leverage compared to typical non-banking firms with leverage ratios of about 1:1. Banks generally operate with high degrees of leverage. If the entire $100 is invested in loans earning 6% rate of interest annually and depositors are paid 2% rate of interest annually, the bank makes $6 from loans and pays $1.8 to depositors per year, earning a net $4.8 from operations, which is 48% rate of return on equity of $10. Leverage thus magnifies the profits of bank shareholders. This tempts bank managers who normally act in the best interest of shareholders to take risk. If the bank's borrower defaults and pays only a part of 6%, shareholders may lose a little of their capital. The most that shareholders will lose is $10, which is relatively small when compared to the loss of $90 to taxpayers due to government guarantee of bank deposits.

The deposit guarantee solves the problem of banking panics, but creates the new problem of moral hazard by which the government (and hence taxpayers) remains liable for unfavorable bank bets. The U.S. has incurred hundreds of billions of dollars of losses during late nineteen-eighties in rescuing many savings and loans associations called thrift banks. To recover such losses in the future and to prevent moral hazard, the U.S. has instituted a system of risk-based deposit insurance and minimum bank capital standards. Banks are required to pay a certain percentage of their outstanding insured deposits as a price for the deposit guarantee and this price varies with the level of risk of a bank. The greater the risk of a bank's assets, the larger becomes the deposit insurance premium rate. Every bank has to maintain a minimum level of capital as a percentage of assets under the scheme in the U.S. Banks failing to meet the minimum capital standards are not allowed to remain in operation. The insurance premiums are deposited in a government managed deposit insurance fund, which is required by law to have at least 1.25% of total bank deposits. Bank insurance premium rates are adjusted to maintain this level funding of the deposit insurance fund.

The above elaborate system of regulation of the most dominant sector of a capitalistic economy is a vivid illustration of the fact that free credit markets have collapsed in the past and that governments must intervene to stabilize such markets. Observe, however, that the U.S. government has strived for instituting only those regulatory policies (optimal capital and deposit insurance premium standards) that are consistent with competitive rational capital markets. In principle, the government's involvement simply ensures that bank depositors do not resort to irrational panics. In a hypothetical scenario of only rational behavior, markets for an ideally deregulated baking industry will have imposed on banks some debt covenants and prices for risky debt. Debt covenants may take the form of restricting a business to maintain a minimum net-worth (assets minus liabilities) or equivalently a maximum leverage ratio. A business violating such debt covenants may be taken to a bankruptcy court under corporate laws. Imposing a certain price for risky debt means that bondholders demand businesses taking high risk to pay a consistently high rate of interest.

A hypothetically deregulated ideal banking industry devoid of panics and runs will have bondholders imposing debt covenants and interest rates consistent with a bank's risk. Government researchers can attempt to derive parameters for such covenants approximately using equilibrium theoretical models of economics and implement the resulting policies as optimal bank regulatory policies. Such government policies will have two components: minimum equity-to-assets ratios that a bank must have to remain in operation and a risk-based deposit insurance premium. In principle, these equilibrium-based regulatory policies are not regulations or strictures on the banking industry, but are transparent policies. These policies are optimal from the point of view of taxpayers, and they help in circumventing both irrational panics and moral hazard. This can be summarized in the following proposition.

Proposition 1: *Assume that government insurance of bank deposits is the only way to avoid banking panics and runs. Then, taxpayers find it optimal to regulate banks with minimum bank capital and deposit insurance premium policies which can at least theoretically be derived in an equilibrium model of economics.*

Proof: See Acharya and Dreyfus (1989). []

Is the assumption in Proposition 1 tenable? Is there an alternative to the government deposit guarantee that is less costly to taxpayers? What are the problems with the above optimal bank regulation?

PROBLEM WITH BANK REGULATION

The size of the U.S. banking industry is about 60% of the GDP. It is heavily regulated. To avoid a repetition of banking panics and runs of the 1930's, the U.S. government decided to insure bank deposits. Bank depositors have been rescued. But, banks' propensity to gamble through high leverage has cost the U.S. taxpayers about $300 billion in late 1980's. The global banking industry has now accumulated a total US$217 trillion in face values of credit derivatives and other such financial instruments. The true economic worth of these financial instruments is less, maybe about one-tenth of the face amount, but still very significant. Such instruments allow banks to raise massive sums through special purpose vehicles called conduits and master trusts against incomes from consumer and credit card loans in their portfolios. Banks effectively sell off the icings of their cakes while holding enormous residual risks for taxpayers. This allows banks to generate massive short-term profits, while effectively passing on the risk to taxpayers.

How have we come to this predicament? This is almost like the failed laissez faire capitalism, except that government regulators are simply trying to play a catch-up game to retain their jobs, while the shrewd banking mandarins are aggrandizing wealth at huge impending future costs to taxpayers. The U.S. decision[1] to insure deposits ushered an era of mega regulation of banks. The economic argument favoring such a decision is that somehow bank regulators will act like *private surrogates* of taxpayers, implementing policies in the best interest of the latter.

If a regulatory institution were to act like a private surrogate of taxpayers, it would[2] (i) collect an actuarially fair price of deposit insurance from a bank as long as it is optimal to do so, (ii) close an ailing bank optimally, when immediate closure is less costly than leaving the bank open, and (iii) allow banks to choose their own asset compositions and capital, generating expected returns consistent with their risks in equilibrium.

If bank regulators implement policies which a private surrogate would, we could achieve the best of both worlds with virtually deregulated banks and no banking panics and runs. Such policies will allow universal banking by giving banks the leeway to choose their own asset compositions and capitals. Banks will of course transfer their deposit insurance costs to depositors via lower interest rates on deposits, but panic-prone depositors should accept the lower rates (in equilibrium) in lieu of the protections they receive from government guarantee of deposits. Actuarially fair deposit insurance premiums will avoid a transfer of wealth from taxpayers to insured bank depositors. Optimal bank closure timing will prevent transfer of wealth from taxpayers to uninsured large depositors who tend to promptly withdraw their funds following the first news of trouble at a bank. Proposition 1 basically sums up this sanguine view of bank regulation.

Given a bank's risk and capital position, one can use Merton's (1977) approach to calculate the actuarially fair deposit insurance premium. But, what is the private surrogate regulator's minimum bank capital requirement (bank closure rule), when banks are allowed to choose their own capital? Acharya and Dreyfus (1989) and Acharya (1995) show the existence of a minimum positive threshold capital level which banks will voluntarily maintain in a competitive and unregulated world with free entry and exit. Consistent with this research, the U.S. Congress enacted a constant minimum required capital of about 2 percent of a bank's assets, leaving the task of determining deposit insurance premiums to the Federal Deposit Insurance Corporation (FDIC).[3] This research showed for the first time that it was optimal for taxpayers to foreclose banks. Previously, an ailing bank's lawyers and accountants would drag the

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[1] See, e.g., Friedman (1957).

[2] The private surrogate role was postulated in Black, Miller and Posner (1978), implicitly adopted in Merton (1977, 1978), and explicitly used in Acharya and Dreyfus (1989), Acharya (1992,1995), and Acharya and Udell (1992).

[3]Such enactments restrict the regulatory choice to only those policies which private surrogates of taxpayers will adopt and, thereby, avoid a potential inconsistency between the regulatory incentive and the best taxpayer interest.

regulators to courts until the bank depleted all its statutory capital, and until the troubling banks completed embezzling funds through all kinds of ruses. The new stringent bank capital requirements of 1989 were at least partly responsible for the rest of the world to trust the U.S. banking system and transfer funds to the country to expand economically.

But, it is shocking how some of the major banks are heavily leveraged through special purpose vehicles (SPV) created as bankruptcy remote entities like conduits and trusts. SPVs are frequently maintained as off-balance sheet activities, separated from parent banks by "firewalls" which appear safe theoretically but are fragile in the real world. A major bank can have as much as 25% of its assets in a conduit or trust. SPVs ideally circumvent bank regulatory laws at enormous risk to taxpayers. For example, a major bank can use $8 in equity capital and $92 in insured deposits, i.e., a total of $100 as equity of an SPV Conduit to raise fresh funds of $900 in new notes and papers against the Conduit's assets comprising consumer loans and credit card loans. This means, the parent bank uses a double leverage by which $8 in equity leads to a total borrowing of $992 to fund loans in the conduit. The parent bank satisfies 8% minimum regulatory capital requirement. Even the Conduit in this example has equity of 10% of its assets ($900 borrowed plus $100 in equity). But, the whole bank skates on thin ice by having only 0.8% of assets as capital, which is one-tenth of the requirement set by regulators. Such double leverage not only circumvents bank regulatory laws, but also exposes taxpayers to enormous risk.

Another potentially devastating transfer of risks by banks to taxpayers is taking place under the veneer of a relatively healthy banking industry. This is the very ubiquitous credit derivative scheme which banks use to sell off creams of their loans for immediate profits, while the risk piles up for later days. By this scheme, loans are not sold by a bank. Only derivates based on loans are written (shorted) by the bank. Short selling of credit derivatives for lucrative premiums enhances current profits, boosting managerial bonus and incentives tied to bank stocks. For example, suppose that a bank uses $8 in equity and $92 in insured deposits to fund mortgage loans of $100 at 6%. Suppose that there is an estimated 5% rate of default in mortgage loans. Then, the bank is expected to receive $5.7 per year. The bank can sell a credit derivative which guarantees that the first 95% of all mortgage proceeds will be paid to the buyer of the derivative. The buyer can be some mutual fund that expects, say 3%, guaranteed return. The mutual fund can pay (invest) $190 to buy this credit derivative if sold by a major bank like Citibank. Since the mutual fund investors are assured of $5.7 per year, they will generate a guaranteed 3% on their purchase (investment) of the credit derivative for $190. This sale boosts the bank's immediate profits by $90. If the bank efficiently uses its profits, it may be fine because it can face the future residual defaults on its mortgage loans. But, managements tend pay themselves excessive perquisites and bonuses, which means the load of residual risks invariably piles up for taxpayers. Taxpayers will bear all the residual risk on a latter date if the bank disburses $90 towards managerial perquisites, dividends and current operations.

OPTIMAL BANKING SYSTEM FOR TAXPAYERS

Bank regulators unwilling to relinquish their grips over banks have attempted to resolve the seething risk problem in many different ways. One of the ways is to set bank capital requirements and deposit insurance pricing standards based on public rating of bank assets (Acharya (2003)). This will allow rating agencies like Moody's, S&P and Fitch to rate bank asset pools. Banks will then define risk weights for each pool to determine minimum risk-weighted capital requirements. This approach can circumvent the criticisms leveled against government examination of bank assets. But, it raises new problems about efficacy of rating procedures of public rating agencies. There can be serious problems in public ratings norms used by Moody's, S&P and Fitch, resulting in dramatic changes in ratings unless public rating methodologies are corrected (Acharya (2000)).

The other approach for bank regulation is to let banks estimate their own risk weights for various asset pools using internal models. Bank regulators may simply impose penalty in terms of extra capital requirements on banks based on deviation of ex-post risk-losses from ex-ante estimates furnished to regulators. Such a capital penalty rule may discipline banks to strive for best internal models to predict risk-losses as debated in Federal Reserve Board (Acharya (1990)). In fact, the recent Basel accord on bank

regulation aims at standardized and internal ratings-based (IRB) approaches to measure credit risk.[4] The Basel Committee on Bank Supervision at Bank for International Settlements (BIS) says, "Safety and soundness in today's dynamic and complex financial system can be attained only by the combination of effective bank-level management, market discipline, and supervision. The 1988 accord focused on the total amount of bank capital, which is vital in reducing the risk of bank insolvency and the potential cost of a bank's failure for depositors. Building on this, the new framework intends to improve safety and soundness in the financial system by placing more emphasis on banks' own internal control and management, the supervisory review process, and market discipline…. Banks will measure their own credit risk, market risk and operational risk using their own models."

The question that still remains is: will the new BIS approach thwart piling up of risks on taxpayers due to credit derivatives and other such financial instruments? In fact, a more crucial question is whether the complicated, patchy and unsatisfactory regulations are necessary at all. Regulation obviously keeps banking economists and regulators employed, but it also muzzles them perennially to uncover a satisfactory solution which may be optimal from the point of view of taxpayers. Somehow the piling up of residual risks at banks should be prevented or priced correctly with incentive for banks to maintain sufficient reserve to absorb potential future losses. With bank managers looking for short-term gains and not fazed by future risks to taxpayers, the current regulatory approach will never be a solution in the best interest of taxpayers.

A solution suggested by capital market theorists led by Miller (1995) is to deregulate banks completely. Banks will then slice their assets into homogeneous risk pools for funding by investors in capital markets. Investors will fund each respective slice protected by firewalls within a bank. Firewalls demarcate a legally distinct entity for each asset slice backing liabilities due to corresponding investors' funds. The funding for an asset slice and the corresponding rate of return paid by a bank will depend on economics of supply and demand and on the risk-return trade off in capital markets. The riskiest asset slices may not be marketable. The least risky slice of a bank may comprise primarily of government securities funded by depositors unwilling to take any risk. The other slices can be rated by public rating agencies and be sold to interested investors accordingly. This approach will make every slice priced according to its risk. This will also obviate the necessity for bank regulation. This approach results in universal banks with no regulatory intervention and no government guarantee of bank deposits (Bensten (1994)). It is like the approach that prevailed prior to 1930 in the era of failed laissez faire capitalism.

The current arguments in favor totally deregulated universal banks are that credit and capital markets have become sophisticated enough to withstand any shock and that the largest investment bank (Drexel Burnham) failure has not dented the economy. The problem with this approach is, however, that it fails to address irrational banking panics and runs that engulfed the U.S. in early 1930's when deposit insurance was unavailable. There is no economic model to address irrationality. The current wisdom is that panic-prone bank depositors have to be insured by the government. Government regulators have exploited this predicament to remain entrenched in the process of regulation, despite hundreds of billions of dollars losses to taxpayers resulting from moral hazard associated with deposit insurance. But, there is a better alternative to the government guarantee of bank deposits, which is less costly to taxpayers as shown in the following proposition.

Proposition 2: *Define "safe banks" as those whose assets comprise only government securities and cash, who accept no more deposits than liquidation value of assets at any point in time, and who issue no liability (like debt and notes) other than preferred stock and common stock. It is optimal for taxpayers to have enough number of safe banks to serve panic-prone depositors and to let other banks operate as universal banks without any government regulation. The extent of government regulation taxpayers need is to ensure that safe banks do not deviate from their charters.*

Proof: Panic prone depositors will be drawn to safe banks. There will never be any systemic banking panics and runs. Observe that such panics prompted the U.S. Congress to insure bank deposits and then establish regulatory institutions to contain bank moral hazard problems wrought by insurance. Absent the possibility of any banking panic, deposit insurance will be unnecessary and bank regulatory institutions

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[4] http://www.bis.org/press/p020710.htm

will be redundant. Elimination of costly and redundant bank regulatory institutions is then optimal for taxpayers. Investors with surplus funds seeking greater risky returns can gravitate to universal banks, like they currently are doing with respect to investment banks offering checking facilities. Virtual deregulation will free the bank regulatory noose on the economy and preclude the problems associated with potential credit crunch induced by bank regulation. The minimal monitoring of safe banks will cost little to taxpayers. Potential shifting of massive risks to taxpayers by bank managements will cease to occur. []

The above safe banking proposal can be easily implemented, given political will of the U.S. Congress. The Congress will be forced to act after any fresh catastrophic failure of banks. The U.S. witnessed an expansion of $2.5 trillion in new credit during the last one year, primarily in the home mortgage market. There is no reason to assume that the U.S. assets somehow rose in value more than this colossal new credit even after the terrorist attack of September 2001. It seems that the U.S. home mortgage market is ballooning without much real support and will likely burst sometime. This can make many major banks default massively. Unless the U.S. Congress acts preemptively, it will be forced to react afterwards after uncontrollable bank failures. Safe banking is the only optimal alternative available for taxpayers.

SAFE BANKING IS THE ONLY OPTIMAL ALTERNATIVE

Regulators argue for continuing bank regulation because deposits need to be guaranteed by the government to preclude a rare catastrophe of banking panics and simultaneous withdrawals of deposits. They remind taxpayers about banking panics causing huge systemic losses to the economy. But, as proposed here, the government can create enough safe banks that invest only in government securities to let panic-prone depositors save their live savings. Safe banking will not only obviate government guarantee of bank deposits, but also eliminate the elaborate and costly bank regulation. Is the current bank regulatory regime continuing due to vested interests of government regulators? We have to wait for the next catastrophe in bank failures to get an answer.

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