

FINANCIAL REFORM—WHAT'S REALLY NEEDED?[‡]

Limited-Purpose Banking—Moving from “Trust Me” to “Show Me” Banking[†]

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I. The Fall of 2008—an Autopsy

The list of culprits for the crash of 2008 and its ongoing devastating economic fallout includes regulators, rating companies, politicians, housing policy, Fannie Mae and Freddie Mac, boards of directors, bank managers, the Federal Reserve, derivatives, bad lenders, bad borrowers, accounting, a housing bubble, repeal of the Glass-Steagall Act, illiquidity, fraud, opacity, and leverage. The crime's victims were initially localized, but quickly spread to asset markets, product markets, financial institutions, borders, and lots of innocent people.

The specter of large financial intermediaries undergoing actual- or near-death experiences flipped expectations. Suddenly, everyone expected bad times and took steps to ensure that outcome. Fear became well worth fearing. Politicians stoked the fire, suggesting that depression was right around the corner. And as if guided by an invisible hand, employers started laying off workers in droves. By the end of 2008, the firing free-for-all was putting 700,000 people on the street each month. Trust in financial companies took a holiday. Those who knew the system best, the bankers, were the first to panic. They understood what everyone else

soon learned—that no one, not even the heads of the banks, really knew what particular banks, including their own, owed and owned and that, when push came to shove, no bank could trust any other bank.

The Treasury and Federal Reserve watched the post-Lehman freezing of credit markets with tremendous alarm, realizing that the entire financial system was effectively experiencing a bank run. To their credit, both institutions swung into full gear, effectively becoming the nation's and, indeed, the world's banking system. Their new customers ranged from RV owners to French banks. No doubt their actions kept the crisis from worsening. But there was, and still is, no happy ending to the bank run of 2008. *It's a Wonderful Life* has been replaced by *It's a Horrible Mess* at the local (i.e., online) cinema. Yes, Wall Street is still functioning, inflation is moderate, growth is positive, and the government is claiming a “profit” on its rescue mission. But 29 million Americans are out of work or short on work, and millions of older Americans have seen their retirements badly damaged, if not destroyed. For Main Street, the system failed and its maintenance, with minor tweaks, is the unkindest cut of all.

II. “Trust Me Banking”—Unsafe at Any Speed

The events and aftermath of 2008 are hardly unique. Western economic history records one financial crisis after another leading to widespread and lasting economic carnage. Indeed, today's eurozone sovereign debt crisis is, at its core, another banking crisis that threatens to produce a double dip recession in the United States as well as Europe. In this crisis, as in the subprime crisis, banks find they are holding triple-B assets, which were previously rated triple-A.

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Lord knows, the world is a risky place. The only thing for sure is that nothing is for sure. Hence, when banks borrow and say, "Trust me" to their creditors, they are asking their creditors to take a lot on faith. And when creditors turn reluctant, banks improve their promises, pledging immediate return of borrowed funds in the case of deposits and shortening the duration of their other borrowing. This gives each creditor more assurance of recovery if she sees smoke before other creditors see fire, but less assurance of getting paid back if all creditors see smoke at once and simultaneously rush to withdraw. At that point, the government substitutes its name brand for that of the banks.

Whether the government succeeds in halting the run is a confidence game. It's also a matter of how you define success. In 2002, the Argentine government, after abandoning its dollar-peso peg, assured bank customers their new money was safe and, when no one trusted that promise, the government seized the banks and froze customer accounts, making clear that customers' money was, indeed, safe—safe from its owners.

Whether or not particular banks, including the central bank, survive in this or that damaged condition in the aftermath of a financial crisis is not of primary concern. The real issue is the degree of damage inflicted on the broader economy. Banks control the financial highways and when their actions shut that system down, in whole or in part, the economy suffers. The fallout is partly from closure of the roads, but mostly, it seems, from the economy's coordinating on bad times, as per Diamond (1982) and other students of coordination failure.

Yes, coordination failure is but one explanation for today's slump. Real business-cycle theory would suggest a very large productivity shock hit at 1 AM on September 15, 2008 when Lehman Brothers filed for bankruptcy. New Keynesians would say the thousands upon thousands of firms laying off millions upon millions of workers in the immediate aftermath of Lehman's collapse were too busy with their mass firings to cut their sticky prices, which suddenly became too high. Or they'd claim the workers failed to drop their wages, which suddenly were too high. Monetarists might argue that the Fed's more than threefold increase, post-2007, in the monetary base constitutes insufficient monetary easing, or that failing to devise a scheme to make short-term real interest rates negative, as

opposed to zero, is the problem. Demand-siders could (and do) argue that running deficits close to ten percent of GDP was insufficient economic stimulation. Supply-siders would (and do) say tax rates are far too high even though federal tax receipts are at a postwar low as a share of GDP. They'd also throw in excessive government regulation and uncertainty about future government policies. Yet others will say the economic threat is foreign. Fingers are routinely pointed at China's supposedly overvalued exchange rate as well as that country's alleged usurpation of all our comparative advantages. For the politicians, though, the explanation is clear—the other party is killing jobs.

Other equally dubious explanations for the slump have been advanced, but let's assume that what we saw in 2008, what we are seeing today in Europe, and what we've seen historically reflects what appears patently obvious: namely, that financial crises trigger economic crises. The question then becomes: Are such crises inevitable? Or is there another way to organize the financial system to prevent such crises? If there is such an alternative, then the risk we face from the current system constitutes man-made risk; i.e., an excess burden.

III. The Lethal Mix of Proprietary Information and Leverage

Why is the financial system so risky? The answer lies in the combination of proprietary information and leverage. Markets don't operate well in the dark. The drug industry is a good example. Prior to the establishment of the Food and Drug Administration (FDA) in 1906, producers of medicinal cures claimed a right to keep their secrets. No doubt, some of the elixirs produced back then had value, but enough contained arsenic, uranium, and other poisonous ingredients to effectively kill the medications market, plus lots of people. The FDA put an end to these toxic assets by requiring the testing of medications and its own seal of efficacy.

In the financial world, there is precious little disclosure of financial liabilities and assets. There is, for example, no FDA to confirm that a particular mortgage written to a Mr. Smith by a Mr. Mozilla was truthfully originated and is being truthfully represented in the marketplace. Instead, the market is forced to rely on the integrity of the initiator or a rating company

paid by the initiator or whoever is the current owner of the paper. The moment it became generally clear that a nontrivial volume of subprime mortgages had been initiated fraudulently and were, indeed, being referred to routinely inside the industry as “liar loans,” “no-doc loans,” “NINJA loans,” etc., the entire class of subprime securities and their securitizations received a new designation—“toxic loans.” It’s important to bear in mind that these securities were called toxic not because they were risky and not simply because their underlying collateral had begun to lose value, but because these securities were either claiming or suspected to be claiming to be something they were not.

With no way to verify the truth about these securities, we saw a replay of the Tylenol scare of 1982. Eight bottles of Tylenol laced with cyanide, sold in a Chicago drugstore, instantly transformed 31 million bottles of Tylenol located in stores all over the globe into toxic assets that could find no buyers. Johnson and Johnson spent \$100 million replacing the tainted Tylenol with new safety-sealed bottles. In so doing, Johnson and Johnson provided disclosure that the new bottles weren’t fraudulent—that they only contained what, in fact, the company had shipped.

What brought Wall Street to its knees in the fall of 2008 was, thus, not a liquidity run (every-one didn’t suddenly have an expensive medical emergency), but a fraud run. Fraud, suspicion of fraud, and suspicion of suspicions of fraud caused the run. “Trust me banking” was exposed for what it is—a system that no one can really trust because no one external to the banks can verify what the banks really hold and no one external can have access to this information because of the claim that it is proprietary. The word “claim” here is important. Wall Street may claim that its secrets are its to keep, but if its secrets are that it’s selling snake oil, the government can protect the public interest and the market’s functioning by compelling highly detailed disclosure or, indeed, by establishing an agency—call it the Federal Financial Authority (FFA)—to directly verify and fully disclose the securities. Stated differently, the degree to which a bank’s balance-sheet details is proprietary information is not for the banks to decide. It’s a matter of government policy. As things now stand, there is no FFA and the market is thus incredibly fragile, with people ready to run away from suspect securities or banks holding

suspect securities at the drop of a hat. Indeed, a quiet, but apparently substantial run is now underway with respect to European banks that hold significant amounts of the sovereign debts of BIGPIS countries (Belgium, Ireland, Greece, Portugal, Italy, and Spain).

The fact that the banks and other financial intermediaries control two public goods—the financial highway and collective confidence—means their possible collapse is a public bad. Banks collapse for one reason—they are leveraged. Hence, limiting proprietary information via compulsory disclosure and eliminating leverage are the key to having a stable, well-functioning financial system. Limited-Purpose Banking (LPB) does both. Its name reflects its mission; namely, limiting banks and other financial intermediaries to their legitimate purpose—not leveraged gambling, but financial intermediation.

IV. Limited-Purpose Banking

This proposal¹ has eight provisions.

1. All financial companies protected by limited liability can market just one thing—mutual funds.
2. Mutual funds are not allowed to borrow, explicitly or implicitly, and, thus, can never fail.
3. Cash mutual funds, which are permitted to hold only cash, are used for the payment system.
4. Cash mutual funds are the only mutual funds backed to the buck.
5. Tontine-type mutual funds are used to allocate idiosyncratic risk.
6. Pari-mutuel mutual funds are used to allocate aggregate risk via direct or derivative betting.
7. The Federal Financial Authority (FFA) hires private companies working only for it to verify, appraise, rate, take custody of, **AQ 1**

¹ See Chamley and Kotlikoff (2009) and Kotlikoff (2010).

and disclose, in real time, all securities held by mutual funds.

8. Mutual funds buy and sell FFA-processed and -disclosed securities at auction. This ensures that issuers of securities, be they households or firms, receive the highest price for their paper.

Unlike the Glass-Steagall Act, which regulated based on name, not function, LPB treats each limited-liability financial intermediary identically, whether it calls itself a commercial bank, an investment bank, an insurance company, a hedge fund, a private equity fund, a credit union, etc. All have to operate strictly as mutual-fund holding companies that issue 100 percent equity-financed open- and closed-end mutual funds.² Because the individual mutual funds aren't leveraged, neither they nor their parent holding company can fail if their assets lose value. Hence, the financial system will never fail. Anything short of 100 percent equity finance—advocated, for example, by Admati and Pfleiderer (2010)—opens the door to banks getting back into the leveraging business and necessitates the massive regulatory structure that can be eliminated with LPB.

Shadow banks under LPB will be those without limited liability. They will be permitted to leverage. But the risk of owners' loss will greatly limit their desire to take on leverage as illustrated by the behavior of the unlimited liability banks in Switzerland. Nonfinancial corporations that wish to engage in financial intermediation must operate these businesses as LPB mutual funds.

Cash mutual funds, which hold nothing but hard, cold cash, are used for the payment system and are naturally backed to the buck. Mutual-fund holding companies are not permitted to use their own funds to back money market or other mutual funds to the buck. Cash mutual funds are the *Narrow Banking* component of LPB's comprehensive financial reform. Narrow Banking was championed by Frank Knight, Henry Simons, Irving Fisher, and other economists in the 1930s in *The Chicago Plan* and *A Program for Monetary Reform*.³

² Open-end mutual funds would use in-kind distributions to deal with redemption runs.

³ http://en.wikipedia.org/wiki/Chicago_plan and http://en.wikipedia.org/wiki/A_Program_for_Monetary_Reform.

Tontine-type closed-end mutual funds would be used for idiosyncratic risk allocation. An example is a life insurance mutual fund available to 50-year-old males certified to be in good health. The shares purchased by these males would be invested in three-month Treasuries, and paid out to those shareholders who die (their survivors, to be precise) within the three-month period. The payout to decedents is the pot, less the mutual fund fee, paid to decedents in proportion to the amount invested by decedents. This is idiosyncratic life insurance with no aggregate risk guarantee by the mutual fund. If more shareholders die, say to an unexpected outbreak of swine flu, less is paid out per decedent. Under our current system, an outbreak of swine flu à la 1918 would sink our life insurance industry, leading to an instant run on its roughly \$3 trillion in cash-surrender policies.⁴

AQ 2

Pari-mutuel closed-end funds would be used to allocate aggregate risk. Consider the "One-Year, Close Date January 1, 2013 Intel Defaults or Not Mutual Fund" as an example. Investors buy shares by January 1, 2013. They buy either "Intel Defaults in 2013" shares or "Intel Doesn't Default in 2013" shares. All proceeds from the sale of both types of shares are invested in one-year Treasuries or another asset(s) specified by the fund. At the end of the year, the fund's assets are sold off at market and this pot, less the fee, is paid to those shareholders who bet correctly. This is, minor details apart, a credit default swap. Alternatively, the bet could be whether Intel's stock price exceeds a certain level at the end of the year. In this case, the mutual fund constitutes an option. All manner of derivatives can be provided safely under LPB using parimutuel mutual funds, where "safely" means no risk to the financial system or taxpayer.

LPB uses the FFA to turn on the lights on Wall Street's products. Recall Mr. Smith, our would-be mortgagee. Mr. Smith's employment status, income history, and credit history would be verified by companies working solely for the government. Liar loans would be history. The FFA companies would appraise Mr. Smith's collateral and rate his paper. These and other data, including the general location of the property,

⁴ Note that swine flu primarily kills young and middle-aged adults. So life insurance companies would not make up losses from their annuity contracts.

but not the identity of Mr. Smith, would be disclosed on the Internet prior to his paper coming up for auction. Mr. Smith would be free to add to the Internet disclosure additional ratings he purchased, as well as other testimonials to his fidelity, but it would be clear what was and was not FFA-vetted information.⁵ Requiring that all LPB securities be traded in an auction market ensures issuers of paper the highest price (subject to minimums they would set) and would promote standardized complex securities. Complexity is a fertilizer for financial fraud, and Wall Street has been laying it thick.

V. Assuaging Concerns about Limited-Purpose Banking

LPB doesn't limit borrowing by firms or households. Indeed, thanks to the FFA's services and the auction mechanism, it should enhance their ability to borrow as well as sell equity. This is particularly true of small and medium-sized enterprises. LPB eliminates leverage by financial intermediaries, where leverage entails great macroeconomic risk. Modigliani-Miller tells us that leverage doesn't matter unless there are bankruptcy or information costs, in which case equity is preferred. In banking, bankruptcy costs are arguably as high as it gets and the FFA is designed to dramatically reduce information costs. In eliminating bank leverage, LPB eliminates the leverage intermediaries have over taxpayers during a financial crisis in credibly threatening financial meltdown if they aren't bailed out. Eliminating fractional reserve banking will make the money multiplier 1, but it won't reduce the money supply since the Fed can increase the monetary base, which will equal *M1*, as it sees fit. Demand deposit contracts are not essential to maturity transformation, which is code for liquidity risk sharing. Jacklin (1987) and others have shown that trading in securities can substitute for demand deposits. Demand deposit contracts may have some risk-sharing advantages depending on their construction *in no-run equilibria*, but improving liquidity risk sharing in good equilibria appears to be very highly overrated relative to eliminating the risk

EQ 1

⁵ The government might choose to limit certain types of information disclosure, such as race and sex, to limit discrimination and adverse selection.

of bad equilibria caused by fraud-based runs (Jacklin 1987). The use of debt contracts to indirectly discipline bankers who can't be monitored presupposes that bankers are bank owners, which is hardly the case, and that what bankers do can't be disclosed, and thus monitored, which it can be via the FFA. Finally, relationship banking doesn't disappear. Mutual fund managers will specialize in learning about particular paper issuers prior to bidding on their paper, to the extent such knowledge acquisition has value.

EQ 2

VI. The LPB Glass Is Already 30 Percent Full

Roughly 30 percent of US assets are held by mutual funds, which specialize in all manner of assets. The roughly 10,000 mutual funds slightly outnumber the banks. And most Americans do most of their banking with mutual funds thanks to their holding of 401(k)s, IRAs, and other tax-favored assets. In Europe, where explicit mutual funds are less prevalent, LPB-type institutions also exist. The best example is the covered bond market in Denmark, Sweden, and Germany. Apart from their taking on credit risk, banks participating in this market are, in effect, marketing mutual funds. One might ask why the LPB glass is not 100 percent full if the system is superior. The answer is that traditional banking is being effectively subsidized by the taxpayer since the banks are able to secure bailouts in downside states of nature. Moreover, Wall Street has spent a great deal of money ensuring politicians keep its subsidy in place. This is evident from the Dodd-Frank bill, which does precious little to address either disclosure or bank leverage. Note also that LPB doesn't restrict the size of mutual-fund holding companies. But it effectively breaks banks into smaller units by having the holding companies market mutual funds that are walled off from one another and, generally speaking, are relatively small.

VII. Is There Value to Proprietary Information?

Arguably, letting bankers protect their secrets gives them greater incentives to find good investment opportunities for themselves, which translates into better overall economic performance. The fact that roughly three-quarters of mutual fund managers routinely underperform the market and that those who do beat the market are less likely to repeat that outcome

suggests that bankers' skills in picking winners are far worse than advertised. Yet, even if most bankers aren't good at their game, the "winner-take-all" reward structure that's fostered by proprietary information may succeed in surfacing rare breakthrough technologies that would not otherwise get to market. The documentation of such cases would be useful for the banking system to provide. Lloyd Blankfein, Goldman Sachs' CEO, has suggested, perhaps in earnest, that the banks are "God's gift." Perhaps he or others could specify what technologies they brought to market that would not otherwise have surfaced had they been forced to operate in the light of day.

VIII. Modeling the Costs and Benefits of LPB

Equations are worth a thousand words. Here, then, is perhaps the simplest framework to begin examining the pros and cons of LPB. Take a one-period model with n risk-neutral savers endowed with one unit of the economy's single good. Savers can store their endowment and consume for sure at period's end or they can invest their endowment with one of m risk-neutral bankers, where $n > m$. Honest bankers can't handle more than one client. Let u stand for the share of dishonest bankers. Savers expect that that share \bar{u} . Bankers, whether honest or not, have no endowment. Bankers bargain with savers to deliver an expected payoff of one; i.e., bankers take all expected surplus. Dishonest bankers pocket one and claim they failed to find an investment opportunity. Assume that honest bankers pay b per unit of deposit if they discover an investment opportunity. Let p be the probability that an honest banker succeeds in locating an investment that leaves him with a . If he fails, he is left with nothing. His payoff, \bar{i} , is given by

$$(1) \quad \bar{i} = p(a - b) - \delta p^2/2,$$

where the last term indicates that bankers incur a cost for raising the probability of success. Honest bankers set

$$(2) \quad p(b) = (a - b)/\delta.$$

With proprietary information, savers can't tell honest bankers from fraudsters. The expected payoff for the savers is $(1 - \bar{u})pb$. In

equilibrium, that payoff is equal to one and the value of b satisfies

$$(3) \quad 1 = (1 - \bar{u})p(b)b,$$

which is equivalent to

$$(4) \quad b = \frac{a \pm \sqrt{a^2 - \frac{4\delta}{1 - \bar{u}}}}{2}.$$

We can eliminate the higher value by a stability argument. In Figure 1, if b lies between b^* and b^{**} , savers all want to invest given the success probability forthcoming at that b and bid for the bankers by accepting a lower b . Below b^* , they do better storing their endowment and bid for the bankers by demanding a higher b . Above b^* , savers require a higher success probability than bankers are willing to supply and the attempt to offer a higher b to raise the success probability leads to an even lower supply of effort by the bankers and, thus, even less interest by savers to invest.

If there are too many suspected crooked bankers, i.e., \bar{u} is too large, the banking system will collapse (the curve will be above the line). The true fraction of crooks won't matter. Enough mistaken rumor of fraud will kill the market. Savers will eschew bankers; i.e., they'll run on the banks by not investing in them. Second, when crooks are more numerous, honest bankers promise a higher payoff, b^* , but do less to achieve success. Hence, the actual crooks make the honest bankers appear less honest. Third, realized value added from banking, given by $(1 - u)mpa$, is smaller if savers believe there are more crooked bankers since p is lower.

Eliminating proprietary information forces the bankers to show what they are doing with investor money to find a . This exposes the crooks, who, we'll assume, would be jailed and, therefore, wouldn't pretend to be bankers. Consequently, \bar{u} is zero, b^* is smaller, p is higher and realized value added in banking is higher. This increase in value added can be taxed and used to achieve a Pareto improvement. One could modify the model to make a or $p(b)$ smaller when proprietary information is eliminated. This would give secret-keeping a *raison d'être* and militate toward some tolerance of crooked bankers. But ridding the economy of all crooks has one major advantage. The banking

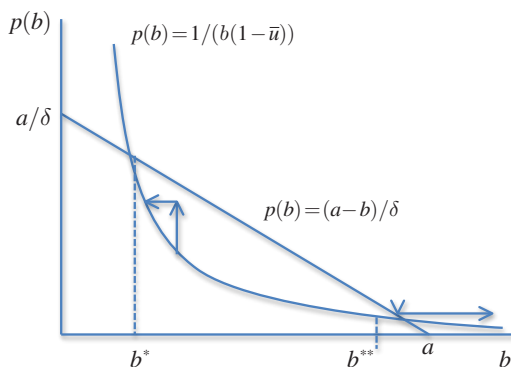


FIGURE 1

system never collapses, whether due to truth or rumor.

IX. Conclusion

Not all that glitters is gold. The glitter of the high-rolling, high-paid secret-keepers of Wall Street has rubbed off. The tarnish lies scattered on Main Street. More theory and empirics can help us better understand the trade-offs between fraud, leverage, and unique discovery. But economics rarely comes down on one side of an issue. There is always the other hand waving for attention.

Unlike economists, policymakers have to choose hands. Had they chosen Limited-Purpose Banking back in, say, 2000, things would likely be far different today. Wall Street would not have been able to spend years secretly manufacturing and selling massive amounts of securities that are now viewed as fraudulent. Our largest financial institutions would not have gone bust, been married off in shotgun weddings, or nationalized. Private credit would not have frozen. The government would not have “saved” the day by printing massive amounts of money, which may culminate in hyperinflation. Nor would it have

left the next generation to pay back massive amounts of additional debt. And we would not likely have tens of millions of Americans living daily lives of economic and psychological distress.

Had Europe followed suit, shareholders of mutual funds holding sovereign bonds would have taken a hit and moved on. No one would be discussing the end of the euro or the likelihood of another recession caused by fear of European and, indeed, US banks failing because they can’t repay borrowed money invested in “safe” sovereign bonds. No doubt we still would have experienced major declines in certain asset prices, but rather than a nine-point financial earthquake, we’d have felt only minor tremors. Our “show me” financial system would have been made of brick, not straw. And we would not, today, be rebuilding that system with straw.

REFERENCES

- Admati, Anat R., and Paul Pfleiderer.** 2010. “Increased-Liability Equity: A Proposal to Improve Capital Regulation of Large Financial Institutions.” Unpublished.
- Chamley, Christophe, and Laurence J. Kotlikoff.** 2009. Limited Purpose Banking—Putting an End to Financial Crises. *The Financial Times, Economists’ Forum*, January 27.
- Diamond, Peter A.** 1982. “Aggregate Demand Management in Search Equilibrium.” *Journal of Political Economy* 90 (5): 881–94.
- Jacklin, Charles J.** 1987. “Demand Deposits, Trading Restrictions, and Risk Sharing.” In *Contractual Arrangements for Intertemporal Trade*, edited by Edward C. Prescott and Neil Wallace, 26–47. Minneapolis: University of Minnesota Press.
- Kotlikoff, Laurence J.** 2010. *Jimmy Stewart Is Dead: Ending the World’s Ongoing Financial Plague with Limited Purpose Banking*. New York: John Wiley & Sons.