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The Savings and Loan Insolvencies in the Shadow of the Great Recession

by

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ABSTRACT

For financial firm failures to be macroeconomically significant, they must cause or threaten to cause a recession and slow recovery resulting in substantial cumulative output loss. Absent this, from an economic standpoint, they are of no greater or lesser concern than are failures of nonfinancial businesses. At the time they occurred, the savings and loan insolvencies were considered the worst financial crisis since the Great Depression. What was their actual or threatened damage to the real economy? I estimate cumulative output losses for 1981-1984, 1991-1995 and 2007-2024 (the latter utilizing forecasts and projections along with actual data through 2013). For a final comparison, I consider 1929-41. These estimates, along with other evidence that the failed thrifts lacked systemic importance, lead to the conclusion that the insolvencies, contrary to what was widely believed and/or implied at the time, and in sharp contrast with 2007-09, had little macroeconomic significance. The failures may have had political ramifications, but from the standpoint of national economic policy, the challenge they posed and the damage they threatened was, and has been, exaggerated.

The Macroeconomic Significance of the Savings and Loan Insolvencies

The economic history of the Great Depression exercised strong influence on policy responses in 2007-2009. The reverse line of scholarly influence is plumbed in this paper. The extraordinary financial crisis of the early twenty first century and subsequent recession and slow recovery invite, indeed almost compel us to reexamine past history in the light of new benchmarks. Prior to 2007-2009, the 1982 recession was the most severe the U.S. economy had experienced since the Great Depression, and the savings and loan insolvencies considered our worst financial disturbance since those dark days. That title has now, of course, been usurped. The excesses leading to the insolvencies are now a quarter century in the past; the failures and their consequences are an appropriate object for reassessment in the light of more recent developments.

At the time they occurred in the late 1980s and early 1990s, the insolvencies were considered a very big deal. The language used in numerous articles, monographs, reviews, and book length treatments reinforced and reflected this consensus. James Barth, Martin Lowi, and Lawrence White each published books in 1991, and each used the word debacle in his title (so did Ned Eichler in 1989). Pizzo, Fricker, and Muolo (1989), one of the best journalistic accounts, described the events as “the biggest financial disaster since the Great Depression” (p. 4), words echoed in Calavita, Pontell and Tillman : “one of the worst financial disasters of the twentieth century” (1997, p. 1). This evaluation was shared by the general public, policy makers, and scholars, including virtually all economists.

A 1992 Congressional Budget Office study employed language reflecting contemporary assessments: The amount the crisis had already cost the economy was “startling” (p. ix) and “exorbitant” (p. 1); the waste was of “incredible magnitude” (p. 1). Federal payments and borrowing associated with remediation were “huge”; the 1980s real estate bubble was “giant” (p. 11). The accumulated losses for the deposit insurance funds were “humongous” (p. 13) and the thrift crisis had “reduced the economy’s overall output severely since the early 1980s” (p. 29).

The legacy of this consensus is that it is difficult even today to say or write the words “savings and loan” without following them with the word “crisis.” The 2007-09 financial crisis and ensuing recession and slow recovery, however, offers a new and disturbing standard of comparison, and motivates the central concern of this paper: did the S&L failures represent a truly significant macroeconomic event?

From the standpoint of the real economy, what did it mean to say they were a debacle? Was the potential for damage greatest prior to the failures, as the CBO study, emphasizing misallocation, suggested? Did it inhere in the costs of remediation? Or was the greatest threat in the form of lost output due to ensuing recession and slow recovery? And finally, if failures in fact had little overall macroeconomic impact, and would have had little impact even in the absence of remediation, did they really represent a crisis?

Recent scholarship (Reinhart and Rogoff, 2009) along with our experience of the first decades of the twenty first century has sharpened our thinking about all of these issues. The intent in this paper is to sharpen it further. In order not to prejudge the answer to these questions, I have from the start (and this is reflected in the title of the paper as well) tried to use words other than crisis to describe the thrift failures.

The S&L Insolvencies: Background and Dimensions

The S&L meltdown reached its full efflorescence at the end of the 1980s and early 1990s, a period during which the number of federally insured S&Ls decreased by almost half (from 3,234 to 1,645). From 1986 until its demise in 1989, the Federal Savings and Loan Insurance Corporation (FSLIC) closed or otherwise resolved 296 institutions with assets of \$125 billion. Between 1989 and 1995 the Resolution Trust Corporation did the same for 794 institutions with assets of \$394 billion. Curry and Shibut (2000) date the episode as running over the ten year period 1986-1995, measuring from the year in which the FSLIC was first declared insolvent to the year in which the Resolution Trust Corporation wound down its operations. Focusing on the years of the worst abuses, Caprio and Klingebiel (1997) situate the events between 1984 and 1991. This is also the frame favored by Boyd, Kwak, and Smith (2005) as well as by Reinhart and Rogoff (2009, table A.4.1, p. 390). Laeven and Valencia (2012, p. 26) identify 1988 as the start and end year of what they describe as a “borderline” financial crisis. Lindgren et al (1996, p. 34) describe the entire period stretching from 1980 to 1992 as marked by “significant” banking problems. Whatever the exact time period identified, the roots of these developments can be traced at least as far back as the 1960s and 1970s.

Savings and Loans, to an even greater degree than commercial banks, specialized in borrowing short and lending long, which they did principally in the form of mortgages with nominally fixed interest rates. The Banking Act of 1933 (Glass-Steagall) prohibited interest on checking accounts, and gave the Federal Reserve power to limit interest rates paid by commercial banks on time deposits. In 1966, as inflation and interest rates rose along with spending on the Vietnam War, Regulation Q caps were extended to S&Ls and

mutual savings banks. The intent was to preserve a healthy spread between rates paid on deposits and rates earned on (new) loans, assisting thrifts in overcoming losses on previously issued fixed rate mortgages that resulted from rising interest rates.

The financial health of S&Ls, however, continued to deteriorate in the 1970s, particularly after 1977. Accelerating inflation and rising nominal interest rates interacted with Regulation Q to produce widespread disintermediation: an outward flow of deposits which, if unstemmed, forced a fire sale of illiquid assets. Lowi estimates that in 1981 four out of five thrift institutions were losing money, and “virtually all”, if marked to market, were underwater (1991, pp. 14, 34, 72; see also Pikzer, 1989, p. 71). There is wide agreement that by the time of the 1980 and 1982 recessions, most S&Ls were market or balance sheet insolvent (Kane, 1985, table 4.6; Admati and Hellwig, 2013, p. 54).

The parlous condition of the industry in the early 1980s, which set the stage for the even more disastrous period that followed, was due principally to interest rate risk, not bad loans or fraud. Pizzo, Fricker, and Muolo (1989, p. 323) argue that had adjustable rate mortgages (ARMs) been allowed nationally in the 1970s (as they were in California starting in 1974) and had subsequent regulatory/legislative changes been limited to eliminating caps on deposits rates and not included an expansion of asset powers, the industry might have remained healthy and retained its niche position in the financial ecosphere. Black (2005), appears to support this view, although one should note that the subsequent relaxation of restraints on what kinds of mortgage products financial institutions could offer did not, in the 2000s, end happily. During the 1970s ARMs were repeatedly blocked in Congress, under pressure from both homebuilders and consumer

groups. They became available nationally in 1982, under the terms of the Garn-St. Germain Depository Institutions Act.

Between 1981 and 1986 the sections of Regulation Q specifying maximum interest rates payable on time deposits were eliminated. This ameliorated the disintermediation problem, but at the cost of a rapidly rising cost of funds, which meant that operating income, properly accounted, remained generally in the red. At the same time, regulatory and legislative changes at the state and federal level greatly expanded asset powers. These changes combined with the increase in deposit insurance ceilings from \$40,000 to \$100,000 per account (1980) and the removal of the 5 percent limit on the ratio of brokered to total deposits (1982) created a dangerously explosive political and economic environment.¹

A common narrative is that insolvent institutions with little to lose could outbid solvent institutions for deposits and at the same time offer lower interest rates to borrowers, ultimately worsening the losses of the insolvent institutions and sapping the financial health of those with remaining positive equity. The “gambling for resurrection” language, though colorful, is, however, too sanitized. It assumes a unitary actor view of S&L institutions and, reflecting the ethically neutral language of moral hazard common to economics and insurance law, soft-pedals the contributions of insider looting (Akerlof and Romer, 1993), other forms of misconduct, and political corruption.

¹ In 1982, regulators also eliminated the rule requiring a minimum of 400 shareholders, which had meant that the granting of a thrift charter traditionally required broad community support, and allowed land rather than cash to be used in capitalizing a thrift. Both changes helped developers, sometimes corrupt, in acquiring failing S and Ls. In addition, Garn-St. Germain increased from 20 to 40 percent the share of assets that could be held in (much riskier) nonresidential assets, and allowed loans to borrowers with no money down. Finally, thrifts no longer faced geographic restrictions on where they could make loans.

If the sorry state of the industry in 1980 was the consequence of interest rate risk, its situation in 1990 was, from an accounting perspective, the result primarily of the impact of very risky and/or poorly underwritten loans and investments on asset quality at a time when funds to lend were increasingly easily available. The moderation of inflation and consequent reduction in nominal interest rates (because of the fall of the inflation premium) did unwind some of the balance sheet damage inflicted between 1977 and 1982.² As nominal interest rates declined and the economy improved in 1983, the market value of mortgage loans made at low rates in the 1970s recovered substantially (although refinancings limited this effect).³ Between 1982 and 1983 total accumulated losses in the S&L industry decreased by about 75 percent. In retrospect, the best thing to have done would have been to have ceased regulatory forbearance and resolve those institutions then underwater that had no realistic chance of recovery.

Instead, the balance sheets and income statements of insolvent S&Ls were prettified by a variety of regulatory and legislative initiatives. The continuation of regulatory forbearance allowed zombie (insolvent but still operating) institutions to remain open, forestalling resolution. With equity gone, officers, directors, and owners had little incentive to restrain risky lending or, if they were fraudulently minded, not direct it towards themselves or their collaborators. These initiatives invited increasingly reckless

² This may have encouraged regulators to continue forbearance, reinforcing fantasies that the institutions could “grow” their way out of their problems. The only way this could possibly work was by making very risky loans and investments that happened to pay off.

³ This apparent strengthening of financial condition was augmented by legislative and regulatory changes in 1981 that encouraged S and Ls to remove money losing mortgage loans from their balance sheets by selling them. They were then allowed to amortize losses over the projected life of the loan and to offset these losses against taxes paid during the previous ten years. Major Wall Street firms bought the loans at substantial discounts, securitized them, and in many instances then sold the securities back to S and L's.

lending,⁴ and a continued flow of funds to doomed projects, causing a major deterioration in the quality of assets. Combined with the gradual demise of Regulation Q and the rise of brokered deposits in an environment in which all accounts were federally insured up to \$100,000,⁵ a situation that at the time seemed catastrophic developed, particularly in the states of Texas and California. The 1987 stock market crash gave the distressed industry an additional infusion of funds as individuals pulled money from the equities and invested in S&L certificates of deposit.

In Texas, brokered deposits fueled lavish executive compensation and risky and imprudent lending on undeveloped land and commercial office construction. Transactions were permeated with self-dealing, artificially inflated land values, and other forms of fraud and theft. California S&Ls used brokered deposits and newly expanded asset powers to make huge interest rate bets on mortgage backed securities. In the early 1980s no one knew which way rates would go: some S&Ls took long positions in bonds; others short; it was largely a zero sum game. But there was an asymmetry: when rates fell those

⁴ Calavita, Pontell and Tillman, (1997, pp. 33-42) make a compelling case that the data are simply not consistent with the 'minimal fraud' interpretation generally advanced by economists. The entire industry if marked to market was insolvent, yet only a third of institutions engaged in high risk lending. The portfolios of institutions that did so were remarkably undiversified, often concentrated in ADC (Acquisition, Development, and Construction loans), direct investments which were among the most risky an S and L could make. To have any hope of making a profit, such loans require strong underwriting and internal controls, yet these were almost always absent or lax, and LTOB (loan to one borrower) regulations and restrictions on insider lending were routinely violated. Every single institution engaging in high risk lending failed with large losses; this was as true in the California economy of the mid 1980s as it was in the overbuilt and depressed real estate market in Texas. The fall of oil prices, an impersonal market force often adduced as explanation of why the thrifts struggled in the 1980s, was largely irrelevant in California.

⁵ The increase in deposit insurance from \$40,000 to \$100,000 per account became effective in March of 1980 with the passage of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA). In the summer of 1982 the Federal Home Loan Bank Board eliminated the prior rule that brokered deposits could comprise no more than 5 percent of total deposits. S and Ls could now attract all the "hot money" they needed by advertising for them directly, or by using brokered deposits supplied by Merrill Lynch and others. On top of this a change in rules liberalizing insurance coverage on union pension fund deposits, made additional stocks and flows of money, sometimes mob connected, available to S and Ls. Unscrupulous loan brokers, such as Mario Renda's First United Fund often demanded the S and Ls engage in "linked lending" to specified borrowers in exchange for deposits (see Pizzo, Fricker and Muolo, 1991). Needless to say, most of the loans were never paid back.

taking the long position won, and had their financial health restored. Those taking the other side lost, but ultimately it was the deposit insurance fund and taxpayers that absorbed the loss. California S&Ls also used millions of dollars of insured deposits to invest in risky junk bonds, as well as fuel speculative land development in other states such as Arizona (see Pilzer, 1989, chs. 5 and 6).

The bottom line, generalizing across some of the regional differences, is that the positive balance sheet effects of nominal interest rate declines in the early 1980s were swamped by the massive deterioration in the quality of loans and investments made in the remainder of the decade. By 1989 accumulated losses due to the post-1983 deterioration of asset quality exceeded those attributable to the high interest rates of the late 1970s and early 1980s (Ely, 2008, based on data from the FSLIC and the Resolution Trust Corporation).

If fraud played a small role in bringing the industry to its condition at the start of the 1980s, it, along with political corruption, was omnipresent in the worst failures thereafter.⁶ The cost of remediation, along with the salience of misconduct and political

⁶ The profitability of and opportunities for fraud increased with regulatory and legislative changes in the 1980s, attracting to the industry many who were or would become white collar criminals, including some with organized crime connections. Not all officers, directors, owners, borrowers, or brokers availed themselves of the opportunities, and there are grey areas separating behavior merely unethical from that which is clearly illegal. That said, economists have often seemed to go out of their way to downplay the significance of criminal misconduct in contributing to the insolvencies (see Calavita, Pontell, and Tillman, 1997, pp. 18-19; 33-42). Lawrence White, a member of the Federal Home Loan Bank Board from November of 1986 through August of 1989, warned in his 1991 book that “any treatment that focuses largely ...on fraudulent and criminal activities is misguided and misleading” (1991, p. 117). This language can be defended – obviously there were other forces at play – but is too strong: see Pizzo, Fricker, and Muolo (1989), Calavita, Pontell, and Tilman (1997), or Black (2005), among others. Calavita et al (p. 31) report that a criminal referral was filed in two thirds (455 out of 686) of the institutions under Resolution Trust Corporation control as of May 19, 1992, with an average loss per institution due to fraud of over \$12 million. Law breaking was sometimes “insider” (officers, directors, or owners), sometimes ‘outsider’ (borrowers and loan brokers), and sometimes so convoluted as to make it almost impossible to make this distinction.

corruption, is part of why so many at the time thought that these insolvencies were such a big deal.

Macroeconomic Significance

But were they macroeconomically significant? A macroeconomically significant financial disturbance is defined here as one triggering a recession and slow recovery that together result in substantial cumulative output loss. A number of economists and economic/financial historians have offered various chronologies of disturbances and crises in different countries, and the judgments made sometimes differ. I argue that whether a financial disturbance should be classified in retrospect as a financial crisis depends on whether or not it satisfies this test. If a disturbance ends up having only minor effects on output and employment, in other words to use an older term, if it is largely *neutral* with respect to these variables, then as economists we should not in retrospect view it as a crisis, no matter how much heated language by scholars and journalists may have been engendered by criminal activity and the response to it or the politics of a bailout.⁷

The definition proposed here has much to recommend it, but it does leave open an important question: if successful remediation or policy response somehow prevents a significant cumulative output loss that would otherwise have eventuated, should the disturbances still be classified as macroeconomically significant? The historical evidence does suggest that scenarios involving fully effective remediation are rare.⁸ Because of this possibility, however, I take the criterion as establishing sufficient though not

⁷ I am not suggesting we should turn a blind eye on white collar crime, or treat it leniently. Neglecting it has consequences for behavior in the future, just as much as does the bailing out of a failed institution.

⁸ If almost entirely successful responses were indeed the norm, there would be little evidence for the Reinhart and Rogoff hypothesis that recoveries from recessions triggered by financial crises take longer.

necessary conditions for classifying a financial disturbance as a crisis. In cases of minimal output loss we may need also to argue that the degree of loss was largely unaffected by the character, timing, or amount of remediation. Here the issue will turn on evaluating the systemic importance of the failed institutions.

Before discussing the S&L insolvencies, their possible systemic importance, and the dimensions of the economic downturn and slow recovery that followed, let us begin by asking a related question: should the 1982 (and 1980) recessions be classified as accompanied by financial crisis?⁹ This takes on more than historical importance because of the rapid recovery after 1982 in comparison with the experience in 2007-2009. We will then ask whether the insolvencies in the S&L industry between 1986 and 1995, though classified by Reinhart and Rogoff (2009) and others as a financial crisis, qualify as such, according to the above criterion.

With respect to the early 1980s and the early 1990s, either both the 1982 and the 1990-91 downturns should be treated as recessions triggered by financial crisis (few dispute this classification for 2007-09), or neither, or one should be but not the other. In assessing macroeconomic significance, one must judge first whether an accompanying recession was triggered by financial disturbance and second, what sort of cumulative output loss resulted.

The 1982 and 1990-91 Recessions

The downturn in GDP growth and rise in unemployment in the early 1980s are widely attributed to the tight money policies adopted by Federal Reserve Chairman Paul

⁹ The NBER identifies a recession in 1980 as well as in 1982, the former resulting from the abortive initial efforts by Chairman Volcker to break the backbone of inflationary expectations. For expositional convenience, I will refer to these efforts and their consequences as a single recessionary event.

Volcker to reduce the inflation rate. Volcker eventually succeeded (with an assist from collapsing oil prices), although, contrary to predictions of rational expectations theorists, it came at the expense of what was then perceived to be a very substantial loss of output.

Using Congressional Budget Office estimates of potential and Bureau of Economic Analysis estimates of actual, we can calculate the cumulative output loss between 1981Q2 and 1984Q2 at \$944 billion 2005 dollars, or about 14.8 percent of average potential GDP during that period.¹⁰ This can be viewed as the cost of reducing inflation from almost 10 percent in the late 1970s to 4 percent and lower in the 1980s and thereafter.

According to conventional wisdom, especially that reflecting the assumption of adaptive expectations, this was a garden variety recession, albeit severe, but one (unlike 1974-75) easily understood as driven by aggregate demand mechanisms. Is it possible that the conventional wisdom has nevertheless missed something? If the S&L sector was already insolvent in 1982, should we consider classifying the 1982 recession also as one accompanied by financial crisis? Lindgren et al (1996, p. 34) treat the thirteen year period stretching from 1980 to 1992 as marked by “significant” banking problems, pointing out that during this period 1,395 banks closed, as well as 1,142 S&Ls. Their classification of banking problems as “significant” indicates a lower degree of severity than crisis, although it also suggests considerable continuity across the entire period, which makes a difference if we end up classifying the late 1980s and early 1990s as crisis. Many banks (as well as S&Ls) did indeed close. But most failed banks were small. Between 1980 and

¹⁰ Quarterly CBO estimates of potential output at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12039/keyassumptionspotentialgdp_110125.xls; actual output at <http://www.bea.gov>, NIPA Table 1.1.6. Accessed March 19, 2013.

1994 the FDIC supervised the shuttering of 1,617 commercial banks. Their assets, however, totaled less than 9 percent of total commercial bank assets.¹¹

One of the challenges in dating banking crises precisely is that, as Frydl (1999, p. 1) notes, unlike currency crises, they are “spread out over time, with no clear beginning or end.” Preconditions evolve over years, and these can be as important in understanding outcomes as what we might identify as an immediate trigger. To proceed with analysis, however, we need to make judgments. And so we come back to the initial question: Did the postponement of reckoning in the early 1980s - the band aids represented by regulatory “forbearance” and accounting “innovations” that allowed institutions to avoid being shut down or merged -- disguise a reality, that the two sharpest post-Depression downturns (1982 and 2007-09) share more in common than has been acknowledged, in the sense that the former as well as the latter was associated with financial crisis?

The classifications of both the 1982 and 1990-91 recessions have implications for the generalization that recessions accompanied by financial crisis experience weaker and much longer recoveries to potential than do those which are not. The 1982 recession was very deep – indeed, as measured by the peak unemployment rate, it was deeper than 2007-09. But recovery from it was also very rapid (Bordo and Haubrich, 2010). It was a V-shaped recession, and the comparatively slow recovery from 2007-2009 became an issue in the 2012 Presidential election. Some attributed the slow recovery to Obama’s

¹¹Failed bank assets as a percentage of FDIC insured commercial and saving banks as of December 31, 1979, plus assets of subsequently chartered institutions as of date of failure, merger, or December 31, 1994, whichever is applicable (FDIC, 1994, p. 156). The exception to the generalization about the size of failed institutions was Continental Illinois (1984), then the seventh largest US commercial bank. Continental Illinois was, until Washington Mutual went under in 2008, the largest bank failure in U.S. history, and its bailout first made commonplace the concept of too big to fail. It got into trouble with oil patch loans in Texas and Oklahoma purchased from the failed Penn Square bank. These loans had not been adequately scrutinized by bank officers (kickbacks and fraud were involved), and when sharply declining oil prices made it evident that the loans were going bad, lenders ran on the bank.

“failed” economic policies, while others, appealing to the Reinhart and Rogoff (2009) hypothesis, pointed out that 2007-2009 was accompanied by a severe financial crisis whereas 1982 was not. For a number of reasons, it is important to make a judgment about whether the recessions of the early 1980s were accompanied by (disguised) crisis.

As noted, there is still lack of agreement among scholars about exactly what is meant by a financial crisis, but consensus in distinguishing within this category among banking, sovereign debt, and currency crises. Since none of the episodes under discussion here (the 1982 recession, the S&L meltdown/1990-91 recession, or the 2007-2009 recession and slow recovery) was associated with flight either from US government debt or the US dollar, we can begin by agreeing that the type of crises under consideration involved banking (or, more generally, financial institutions).

One symptom of a banking crisis will, of course, be the failure, or delayed failure of financial institutions, and on these counts, one could argue that both 1982 and 1986-1995 qualify. The preponderance of S&Ls were already “zombie” institutions by the early 1980s. They were kept alive (made to appear solvent and profitable) by regulatory accounting gimmicks, and almost half of them failed or otherwise disappeared during the subsequent decade. Definitions of banking crises vary, but most emphasize runs on financial institutions, often but not always accompanied by government bailouts (Government Accountability Office, 2013, p. 9). The S&L meltdown meets these standards (bailout and runs in Ohio, Maryland, and in California at IndyMac), and arguably casts a penumbra over both the 1982 and 1990-91 recessions.

But to qualify as an event with macroeconomic significance, we need more. Some banking crises (broadly understood) occur in institutions that are not systemically

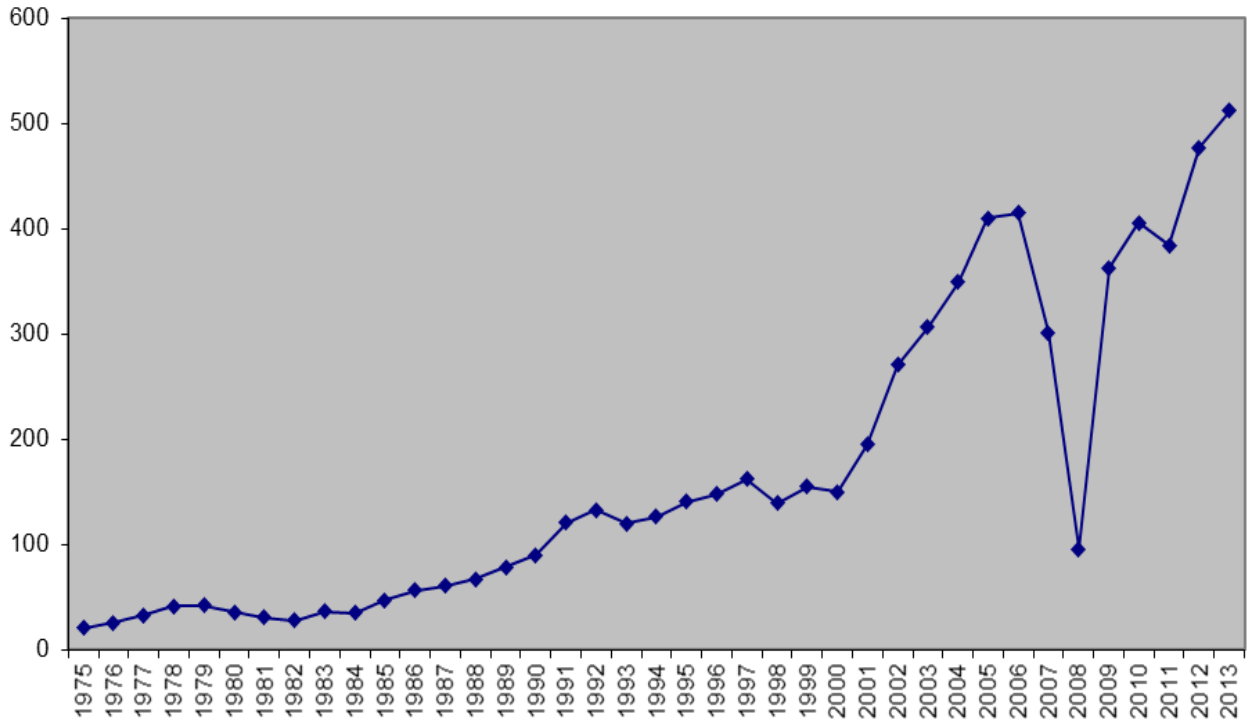
important and whose impact is highly localized, and they do not engender or threaten a significant downturn in real economic activity. I argue that the S&L insolvencies fall into this category

Systemic banking crises are understood to be those in which most or all of the banking system's capital is exhausted (Boyd, Kwak, and Smith, 2005, p. 981).¹² This is likely to be accompanied, on the income statement side, by a sharp drop in aggregate financial sector corporate profits, both in absolute terms, and in relation to nonfinancial profits. Although figure 1 shows 2007-2009 clearly qualifying on this account, neither the 1982 recession nor the mild 1990-91 recession show much evidence of this. A very large number of S&Ls, of course, did exhaust their capital, and continued to lose large amounts of money. This was not, however, true for the banking sector as a whole.

One of the few silver linings associated with 2007-2009 is that we now have a very strong impression of what a systemic financial crisis and its aftermath looks like in the post-World War II United States. In particular, this episode evidenced a very large decline in pretax corporate profits reported in the financial sector, from a peak of \$415.1 billion in 2006 to \$95.4 billion in 2008. In contrast, financial sector profits declined from \$41.8 billion in 1979 to \$27.2 billion in 1982, a slippage of 35 as opposed to 77 percent. The comparison is between a decline of more than three-fourths and one of a little more than a third.

¹² See also Bordo, Eichengreen, Klingebiel, Martinex-Peria and Rose, 2001, p. 55: "For an episode to qualify as a banking crisis, we must observe financial distress resulting in the erosion of most or all of aggregate banking system capital."

Figure 1
 Domestic Pretax Profits, Financial Sector, United States, 1975-2013
 \$ billion



Source: Federal Reserve Board, Flow of Funds Accounts (2014, June 5 release), table F-7, lines 11-12.

Moreover, the decline in financial sector profits in 1982 can be viewed as largely a consequence of a recession that had its sources elsewhere, in the efforts of the Federal Reserve System to reduce inflation by slowing the growth rate of the money stock. The resulting negative aggregate demand shock increased nonfinancial business bankruptcies, which increased bad loans and understandably took a toll on the profits of the financial sector. The causality ran principally from recession (whose origin was in Washington) to decline in financial sector profits.

In contrast, few question that it was financial crisis that drove the US economy deep into recession in 2008. Whereas John Taylor and others have suggested that monetary policy was too loose between 2001 and 2004, no one has suggested that the

2007-09 recession was caused by tight monetary policy, or that it was a recession originating outside of the financial sector that produced distress within it.¹³ In this fundamental respect 1982 and 2007-09 were very different.

As far as the period of the S&L meltdown itself (during which losses were finally recognized, and the institutions were allowed or forced to merge or fail), between 1986 and 1995 financial sector profits *increased*, with the exception of a slight decline (under 10 percent) between 1992 and 1993. If we treat financial sector profits as a barometer indicating aggregate stress on the financial system, the S&L “crisis”, in contrast with 2007-08, hardly registers (figure 1).

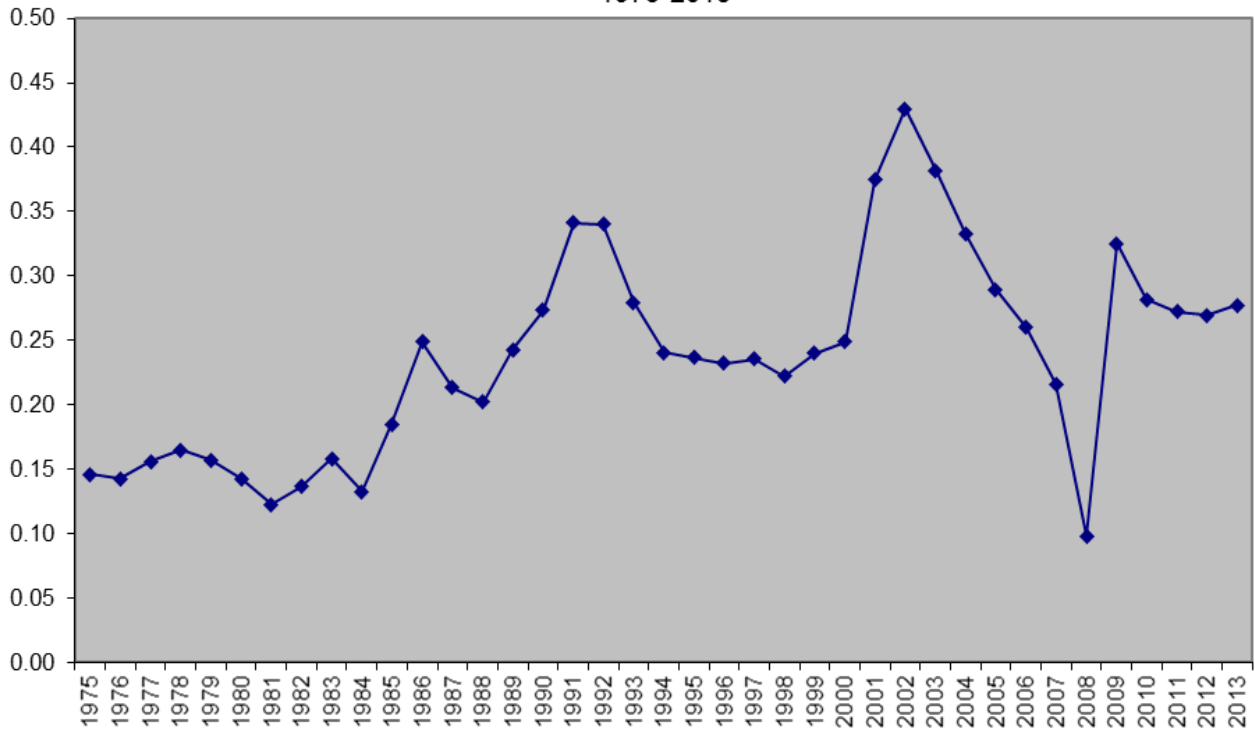
Another way to consider the significance of financial disturbances is to look at the share of financial sector corporate profits in total pretax domestic corporate profits. Once again, there is no doubt about the sizable footprint of the most recent set of events: after peaking at 43 percent in 2002, that share fell to 10 percent in 2008. The general trend in that ratio has been upward since 1975, and we do see a gradual decline from 34 percent in 1992 to 24 percent in 1994, but it is not nearly as large proportionally (figure 2).

A related measure of the impact of a recession triggered by financial crisis is the effect on private sector bond prices and yields. In a garden variety recession (one not associated with financial crisis), yields will generally fall and prices will strengthen, with the exception of very risky bonds. In contrast, as we know from 2008, in a recession triggered by a macroeconomically significant financial crisis, prices of virtually all private sector debt plummet, as a flight to quality drives Treasury yields down and all

¹³ However, as the downturn began the Congressional Budget Office did note the negative yield spread at the end of 2007 (inverted term structure of interest rates) and indicated that this condition had incorrectly predicted a recession “only once since 1955” (2008, p. 30).

other yields up. There is little evidence of this either in 1990-91 or for that matter in 1982.

Figure 2
Financial Sector Share of Pretax Domestic Corporate Profits, United States,
1975-2013



Source: Federal Reserve Board, Flow of Funds Accounts (2014, June 5 release), table F-7, lines 11-12.

The 1990-91 recession was relatively mild, associated in part with the temporary spike in oil prices accompanying the first Gulf War. In the shadow of 2008, and with knowledge of the course of the economy in the 1990s, the claim that the S&L insolvencies were macroeconomically significant begins to appear problematic, both because at the aggregate level the recession was mild, and because there is little evidence linking it to the S&L travails. And the suggestion that 1982 should be considered a recession triggered by a (disguised) financial crisis seems, in the light of the data, to be something of a reach for those who wished, in highlighting the contrast between the sharp

economic recovery from 1982 and the sluggish recovery from 2007-09, to place the Obama administration's recovery record in a more unfavorable light.

Measuring the Macroeconomic Significance of a Financial Crisis

For a financial crisis to be macroeconomically significant, it is sufficient for it to be followed by an economic downturn and slow recovery generating a substantial cumulative output loss and for there to be a strong case that the crisis not only accompanied the recession but also caused it. Both the 1982 and the 2007-09 recessions saw sharp downturns.¹⁴ But while there is good reason to believe that the latter recession was triggered by financial crisis, there is little evidence to suggest that this was true in the case of the former.¹⁵

Calculating the cost of a financial crisis requires both an estimate of the cumulative output loss, and a plausible case linking a recession and slow recovery to the financial crisis. Other suggested markers, such as the rise in unemployment or the unemployment rate (Better Markets, 2012) represent in a sense double counting: in these cases, we are simply observing the flip side of the rising output gap. Given the NIPA accounting

¹⁴ I include less discussion of the output losses associated with the 2001 recession and subsequent slow recovery, because there are no claims that the collapse of the NASDAQ produced a financial crisis. High margin requirements for stock purchases meant that losses by and large stopped at the households holding the equities. There is no evidence in the financial sector profit data that the fall in stock prices jeopardized financial institutions in the aggregate.

¹⁵ Reinhart and Rogoff observe that financial crises are sometimes triggered by an economic downturn leading to defaults of nonfinancial firms which adversely affect financial institution balance sheets (2009, pp. 145-46). They use these words to distinguish such cases: "rather than being the trigger of a recession". There is little reason to doubt, however, that in 2007-09, in contrast with 1982, financial distress was the trigger of recession (not vice versa) and almost all contemporaneous commentary reflected this view. The 2011 Congressional Budget Office Budget and Economic Outlook report summarized developments in this way: "The economy has struggled to recover from the current recession, which was triggered by a decline in house prices and a financial crisis -- events unlike anything this country has seen since the Great Depression" (highlights, p. 28). Or, as Hall puts it, "...I take for granted that the financial crisis was the cause of the collapse in product and labor demand and that expansionary policy was unable to offset the collapse" (2014, p. 2). In their study of financial and currency crises, Bordo et al (2001, p. 64) reject the idea that crises are mere ephemera, reflections of macroeconomic cycles that have their origin and laws of motion elsewhere.

identities, the lost income of those no longer at work (as well as their lost expenditure) is equal to the value of lost output.

Preoccupation with the Cost of Remediation can be a Distraction

Much discussion has surrounded estimates of the cost of remediation associated with the S&L insolvencies as well as the distress facing much larger institutions in 2007-09 (there is little discussion of such costs for 1982, when bank failures were easily handled by the FDIC). Debating the size of taxpayer funded remediation, is likely, however, to tell us little about the true costs of a financial crisis for an economy. What is more important is whether financial distress plausibly caused or heavily influenced a subsequent economic downturn and slow recovery, and if so, what was the cumulative output loss associated with this deviation from the trajectory of potential output.

Remediation involves transfers from some groups or individuals to others. Focusing on costs to “the average taxpayer” obscures the benefits many receive. S&L remediation was associated with transfers to creditors of failed institutions as well as to institutions that took over the assets and liabilities of those that had failed (which had much the same effect). To the degree that some of the remediation represented the disbursement of insurance premia previously remitted by S&L institutions, there was no additional burden on taxpayers, although of course the insolvency and ultimate demise of the FSLIC in 1989 reflected the fact that these funds were hardly sufficient to make good on the guarantees.

The preferred approach to considering cost has been to total up federal disbursements, sometimes excluding and sometimes including payments from government operated but industry financed insurance pools such as FSLIC or FDIC. For

the S&L insolvencies estimates of the totals (including interest on debt over a 30 to 40 year horizon) have come in as high as half a trillion early 1990s dollars (White, 1997, p. 197). 1994 GDP was approximately \$7 trillion so by that measure the bailout cost about 7 percent of one year's GDP.

There is a strong argument, however, that the cost of remediation should be reckoned independently of how it is financed, and it is therefore not appropriate to include interest on borrowed money in these tabulations.¹⁶ When the government costs out a major weapons system, it doesn't include interest charges assuming the money used to acquire the weapons is borrowed (Curry and Shibut, 2000, p. 29). If one just looks at direct costs (assuming, say, that the transfers were financed with taxes), we are closer to 3 percent. Caprio and Klingebiel (1996) provide 3.2 percent of one year's GDP as an estimate of the resolution costs of the 8 year episode they see running from 1984 through 1991. Lindgren et al (1996) come up with 2.4 percent for the thirteen year period 1980-92 they identified as associated with "significant" banking problems. Frydl (1999) treats these as upper and lower bounds of the costs of resolution.

In 2007-09, remediation was more multifaceted. It included traditional FDIC resolutions, the largest of which was of Washington Mutual, and these were similar in mechanism and effect to what had transpired in the S&L cases. But for larger financial institutions, deemed too big or too interconnected to fail, remediation consisted of

¹⁶ The decision as to whether costs are financed by borrowing or a current levy on taxpayers is in principle separate. If I buy a television for \$1,000, that's what it cost me. It doesn't make sense to increase that amount by what I could have earned if I'd invested those funds, or what it would have cost in total had the purchase been financed. In a world without frictions, \$1,000 is the present value of the stream of earnings I could get if I lent out the money. It is also the present value of the principal and interest payments owed if the money were borrowed. The S and L bailout did have political consequences. The cost of the transfers associated with remediation was part of what led President George H. W. Bush to agree to tax increases, behavior which may have cost him the presidency.

government (Treasury) injections of equity (the Capital Purchase Program portion of TARP), which were funded by tax revenues or borrowing. TARP funds were also used to acquire equity positions in the insurance company AIG as well as major automobile companies, with the exception of Ford. In a separate operation, the Treasury took Fannie Mae and Freddie Mac into conservatorship.

Remediation can also be thought of as including various Federal Reserve liquidity facilities that helped banks and other financial institutions (many of which were insolvent as well as illiquid) meet current demands for cash, affirmative action by the Fed to acquire mortgage backed securities (a major factor after 2009 in extending the Fed's balance sheet), the payment of interest on deposits by member institutions at the Fed, which by 2014 was transferring approximately \$6.5 billion annually of additional revenue to banks,¹⁷ the temporary extension of deposit insurance to money market funds, support of the commercial paper market, and other guarantees.¹⁸

Due to the actions of the central bank, remediation operated on both sides of financial institution balance sheets (the Fed generally on the left hand (assets) side, the Treasury on the right (liabilities/net worth). These efforts partially insulated the US (and to a lesser degree the world) financial system from what might otherwise have been a much greater cumulative output loss. From a macroeconomic perspective, however, it is

¹⁷ On February 28, 2014, member banks held approximately \$2.6 trillion of deposits at the Fed. The \$650 billion estimate is based on this amount and an interest rate of 25 basis points. http://www.federalreserve.gov/monetarypolicy/files/quarterly_balance_sheet_developments_report_201403.pdf, accessed June 17, 2014.

¹⁸ Payment of interest on reserves represents an indirect charge on the Treasury, since it reduces the operating revenues the Fed can return to the Treasury at the end of the year. To the degree that the Fed purchased mortgage backed securities that failed to perform, that would also lead to an indirect charge on the Treasury, for a similar reason. Otherwise, expansion of the Fed's balance sheet through monetization of debt, either public or private, does not impose direct costs on anyone, provided it does not result in inflation.

of little consequence whether the remediation programs ended up costing the Treasury money.

It is in fact likely that none of them will. The question of whether the TARP program would ultimately turn a profit remained for a time contentious, with the Treasury taking a highly optimistic view and the Office of the Special Inspector General for the Troubled Asset Relief Program taking a much more pessimistic and critical view (SIGTARP, 2013). By January 31, 2014 the Capital Purchase Program portion of TARP had returned \$225 billion to the Treasury in repayments, dividends, interest, and warrant income, compared with disbursements of \$205 billion in equity injections to financial institutions in 2008 (GAO, 2014). The TARP program overall included the Capital Purchase Program for financial institutions as well as the Treasury's portion of the AIG rescue (the New York Fed also participated), and the positions taken in automobile companies. By April 30, 2014, beneficiaries had returned \$438.5 billion to the Treasury, exceeding the total disbursements of \$423.7 billion¹⁹ (US. Department of the Treasury, 2014).

The other big Treasury operation was the conservatorship of Fannie and Freddie. The 2008 equity injections required outflows from the Treasury of \$189 billion. An October 2012 Wall Street Journal story suggested that the actual taxpayer cost would be about \$78 billion, down from earlier administration estimates of \$130 billion. By March of 2014, returns to the Treasury from the two GSEs *exceeded* disbursements of \$189 billion by \$15 billion.

¹⁹ TARP was originally authorized for \$700 billion, but this was reduced to \$475 billion by the Dodd Frank bill. The large banks' and AIG's ability to pay back equity infusions was due in part to the Fed's massive purchases of mortgage backed securities, and the Treasury's conservatorship of Fannie and Freddie. Both types of actions strengthened banking sector balance sheets independently of TARP.

But do the apparent profits on the two major Treasury operations indicate that the financial crisis didn't actually cost the government (or the economy) anything? Of course not. First of all, on the narrower question, although the TARP bailouts have been repaid, taxpayers were not compensated for the very large ex ante downside risk they bore. Nevertheless, if we become too focused on refining these cost estimates we will miss the forest for the trees.

The S&L remediation "cost" the economy roughly 3 percent of GDP (remember, these were transfers, and many individuals, often high net worth, benefitted) while the response to the 2008 crisis may ultimately make money for the Treasury. Those outcomes, however, have almost no bearing on which of the two sets of financial disturbances was more macroeconomically significant.

Here are the important facts: the first financial crisis of the twenty first century caused a recession and slow recovery that resulted (and continues to result) in a very large cumulative output loss.²⁰ In contrast, the S&L insolvencies had almost no connection to the subsequent recession and slow recovery which, in any event, resulted in a modest cumulative output loss.

Cumulative Output Loss: 1990-95

The US economy did experience a recession in 1990-91, part of which might be attributed to the decline in construction spending, particularly in Texas and California. But the declines in aggregate magnitudes were relatively small. Residential construction

²⁰The TARP expenditures were a fraction of the costs to the Treasury (and the states) of the financial crisis, since the ensuing recession and slow recovery meant a loss of tax revenue that would otherwise have been collected. Total receipts at all levels of government fell from \$4.2 trillion in 2007 to \$3.7 trillion in 2009. Total current receipts for the Federal government declined from \$2.66 trillion to \$2.23 trillion between these two years. NIPA tables 3.1 and 3.2, accessed June 13, 2014.

dropped from \$239.5 billion in 1989 to \$205.1 billion in 1991 before recovering. Housing starts dipped from a peak of 1.6 million in January of 1989 (all numbers are at an annualized rate) to a trough of 798 thousand in January of 1991, but quickly recovered to over 1 million, as they had in the 1982 recession (Congressional Budget Office, 2008, p. 34). In contrast, starts collapsed from a peak of over 2.2 million in January of 2006 to a trough of 478 thousand in April of 2009, considerably below where they had been at the depths of either the 1982 or 1990-91 recessions. Recovery of housing starts after 2009 took a very long time. Starts averaged just over 900 thousand in the first 8 months of 2013, and in April of 2014, they were still barely over 1 million on an annualized basis, less than half their peak more than seven years earlier (<http://research.stlouisfed.org/fred2> , series HOUST, accessed June 11, 2014).

Perhaps we should be focusing on nonresidential construction. But here the percentage decline in the 1990-91 recession was even smaller. Nonresidential construction for the country as a whole dropped from \$622.4 billion in 1990 to \$598.2 billion in 1991 before recovering (all magnitudes nominal, from NIPA table 1.1.5). The Federal Reserve Board's Senior Loan Officer Opinion Survey on Bank Lending showed a modest decline during the 1990-91 recession, comparable to what was seen in 2001, but overshadowed by the precipitous fall in 2008 (Congressional Budget Office, 2009, p. 10). There is little evidence of deterioration in this measure during the 1982 recession, (although a large negative spike in 1980 associated with the imposition of credit controls).

There are multiple channels whereby financial failures may adversely affect the real economy. The most potentially devastating is through the credit channel. If failures

threaten or cause to seize up flows of lending, as was the case with Lehman Brothers, the damage to capital formation and to the real economy can be very serious indeed. The data at the national level on construction spending— the component of gross private domestic investment we would most expect to be affected by S&L failures, do not suggest such an impact.

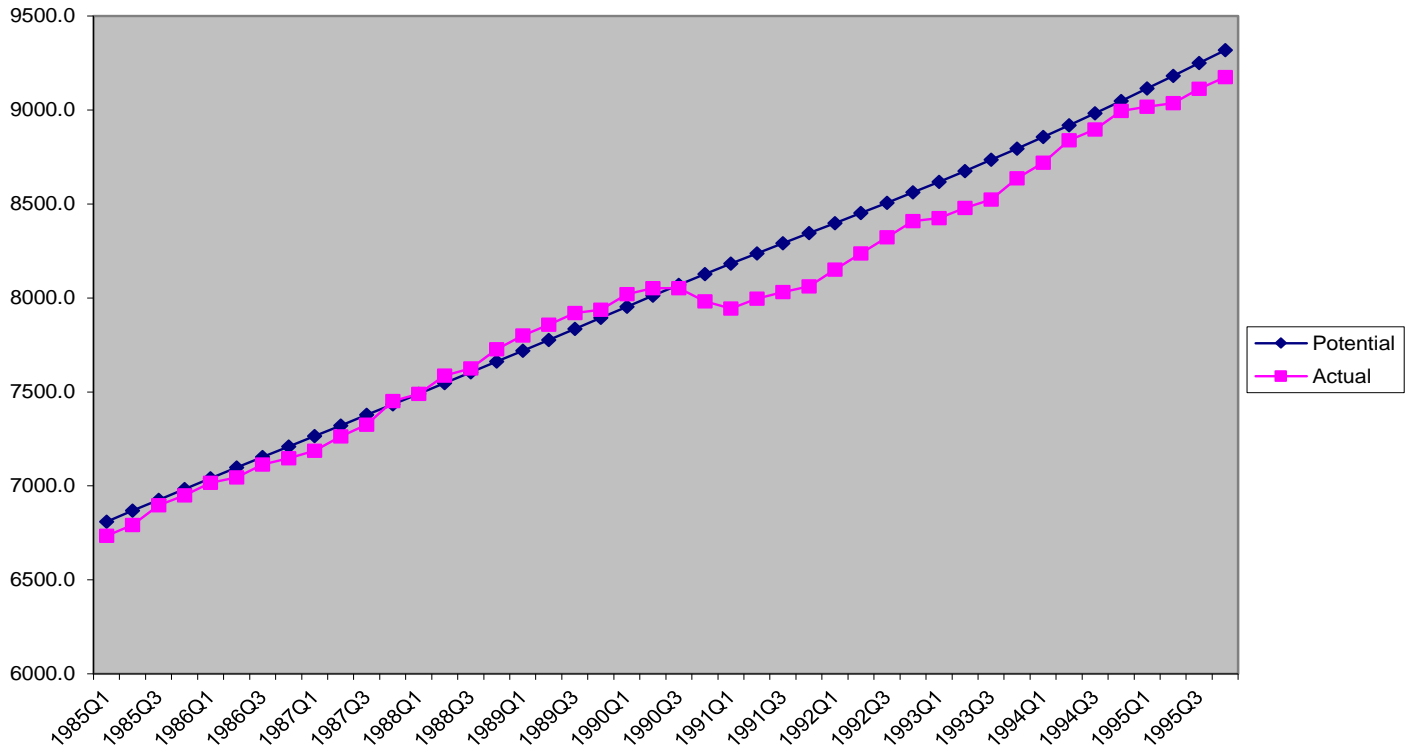
Congressional Budget Office data (2011, p. 28) show output roughly at potential between 1985 and 1990, then dipping below potential between 1990 and 1995. Real GDP fell a slight .2 percent between 1990 and 1991, probably influenced by the direct effect of the spike in oil prices associated with the first Persian Gulf War, and the indirect effects on spending due to related drops in consumer and business confidence. Output recovered relatively rapidly in 1992, although an output gap remained until 1995. In absolute terms the loss is reflected in the rise of the unemployment rate from 5 percent in March of 1989 to 7.8 percent in June of 1992. A 2.8 percentage point increase is not trivial, although it pales in comparison with the increase from 4.5 percent in March of 2007 to 10 percent in October of 2009. Moreover, after its June 1992 peak, the unemployment rate dropped almost as quickly as it had risen, and then continued to decline in the 1990s, reaching a nadir of 3.8 percent in April of 2000.

The cumulative output loss between 1990 and 1995 played a role in the 1992 Presidential election,²¹ but was nevertheless small compared to what has and will be experienced in the aftermath of the 2007-2008 financial crisis. It is important in estimating the macroeconomic cost of a downturn not to limit oneself to the periods of recession identified by the NBER business cycle dating committee. The economy can

²¹ In the memorable words of James Carville's advice to Bill Clinton on winning the election, "It's the economy, stupid."

return to growth and thus be characterized as having emerged from its downturn, but in levels remain substantially below the prior trajectory of potential.

Figure 3
Actual and Potential Output, US, 1985Q1-1995Q4
Trillions of 2005 \$



Sources: Quarterly CBO estimates of potential output available at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12039/keyassumptionspotentialgdp_110125.xls; actual output at <http://www.bea.gov>, NIPA Table 1.1.6. Accessed March 19, 2013.

The NBER says the economy was in recession for 8 months from the third quarter of 1990 through the first quarter of 1991, but we must consider as well the recovery period during which the economy remained below potential. The calculations below reference the five year period from 1990Q4 through 1995Q4, when the economy appears to have returned to potential. I compare the CBO's series for real potential output in

chained 2005 dollars with actual output using the same metric, and cumulate the output gaps. This comes to \$.9 trillion, which can be compared with average potential output during this period of \$8.038 trillion. We can therefore say that this half decade of below potential output at the start of the 1990s cost approximately 11 percent of one year's GDP.

From the perspective of the questions posed in this paper, however, the size of this number is almost beside the point, because there is at best a tenuous connection between the output shortfall between 1990 and 1995 and the S&L troubles. In a 1992 discussion, Stephen McNees hardly mentioned the S&L sector in discussing the genesis of the downturn. Robert Hall (1993) echoing Olivier Blanchard (1993), concluded that the downturn had something to do with the response of consumer and business confidence to the Iraq war and the spike in oil prices. There is no mention at all of the S&L difficulties in his list of eight possible causes of the recession. Carl Walsh (1993) argued that if there was a cause it was restrictive monetary policy. Davud Geltner (2013) concludes that commercial real estate, which was differentially implicated in fraudulent S&L lending, did not play a major role in causing the recession or influencing recovery in the early 1990s.²² The main contrary view I could find is in an article on <http://about.com> by Kimberly Amadeo entitled "The History of Recessions in the United States." Regarding the 1990-91 recession she wrote that "It was caused by the Savings and Loan Crisis in 1989", full stop.²³

²² "CRE (commercial real estate) was much more intertwined with the S and L crisis than it was with the 1990-91 recession..." (Geltner, 2013, p. 1).

²³ Akerlof and Shiller (2009, p. 30) do consider the S and L crisis a factor, but say that "the loss in confidence in the wake of the first Iraq war and the spike in oil prices that preceded it were more

Though virtually everyone in the early 1990s thought the S&L insolvencies were a crisis, academic economists apparently did not then and do not today believe they had much to do with the recession that followed. Does this seeming disconnect make any sense? Can we consider financial disturbances a crisis if they have virtually no impact on the real economy? Or is the question whether the apparent absence of impact is attributable to the quality or effectiveness of remediation?

As argued, if we can link financial disturbance to a recession and slow recovery resulting in significant cumulative output loss we have established sufficient conditions for macroeconomic significance. Conversely, demonstrating that failures were not followed by these outcomes is necessary though not sufficient grounds for concluding that the disturbances had little macroeconomic significance. The evidence is only necessary because there is still the possibility that the character, amount, and/or timing of remediation prevented output loss that otherwise would have occurred.

To know whether the output trajectory might have been sensitive to the nature of remediation we need to determine whether the failed institutions were systemically important. This requires thinking about alternate histories. Counterfactual analysis involves speculation about events that either didn't happen or haven't yet happened, and for this reason many are averse to it. But such exploration is unavoidable in assessing financial fragility and the vulnerability of the real economy a reality reflected in the Dodd- Frank act, which requires *ex ante* identification of SIFIs (systemically important financial institutions). The act mandates, *in advance*, tagging those institutions whose failure would have significant negative consequences for the macroeconomy.

important.” Elsewhere (p. 86) they acknowledge that “the failures did not have a major macroeconomic effect.”

Whether a financial institution is systemically important depends on how large is its asset base, how enmeshed it is in chains of intermediation, a function of its degree of leverage and the nature of its liabilities, and how available are substitute intermediation services. The potential for contagion is important, and there are several mechanisms whereby it can occur, one of which is via direct interconnection. If A fails, and has borrowed from B, so that A's liabilities are B's assets, then B may be in jeopardy. And if B fails, and has borrowed from C, C can be vulnerable. Like a row of falling dominoes, or a force multiplier, the failure of one institution might generate a cascade of other failures.

Contagion may also occur in the absence of direct interconnection. If A fails, holders of B's short term liabilities may run, not because B actually holds A's liabilities, but due to lack of knowledge of "where the bodies are buried", fears that B's asset portfolio is similar to A's and/or that apparently similar deposit guarantees are wobbly.²⁴ B's solvency may also be threatened if, with an asset profile similar to A's, fire sales of A's assets drive down the market value of B's assets.

Widespread collapse of financial institutions can damage the real economy through multiple channels. By depriving new and existing businesses that lack access to the capital markets of access to credit such businesses become credit constrained. Some, with viable plans for business expansion, will not be able to undertake them. Others, relying on credit for ongoing operations, may not be able to make payroll or purchase materials, and industries whose customers depend on credit may not be able to purchase goods or services. Consumption and gross private domestic investment will be lower,

²⁴ White (2014) distinguishes between cascades (the interconnection mechanism) and contagion; both types of links are often considered to be part of financial contagion.

aggregate demand will suffer, output and employment will fall, and more business failures may ensue, further weakening financial institution balance sheets.

Failures may also generate negative wealth effects. When financial institutions fail, depositors, bondholders, and shareholders may all find themselves poorer, and this may adversely affect consumption. But we may conclude even had there been no S&L remediation, such wealth effects would have been small.. It cost about \$200 billion dollars, or roughly 3 percent of GDP, to resolve the insolvencies. This seems like a considerable sum, and it was, but it should be kept in perspective.²⁵ The dot com collapse a decade later resulted in a \$7 trillion decline in household wealth, an order of magnitude higher in both absolute terms and as a share of GDP than the losses associated with the S&L failures.²⁶ Job gains between 2001 and 2006 were soft, but the collapse of the NASDAQ does not appear to have had a major macroeconomic impact, in part because the burgeoning housing construction boom took up some of the slack in the economy, but more importantly because the intermediation chain was short, and losses stopped quickly with households owning the assets.

The more leveraged is an institution, and the more contagion threatens, the more vulnerable may be the larger financial system and the macroeconomy to possible failure,

²⁵ At the time US private depository institutions held almost \$4.7 trillion in assets, and pension funds approximately as much again. Federal Reserve Flow of Funds data, Tables L.109 and L.116. Release of September 18, 2014.

²⁶ GDP was \$10.6 trillion in 2001, so we are talking about a decline in stock market wealth equal to about 70 percent of GDP, as opposed to the roughly 3 percent of GDP associated with the S and L remediation. Because of 50 percent margin requirements on new stock purchases, a rule in place since 1974, the impact of stock market declines generally stopped with the households that held the stock. The risk to financial institutions lending on stock is small, except in the unusual event of a catastrophically rapid decline in prices, where there is not enough time to sell out before margin is exhausted. There were likely modest negative impacts on consumption in the early 2000s, but partly because stock is more unequally held than real estate, the consumption hit was lower than when the subsequent real estate bubble burst (because high income and high net worth individuals have lower marginal propensities to consume)

and the more sensitive may be the real economy to the character, timing and amount of remediation. On the other hand, if the asset base is limited and/or losses will stop with the first round of liability holders, and if comparable intermediation services will be available from still solvent institutions, the possible or actual macroeconomic impact of failure will be much less sensitive to the nature, timing and amount of remediation.

Although, like most financial institutions, S&Ls were highly levered, their liabilities consisted principally of retail and brokered deposits, the latter collected from high net worth individuals by intermediaries such as Merrill Lynch and then funneled to S&Ls willing to pay the highest rates. These flows were supplemented by union pension funds, particularly through corrupt organizations such as Mario Renda's First United Fund. Broker-dealers were not, however, lending to savings and loans on their own account, nor, by and large, were S&Ls borrowing from banks. Finally, the S&Ls were not providing unique or irreplaceable intermediation services. Some of the biggest problems involved commercial lending, a lending arena in which S&Ls were novices, and by all accounts, doing a very bad underwriting job.

Due to the relatively small size of the insolvent institutions, the lack of interconnectedness reflected in their liabilities, and the availability of other institutions capable of lending on real estate, we can state with some confidence that the failed S&Ls were not systemically important. Even had their depositors not been made whole, the macroeconomic damage would probably have been limited.²⁷

²⁷ For a contrary view, see Adams (1990, p 53): "Wall had scrambled under a threat not known since the Depression: the possibility of widespread bank runs and a general panic." But failures of S and L's did not threaten contagion, because losses stopped directly at households – regular depositors and holders of brokered deposits, If Lehman Brothers had been funded either by equity

The FSLIC, unlike the FDIC, did not legally have the full faith and credit of the United States government standing behind it. Had backstopping not ultimately been provided in 1989 when the FSLIC ran out of money, losses would have been absorbed by the households that owned deposits of failed institutions and would have stopped there. Thus contagion through directly interconnected balance sheets would have been limited. Contagion to solvent institutions through other mechanisms could have been prevented by providing liquidity to S&Ls deemed merely illiquid and contagion to banks forestalled by making clear that (unlike the FSLIC) the FDIC guarantee stood even if its fund were exhausted.

I am not saying this necessarily would have been good policy. But exploring the consequences of a scenario in which depositors were not made whole reinforces the conclusion that the absence of significant cumulative output loss is mostly attributable to the systemic unimportance of the failed thrifts as opposed to the amount or character of remediation.

Cumulative Output Loss: 2007-24 (and beyond)

For 2007-2024, there is a much stronger case that the recession and slow recovery was caused by developments in the financial sector.²⁸ By “cause” I do not necessarily mean a specific “trigger” such as the collapse of Lehman Brothers, but rather an accretion of financial fragility over a number of years, the result of risky and highly leveraged bets

(capital) or by brokered certificates of deposit provided by individual households, its failure would have posed much less threat to the financial system and real economy.

²⁸ The use of 2024 as an endpoint in estimating the macroeconomic repercussions of the 2007-2008 financial crisis is arbitrary: it is simply the outer boundary of the Congressional Budget Office’s ten year forecast of actual and potential output at the time of the latest revision of this paper (2014). In 2024, according to the CBO’s forecast of actual output, the economy will still be substantially below a trajectory of potential based on the 2008 forecast.

made with other people's money. Financial fragility increased over time as these features come to characterize the balance sheets of both depository institutions and the larger penumbra of the shadow financial system.²⁹ This fragility created a predisposing vulnerability. The financial system – mostly actors in the private sector – collectively created this vulnerability, through balance sheet decisions within their own institutions, and through the use of lobbyists and trade associations to influence legislative and regulatory actions. If the financial sector had been less vulnerable in the second half of the 2000s, a change in the trajectory of house prices might otherwise have been more easily shaken off.

This state of fragility, particularly as it was hidden in the nether reaches of the shadow system, only imperfectly fathomed by policy makers such as Ben Bernanke (he has admitted as much on several occasions), was by and large unrecognized prior to the financial crisis in 2008 but hugely important in understanding and explaining the 2007-2009 recession and subsequent slow recovery. In contrast, it was largely absent and noncontributory in earlier recessions such as 1982 and 1990-91.

The almost complete lack of anticipation of the coming economic downturn can be appreciated by reexamining the forecast included in the Congressional Budget Office's The Budget and Economic Outlook: Fiscal Years 2008 to 2018, released in January of 2008. For the four years 2009-12, the CBO undershot the civilian unemployment rate by 3.9, 4.5, 4.1, and 3.3 percentage points respectively. They had the three month T bill rate

²⁹ I prefer the term shadow financial to shadow banking system, because most of the institutions within it were not banks and generally not depository institutions. See Roubini (2008). Households investing in housing had, of course, also become much more highly leveraged.

above 4 percent through the period; actual was barely above 0. The record with respect to the ten year T note was not much better.

The 2008 forecast was vetted by the CBOs Panel of Economic Advisors, which included Martin Baily, Jared Bernstein, Martin Feldstein, Robert J. Gordon, Robert Hall, Lawrence Katz, Allan Meltzer, Laurence Meyer, William Nordhaus, Rudolph Penner, James Poterba, Alice Rivlin, Nouriel Roubini, and Stephen Zeldes. While the CBO staff bears responsibility for the forecast, it is fair to say that none of those listed, with the possible exception of Roubini (see Roubini 2008), indicated in his or her pronouncements or writings at the time any premonition that the economy was about to go over a cliff, and whatever was said at that panel meeting did not lead the CBO staff to revise what turned out to be largely a business as usual forecast. It was less optimistic than the forecasts by the Bush administration, the Federal Reserve Board, or an average of private forecasters, but still, in retrospect, wildly overoptimistic.

Publishing in January of 2008 when, as determined subsequently by the NBER, the economy was already in recession, the CBO noted the warning signs reflected in rising unemployment claims and the negative yield spread (p. 33), but did “not expect the slowdown in economic growth to be large enough to register as a recession” (2008, p. 21). They acknowledged that 2008 growth could be weaker than forecast if “the turmoil in financial markets leads to a more severe economy-wide curtailment of lending than CBO anticipates”, but that it could be stronger than forecast if “financial institutions (are) able to absorb mortgage related losses without triggering significant repercussions in the broader economy.”

Table 1 reports the Congressional Budget Office’s forecast and projected unemployment rate, three month Treasury bill rate, and ten year Treasury note rate for 2009-12, along with the actual. The failure to get interest rates right was not by and large due to poor forecasts of the inflation trajectory, since the CBO only slightly overestimated price levels.

Table 1
2008 CBO Forecast or Projected for 2009-12 and Actual

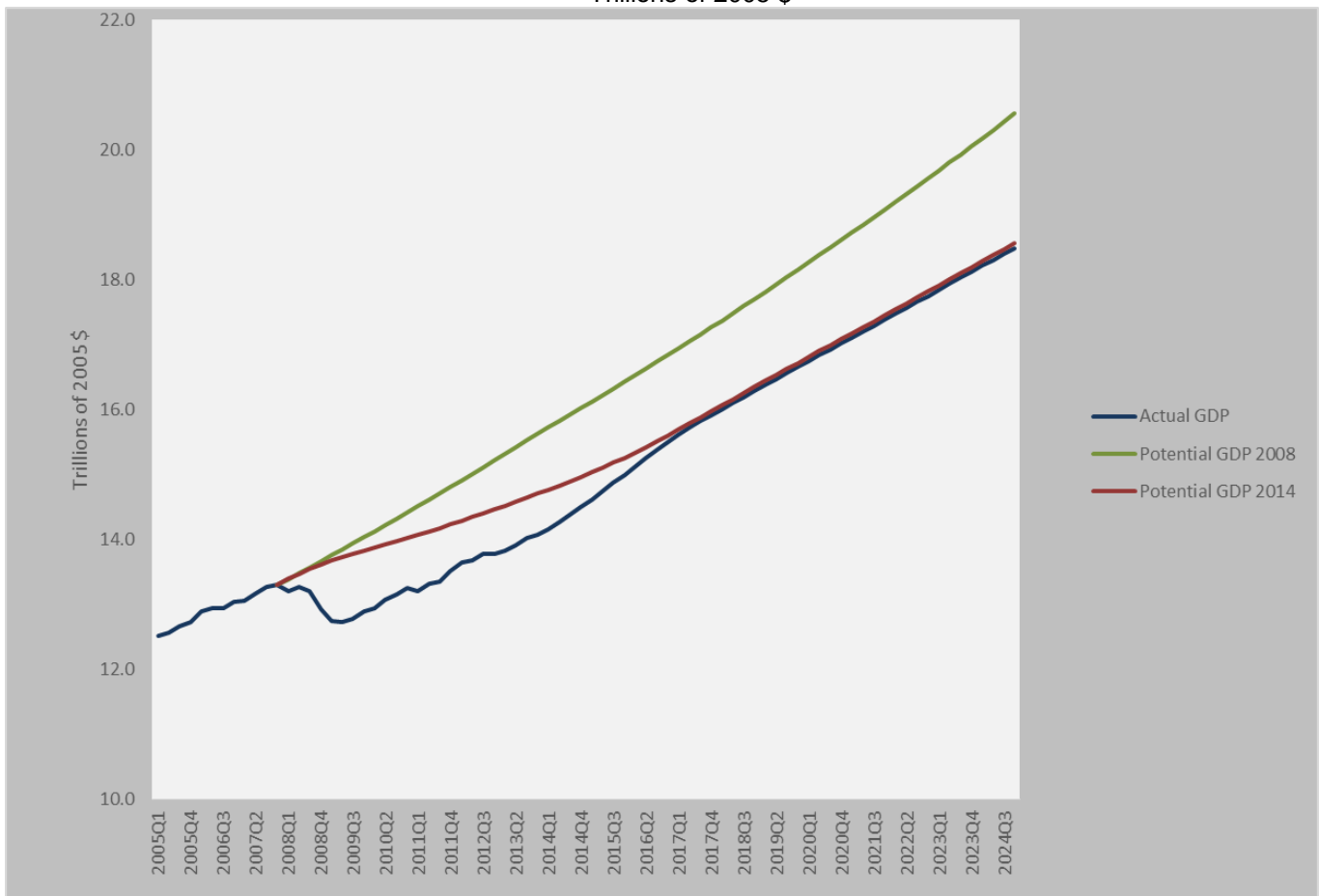
		Unemployment	3 Month T bill	10 yr T note
2009	Forecast	5.4	4.2	4.9
	Actual	9.3	0.15	3.85
	Forecast Error	-3.9	4.05	1.05
2010	Forecast	5.1	4.6	5.2
	Actual	9.6	0.14	3.3
	Forecast Error	-4.5	4.46	1.9
2011	Forecast	4.8	4.7	5.2
	Actual	8.9	0.01	1.89
	Forecast Error	-4.1	4.69	3.31
2012	Forecast	4.8	4.7	5.2
	Actual	8.1	0.07	1.78
	Forecast Error	-3.3	4.63	3.42

Source: Congressional Budget Office, 2008.

The report went on to say that losses associated with subprime mortgages were uncertain, but “expectations are that the banking system as a whole will not be imperiled...the tightening of credit standards to date has been less extreme than the tightening that occurred during the banking crisis of the early 1990s” (2008, p. 28). The evidence for this appears to have been that at the point the report was written the reduction in lending still seemed modest relative to the mild reduction in commercial and

industrial loans evident in the early 1990s (as well as the early 2000s). The report estimated that the fall in residential construction had shaved about a percentage point off of GDP growth in 2007, but forecast that falling house prices, which increased affordability and would lead to a working off of house inventories, would produce a revival of housing starts in 2009 (p. 31). The risk of a collapse of business fixed investment (nonresidential construction and equipment and software), such as had characterized the previous two recessions, was “small” (p. 37).

Figure 4
Actual and Potential Output, United States, 2005Q1-2024Q4
Trillions of 2005 \$



Source: Congressional Budget Office, 2008, 2014. See text

To its credit, the CBO can point to the fact that its forecasts were more pessimistic (and therefore somewhat more accurate) than those of the Bush administration, which in November of 2007 forecast real GDP growth in 2008 more than twice (2.7 percent) what the CBO had (1.5) percent. The actuality was that real GDP growth was negative in 2008, and then again in 2009. It began rising again in 2010, but GDP did not exceed its 2007 level until 2011 (NIPA table 1.1.6).

Subsequent to the publication of its 2008 report, the CBO repeatedly reduced its estimates of the trajectory of potential output.³⁰ A number of plausible mechanisms justify attributing these downward revisions to the effects of the recession and slow recovery. These include reduced labor market attachment and the atrophying skills of the long term unemployed as well as physical capital accumulation that didn't take place but otherwise might have.³¹ There is a problem, however, in using these revised trajectories to compute cumulative output loss. The correct counterfactual is to compare actual output with what potential would have been in the absence of the downturn.

If we grow potential output at rates forecast or projected in the 2008 report (2.7 percent per year for 2008-13, and 2.5 percent per year for 2014-18, then continuing at that rate until the end of the window of the 2014 projection (2024Q4), and compare this trajectory with actual through 2013 and then projections of actual through 2024Q4, the cumulative output loss at that point will be \$24.3 trillion in 2005 dollars, which translates to 1.45 years of average potential over the entire 2008Q1-2024Q4 period.

³⁰ It also revised downward its forecasts of actual output.

³¹ In contrast, there was no downward revision of the estimated potential output trajectory as the result of the mild 1990-91 recession.

And we will still be \$2.1 trillion short of a projection of potential based on the 2008 report. The 2008 CBO projection of potential growth were not unreasonably high. In fact it was quite moderate relative to the long run growth rate of the US economy, which had averaged a remarkably stable 3.1 percent since the end of the Civil War. The 2.7 percent and 2.5 percent rates reflected in the 2008 forecast were therefore significantly lower than historical trend. This was due almost entirely to demographic forecasts of slower growth in (potential) labor force and hours (about half a percent a year rather than the long run trend of 1 percent per year). The 2008 estimate of long run total factor productivity growth in the private nonfarm economy was what at the time seemed moderate: 1.4 percent per year. Combined with an estimated long run growth rate of capital services of 3.5 percent a year, this yielded a forecast of long run labor productivity growth of about 2.1 percent a year, roughly consistent with the long run historical average.

Between the 2008 and 2014 report, the CBO projections of the long run rate of growth of the potential labor force growth and potential hours in the nonfarm business sector changed hardly at all. But the projection of long run TFP growth declined to 1.3 percent and then in the February 2014 report to 1.2 percent per year. The CBO also dropped its projection of the long run growth of physical capital services in the private nonfarm economy from 3.5 percent in the 2008 report to 3.2 percent per year in the 2014 report.³²

The lowered forecast of TFP and capital services growth knocked a half a percentage point off the labor productivity growth rate and therefore the projected growth

³² It makes little sense to attribute slow growth of private sector capital services to government budget deficits when the economy had considerable excess capacity and was at the zero lower bound. The slowed growth of physical capital services was due to a prolonged period of insufficient aggregate demand, which decreased the incentives for new investments in plant and equipment.

of potential output (arithmetically the sum of the growth of hours and the growth of output per hour). In 2014 the CBO also decided that the economy, rather than reattaining its (lowered) trajectory of potential in 2017Q1 and remaining at potential thereafter, would remain half a percent below potential for the duration of the projection window (through 2024Q4).

If we view the decline in TFP and the decline in capital services growth as entirely the consequence of the financial crisis, recession and slow recovery, the estimated cumulative loss between 2008Q1 and 2024Q4 of 1.45 years of average potential output would still underestimate the total loss, because we will still in 2024Q4 be \$2.1 trillion (2005 \$) below a forecast of potential based on the 2008 CBO report. On the other hand, John Fernald (2014) has argued that the downward bending of the trajectory of potential should not be attributed to the effects of the prolonged recession and slow recovery, but instead reflected a slowing of TFP growth that had already begun prior to the financial crisis, but could not yet be perceived in 2008. In other words, the IT productivity boom, which began in 1995, permanently raised levels, but not rate of growth, and Fernald identifies its end in 2003, prior to the financial crisis. His view is that it simply a coincidence that the slowing of potential TFP growth followed the financial crisis.

It is likely, nevertheless, that some of the reduction from 1.4 to 1.2 percent in the forecast of potential TFP growth also reflects the atrophying of skills and reduced labor market attachment among the long term unemployed (this will not necessarily affect the long run growth of potential hours, but will affect the growth of the residual). There is an even stronger case that the marked reduction in the growth of physical capital services, which affects the growth of both actual (through aggregate demand mechanisms) and

potential output (through aggregate supply mechanisms), is related to the prolonged recession and slow recovery (see Hall, 2014, p. 13).

The estimate of 1.45 years of average potential may be too high. It may also be too low, depending on where we come out on these debates. But however we ultimately partition the causes of the downward bending of the projected trajectory of potential output subsequent to 2007, we are, in terms of the cumulated loss attributable to the financial crisis, recession, and slow recovery, likely to be in Great Depression territory.³³

A back of the envelope calculation employing Okun's law suggests that cumulative output loss over the twelve year period 1929-41 approached three years of average potential over the period. Assume 5 percent was the nonaccelerating inflation rate of unemployment (this may be too high, since unemployment in 1929 was below 4 percent with little sign of accelerating or for that matter even positive inflation). For each year between 1930 and 1941 inclusive, we can calculate the number of percentage points by which the unemployment rate (Lebergott series) exceeded 5 percent and multiply by two. That's a crude Okun's law estimate of the amount by which actual output fell short of potential in that year. Cumulate these shortfalls and one is at 298 percent. This probably overestimates cumulative loss as a fraction of average potential because potential was rising rapidly and the most severe shortfalls were early in the period. But it is in the right ballpark.

³³ The downturn between 1929 and 1933 was of course much steeper, in part because of differences in policy responses, although recovery between 1933 and 1937 and particularly after 1941 was very sharp. Still, the cumulated output loss measured as a fraction of average potential GDP associated with the great recession and slow recovery is of the same order of magnitude as and rivals that associated with the Great Depression (considered as running from 1929 through 1941). As Hall states at the beginning of his 2014 working paper, "The years since 2007 have been a macroeconomic disaster for the United States of a magnitude unprecedented since the Great Depression." For a cross national perspective on the possible post-2007 operation of hysteresis, see Ball (2014).

A more refined estimate confirms this. Begin with 1929 through 1941 output in chained 2005 dollars from NIPA table 1.1.6. Assuming 1929 was at potential, grow 1929 output by 3.64 percent per year (simple compounding) to create a series of estimated potential output (see Field, 2011, for analysis of why potential grew so rapidly during these years). This leaves 1941 actual output about 9.8 percent below potential, which is what is implied by Okun's law and an assumption that the nairu was 5 percent. Calculate the output gap for each year and cumulate, which yields \$3.467 trillion in 2005 dollars, relative to an average potential of \$1.241 trillion, for a cumulative output loss of 2.8 years of average potential over the years 1929-41. If one were to use David Weir's series for employment during the depression,³⁴ which includes federal emergency workers, for example those in the Works Projects Administration (WPA) and the Civilian Conservation Corp (CCC) unemployment rates would be lower, and so would the cumulated output loss, probably closer to two years, which would narrow the difference by this metric between the Great Recession and the Great Depression.

The cumulative loss that is already and will likely be associated with the Great Recession and slow recovery is therefore very large. It dwarfs estimates of the total cost of the Iraq war, which range between \$1 and \$3 trillion.³⁵ In absolute terms and as a fraction of average potential GDP it dwarfs the cumulative output loss between 1990 and 1995, almost none of which can be attributed to the S&L insolvencies. It is an order of magnitude higher than losses associated with either the 1990-91 or the 1982 recessions, and unlike those earlier two episodes, the link between financial crisis and recession and

³⁴ Carter et al, 2006, Historical Statistics, series Ba477.

³⁵ The \$3 trillion estimate is from Bilmes and Stiglitz (2008), but this includes interest costs on money borrowed to finance the war, which I have argued results in an overestimate.

slow recovery is both clear and widely acknowledged. *It is a reminder of how important it is to implement a regulatory structure likely to reduce the probability of a future disaster comparable in magnitude or perhaps even more severe than that experienced in 2007-09.*³⁶ Table 2 summarizes the four estimates of cumulative output loss developed in this paper.

Table 2:
Cumulative Output Losses: Four Episodes

Episode	Cumulative Loss 2005\$	Cumulative Loss Relative to Average Potential
1929-1941	\$3.5 trillion	2.80
1981-1984	\$.9 trillion	.15
1991-1995	\$.9 trillion	.11
2007-2024	\$24.3 trillion	1.45

Discussion

Estimates of a cumulative output gap are influenced by forecasts and projections of actual as well as potential output. The most volatile private sector determinants of actual output in the short run are autonomous consumption and the three components of gross private domestic fixed investment: residential construction, nonresidential construction, and producer durables (equipment and software). If any one or a combination of these declines sharply, and if this drop in aggregate demand is not compensated for by an increase in net exports, consumer durables or government spending on goods and

³⁶ Much of the reform efforts are focused around increasing capital requirements. Kane (2014) has argued forcefully that this is insufficient, that we also need to make legal changes, expanding the fiduciary duties of loyalty, competence, and care that financial managers currently owe to stockholders to include taxpayers, who have an (implicit) equity stake in firms covered by a safety net. At present, duties toward taxpayers are limited to those explicitly covenanted. (Kane also advocates establishing a dedicated academy to train bank regulators). The absence of fear of prosecution allows managers, stockholders and creditors of financial institutions to take (steal) money from taxpayers with impunity. The theft per se is indeed galling, but the even larger problem is that in pursuit of their objectives, financial sector actors exacerbate the financial fragility that engenders significant threats to the real economy.

services, a recession is almost certain. As a practical matter, given norms and institutions, deflation cannot be relied upon to close an output gap, nor, as a policy measure, is it to be recommended.³⁷ Once one hits the zero lower bound on interest rates, deflation can result in very high real interest rates, which discourage private sector investment as well as purchases of consumer durables.³⁸ The expectation of continued deflation can create a destabilizing cycle: higher real interest rates reduce autonomous spending, creating a larger output gap and therefore even more deflation.

Regardless of the degree of leverage involved in financing the housing construction boom that peaked in 2005, overbuilding would, upon the boom's termination, have depressed residential construction, leading to a modest deficiency in aggregate demand that, unless compensated for by sufficient fiscal and monetary stimulus on the part of the government or Federal Reserve, or increasing net exports, would have driven a wedge between actual and potential. Even allowing for a healthy multiplier, however, this decline is far too small to account for the downturn threatened or actually experienced. The fragility of the financial sector meant that a self-reinforcing set of influences dragged down private sector consumption and investment spending much further.

A second set of effects may influence the trajectory of potential output, and they pertain to physical capital, human capital, and labor. With respect to physical capital, relaxed standards for granting credit during a boom can result in misallocation, one

³⁷ In the New Keynesian literature, inflexibility can result from menu costs, staggered contracts or periods when price adjustment is possible, or game theoretic coordination problems representing a collective action problem. But rendering wages and prices completely flexible does not remedy the defects of disinflation as a remedy for recession when a system of debt contracts features interest obligations largely fixed in nominal terms. As noted, actual deflation can pose additional challenges to recovery.

³⁸ It can also depress consumption through the debt deflation mechanism. Because most debt contracts were and are written with fixed nominal interest rates, deflation increases the burden of debt repayment (and the real value of the income stream to creditors). The negative effect on consumption assumes that debtors have higher marginal propensities to consume than creditors.

dimension of which can be long overhangs of residential or nonresidential structures as well as equipment far in excess of current or immediate future needs. More damaging, from the perspective of the evolution of the economy post-disturbances, is the possibility that physical capital will be ill-suited, not just in quantity, but in design, configuration and location with respect to future needs. Since equipment is by definition moveable, this concern applies particularly to structures. In some cases poorly chosen investment in structures can render an economy worse off than had the capital formation not taken place (Field, 1992). That is, the physical as well as the financial legacy of the credit boom may contribute to the slow private sector recovery and persisting output gap, thus affecting the post-disturbance trajectory of both actual and potential.

If a credit boom can result in an overhang of excess structures and equipment, it is also true that a long period in which output lies below potential will likely result in shortfalls in new physical capital formation as well as consumption compared to what would have transpired in the absence of an output gap. The investment shortfalls do not have the same immediate effect on living standards as do consumption shortfalls, but they may (after overhangs are exhausted) result in a private sector capital stock, and a capital-labor ratio, lower than would have been the case in an environment of smoother and less disrupted physical capital accumulation. This prospect can, but may not, be counterbalanced by the positive supply side influence of fiscal stimulus in the form of well-chosen government R and D or infrastructural investment, which can complement private sector commitments and increase the growth of total factor productivity (Field, 2011). Of course, to the degree such stimulus is undertaken, the cumulative output loss will be smaller and terminate sooner, and the possible detrimental influences of recession

on the trajectory of potential output will also be of less concern. It has, however, been rare that the effects on output of a macroeconomically significant financial disturbance have been more than partially mitigated.

With respect to labor, the immediate consequences of a downturn may not be so damaging, since out of work or underemployed workers may conclude that this is a good opportunity to pursue a professional or advanced degree, or pay for additional training. As the downturn proves to be more prolonged, however, pessimism and discouragement generally sets in, as forecasts of the likely returns from such investments are revised downwards. For the long term unemployed there can be reduced labor market attachment and a decay of job related skills including but not limited to the psychological discipline necessary for successful participation in the workforce. These effects will show up in a reduction of total factor productivity and labor productivity growth. Older workers discouraged by a long bout of unemployment may leave and never reenter the labor force.

It is also possible that the longer term trajectory of potential output might *benefit* from recession, with adversity stimulating creative responses with persisting positive effects. There is historical evidence for some sectors suggesting the operation of such a mechanism (see Field, 2013). It is highly probable, however, that negative effects of prolonged recession on potential output predominate. That is the rationale for attributing most of the post-2008 downward revision of the trajectory of potential to the cumulative effect of operating the economy below potential for multiple years. If an athlete suffers a serious injury and is bedridden for months, muscle tone and bone density will deteriorate,

and there will come a point where some of the effects are irreversible. The athlete's trajectory of potential will bend downward to help close the gap with actual.

A different perspective has been advanced by James Bullard, President of the St. Louis Federal Reserve Bank, who has promoted the idea that an effect of the housing bubble prior to the crash was to allow actual output temporarily to exceed true potential.³⁹ An implication was that projecting potential based on actual in 2002-2007, as the CBO did in 2008, is inappropriate. Bullard was not arguing, as did the CBO, that the financial crisis and recession depressed the trajectory of potential output below what it would have been in the absence of the downturn. Rather, he argued that the boom temporarily *raised* output above true potential in a manner that was not sustainable. The claim was not simply that the sectoral composition of output was temporarily shifted towards construction, it was that total output was raised. If this view is accepted, the cumulative output loss associated with the financial crisis and recession will be much lower.

The idea that actual output can temporarily exceed potential is a well-established feature of macroeconomics textbooks. Natural or potential output is defined as the highest level of output that can be sustained without so stimulating the economy that one faces an acceleration of the inflation rate. The claim can be justified either by appeal to the Friedman "fooling" argument (in the presence of an inflation surprise it may take workers some time to realize that they are working for lower real wages than they

³⁹ In its April 5, 2012 News Release, the St. Louis Fed described a recent speech in which Bullard suggested that "the U.S. output gap may be smaller than typical estimates suggest", because such estimates typically count the "housing bubble" as part of the normal level of output. Available at <http://www.stlouisfed.org/newsroom/displayNews.cfm?article=1355> , accessed March 17, 2013.

bargained for) or through a number of other mechanisms that makes nominal wages rigid or otherwise more sluggish to adjust than prices.⁴⁰

None of these mechanisms can be used to justify the view that actual output was above potential between 2002 and 2007, since there was no large inflation surprise. CPI or GDP deflator inflation remained stable and relatively low, in a range of 2 to 3.5 percent. We may have had asset price increases in housing, but we didn't have significant goods and services price inflation.⁴¹ There is therefore no coherent explanation for why, in a large economy such as the United States, an asset price (as opposed to a GDP deflator) surprise or bubble should have caused total output to be temporarily above potential.

It is well understood, and uncontroversial, that such a surprise might temporarily distort the composition of production. The problem is arguing that *total output* was above potential. We should be skeptical that the path of the economy was, from an aggregate supply standpoint, on an unsustainably high trajectory since, though the unemployment rate did decline from over 6 percent in 2003 to about 4.5 percent in 2007, the inflation rate remained moderate.

Bullard's argument, if accepted, would have had the effect of moving the goal posts in a way that reduced the estimated costs of the financial crisis induced recession, thus possibly reducing the urgency of taking actions that might have reduced the waste of running an economy at what otherwise looks to be 6 percent or more below capacity. If

⁴⁰ Other rationales for an upward sloping short run Philips schedule include menu costs and coordination challenges in price adjustments, particularly where contracts create staggered windows for adjustments. I prefer referring to the (non) neutrality of aggregate demand shocks as opposed to money, since alterations in the rate of growth of nominal GDP can come from perturbations in velocity (due to fiscal policy changes or other changes), as well as changes in the growth rate of the nominal money supply.

⁴¹ A combination of asset inflation and low goods and service inflation (close to 0 percent) also characterized the 1922-29 period. See Field (1984).

the CBO view is correct, measures to close an output gap sooner rather than later might have been doubly advantageous because they could have forestalled further downward revisions of the estimated trajectory of potential. It matters a great deal whether a downward revision was due to the deleterious effects of the prolonged recession and slow recovery or because 2002-07 was somehow unsustainably high. If the latter were true then slow recovery did not adversely affect the long term trajectory of potential (or at least not by as much) and there was correspondingly less urgency to closing the output gap.

Conclusion

The S&L insolvencies are no longer considered “the worst financial crisis since the Great Depression.” That title has been usurped by 2007-09. But the phrase now refers to something very different in size and significance. As this paper has shown, the two sets of events are an order of magnitude apart in terms of actual damage to the real economy and/or the sensitivity of possible damage to the timing, character, and amount of remediation. This reassessment of the insolvencies and their consequences underlines how important it is to differentiate between disturbances posing a significant (and possibly catastrophic) threat to the real economy, and those which “merely” involve misconduct and struggles over the allocation of losses among creditors and/or taxpayers. It is also a reminder of how difficult it may be to make those judgments in the heat of the moment.

The Dodd-Frank Act represents a halting and imperfect step in the right direction, in particular by forcing consideration of the consequences of financial firm failure *in advance* of the possible event. It would nevertheless be useful if in our legislative

language and in our thinking about these matters we focused more directly and consistently on the potential for damage to the real economy (Blinder, 2013, is one of the few consistently to emphasize this connection). As it stands, the aims of policy and/or reform are almost always phrased in terms of the objective of preserving the ‘stability’ of the US financial system which has in the past often meant preserving the firms that comprise it. Preserving financial stability should be a national policy objective only to the degree it prevents significant damage to the real economy. There is no prima facie case that it should be a public objective in and of itself, any more than should be preserving the stability of the computer industry.⁴²

Here are two additional takeaways. First, if we are truly concerned with macroeconomic significance, preoccupation with the cost and politics of a bailout will likely be a distraction. Second, if a financial disturbance has a major impact on the real economy, and thus deserves to be called a crisis, the lost output associated with recession

⁴² The preamble to Dodd-Frank reads: “An Act to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end “too big to fail”, to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.” Aside from Section 123, which calls for a “study of the effects of size and complexity of financial institutions on capital market efficiency and economic growth”, there is no explicit reference to the possible impact of failures on actual and potential output. Perhaps that is considered to be so obvious as to be unnecessary. Yet the reference to the macroeconomy in section 123 strikes one almost as an afterthought. It should be front and center, and if it is not, we risk losing sight of the crucial distinction between the national interest in protecting the real economy, and the interest of private actors in protecting their wealth. If the preservation of large interconnected firms will be justified ex post on the grounds they are analogous to the plumbing or circulatory system of the economy (Blinder, 2013, p. 6), then, like water or sewer lines, they should be publicly owned, or like electric and gas companies, regulated as public utilities. Unlike water, sewer, gas or electric lines, however, there is no obvious case that financial firms are natural monopolies, and therefore no self-evident reason why breaking up some of the larger units would have negative efficiency consequences. In seeking mergers as the “least cost” means of resolving many failed institutions, the FDIC has contributed to the growth of large units, in a way that may not turn out to be least cost in the longer run. Was it essential on efficiency grounds for JP Morgan Chase to absorb Washington Mutual, or for Wells Fargo to absorb Wachovia? Again, Dodd-Frank involves imperfect steps in the right direction.

and slow recovery will almost certainly dwarf damage from misallocated physical capital during the boom period.

The recession and slow recovery between 1990 and 1995 resulted in a cumulative output loss equal to about 11 percent of average GDP at the time, an order of magnitude lower than that associated with 2007-24 and beyond. The relative magnitudes are, however, only part of the problem, because there is little reason to believe that the output loss during the earlier period had much to do with what had been going on with the S&Ls. Because of this, the timing, character, and amount of remediation is largely irrelevant in considering the subsequent macroeconomic trajectory. The institutions that failed, considered either individually or collectively, were not large enough, complex enough, or interconnected enough to threaten a global financial crisis. If the postponement of reckoning had dragged on for several more years, the looting would have been worse, the commercial construction boom would have been worse, the drain on some taxpayers would have been worse, the scandals would have been worse, but it would not have threatened to bring down the entire US and world economy.

Caprio and Klingebiel viewed the S&L experience as a “borderline or smaller” financial crisis (1997, p. 7),⁴³ as apparently do Laeven and Valencia (2012). Their views are closer to the mark than was the characterization given by Reinhart and Rogoff (2009). On the other hand all of these authors made the right decision in not treating 1982 as a recession cum financial crisis.

It is clear that legislative interventions, particularly the Depository Institutions Deregulation and Monetary Control Act (1980) and Garn-St Germain (1982), in

⁴³ See also Boyd, Kwak, and Smith (2005) who reach a similar conclusion, repeating Caprio and Klingebiel’s judgment that it was “nonsystemic.”

conjunction with regulatory actions of the Federal Home Loan Bank Board initiated under Richard Pratt, postponed the reckoning at a very substantial cost to some taxpayers and the industry itself. And it is also true that the eventually successful efforts of regulators such as William Black in the Federal Home Loan Bank Board and the San Francisco and Dallas Home Loan Banks helped prevent an even larger drain on the federal treasury. Had the country waited another several years, the cost to clean up the industry would have been greater (Black, 2005).

Suppose ultimately there had been no remediation of the failed S&Ls. The losers would have been mostly individuals, many of them high net worth rate chasers who had taken advantage of brokered deposits and the federal deposit guarantee. They had not by and large leveraged themselves to acquire these S&L liabilities, and had they had to bear the losses the macroeconomic impact would likely have been small, just as the losses associated with the dot.com collapse appear to have had relatively little macroeconomic impact.

Interconnection matters. When a financial institution fails, it matters whether the losses stop with its immediate creditors, or whether their impairment impairs those who may have lent to them, and so on. Limiting leverage is critical in controlling the threat that too much interconnection can pose to a financial system. It is central to the logic of those advocating higher capital requirements (Admati and Hellwig, 2013).

Although, with the introduction and diffusion of NOW accounts, S&Ls had increasingly come to resemble more traditional depository institutions with which they had been historically contrasted, a trend accelerated by legislative and regulatory changes

in the 1980s, their role in the US economy was simply not as central as those whose existence was threatened in 2007-2009.

Why then did the S&L follies attract so much attention? In part because it was a great story. It featured colorful heroes and villains, and many prurient and salacious details. There was much to get angry about. Ordinary citizens (aside from those holding high interest rate CDs from the failing institutions) were outraged at the cost of the government bailout. And there was much over which to salivate. The narrative featured prostitutes, cocaine, high living, fraud, and real criminals who were actually and eventually put in jail. Before their fall the political reach of individuals like Charles Keating extended to the upper house of the United States Congress, casting a pall over the reputations of a former astronaut (John Glenn) as well as a future presidential candidate (John McCain). Hundreds of white collar criminals went to jail. All of this created a brew irresistible to vendors of newspapers, magazines, and books, as well as to the scholarly community.

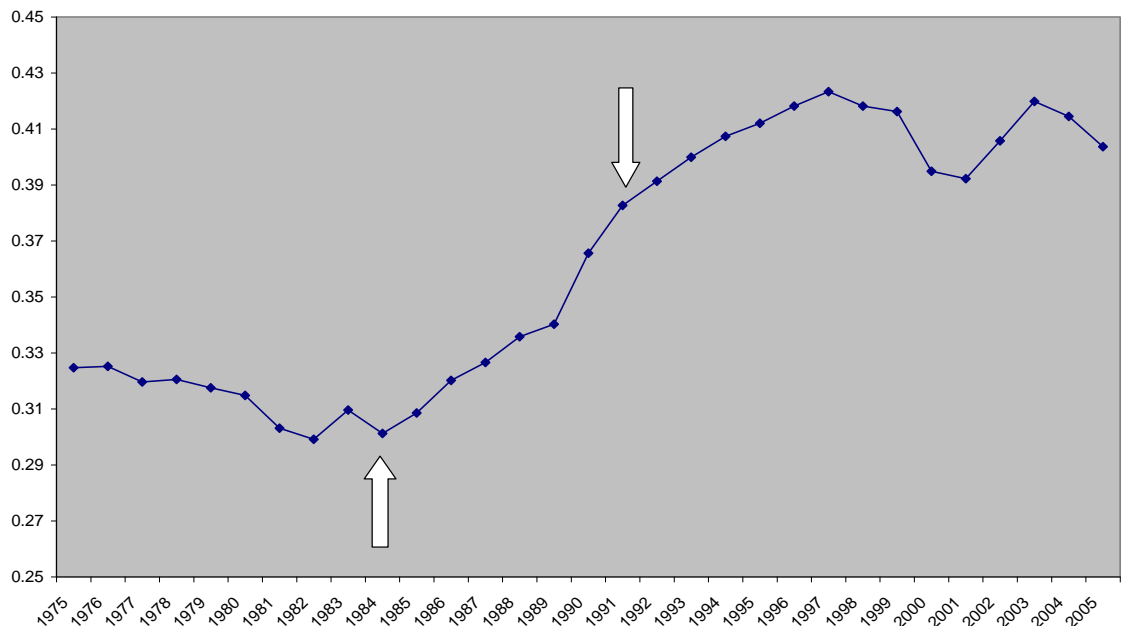
But when we look at the S&L events in the shadow of a financial crisis like 2007-09, we conclude that from a macroeconomic standpoint, it was mostly vapors. The institutions that failed were systemically unimportant. Their failures had almost no discernible effect on financial sector corporate profits; the insolvencies did not usher in a prolonged period of household and financial sector deleveraging retarding recovery.

The impact of commercial structure overbuilding and/or misallocation was heavily localized. The US did experience a recession and slow recovery that began in 1990 and extended to 1995, but this had little to do with the S&L travails. In any event, the

cumulative output gap was a small fraction, relative to contemporaneous GDP, of that associated with 2007-2024.

This verdict on macroeconomic significance applies to the effects on output and employment during the 1990s. Nevertheless, although that impact pales in comparison with the potential and actual damage from what could have been the mother of all financial crises, the developments and legislation that contributed to the S&L insolvencies are part of a trajectory of financial deregulation and rising ratios of private sector debt to GDP that helped lay the foundations for the truly systemic financial crisis that hit at the end of the 2000s.

Figure 5
Debt to Value Ratio, Residential Housing, United States, 1975-2005



Source: Federal Reserve Board Flow of Funds Accounts (2012), Table B100, lines 4 and 33.

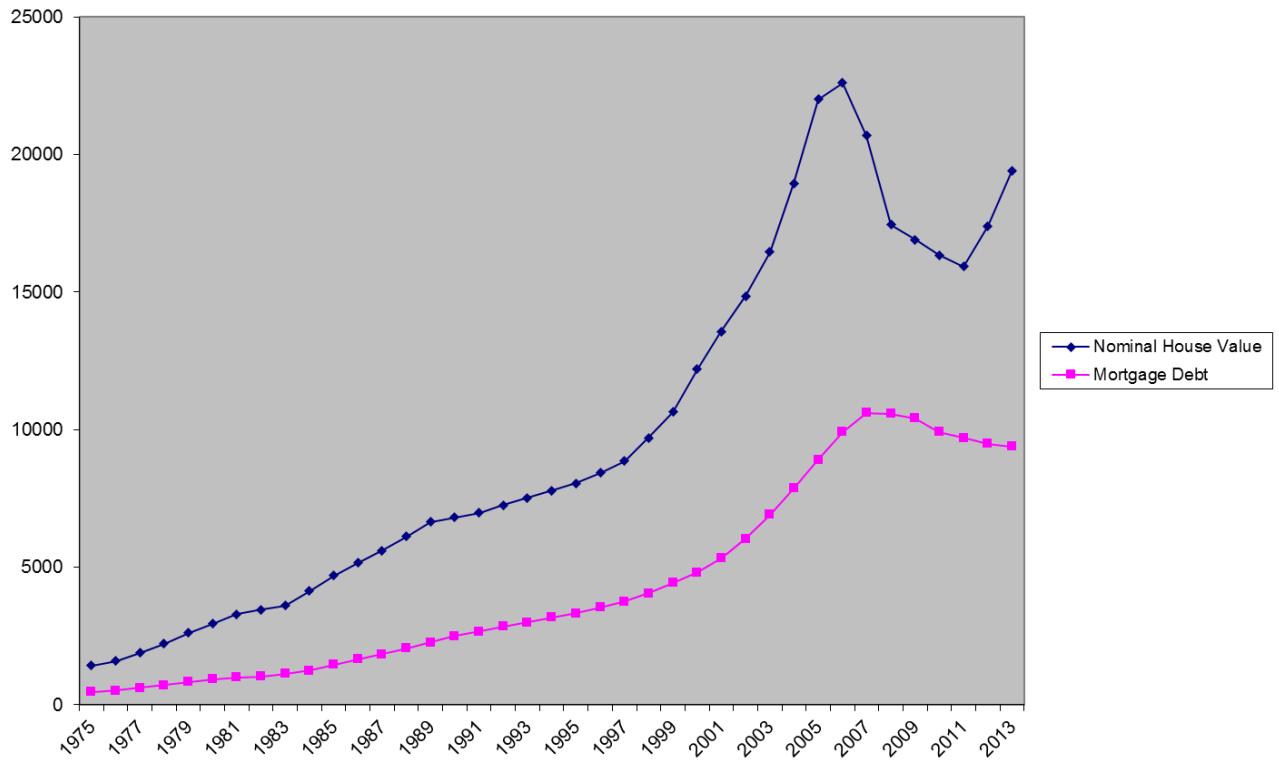
The years of greatest S&L excesses in lending contributed to a substantial and sustained upward shift in the ratio of mortgage debt to housing value in the US economy.

That ratio remained below 33 percent throughout the 1970s and stood at 31.1 percent in

1984. Over the next seven years the ratio increased dramatically, to 38.3 percent. It then grew more slowly through 1997, when it peaked at 42.3 percent, remaining at or below this level through 2005, the year housing construction peaked. It shot up to 60 percent in 2009 and remained high thereafter, but this was largely although not entirely due to the more than \$6 trillion collapse in nominal housing values between 2006 and 2011.

In figure 5, I have plotted values through 2005, because I want to draw particular attention to the steep rise in the debt to value ratio between 1984 and 1991, the years of the most extreme gambling for resurrection and looting. The most highly publicized fraudulent lending was in the area of commercial real estate, but S&L liberality in lending on residential housing between 1984 and 1991 was associated with what became a new normal in terms of the extent of household borrowing on residential housing.

Figure 6
Nominal House Value and Mortgage Debt, United States, 1975-2013



Source: Federal Reserve Board Flow of Funds Accounts (2014, June 5 release), Table B100, lines 4 and 33.

The rise in mortgage debt (debt and nominal house value through 2011 are illustrated in figure 6) was an important contributor to the increase in the overall ratio of household debt to income beginning in the 1980s which, along with increased labor force participation, particularly among women, allowed consumption levels for the bottom 80 percent of households to continue to rise in the face of stagnant real hourly earnings and sharply increasing wealth and income inequality.

Legislation enacted in response to the S&L insolvencies reflected a philosophical shift away from the consensus that had driven New Deal responses to the 1920s and had given the country a half century of relatively crisis free finance. Faith in the “market” and distrust of government and regulation were a key part of the Reagan administration’s ideological armament, and there is continuity of purpose in these policy areas extending through the Clinton years and into the administration of George W. Bush. Regulatory and legislative responses represented way stations in the dismantling of the New Deal regime. An increasingly influential ideology hostile to government and regulation, selectively applied, amplified the effects of the pursuit of gain through the political process. Liberalized asset powers, the elimination of Regulation Q, cuts in the number of S&L examiners and starving the FSLIC and Federal Home Loan Bank Board of federal funds needed for remediation turned out (surprisingly?) to be a recipe for disaster.

Financial innovation in the remediation of the S&L insolvencies also contributed to what followed fifteen years later. Methods developed by the Resolution Trust Corporation for disposing of distressed commercial real estate assets in the aftermath of the S&L insolvencies, particularly the N-series mortgage trust programs, helped provide the template for the tranching collateralized mortgage backed securities subsequently so

enthusiastically embraced (see Geltner, 2013, p. 31). Developed and extended by private firms, these derivative securities were an integral feature of the growing financial fragility that made the U.S. and world economy so vulnerable when housing prices ceased rising and began to decline after 2005.

A final legacy of the S&L insolvencies may have been this: because the remediation costs, although much complained about at the time, were comparatively small, because the recession and slow recovery associated with the insolvencies was mild and apparently not connected in any serious way to them, and because the amount of any cumulative output loss associated with the insolvencies, if any, was likely relatively insensitive to the character, timing, and amount of remediation, policy makers may have developed unjustified confidence in the ability of the macroeconomy to weather the consequence of a credit fueled construction boom. They were therefore less inclined in the 2000s to express much interest in the ways in which continuing financial innovation, extensions of the shadow financial system, and their interaction, were creating a far more fragile and potentially explosive system.⁴⁴ Once the collapse gathered steam, the fragile system turned out to be very sensitive to the character, timing, and amount of remediation, placing much greater responsibility on policy makers than they had no doubt anticipated.

⁴⁴ Thanks to Ken Snowden for suggesting this possibility.

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