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## The aftermath of financial crisis and great recession and what to do about them

### Abstract

The 2007-2009 financial crisis and great recession was the most serious and lasted longer than any other 11 previous ones during the entire post war period. This recession resulted in an estimated 8-12 million job loss and GDP suffered more than \$15 trillion or equivalent to one year's GDP. The Federal debt increased from about 63% of GDP at the end of 2007 to 101% by the end of 2012. Both the Federal Reserve and the Federal Government have undertaken some unprecedented and extraordinary measures by going around traditional policy rules and overcoming difficult legislative process to rescue financial institutions and a few industrial companies. The Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) of 2010 passed four years ago. Yet the laws and rules have only been slowly and gradually phased in. In fact, since the financial crisis, large financial institutions have been getting larger. Capital ratio must be increased and all OTC derivatives must go through exchanges or clearing houses. All regulators must seriously enforce all rules and regulations and overcome the pressure from political lobbyists or special active interest groups. Financial and economic stability for the country as a whole must be the very top priority. Regulators must try their best to make sure that large financial institutions will not take too much risk to jeopardize financial and economic stability. To minimize excessive risk-taking and systemic risk spill over, capital ratio at the large interconnected institutions should be significantly increased to reflect the size and risk exposure of these institutions. Periodic stress tests must be conducted as often as necessary. The DFA rules and regulations and further improvements must be phased in as soon as possible. However, the effectiveness of US new regulations may be negatively affected by the slow action of the European Central Bank (ECB) and the global economic slowdown. Thus the US government officials must also coordinate with ECB, IMF and other major central banks to find the best possible ways to enforce the new rules and regulations to ensure global financial stability.

**Keywords:** the Dodd-Frank Act, global systemically important financial institutions, the Financial Stability Oversight Council, quantitative easing, federal debt, unemployment

**JEL Classification:** G1, G2.

### Introduction and literature review

The principal objectives of this study are: (1) to review the disastrous consequences of the recent financial crisis and the great recession, (2) to examine the unprecedented policies undertaken by the Fed and the Treasury and the best possible policies for the future, and (3) to search for best possible rules and regulations going forward to prevent another potential serious crisis. The great recession from December 2007 to June 2009 was the most serious one during the entire post-war period. From May 2007 to October 2009 the loss of jobs was estimated to be 7.5 million, unemployment rate jumped from 4.1% to 10.1%, and housing prices went down about 1/3 from May 2006 to October 2009 (Grusky, Western and Wimer). In fact, from December 2007 to November 2009 the US lost 8.678 million jobs and unemployment rate jumped from 5% to 10% in two short years. The loss of gross domestic products was estimated to be \$6 to 14 trillion according to output path and \$15 to \$30 trillion according to consumption path, and US household net worth tumbled \$16 trillion or 24% from the third quarter of 2007 to the first quarter of 2009 (Luttrell, Atkinson and Rosenblum, 2013). Increases in federal deficits were about \$ 2.5 trillion, extraordinary nonconventional monetary policy

bloated the Federal Reserve's balance sheet by more than \$2.2 trillion. The impact of the great recession on the stock markets was extraordinary. The Standard & Poor 500 price index dropped from 1565.15 on October 9, 2007 to 676.53 on March 9, 2009 for a sharp decline of 56.78% in 17 months. The price index was fully recovered in November 2013 due mainly to the Fed's massive quantitative easing and near zero short-term interest rates. Although housing prices have partially recovered and stock prices have been fully recovered recently, many homes are still under water and many people lost their jobs for good. Even if the US is still the largest economy in the world, its relative economic influence has been slipping away (Cohen and DeLong, 2010). After studying almost 8 centuries on 66 countries Reinhart and Rogoff (2009) have clearly shown us that the financial crises, in particular the debt and banking crises, tend to repeat themselves. The recent great recession was originated from losses of subprime mortgages and the derivative securities backed by subprime mortgages. According to Glaeser (2013) from 1790s to the present, "America has always been a nation of real estate speculators". In fact, housing speculations were global in the first six or seven years of this new century. If the impact of the recent great recession is so large and so widespread, we need to be constantly reminded the tragic results and try to figure out the bestways to avoid any similar crisis in the future.

There are so many discussions on the possible causes of subprime mortgage problem and the resulting financial crisis, and the great recession originated from subprime mortgages and derivative securities backed by them. The fundamental underlying reasons can be traced to historical patterns, human behaviors, and political and economic systems as pointed out by Akerlof and Shiller (2009), Bookstaber (2007), Glaeser (2013), Johnson and Kwak (2011), Kahneman and Riepe (1998), Kindleberger and Aliber (2011), Reinhart and Rogoff (2009), Shefrin (2000), Shiller (2000, 2008), Krugman (2009), Sorkin (2010), Soros (2009), French and Slaughter (2010), Stardon (2012), Stiglitz (2010), Thaler (1991, 2005), Kroszner and Shiller (2011), Admati and Hellwig (2013), Blinder (2013), Akerlof et al. (2014), and Calomiris and Haber (2014) to name a few. Akerlof and Shiller (2009) trace animal spirits back to Keynes who viewed that the main cause of economic fluctuations and involuntary unemployment was animal spirits. They believe the recent financial and housing crisis “was caused precisely by our changing confidence, temptations, envy, resentment, and illusions – and especially by changing stories about the nature of the economy” (p. 4). Bookstaber (2007) who helped develop the program trading indicated that innovations increased complexity and made the markets more interconnected and tightly decoupled. Tight decoupling increases liquidity which makes it easier to take on levered positions. “People do crazy things all the time, yet the efficient market paradigm assumes that investors take all information into account and react quickly and rationally” (p. 256). As Rajan (2010) indicated “deregulation and developments like securitization had increased competition, which increased the incentives for bankers (and financial managers more generally) to take on more complex forms of risks” (p. 2). In fact, when he presented a paper at the 2005 Jackson Hole Conference, he pointed out the high returns of selling credit default swaps by insurers and the potential full-blown financial crisis. Johnson and Kwak (2011) pointed out the lobbying efforts and the resulting political influence of large financial institutions for loose regulation, exemptions from regulations on certain over-the-counter derivative securities, and favorable bailouts, led to failure to deal with the too-big-to-fail problem. Sheila Bair, a former FDIC chair, believes the desirable future financial system “should be smaller, simpler, less leveraged, and more focused on meeting the credit demand of the real economy. And we should ban the speculative use of credit default swaps from the face of the planet (Akerlof et al., 2014, p. 129). Johnson and Kwak (2011) consider that breaking up large, interconnected, and systemic financial institutions is

the best way to prevent future financial crisis. Anyone who is interested in knowing and understanding the too-big-to-fail issues is suggested to read the New York Times best seller by Sorkin (2010). It is expected that the too-big-to-fail problem will still be the single most serious problem which is too big and too powerful to solve.

Kindleberger and Aliber (2011) observed the financial crises in terms of manias, panics, and crashes from the historical perspectives dated back to 1618. Since 1970s they detected four waves of financial crises with the most recent housing bubble from 2002 to 2007 and subsequent crash from 2008. Although the housing bubble in the US was not nearly as serious as others such as Ireland, Iceland, Spain, Britain and New Zealand, the resulting financial crisis in the US was the most serious for reasons discussed in Shiller (2008), Soros (2008), Krugman (2009), Tseng (2009), Stiglitz (2010), Simon and Kwak (2011), Staddon (2012), and detailed in Blinder (2013). Kaufman (2009) attributed the crisis to failures of both the markets and regulators including central banks, commercial bankers, financial engineers, the Congress and the Administration, investors and ultimate lenders, mortgage borrowers, mortgage brokers and salemen, and prudential bank regulators. Calomiris and Haber (2014) from the perspectives of economics, history, and politics argue that the subprime mortgages and the resulting crisis are rooted in the coercion of political active groups and the ill-conceived legislatures such as the Community Reinvestment Act (CRA) of 1977 and the subsequent mergers leading to megabanks and “too big to fail” problem. They cited a 2012 study which found that “an impending CRA examination caused banks to increase their lending by 5 percent and increased the default risk of those banks’ mortgage loans by more than 15 percentage points” (p. 224). In another study it was concluded that “by 2008, banks had undertaken \$2.78 trillion dollars in CRA commitments that they would not have undertaken otherwise” (p. 225). This implies that banks’ efforts to show the compliance to CRA rules had major effects on risky loans. They also pointed out being government sponsored enterprises Fannie Mae and Freddie Mac could avoid bearing the costs of higher default risk mortgage loans. There were so many widely discussed factors contributing to the crisis, but the most significant ones were subprime mortgages full of predatory lenders and borrowers, excessive securitizing subprime mortgages, irresponsible rating agencies with conflict of interest, irrational optimism leading to unsustainable housing prices, faulty government housing policy, lax government regulation and regulators, prolong low interest rates by the Federal Reserve, greed and

fear of investment bankers, too much leverage used by large financial institutions, and liquidity squeeze (Tseng, 2009). Taylor (2014) pointed out that the main problem of regulatory policy was not because of insufficient regulations, but was the failure to enforce the existing regulations. Taylor attributes the weak recovery after the great recession (2007-2009) to the shift in economic policy from predictable and rule-based to more discretionary and interventional. Other economists attribute the subpar US economic recovery compared to other post-war recessions to the greater degree of the current financial crisis and economic recession, the prolong recession in Euro countries, the slow-down in emerging economies, and weak fiscal stimulus due to sharp increase in federal debt.

In summary, the major causes of the crisis are: 1. Predatory lending and borrowing, which led to the Mortgage Reform and Anti-predatory Lending Act of 2007; 2. Moral hazard committed by market participants from mortgage originators, appraisers, underwriters, lenders, servicers, securitizers, rating agencies, investors, and borrowers; 3. Regulators' failure to enforce the existing regulations; 4. Prolong period of low interest rates which encouraged excessive housing speculation and risk taking; 5. Inadequate ratings of mortgage backed securities and investors inability to value those new speculative derivative securities; and 6. Lack of disclosure and transparency of trading of those securities over-the-counter.

In the next section I will present some narrative descriptions of what has happened in a few key statistics to highlight the concrete evidence resulting from the financial crisis and great recession. Section 2 will review what has been done by the Federal Reserve, the Treasury, FDIC and the Congress. Section 3 will discuss what can be done in the future. The final section presents brief conclusions.

### 1. Narrative review of key economic indicators

The major concern of the negative impact of the great recession on the US economy is the significant loss of employment or the sharp increase in unemployment. Appendix<sup>1</sup> Table 1 shows the changes in total employment, unemployment and civilian unemployment rate. From January 1, 2000 to March 1, 2005, total employment in the US fluctuated between 130 million and 133 million. Then from March 1, 2005 to January 1, 2008, total employment increased steadily from 133,126 thousand to 138,365 thousand with gain of more

than 5 million in less than 4 years. The unemployed increased from the low of 6,727 thousand on October 1, 2006 to 15,352 thousand on October 1, 2009. In the very short three years the unemployed increased by 8,625 thousand or an increase of 128 percent. After unprecedented stimulus monetary and fiscal policies there were still 10,236 thousand unemployed people at the end of 2013 and declined further to 9.4 million by the end of September 2014. The significant decrease of more than 5 million in the unemployed from the end of September 2009 peak to the end of September 2014 may be attributed to the extraordinary expansionary monetary policy, partial recovery of housing related industries and the general economic recovery. The unemployment rate was as low as 3.9 in the early 2000 and 4.4% in the early 2007 before the great recession hit. The unemployment rate quickly doubled to 10% on October 1, 2009 in about 2 ½ years. By the end of 2013 the unemployment rate was down to 6.6%, and it further improved to 5.8% in October 2014 after about six years of monetary and fiscal stimulus programs and the Federal Reserve's balance sheet was swollen to more than \$4.3 trillion through three consecutive quantitative easings. For detail please refer to Table 1.

The second area of major concern is the exploding Federal budget deficit and total public debt. In 2000 there was a Federal budget surplus and in 2001 the deficit increased to just over \$281 billion. Then the tech bubble burst in late 2000 followed by the 9/11 event in 2001, and a minor recession led to sharp increase in deficit in 2001-2007 with annual deficit ranging from more than \$450 billion to \$600 plus billion. Then the financial crisis and great recession hit in late 2007 and the deficit jumped to \$1.47 trillion in fiscal 2008, \$1.61 trillion in fiscal 2009, and \$1.71 trillion in 2010 due to bailouts of financial institutions, tax cut, and increases in unemployment compensation and other expenses because of automatic economic stabilizers. The federal budget deficit started to improve since 2011, but the annual deficit was still close to \$1.2 trillion in both 2011 and 2012. Public debt as a percent of GDP had been steadily and slowly increasing from about 54% in 2000 to 64% in 2007, then jumped from a little more than 73% in 2008 to over 101% by the end of 2012.

Based on the Government Accounting Office (GAO), the Bureau of Fiscal Service's Schedules of Federal Debt (in \$ billion) show that total federal debts from 2000 (fiscal year ended September 30) are as follows:

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
5659	5792	6213	6783	7379	7918	8493	8993	10011	11898	13551	14781	16059	16732

<sup>1</sup> The three appendix tables mentioned in the paper are available from the author upon request.

From 2008 to 2012 each year the Federal debt had increased by more than \$1 trillion with the largest increase by \$1.887 trillion in 2009 when the great recession hit and the bailout program was at its height. At the end of fiscal 2013 the national debt was more than \$16.7 trillion. This increasing federal debt made it impossible for the government to pursue other stimulative fiscal policy and caused the economy to grow slower than any other recessions during the post war era. As the economy continues to grow slowly but steadily, the federal deficit is expected to decline and the federal debt will stabilize in the coming years. Table 2 provides more detailed data.

The third area of major concern is the sharp deterioration in housing sector and stock prices from the financial crisis and great recession. Table 3 shows how rapid the declines in private new housing starts and S&P 500 index. Housing starts jumped from 1507 thousand units on September 1, 2000 to 2273 thousand units on January 1, 2006 with annual compound growth rate of 8.14%. Then they declined to 478 thousand units on April 1, 2009 with annual decreasing rate of 42.7% in two years and 10 months. The Case/Shiller housing price index for 20 metropolitan areas in the US sharply increased from 100.59 on January 1, 2000 to 206.61 on April 1, 2006 with compounded annual appreciation of 14.69%. Then the housing price index dropped precipitously to 136.92 on January 1, 2012 with annual decline of 6.91%.

The more volatile stock market measured by S&P 500 dropped sharply from 1565.15 on October 9, 2007 to 676.53 on March 9, 2009 with 56.78% decline in two years and 5 months. Although the housing price index was still down by almost 20% by the end of 2013, the S&P 500 stock price index was fully recovered at year-end of 2013 and new highs have been set since the middle of 2014 mainly due to the very expansionary monetary policy from three quantitative easing programs and the near zero federal policy rates, which greatly inflated asset prices and resulted in slow but continuous economic expansion. Table 3 shows the detailed monthly changes in recent years. In the future the potential significant impact of monetary policy on asset prices needs to be seriously considered in economic and financial modeling.

## **2. The panic, new regulations, and the policy remedies**

The subprime mortgages and related derivative securities were the leading cause of the current serious financial crisis. Since predatory lending and borrowings were key elements of the subprime mortgage problem, the Congress passed The Mortgage Reform and Anti-predatory Lending Act

of 2007. The essential regulations of that Act were discussed in Tseng (2009, p. 16). In addition, the Congress also passed The Housing and Economic Recovery Act of 2008 to strengthen the safety and soundness of supervision by establishing the Federal Housing Finance Agency (FHFA) to oversee the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Association (Freddie Mac) and the Federal Home Loan Banks (FHLBs). The FHFA has broad supervisory and regulatory powers over the activities, corporate governance, operations, safety and soundness, and missions of the government sponsored enterprises (GSEs) just mentioned. For details of this Act, please refer to Tseng (2009, pp. 18-19).

For the rest of this section many key points are drawn heavily from the materials presented by the excellent book of Professor Blinder's "After the Music Stopped" (2013). On September 8, 2008, the Treasury seized control of Fannie Mae and Freddie Mac and pledged a \$200 billion cash injection to help both cope with mortgage default losses. The watershed of the panic was highlighted by the filing of bankruptcy by Lehman Brothers on September 15, 2008, which threw the financial crisis into tailspin. Right after Lehman went bankrupted, European countries nationalized quite a few banks in the United Kingdom, Ireland, Belgium, the Netherlands, France, and Germany. Shortly after the American International Group (AIG) was bailed out with \$85 billion loan by the Treasury, which eventually was increased to \$182 billion, the Treasury on September 19, 2008 used its \$50 billion of the Exchange Stabilization Fund to insure the existing money market mutual funds. With the assistance of the Federal Reserve (Fed) in September 2008, Morgan Stanley and Goldman Sachs became bank holding companies in order to receive loans from the Fed. With special arrangement and help from the Fed, Merrill Lynch was taken over by Bank of America, Washington Mutual by J.P. Morgan Chase, and Wachovia by Wells Fargo. The Congress passed the Emergency Economic Stabilization Act of 2008 that included the vital part called Troubled Asset Relief Program (TARP), which was passed on October 3, 2008. The original purposes were to buy toxic assets such as derivative securities originated from subprime mortgages, to guarantee certain assets, to inject capital directly into banks by buying their shares, and to refinance home mortgages into loan guarantees. On October 12, 2008 the original purposes were completely changed with no string attached. The TARP injected \$25 billion each for Citigroup, JP Morgan Chase, and Wells Fargo, \$15 billion for Bank of America, \$10 billion each for Merrill, Goldman Sachs, and Morgan Stanley, \$3 billion for Bank of New York-Mellon, and \$2 billion for State Street Bank totaling \$125 billion.

At the same time the Congress passed some fiscal stimulus programs. First, the Economic Stimulus Act of 2008 gave tax rebate of \$300-\$600 for people filing single tax returns, and \$600-\$1,200 for people filing the joint returns. The total cost amounted to \$150 billion. Second, The American Reinvestment and Recovery Act of 2009 was passed on February 17, 2009. The cost was first estimated to be \$787 billion or about 5.5% of GDP. Later, the Congressional Budget Office re-estimated that amount to \$830 billion. About 1/3 of this Act went to tax cut, another 1/3 was for new spending on unemployment benefits and infrastructure, and the final 1/3 was to assist state and local governments and to help them to pay Medicaid bills.

Shortly after the bankruptcy filing by Lehman the Treasury and the Fed began working on \$700 billion bailout plan that was signed by President Bush on October 29, 2008, and the Fed cut the federal fund rate to 1 percent. Mortgage rates fell sharply after the interest rate cut by the Fed and expectations of Fed's buying mortgage-back securities. The Fed established the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) to extend nonrecourse loans at low interest rates to banks to purchase asset-backed commercial papers issued by money market funds. By October 8, 2008 the Fed had lent almost \$150 billion to buy asset-backed commercial papers. The Federal Deposit Insurance Corporation (FDIC) created the Temporary Liquid Guarantee Program (TLGP) to let certain financial companies float debt instruments that were insured 100% by FDIC's TLGP, which was later increased to \$225 billion and peaked at \$350 billion in May 2009.

On November 25, 2008 the Fed began with quantitative easing, known as QE1, to purchase mortgage-backed securities and federal agency debt. By the time it concluded QE1 by the end of the first quarter of 2010, the Fed bought \$1.25 trillion of mortgage-backed securities, \$300 billion of Treasury bonds, and \$175 billion of federal agency debt. From December 2008 to the present the federal fund rate has been kept at 0-0.25 percent. QE1 did help slightly the economy, the housing market, and other asset prices such as stock prices. The unemployment rate barely moved from 10% on October 1, 2009 to 9.9% on April 1, 2010. The effect of QE1 was in doubt and widely debated. The weak economic recovery prompted the Fed to embark QE2 on November 3, 2010. The Fed began purchasing \$600 billion of long-term Treasury securities to stimulate the economy, to keep mortgage rates low, and to revive the housing markets. QE2 lasted until June 30, 2011, and unemployment rate did drop from 9.8% on

November 1, 2010 to 9% on July 1, 2011. At the same time private housing starts increased from 545 thousand units to 623 thousand units during that period. However, the 30-year fixed mortgage rate increased by 30 basis points during QE2. The effectiveness of QE2 was in serious doubt and the economy clearly was in great need for further help, so the Fed was determined to do more in the face of criticisms from all corners for fear that printing more money would result in devaluation of dollar and lead to high inflation. On September 13, 2012 the Fed after analyzing the weak economic conditions and lack of inflation threat decided to apply the so-called operation twist or QE3 by buying \$40 billion mortgage-backed securities and long-term treasuries from the proceeds of selling short-term treasury securities. At the same time the Fed continued to keep federal fund rate near zero while trying to bring down long-term rates to stimulate investment, employment, and the economy. Judging by the fact that the economy was still weak with no inflation threat and unemployment rate at 7.9% by the end of 2012 the Fed decided to increase the monthly purchase of long-term bonds to \$85 billion a month from January 2013 and the Fed clearly indicated that the target unemployment was set at 6.5% and inflation rate at 2.5%. In addition, the federal fund rate would stay near zero until 2015. This forward guidance monetary policy was intended to help both businesses and consumers to make long-term plans and decisions. With easy and expansionary monetary policy the Fed attempted to boost investment in general and the housing markets in particular and keep dollar value low to stimulate exports and the economy. These last efforts finally appeared to pay-off because the unemployment rate dropped to 6.6% by the end of 2013, and it declined further to 5.8% by the end of October 2014.

Unfortunately, based on a recent study by Hlaltshwayo and Spence (2014) the employment gain of 6 million jobs from 2009 to 2012, using the Bureau of Labor Statistics' Current Employment Statistics data, was mainly originated from non-tradable sector such as health care, food and accommodation, administrative services and retail. Tradable sector accounted for only a small gain. Professional services and capital-intensive manufacturing employments showed some encouraging gains. Job losses of 707,000 concentrated on non-tradable sector with 77% of the losses were in government sector, particularly at local level in public education. The authors also believe the low unit labor cost, declining energy price due to increasing shale oil production, low inflation, and depreciation of US dollar will increase the US competitiveness and exports. They expect

that the growth of tradable sector will boost the US economy further. They believe that the way to grow the economy is to speed up the tradable sector. However, based on the recent evidence that Japan is in recession in 2014, the Euro zone is still struggling, the value of US dollar has been appreciating, and the emerging economies have been slowing, the export expansion for the US companies in the near future is expected to be small.

The housing recovery has been slow and uneven since the unemployment has been still high, the wage rates for the medium and lower income groups have been growing only slightly, and the mortgage markets are still very tight. But the Case/Shiller housing price index did jumped from 146.90 on December 1, 2012 to 166.70 on December 1, 2013. Even though the mortgage rates are still at historical low, the housing affordability remains a problem. However, since the unemployment rate was close to the revised target rate of 5.5%, the housing price appreciated substantially, and the stock price had recovered, the Fed in its December 2013 policy meeting concluded that it was time to trim back monthly bond buying from \$85 billion to \$75 billion a month. During the following Federal Open Market Committee (FOMC) meetings in January and March of 2014, the Fed cut \$10 billion purchase of long bonds further in each meeting, and most recently during the FOMC meeting in June 2014 the Fed indicated that the bond buying or quantitative easing would end in October 2014. The forward guidance of monetary policy had shifted from target date to targeted dual economic mandates of price stability and full employment with revised target unemployment rate of 5.5 % and inflation rate of 2%. As of October 2014 the unemployment rate stood at 5.8% and the inflation rate at 1.7%. Many economists predict that the Fed will start to boost interest rate sometime in the middle of 2015. Judging by the fact that the Fed and most financial institutions are loaded with debt securities, the increase in interest rates will significantly affect the asset prices of their portfolios in general and the debt securities in particular.

### 3. Policy recommendations for the future

After discussing the major causes and serious effects on financial institutions and the economy, and what have been done by the Fed and the US government, it can be seen that the major goals of the current and future financial reforms include the followings: 1. Raise capital ratio and liquidity, improve risk management and standards of corporate governance to strengthen the stability and robustness of financial institutions and the economy; 2. Develop effective resolution mechanisms for systemically important or interconnected global

financial institutions; 3. Establish sound and transparent markets such as organized exchanges or some central clearing houses for all derivative transactions; 4. Closely monitor and deal with risks undertaken by shadow banks; 5. Significantly improve the performance and accuracy of ratings by credit rating agencies, particularly the ratings of derivative securities; and 6. Coordinate more effectively international regulations and supervisions on the global systemically important financial institutions.

After reviewing the literature extensively the following recommendations are strongly suggested to achieve those goals of financial reforms.

First, the existing law of the Dodd-Frank Act (DFA) of 2010 should be taken seriously and refined in some workable and suitable ways. This 2,319 page bill is very comprehensive, yet it has been phasing in rather slowly. The Fed can impose higher capital requirements, lower leverage, and greater liquidity if the living wills do not provide for orderly unwinding of the troubled institutions. As of August 5, 2014, the Fed and FDIC had rejected all 11 living wills the second time after those 11 institutions had spent two years to prepare. By DFA all financial institutions with total assets of \$50 billion or more must lay out how the regulators can dismantle them through the bankruptcy process, the so-called living will. There should be no more taxpayer bailouts. New resolution authority has yet to be fully worked out. The Fed will supervise and regulate the systemically interconnected (important) financial institutions (SIFIs). Securitizers are required to keep some minimum amount of their own securitized financial instruments. SIFIs must keep higher capital requirements, including off-balance-sheet items, and have some new liquidity standard. DFA also requires to tighten SEC regulation and to reduce regulatory use of ratings. An independent Consumer Financial Protection Bureau (CFPB) was created to enforce federal laws and regulations that outlaw discrimination and other unfair treatment, deceptive or abusive acts or practice in consumer finance. Currently the CFPB has focused on student loans, mortgages, credit cards and prepaid debit cards. DFA proposed to regulate OTC derivatives with central clearing houses or some exchanges. Hedge funds are required to register with SEC and to limit their bank ownership. Better underwriting standard for mortgage financing was considered. The DFA gives regulators enough power to transform the banking industry to break up too-big-to-fail institutions, but it is up to regulators to do the jobs. So far it is still uncertain on how the DFA rules will be interpreted and implemented and how regulators are going to use their power to enforce DFA rules and regulations.

Second, the large financial institutions have been getting larger since the financial crisis, and there appears no way to break them up to solve the “too-big-to-fail” problem. In addition, with new financial innovations, increasing globalization of financial markets and institutions, and rapid improvement of information technology, financial markets and institutions are increasingly more interconnected. To get around the issues, first, capital ratio must be adequately increased. As Admati and Hellwig argue strongly, “if banks have much more equity, the financial system will be safer, healthier, and less distorted. From society’s perspective, the benefits are large and the costs are hard to find; there are virtually no trade-offs” (Admati & Hellwig, 2013, p. 169). They pointed out that equity requirements are too low and the required equity should directly relate to total assets rather than “risk-weighted assets” in Basel III. Sheila Bair, a former FDIC chair, considers the rules of risk-adjusted capital ratio to be hopelessly complicated. She has witnessed the “risk weights were gamed prior to the crisis, for example, by moving assets to trading book, securitizing loans to get lower capital charges, wrapping high-risk collateralized debt obligations in credit default swap protection to get near-zero risk charges, blindly investing in triple A securities, loading up high-risk sovereign debt, repo financing...” (Akerlof et al., 2014, pp. 131-132). Admati and Hellwig believe many politicians and regulators are symbiosis and they tend to downplay the costs of the crisis. They pointed out that “greed has come to dominate the culture of major banking institutions over the past two or three decades” (Admati and Hellwig, 2014, p. 208). They recommend that interest payment should not be taxed deductible to prevent excessive leverage. Secondly, all derivatives must be traded on the exchanges or through some central clearing houses (Kroszner and Shiller, 2011) so that information transparency is preserved. Finally, the Volcker rules in the US or the “ring-fencing” separation of retail banking and investment banking within a banking group or bank holding company as proposed in UK and Euro Zone are expected to become effective in the near future.

Third, Shiller (2012) discussed the roles and responsibilities of regulators and important players and market participants such as executives of large financial institutions, investment bankers, mortgage lenders and securitizers, traders and market makers, financial engineers, derivative providers, large insurers, lobbyists, accountants and auditors, and educators. He strongly advocates that “we must bring the power of financial risk management to the people so they can use it as effectively as possible, giving human limitations, and so that they are not

taken advantage of” (Kroszner and Shiller, 2011, p. 121). Indeed, this is consistent with their view of animal spirits (Akerlof and Shiller, 2009), greed and fear (Shefrin, 2000) or irrational exuberance (Shiller, 2000). It will take time to change the fundamental behaviors of major actors of the interconnected large financial institutions, but it is critical to put in every possible effort to avoid another disastrous crisis.

Fourth, the 15 academics with extended practical experiences participated in the Squam Lake Report (French and Slaughter, 2010, pp. 99-100) made the following three recommendations: 1. “create a better resolution procedure for systematical institutions. Moreover, because of the importance of this issue, regulators should be granted the authority to restructure financial institutions as soon as possible”. 2. “Negotiations to create a unified cross-country resolution process should begin immediately. These negotiations should not, however, delay the implementation of interim regulations in each country that are as effective as possible, given existing cross-country differences”. 3. “The treatment of qualifying executor contracts in resolution should be specified precisely and should not be left to the discretion of regulators. The exemption currently given to these contracts should be reevaluated to determine if it unnecessarily adds to systemic risk”. They argue the Fed should be the systemic regulator and should have an explicit mandate to maintain the stability of the financial system. They also recommend that all SIFIs should report their asset positions and risks to regulators each quarter. The systemic regulator should report the annual risk of the financial system to the Congress.

Fifth, according a recent study by McKernan et al. (2014) based on the US Survey of Consumer Finances (SCF) triennial data from 1983 through 2010, they found that the great recession lowered the average wealth of US families by 28.5% that was nearly double the loss of other recessions since 1980s. They also found that young families and families of color suffered the largest loss of their wealth. The wealth of age 35 to 43 in 2010 declined by 47 percent while that of older age groups from 44 to 79 in 2010 decreased by 20 to 28 percent. Some of the higher paying jobs have been lost during the current great recession, but the employment gains in recent years are mostly lower paying jobs. Due to increasing Federal budget deficits and national debt we have not been able to increase higher-paying job training and education. Lengthening the unemployment compensation is an expedient, incentivizing and helping unemployed and young people to get necessary training and education and to reenter the labor market are essential to improve

aggregate demand and accelerate economic recovery. In other words monetary policy alone and financial reforms are not enough. Better coordination of monetary, fiscal, and prudential macro- and microeconomic policies are vital. Prolong low (zero) interest rate will encourage risk-taking and lead to asset bubble, while macro-prudential policy such as lower loan-to-debt ratio or debt-to-income ratio may reduce aggregate demand in the economy. Increasing national debt will eventually lead to higher interest rate and higher debt. If large debt makes debt unsustainable and increase the probability of default, the risk will increase to the extent to lead to bad equilibrium. On the other hand, if higher debt coupled with low interest rate such as the US, a good equilibrium may result. How to coordinate monetary policy, fiscal policy, debt issue, and macro-prudential policy to reach desirable results is vital for policy makers.

Finally, the Financial Stability Oversight Council (FSOC) created by the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) in 2010 has the ultimate regulatory responsibilities since it includes the following voting members of the heads of Department of the Treasury, Federal Reserve Board, Office of the Comptroller of the Currency, Consumer Financial Protection Bureau, Securities and Exchange Commission, Federal Deposit Insurance Corporation, Commodity Futures Trading Commission, Federal Housing Finance Agency, National Credit Union Administration, and an insurance expert to be appointed by the President. The Council also includes the following non-voting members: Office of Financial Research, Federal Insurance Office, a state insurance commissioner, a state bank supervisor, and a state securities commissioner. Clearly this Council includes all key regulators in various areas and is very comprehensive. FSOC is responsible for “monitoring systemic risk in the financial system and coordinating several federal financial regulators” (Murphy, 2013). The FSOC is required to identify systemic risks, to promote market discipline, and to respond swiftly to emerging threats to financial stability. The FSOC has six policy tools to use to accomplish its mission. First, the FSOC coordinates the communication among all heads of financial regulators. Second, the Office of Financial Research (OFR) has permanent staff to gather and analyze confidential financial information. Third, the FSOC determines the criteria and decides which financial institutions are subject to additional prudential regulation by the Fed regarding capital requirements, asset tests and other safety and soundness regulations. Fourth, the FSOC sets criteria and designates which financial market utilities (such as settlement and clearing service

organizations) are subject to safety and soundness regulations. Fifth, when financial stability is threatened, the failing non-bank institutions may be resolved by the FDIC instead of regular bankruptcy process. Finally, the FSOC will evaluate consumer financial protection rules which may cause systemic risk. Our financial and economic stability depends on how well the FSOC members perform and how well the “too-big-to-fail” and “too interconnected” institutions will behave. The Congress and the regulators must abide to their duties, and the general public must exercise its watchdog functions.

## Conclusions

Policy makers, regulators, and the general public must remember the seriousness of the current financial crisis and the great recession. Furthermore, they must do everything they can to avoid another one in the foreseeable future. It has been almost five years since the US economy came out of the great recession in July 2009. Progress has been made; stock market has fully recovered and housing markets have partly revived due to tremendous injection of liquidity by the Fed through monetary policy stimulus such as near zero policy interest rate and quantitative easing. There are still more than ten million people unemployed and many discouraged workers have left the labor market. Although the employment rate had dropped to 5.8% in October 2014, the lowest since September 2008. The drop was accompanied by the decline in labor force participation rate to 62.8%, the lowest since 1978. On the regulatory front living wills by TBTF institutions are still unacceptable and stress tests have been conducted. Some OTC derivatives have been standardized and brought to exchanges or central clearing. Some form of the Volcker Rule will be implemented from 2015. The bank capital requirements must be suitably improved. The systemically important global financial institutions (GSIFIs) must improve their risk management, capital ratios, liquidity, and sources of funding. The GSIFIs must get ready for the expected increase in interest rates. It is hoped that when the economy is in better shape, bankers, regulators, policy makers, politicians, and the general public will not forget what caused the recent financial crisis and the great recession and the active lobbyists and special political interest groups will not regain their upper hands. Hopefully this time will be truly different. However, the next potential financial crisis may also come from the large emerging economies such as Brazil, China, India, and Russia as they are more integrated into the global economy and are required to make all necessary adjustments which may have some difficulties for these countries to make proper transitions and adjustments to achieve the stability of global financial system.

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