

# The financial sector and growth – Best practice regulation and the opportunity for a more stable system in a low growth environment

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*There is a great need for a different regulatory system. Although it is practically impossible to find a “right” regulatory system, future regulation needs rough guidance. Historical experience can give a broad hint about the feasibility and effectiveness of measures. What regulatory agencies must avoid is a regulatory overreaction that kills off every tiny little bit of potential growth. Uncertainty avoidance, i.e. crystal-clear plans and a clearly defined allocation of tasks, and the opportunity to choose from various options, e.g. two or more ways to acquire project funding (via banks, markets, non-banks, private households,...) are the least prominent points in the debate. Better known elements on the list are a further enhancement of macro prudential regulation, the establishment of a stability regulator, anti-cyclical capital requirements and other anti-cyclical policy measures, cross-border regulation agreements and the use of incentives that support stability and effective and efficient regulation. The harmonization of the different regulatory frameworks is only a first step.*

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## a) Introduction

The financial sector is one of the most important sectors in a modern economy. The sector's functions range from the efficient allocation of capital, the creation of information and the pooling of deposits to tasks such as the monitoring of investments, the easing of goods and services transactions and the sharing, trading and diversification of risk. Via various transmission channels, notably the "borrower balance sheet channel" and its international dimension, the "bank balance sheet channel" and its international implications, as well as the pro-cyclicality of risk-related capital requirements and the "liquidity channel", the financial sector exercises power on the real economy. These transmission channels are real and so are the consequences, resulting from this connection between the financial and the real sector. Although a sectorial crisis is dangerous in itself, the impact can usually be contained. With the financial sector it is usually different. Regulation on this part of the economy has usually failed over time. After a relatively calm period, with no major financial sector crises in the developed economies the 2008 financial crisis came as an eruption of a supposedly extinct volcano. Politicians and economists quickly found reasons for the crisis and fast and sometimes hasty actions were taken. Today, all the predictions point towards a low growth future. What I wanted to find out was, how it could be possible, if at all, to properly regulate the financial sector in a low growth scenario.

Current policy debate strikes me as uninformed and sometimes even helpless, because the aftermath of the 2008 financial crisis and the following public debt crisis are associated with a situation rarely seen. On the one hand, governments are busy regulating the financial sector by imposing new regulation, notably Basel III and other measures, on it. On the other hand Western governments need to reduce their debt burdens in order to be able to cope with upcoming crises and to be able to finance future investment. This task is made difficult by the global dimension of the problem. Furthermore, growth lags in most of the countries, which increases the difficulty to settle up. Households and governments borrow more than before the crisis and global debt is up by more than \$50 trillion since the end of 2007. It is quite ironic that the bright spot here is the financial sector, which has deleveraged. What makes the situation worse is the uncertainty imposed on households and businesses worldwide by unpredictable policy measures that have never been seen before. They increase the uncertainty in the economy and depress not only investments and demand but might already bear the seed for a future crisis. Furthermore, (the perception of) growing inequality in Western countries is creating another problem to growth and systemic stability. These factors are a dangerous mixture, because they usually require different solutions. There is no time, however, to solve each problem after the other.

My approach is, to survey theoretical and empirical literature on the positive and negative contributions of the financial sector, as well as the possible regulatory measures. I introduce a regulatory toolkit and review the components concerning their theoretical and empirical upsides and

downsides. After an analysis of the status quo regulation, especially Basel III, I focus on the literature about the risks of low growth to individual economies and the world. Matters of particular interest are the policy shifts before the crises outbreak, the zero interest environment with its negative impact on the financial sector stability, on the risk taking behavior, and on aggregate demand as well as the role of risk and uncertainty for the supply of investments for innovation and longer-term projects.

The future does not look so bright, according to many experts. Debt burdens and uncertainty are high, people are not able or willing to consume and governments find their hands tight. This might, however, be the very environment where the financial system can be fixed. If, and only if, the governments act clever and with integrity and discretion, inherent instability tendencies can be alleviated or even overcome. Recent history shows, however, that this is not very likely.

### **b) How the financial economy serves the real economy and lets it down**

Already Schumpeter knew that the level of development of a country's financial sector is a good indicator for long-term growth. He argued that the services that the financial sector is able to deliver, such as collecting and accumulating savings, evaluating projects for lending, valuating assets and bearing risks, promoting and facilitating transactions and monitoring companies, would increase long term growth. Therefore, the financial sector contributes to the production of ex-ante information about investment possibilities and to the efficient allocation of capital, to better risk handling and diversification. These tasks require and promote the emergence of different contracts, markets and intermediaries. The different qualities of available information, the different judicial and political systems and possible contracts, as well as the various tax systems require different contracts, markets and agents over time and location. The financial system is able to influence this allocation over the long term. Despite these arguments for positive contributions of the financial sector, the literature is full of mixed views ranging from – growth is the foundation of financial development and not the other way round – to – the financial sector is one of the most important factors of economic development.<sup>1</sup>

The different positive contributions can be summed up and categorized as follows:<sup>2</sup>

- Capital allocation, information creation and pooling of deposits
- Monitoring of investments
- Easing of goods and services transactions
- Risk sharing, -trading, and -diversification

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<sup>1</sup> Levine (2004), pp. 870

<sup>2</sup> Schneeweiss (2011)

The efficient allocation of capital is, arguably, the most important task a good and developed financial system should be able to perform. The assessment of firms, managers, projects and the market come with high cost when done on an individual basis. Individuals might not only be unable to bear these high costs, be they time, knowledge, or money, but they might also be unable to even collect all the necessary information due to transaction costs. High information costs or asymmetric information lead to inefficiently allocated funds. While most theoretical models assume the information problem to be solved beforehand, reality is much more complicated. Banks and financial intermediaries reduce the transaction costs associated with the mentioned shortcomings<sup>3</sup>. Individual agents face high information costs and since there is no rivalry associated with information, it is better for individuals to work together, discover the information in common and share the costs.<sup>4</sup> These “mergers” don’t need to necessarily collect savings and produce loans. They can also discover the information and sell it on a market. The main point is, that the agents can reduce the costs of information-gathering and improve the ex-ante accuracy of the valuation of projects what leads to positive effects on the allocation of the resources, i.e. capital. The more efficient resource allocation leads c.p. to higher growth. By securing the funding of “better” rather than “worse” firms, the financial sector promotes the survival of good projects and kills bad projects at the very beginning.<sup>5</sup>

Besides funding the best technologies, financial intermediaries might also be able to increase the rate of innovation. The better the entrepreneur, the more money he gets. The typically Schumpeterian view is<sup>6</sup>: „The banker, therefore, is not so much primarily a middleman... [but] authorizes people in the name of society.“ Financial intermediaries and also the stock markets stir the production of information. While markets grow bigger, more liquid and more mature, the incentives for investors to accumulate information also grows, because it is way easier to exploit gathered information in higher developed markets – the expected return is relatively higher. Depending on the intensity with which the debt and equity holders can effectively monitor corporations and influence the capital structure, different saving- and allocation decisions result. When the equity- and debt holders are able to establish their desired capital structure, standard theory expects an efficient resource allocation, leading to an incentive for savers to invest. Equity holders can influence company decisions by exerting their voting rights. Because of the high information costs that are usually attributed with educated votes concerning mergers, management decisions, and else, the board of directors should decide for the shareholders in a way the shareholders would decide themselves. That is, however, unlikely. Especially small shareholders usually lack the required information to assess even the board of director’s decisions. The stock markets also work as disciplining measure. There is further evidence, that big shareholders use their economic power to exercise “political” power, despite having an incentive to better monitor the company. One way, for small investors to exert power, are shareholder

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<sup>3</sup> Levine (2004), p.870

<sup>4</sup> There are, of course, exceptions, depending on the profit one can make when discovering the information alone.

<sup>5</sup> Levine (2004), pp. 870

<sup>6</sup> Schumpeter (2004), p.74

associations.<sup>7</sup> Another positive contribution to economic growth is the risk sharing. The financial sector is able to insure, trade and pool large amount of risk. This, again, has a direct effect on resource allocation. Projects, companies, sectors, regions and countries can get financed despite their high individual risk. This risk diversification aspect can foster growth through the mentioned change in the resource allocation and its influence on the savings rate and a country's ability to innovate.<sup>8</sup> Long lasting intermediaries can even trade risk through time and spread it over generations. This leads to another contribution of the financial sector – the pooling of savings. Costs arise from the collection of deposits and from the necessary signaling, to ensure savers that their deposits are safe. It is obvious, that most companies can't be financed by individual investors. In order to perform this task, i.e. finance big companies and high risk projects, banks emerged. Also, the limited liability company, is one of the institutions that has emerged to deal with risk and the pooling of capital. Without access to many different investors, companies would be limited to an inefficient size. The collection of savings removes this limitation and the scale effects lead to larger firms.<sup>9</sup> The welfare effect of the pooling of savings is likely positive. Without the financial sector, output and production costs would be higher. An even bigger wealth inequality can be expected without the financial sector, because bigger firms would belong to larger wealth and earn abnormal returns due to scale effects.<sup>10</sup> Another positive contribution is the fostering of trade via specialization.<sup>11</sup>

An early empirical work, which was actually a whole book, on this very topic is Raymond W. Goldsmith's 1969 book "Financial Structure and Development". Since then, economists have been working, both theoretically and empirically, to establish or disprove a link between financial and economic development.<sup>12</sup> Goldsmith and later McKinnon (1973) and Shaw (1973) argued that the liberalization and development of the financial sector would foster economic growth. The channels for this would go through the impact on the growth rate of savings, investment, and thus growth itself.<sup>13</sup> Whereas McKinnon's paper focused on the connection between domestically funded investments and the domestic interest rate, Shaw focused on the external funding sources as well as the depth of the financial system. Goldsmith's motivation for studying the link between growth and finance was that he was convinced that the link between the financial system and the economic growth rate of a country was the most important topic in the field of finance. In achieving these goals, he found some more or less conclusive answers. In documenting the evolution of financial systems, Goldsmith succeeded in showing that banks tend to outgrow national output over the development process of a country. He also found some evidence indicating that non-bank financial intermediaries and stock markets outgrow the banks in size and importance. He also succeeded in finding a positive correlation between financial

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<sup>7</sup> Levine (2004), 872ff.

<sup>8</sup> Levine (2004), pp. 870 and Aghion (2004)

<sup>9</sup> Levine (2004), p. 880

<sup>10</sup> Levine (2004), p. 880

<sup>11</sup> Levine (2004), p.880

<sup>12</sup> Demirgüç-Kunt et al. (2004).

<sup>13</sup> Wong et al. (2011)

development and the level of economic activity in 35 countries prior to 1964. He was just not able to draw causal interpretations from it. On the third issue, the link between economic development and the structure of the financial system, Goldsmith was not able to find much cross-country evidence because of the limited availability of data in the 1960s and 70s. He solely relied on data from Germany and the United Kingdom and later on data from the United States and Japan. While this is interesting for economic history, it also shows, that his conclusions might not be consistent with findings from less limited data. Goldsmith was aware of this problem and hoped that researchers in later years would answer his questions, with better data, again. Recently, researchers have indeed made progress in expanding our knowledge about the link between financial development and growth. They have provided additional evidence on the so called finance-growth nexus and suggest that the level of financial development does not only correlate with economic growth but that the financial system indeed causes growth.<sup>14</sup> Furthermore, some researchers suggest, that the cross-country varieties in the judicial system account for the institutional differences that, in turn, influence growth<sup>15</sup>.<sup>16</sup> For a comparison of different financial systems, see Allen and Gale (2000). They model an economy, where financial contagion is an equilibrium phenomenon due to overlapping, international claims. If the spillover effect, resulting from a loss in one particular country, is strong enough, it will cause a crisis in the tightly connected “neighbors<sup>17</sup>”. As soon as the demand for liquidity in one part of the world is above a certain threshold, the optimal risk sharing equilibrium breaks down. If there was some alternative, parallel substitute to the interbank market, the contagion risk could possibly diminished under certain circumstances.<sup>18</sup>

Demirgüç-Kunt et al. (2008), show, that the level of development of a given country’s financial system in 1976 is able to predict GDP growth, productivity and capital stock growth from 1976 to 1993. These results are consistent with earlier literature arguing that stock market liquidity facilitates long run growth and dismisses models that highlighted the negative aspects of stock market liquidity, such as Bhidé (1993). The results also support the notion that stock markets provide different financial functions than banks.<sup>19</sup>

### **c) Frictions in the financial system**

A disruption of the information generating function of the banking sector might lead to a suboptimal capital allocation. Factors, disrupting the financial system, might be herding, Ponzi schemes, bubbles, boom-bust-cycles, algorithmic trading or asset inflation. These factors may lead to negative impacts on the real economy through instability, uncertainty, and high volatility. Unrealistic return expectations might also lead to frictions as well as speculation. According to Schulmeister, profit

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<sup>14</sup> see especially the work of Levine as well as work from other economists, e.g. Demirgüç-Kunt and Maksimovic (1998), Rajan and Zingales (1998), or Wurgler (2000)

<sup>15</sup> La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998)

<sup>16</sup> Demirgüç-Kunt et al. (2004)

<sup>17</sup> not geographically but in terms of business connections

<sup>18</sup> Allen et al (2000)

<sup>19</sup> Demirgüç-Kunt et al. (2008)

seeking and the accumulation of capital by households and companies has decoupled from the real economy over the last quarter of a century. This might extract necessary money from the real economy, leading to less investment in real assets and more investment in financial assets.<sup>20</sup>

Over the long term, returns can only be earned through growth in the real economy. Abnormal returns can only be earned on the basis of mechanisms like:<sup>21</sup>

- gains due to bubbles, irrational expectations, herding
- accounting profits, e.g. Fair Value Accounting
- asymmetric information
- moral hazard
- capital requirements like Basel II, risk weights and their pro-cyclical impact
- intransparency

#### **d) Transmission channels – how does the financial sector influence the real economy**

Usually one can find two or three important transmission channels that link the financial sector and the real economy.<sup>22</sup>

- The borrower balance sheet channel and its international dimension
- The bank balance sheet channel, its international dimension and the procyclicality of risk-based capital requirements
- The liquidity channel

The first two channels can be called the „financial accelerator“ because they amplify negative shocks. They challenge the Modigliani-Miller view and state, that the financial structure of a firm is not irrelevant for its investment decision. Both channels emphasize the influence of the wealth of the borrower and bank on the credit conditions these agents face. That means that at least one of the assumptions of the Modigliani-Miller-theorem does not hold in the real world. This is not unlikely, because the theorem makes rather strong assumptions in terms of the necessity of a frictionless market.<sup>23</sup>

Borrowers face a premium on external funds. This premium usually depends inversely on the solvency of the borrower. The borrowers' creditworthiness is, of course, dependent on his or her wealth or the company's equity value. Fluctuations in asset prices and other shocks affect the ability of a borrower

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<sup>20</sup> Schneeweiss (2011)

<sup>21</sup> Schneeweiss (2011)

<sup>22</sup> Basel Committee on Banking Supervision (2011)

<sup>23</sup> Basel Committee on Banking Supervision (2011)

to spend and contribute to aggregate demand, because every change in solvency will increase or decrease the costs of external funding. Because lenders are not able to fully enforce repayment, they will usually require a collateral. Any shock leading to a fall in the value of the collateral will tighten this constraint. This might set a feedback mechanism in motion, because borrowers will not be able to spend and produce as much as they would like to. Also asset prices might be affected negatively. Every adverse shock to a bank's or institution's balance sheet might also lead to sharp declines in the supply of credit, which might magnify the shock's effects even more. This channel, the balance sheet channel, can either go through a bank's lending activity, where shocks affect the cost and availability of credit or through a bank's capital, where shocks or regulatory requirements affect the capital costs. Risk weighted capital requirements usually increase when economic conditions deteriorate, which can be problematic.<sup>24</sup>

The empirics provide both hints about direct effects, meaning the effect from a borrowers default probability on the cost of credit, and macroeconomic feedback mechanisms, i.e. the effect of aggregate shocks, idiosyncratic shocks and local problems, on the ability of a borrower to repay his debt, which leads to the conclusion that macroeconomic factors affect the bank balance sheet both through the indirect effect on the number of defaults and delinquencies as well as the direct effect on the bank's performance. Empirical results also indicate the existence of the bank capital channel. The bank lending channel might only be an issue for smaller banks.<sup>25</sup>

Recent years also saw lots of innovations in the financial markets. Especially the intensified use of securitization and other new funding channels led to the emergence of a risk channel. This risk channel highlights the importance of monetary policy for the risk taking behavior of a financial institution. In light of the recent crisis, I also want to point to another important transmission channel – the liquidity channel. Liquidity can be a constraining factor for a bank's ability to extend credit or affect other variables and therefore influence the bank lending channel effects or create other transmission channels. High leverage ratios, maturity mismatches and inappropriate accounting standards are elements that promote liquidity problems. The interrelation between funding liquidity and market liquidity played another major role, especially during the downfall of Lehman Brothers. The empirics support the theoretical notion that liquidity can be a major cause of disruption in the real economy.<sup>26</sup>

#### **e) The current crisis and the debt-deflation cycle –Minsky having a moment?**

A study conducted by the US Congressional Research Service offers many explanations for the financial crisis. The most obvious reasons to mention here are the imprudent lending practices that led to the burst of the real estate bubble. Against a backdrop of easy credit, low interest rates, and rising

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<sup>24</sup> Basel Committee on Banking Supervision (2011)

<sup>25</sup> Basel Committee on Banking Supervision (2011)

<sup>26</sup> Basel Committee (2011)

housing prices, standards were further relaxed to insure, that many citizens were able to afford their own house, without actually being able to afford it. The mentioned low interest rates led to a higher money supply. This new money had to be invested somehow and was often channeled into the real estate market. Especially the rediscovered Securitization process contributed to this<sup>27</sup>.<sup>28</sup> Mortgage banks were practically forced, through the Community Reinvestment Act, to issue subprime mortgages. Because they knew of the repayment issues, they securitized mortgages on a vast scale and instead of keeping these mortgages on their books, they sold them, strictly divided into different credit rating classes, to other banks and financial investors. In order to do this, mortgage banks created bonds, thus fixed income assets, that constituted proportional repayment and interest claims. For American banks, securitization was the main way to get rid of risk.<sup>29</sup> The boom in the subprime lending sector was, however, mainly driven by borrowers not subject to the Community Reinvestment Act.<sup>30</sup> Securitized mortgages were less regulated, compared to other financial instruments, because they were mainly traded OTC, where regulatory standards are not as high. As a result, an asymmetrical information structure arose. Although the biggest OTC markets are to be found in the area of interest- and currency swaps. What makes OTC markets unique is, that they are so intransparent. Furthermore, banks had no incentive to be mindful of the quality of their products. In addition to that, rating agencies failed to appreciate the nature of risk inherent in the mortgage bonds. In contrast, they were quite convinced, that the mortgage bond risk could be diversified away easily. Regulatory agencies followed this assessment.<sup>31</sup> Other often mentioned causes for the Financial crisis are the deregulatory tendencies and the shadow banking system. Legislation such as the Gramm-Leach-Bliley Act or the Commodity Futures Modernization Act allowed financial institutions to play their game in unregulated markets. The liberalization was driven by the belief in the self regulation of the market.<sup>32</sup> Many banks started to launch new legal entities to enter risky speculation and get rid off risky assets. Regulators were quite supportive, since the 1990s, of this “new way of risk management”. This led, together with the implicit demand from the federal government via the Community Reinvestment Act<sup>33</sup> to finance subprime mortgages, to an expansion of credit. The mark-to-market accounting acted as procyclical catalyst, because it overstated book profits.<sup>34</sup> A peculiarity of the American legislation was, that debtors could get rid of their debt by simply moving out of their house and handing in the keys.<sup>35</sup>

To add to the picture, there was a false appreciation of risk management, human mistakes, wrong models, and excessive leverage due to cheap money. Furthermore, short term incentives contributed to

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<sup>27</sup> reinvented because there had been similar instruments in the 1980s

<sup>28</sup> Jickling (2009)

<sup>29</sup> Sinn (2010), pp.162; see also Jickling (2009)

<sup>30</sup> Jickling (2009)

<sup>31</sup> Jickling (2009)

<sup>32</sup> Jickling (2009)

<sup>33</sup> notable agents – Fannie and Freddie

<sup>34</sup> Jickling (2009)

<sup>35</sup> Sinn (2010)

the crisis. In contrast to the common view that financial innovations are bad, they only make the financial market more complete and efficient. The lack of transparency, not the innovation itself, has to be blamed. The metaphor of the Black Swan and the short term bonuses are also often mentioned as causes of the crisis.<sup>36</sup>

If one accepts the mentioned causes, the crisis seemed to be the result of some unfortunate event, an unfortunate coincidence of private and public mistakes. People bought houses they couldn't afford, banks and mortgage lenders bundled risks they couldn't bear or understand, and investors and financial institutions bought these risks without carefully analysing the implications. If one accepts these arguments, the conclusion is obvious:

*>>[...] we see how utterly mistaken was the Milton Friedman notion that a market system can regulate itself [...]how silly the Ronald Reagan slogan was that government is the problem, not the solution. This prevailing ideology of the last few decades has now been reversed. Everyone understands now, on the contrary, that there can be no solution without government.<sup>37</sup> <<*

The tale that is being told is, that the financial crisis was a terrible, terrible accident. It was an accident precipitated by an unforeseeable confluence of events that conspired to bring down the global financial system. This view is not all wrong but incomplete. Rather than characterizing the crisis solely as an accident, it can be shown, that the financial regulators repeatedly designed, implemented, and maintained policies that helped precipitate the global financial crisis. They embraced policies that permitted, and too frequently encouraged, the executives of private financial institutions to undertake socially harmful, though privately profitable, investments. Regulators, however, ignored warning signs of increasing systemic fragility, signs that should have been quite clear in light of the more than 130 financial crises around the world since 1980 and in light of the long history of financial sector regulation. They did little when leading commercial banks moved over half of their assets off balance sheets, when the largest institutions dramatically reduced owner-contributed equity capital through the purchase of opaque credit default swaps, when their own inspectors repeatedly identified problems in financial institutions, when banks grew their assets at unprecedented rates, and when they learned that their own policies were encouraging reckless behavior. Regulatory institutions systematically chose policies that increased the fragility of that component of the financial system for which they were responsible, and they maintained those policies even as they learned about the bad consequences of their decisions. The crisis was not simply the result of an uncontrollable bubble, it was not only due to the incompetence and impotence of regulators, it was not just a mistake, and it does not primarily reflect regulatory gaps. The crisis did not just happen to policy makers – it happened because of them and shows some signs of institutional degeneration, whether it be a social, political, legislative or other

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<sup>36</sup> Jicking (2009)

<sup>37</sup> Samuelson (2009)

institution.<sup>38</sup>

One of the most famous names these days when writing about the topic of instable financial markets is Hyman Minsky. Minsky, being a post-Keynesian and one of the students of the famous economist Joseph A. Schumpeter, developed a theory about the instability of the financial sector in the 1970s. He argued that the financial markets follow a cycle of three different states. The first state, called “hedge finance”, stands at the very beginning of the cycle. The following “speculative finance” state of the financial economy comes with a lot more debt and a naïve attitude to risk. In the third state, the “Ponzi-finance” state, this risk-attitude leads to ever more and more debt until the bubble suddenly bursts in a “Minsky moment”.<sup>39</sup>

Minsky’s theory builds on an even older theory, the debt-deflation cycle, by Irving Fisher. In the business cycle research, Mishkin (1978), Bernanke (1983), Bernanke and Gertler (1989) and others, already suggested over 30 years ago, that the condition of private and public balance sheets, i.e. the solvency of a borrower, is crucial for macroeconomic activity.<sup>40</sup>

Although the argument is quite tautological and therefore necessarily true, we haven’t been able to find an answer to the most basic question that follows – how can we avoid crises – for more than hundred years. Between the 1970s and 2011, advanced economies saw Gross Total External Debt (% GDP) rising from just below 30% to almost 300%.<sup>41</sup> Between the dotcom bubble and the financial crisis, US households saw a rising of debt from 96% of income to 128%. The same pattern holds for England (105% to 160%) and Spain (69% to 130%). Although debt is usually not seen as a big problem, the focus on debt has the mentioned long tradition, beginning even before the introduction of the debt-deflation cycle by Irving Fisher. According to him, there are only two ways out of a debt-deflation cycle, namely laissez faire or brute force reflation.<sup>42</sup>

Minsky dismisses the Walrasian world view of self-stabilization because of his conviction, that the system itself can produce its own destabilizing shocks. During economically good times, individual and society as a whole get self-satisfied and convinced, that this trend would never end.<sup>43</sup> The “Great Moderation” period shows such a period during which agents believe, that the positive trend can be attributed to their better ability to handle business cycles (i.e. monetary policy and inventory management) without ever really giving the thought a chance, that they were just lucky. Other mentioned reasons for the moderation were lower volatility in the housing market and a favorable mixture of business sectors in the overall economy. Especially the Greenspan-Volcker era was so fantastically boring, in terms of business cycle fluctuations, that most of the economists and politicians

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<sup>38</sup> Barth et al. (2012)

<sup>39</sup> Kurz (2013)

<sup>40</sup> Bernanke et al. (1989)

<sup>41</sup> Reinhart et al. (2013)

<sup>42</sup> Eggertsson et al. (2012)

<sup>43</sup> Keen (2013)

almost forgot, what a crisis actually means. In light of the Great Moderation, the Minsky cycle can be shown with quite a good accuracy from the 1980s to 2008.<sup>44</sup> The basic notion, however, is, that in a first step, agents believe in a new era, a “this-time-is-different” thinking spreads. This thinking leads to overconfidence. This overconfidence cycle goes through three stages – “hedge”, “speculative”, and “Ponzi”. In a first phase, usually after a crisis, banks and borrowers are cautious. Only “good” borrowers, namely borrowers who can repay interest and loan, are given money. Usually, this works out quite well and banks, as well as borrowers and politicians get less cautious and more risk seeking. The financial sector begins to lend out money to borrowers, who can only pay the interest. These types of loans use assets as collateral and as long as the asset prices rise, the borrower will be able to even repay the loan. As soon as the last crisis is completely forgotten, banks also lend money to borrowers who can not even pay the interest payment, let alone a down or interest payment. This last stage is called the stage of “Ponzi finance” after famous fraudster Charles Ponzi.<sup>45</sup>

During the “Ponzi-finance” stage, there will always be a moment, where the system jumps over the edge. Sometimes it takes the agents longer, to realize, that they are walking on thin air. The very moment, called “Minsky moment”, when agents realize that there is a bubble, the system collapses. The trigger can be a bankruptcy, e.g. the fall of Lehman Brothers. The fact, that “Ponzi finance” builds on rising asset prices, lead to a chain effect, when prices are falling. Banks, borrowers, and other agents realize, that there is debt in the economy, that can’t ever be honored. They start to fire-sell their assets, driven by fear. This leads to a feedback loop, where more and more agents try to sell more and more assets.<sup>46</sup>

A discussion of more pros and cons of Minsky’s hypothesis can be found in Bellofiore/Ferri (2001), Part 1.

#### **f) The regulatory toolkit**

In order to avoid crises, regulators are faced with a trilemma. This trilemma emerges as a result of the fact that regulators have to trade off their public interest (i.e. financial stability) and the private interest goals (i.e. sector competitiveness and credit availability).<sup>47</sup> It is evidently so that a system that is only focused on competitiveness and credit availability need not be the most stable system. On the other hand, a focus on stability might kill the availability of credit. Furthermore, regulatory regime shifts might also cause problems, indicating that fast and abrupt regime changes are dangerous.<sup>48</sup>

Regulation is usually divided into micro- and macro prudential measures. It is not always clear what constitutes a macro prudential or a micro prudential regulation. Capital adequacy standards for

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<sup>44</sup> there is always the problem of over fitting the model

<sup>45</sup> Keen (2013)

<sup>46</sup> Ibid.

<sup>47</sup> Scherf (2014), pp. 121

<sup>48</sup> Ibid.

example might be used both as micro- and macro prudential regulation. Whereas micro prudential measures focus on the health of individual banks, therefore seeking to ensure partial equilibria, macro prudential measures focus on general equilibrium goals, i.e. systemic health.

The implications of a variety of these measures will be discussed in the following paragraphs. Specifically, I will discuss the implications of:

- Competition vs. stability (Entry barriers)
- Separation of investment and “normal” banks
- Capital requirements
- Deposit insurance
- Supervision
- Government ownership
- Bank Failure Resolutions
- Lender of last resort

Economic theory is not clear on the issue of entry barriers, competition, and stability. On the one hand, entry barriers can increase the stability of the whole system, on the other hand they might have a negative impact on efficiency.<sup>49</sup>

Competition in the banking sector has been at the center of the regulatory debate on the stability of the financial system. In non-financial markets, competition is usually seen as a prerequisite for an efficient market with low prices and satisfied consumers. This argument is also made for the banking sector. Several theoretical and empirical studies have shed doubts on this argument. They claim that monopoly rents foster incentives to invest in relationships with smaller or more opaque borrowers. Theoretical models have made different predictions on the relationship between higher concentration, competition, and system stability. Some models predict that a banking system with less competition is more stable because profits provide a buffer against fragility and incentives against excessive risk taking. This argument might only be valid as long as profits are actually used as buffer and not paid out to the owners in form of dividends or share buybacks. The view, that less competition is actually a good thing is called the “charter value” view of banking. It sees banks as choosing the risk of their asset portfolio. Bank owners, however, obviously face incentives to shift risks to depositors because in a world of limited liability, they only participate in the upside part of the risk taking. This problem is even reinforced by implicit government guarantees. In a more competitive system with more pressures on profits, banks do have higher incentives to take on more risks what might increase the system’s fragility. Additionally, in a competitive environment, banks earn fewer informational rents from their relationship with borrowers. This reduces not only their incentives to properly screen their borrowers,

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<sup>49</sup> Barth et al. (2004)

which again increases the risk of fragility, but makes short-term customer-bank relationships more likely.<sup>50</sup>

Models opposing more competition therefore predict that deregulatory measures that lead to more competition and lower entry barriers, e.g. in the US in the 1970s and 1980s as well as in many other emerging and developed markets, increase the fragility of the financial system. Less competition, and therefore more concentration, can also create a positive feedback on liability risk. There is, however, also the argument that a bank's distress probability is decided by the customers' expectations rather than the bank itself. Another argument against competition is that banks won't be willing or able to provide liquidity to another bank currently in distress. Saez und Shi (2004), on the other hand, show that banks can not only cooperate but also act strategically and help others with temporary problems, when they are not in a perfectly competitive environment. Together with deposit insurance, less competition is negatively associated with stability. Furthermore, deposit insurance may promote unhealthy competition because it works like a put-option for the failing bank. Another popular measure to reduce the fragility of the system is a minimum capital requirement for banks. Hellmann, Murdock, and Stiglitz (2000) show, however, that a regulatory scheme consisting of capital requirements still needs deposit interest rate ceilings to keep banks from taking on excessive risk in perfectly competitive markets. A final argument in favor of less competitive markets is concerned with the number of banks. If less competition also means a smaller number of institutions, regulators may be able to better supervise the sector. Allen and Gale (2000) argue, that the United States actually support this view, that competition increases the fragility, since there are still many small banks around, relative to, e.g., in the UK or Canada, where the sector nowadays is dominated by a small number of large banks.

The empirical studies have not found a clear conclusion on the matters discussed in this section. There is a trade-off in both more and less concentrated banking systems. Two conclusions, however, can be drawn: Market concentration does not directly imply less competition and the regulation and supervision framework shapes the structure of the banking sector. This is both good and bad, because regulators can exert influence but usually cannot be held responsible for their failure. Cross-country empirics point to a positive effect of more competitive banking sectors but are a bit blurry when it comes to the relationship between concentration and stability. Concentration ratios may not be good measures of competition after all. Maintaining a healthy and lean, competitive and contestable banking sector seems to lead to more stability. At the same time, allowing banks to grow might prove beneficial in terms of risk diversification.

History has shown that the separation of investment and commercial banking is not the Holy Grail of financial sector regulation. Two opposing cases and a balanced middle way, namely the US, Germany,

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<sup>50</sup> Beck (2008)

and Great Britain show that both a separated and an inclusive banking system with both specialized and universal banks has weak spots. The history of banking in America has always been a history of tensions between the need for a powerful financial sector that could fund the needs of the biggest economy in the world and a deep rooted opposition to everything that smells like market power such as big banks. These tensions date back to the earliest years of the republic and saw outcomes in laws such as the National Bank Acts of 1863 and 1864 which established the separation of commercial and investment banking for the first time, and the Glass-Steagall Act of 1933, which set the separation in stone. On the other side of the road stands Germany with its history of universal banking. By 1840, universal banks in Germany played already an important role and by 1913 the most powerful companies in Germany were banks. While a central bank seemed to emerge organically even in the United States, universal banking was only becoming the norm during the 1970s onwards. When the Glass-Steagall Act was finally repealed, most banks in the United States turned into universal banks. The banks which performed worst during the crisis were, quite ironically, specialized banks. The financial crisis was not a crisis that disproved the upsides of universal banking but, again, was able to show the fragility of a system that is comprised of small banks with limited funding ability. While e.g. Barclays, HSBC, and Standard Chartered in the UK or JP Morgan Chase in the US and Deutsche Bank in Germany were able to weather through the storm, specialized and smaller banks such as Lehman Brothers, Bear Stearns, Northern Rock or the German Landesbanken showed their vulnerability not only due to their specialization but, in the case of the German Landesbanken, also due to their lack of experience with new products such as asset backed securities. It is neither the universal banking system that is bad nor is it the separated banking system but rather other mistakes. It is therefore futile to reintroduce legislation in order to separate business activities.<sup>51</sup>

The most important tool for modern banking regulation are capital adequacy requirements. They should improve financial stability by increasing a bank's capital buffer. A higher capital buffer increases the share of losses that can be absorbed by equity, which decreases the chance of default and gives banks more skin in the game, thus changing their incentives. The effect of capital requirements on the availability of credit and the competitiveness of the system has been an area of strong discussion, because differences in leverage or capital requirement regulation might harm a countries ability to compete with foreign peers. The main problem, however, that makes capital requirements even more desirable is the notion of "economizing on equity". If the balance sheet is x-times equity, even small operating margin lead to high returns on equity. Although Basel III will be discussed later in this paper, it is important to point out that the new regulation will cost banks profitability, estimates range around 12%-13%. The new regulation will also force banks to deleverage, which is the main intention of the new rules. The direction of the effect of these new requirements on the availability of credit, and ultimately on the investments and output in the economy, depends on the banks' decision

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<sup>51</sup> Casserley et al. (2009)

between increasing capital or decreasing their set of risk weighted assets and credit positions. In the latter case, parallel structures are important. Since banks won't be willing or able to supply the amount of credit the real economy needs, the absence of alternative funding will slow economic growth. Regulators might want to think about either forcing banks to issue equity or establish other ways to fund the real economy, e.g. via markets, federal pension funds (direct placements), insurance companies, angel investors, and so on. From a political economy point of view, there is no free lunch in tightening regulation; there is always a trade-off.<sup>52</sup>

The role of the deposit insurance has always been especially controversial. While a deposit insurance is usually established to prevent bank runs and protect small depositors, the trade-off is huge. Deposit insurance almost forces banks to act aggressive and provides perverse incentives to take excessive risks, especially when facing its on bankruptcy or insolvency. In weak supervisory frameworks, the incentives are stronger than in an environment with compulsory membership and active management of the insurance scheme. Another measure to avoid the worst possible outcome are risk-based premia.<sup>53</sup>

The fatal incentives are aggravated in light of bankruptcy, because the deposit insurance works like a common stock put option. Its value increases as the bank's capital base shrinks. This explains why shareholders of insured banks don't really care about high levels of capital. The empirical literature confirms this notion. The put option effect is only significant for banks in distress and worthless for banks operating on a healthy capital base. „Zombie“ banks, like the ones in Japan in the 1990s and 2000s as well as some modern-days bad banks experienced an unusually dominant effect of this put option. Furthermore, it can not be ruled out, that the combination of deposit insurance and implicit bailout guarantees play a partial role in banks' leverage decision.<sup>54</sup>

There is a major delegation problem between the taxpayer and her agent, the regulator. Although the positive aspects of regulation are obvious, this agency problem may be one of the key elements that remains undiscussed by the public.<sup>55</sup> Because banks, like the whole financial system, are so complex and complicated, owners and the society are not able to monitor them properly. This task can be fulfilled by regulatory agencies that get, on the other hand, influenced by the financial sector with which they have to work together on a daily basis. The general public does not interact with the regulators at all, or at least not very often, they are not part of the 'peer group' and, more often than not, they do not even understand the issue anyways. Usually, the general public lacks not only the knowledge and expertise to judge the regulator but also the information to follow what is happening. The resulting bias is especially severe when it comes to crucial decisions. I want to note, that this point

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<sup>52</sup> Scherf (2014)

<sup>53</sup> Demirgüç-Kunt et al. (2002)

<sup>54</sup> Thakor (2014)

<sup>55</sup> Booth et al. (1993)

of view does not depend on corrupt regulators. In fact, most of the time, regulators might even act with the best of intentions. They are also humans and social animals. They want to belong to a social group and are therefore more likely to conform to this group's ideas. In the end, regulators really believe in the opinions of their social group. There is no institution around the world that is independent of short-term political influence and the influence of the private sector, powerful enough to check regulatory decisions and market conditions, are able to correctly assess this information and has the reputation to deliver this assessment to the public. There are virtually no checks and balances on the regulating agencies around the world. Even reforms such as the Dodd-Frank Wall Street Reform and Consumer Protection Act and the new Basel III Accord do not introduce anything to cope with this central challenge on how to get the regulator to act in society's interest.<sup>56</sup>

Economists are not united in their view about the impact of government ownership of banks. The socialist view highlights the importance of banks for the whole economy and assumes, that governments are able to achieve outcomes that are socially desirable. Therefore, government ownership might help an economy to overcome private market failures. On the other hand, governments might face distorted incentives as well. Governments may use the banks for their own purpose. Political resource allocation, too soft budget constraints and inefficiency are the likely outcomes. Empirical studies find, that countries with a bigger share of government ownership tend to develop slower, both financially and economically.<sup>57</sup>

Another issue in the area of bank regulation is the "too-big-to-fail" problem. This problem is part of a macro prudential regulatory toolkit. It is obvious that the whole system is in danger, when a too-big-to-fail institution fails eventually. While bailouts, intervention, and government aid for such banks might be unavoidable in time of crises, it is important that the government provides a clear policy on how regulators are going to deal with failed institutions.<sup>58</sup>

### **g) Current and future regulation**

The most important regulatory framework for Europe, and the one I will particularly focus on, was proposed by the Basel Committee on Banking Supervision. The Basel Committee, part of the Bank for International Settlements, is one of the most important global standard-setters for the regulation of banks. It also provides a forum for cooperation on regulatory issues and supervision. The Basel I and

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<sup>56</sup> Barth et al. (2012)

<sup>57</sup> Barth et al. (2004)

<sup>58</sup> Beck (2008)

Basel II frameworks came into effect in 1988 and 2004 respectively.<sup>59</sup> The original Basel Accord has its origins in the failure of the German Herstatt Bank in 1974<sup>60</sup>. Herstatt's default on its contracts was caused by insufficient capital, the same bankruptcy cause that also brought down Lehman in 2008. The Basel Accord rules, now known as Basel I, soon came to be seen as not strict enough in the way they allowed banks to weigh risks<sup>61</sup>, with one category for all corporate loans, another for all loans from countries, and so on. Work on the new framework, now known as Basel 2, started in 1996, and a draft was published in 2004.<sup>62</sup> The fact, that it took politics more than ten years until Basel II was finally established, is not really comforting.

It is now clear that the pre-crisis regulation Basel I and the anticipated Basel II potentially destabilize(d) the global economy. The regulatory agencies, with the central bank's and the IMF in the front row, even stuck to their flawed regulation after they learned, which problems and consequences might arise. An independent institution with an expert staff that is capable of evaluating regulation from an objective society's point of view, is clearly missing from the global regulatory framework.<sup>63</sup>

The "usual" approach or traditional way of prudential regulators has been to focus on individual institutions and their safety and soundness. This bottom up perspective remains dominant until today. In response to the financial crisis, however, it became clear, that a top down approach to prudential regulation, with a focus on the system as a whole and its stability, is desperately needed. While it is not quite clear what "systemic stability" really means, it is inevitable to appreciate the financial system as the complex adaptive system it is.<sup>64</sup> The history of financial sector' regulation is a history of long swings between less restrictive to more restrictive and back to less restrictive regimes. The current crisis now functions as the catalyst for a swing to tighter regulation. The causes for these swings have been changes in beliefs about the efficiency of market based financial systems and their ability to manage themselves. Similarly, these changes led to swings in the thinking about monetary policy. It is worth mentioning, that the complementary nature of regulatory and monetary regimes has had important implications for the real economy. Prior to the 1930s, there had been little to no regulation. The belief, however, that banking excesses had caused or at least contributed to the Great Depression led to a significant tighter regulatory regime in the years afterwards. Whatever the cause, the number of bank failures and bankruptcies saw a low through the 1950s, 1960s, and 1970s.<sup>65</sup>

The following swing to a more deregulated economy began in the United States in the 1960s and a little bit later in Europe and Japan. There were three structural changes resulting from this liberalization. The traditional on-balance sheet banking was increasingly complemented by

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<sup>59</sup> Bank for International Settlements, online: <http://www.bis.org/bcbs/about.htm>

<sup>60</sup> actually I.D. Herstatt KGaA.

<sup>61</sup> loans to companies were assigned a weighting of 100%, loans to banks in rich Western countries had a risk weighting of just 20%.

<sup>62</sup> The Economist (2006), online: <http://www.economist.com/node/6908488>

<sup>63</sup> Levine (2012)

<sup>64</sup> White (2014)

<sup>65</sup> Ibid.

“transactional” banking, e.g. shadow banking, which is largely off-balance sheet. This “transactional banking” is usually based on securitizing traditional bank assets. The result of this was the emergence of a large chain of intermediaries that link and linked borrowers and lenders. The system also became increasingly globalized. This need not be a problem at all but obviously increases the complexity and vulnerability of the system. There was also a significant degree of consolidation leading to larger banks and firms that not only gained market share but also began expanding their activities beyond the range of traditional banking activities. While each and every one of these developments might not be a problem at all, they came with important downsides as well. Securitization and the spread of shadow banking were built on a fragile business model that was heavily dependent on short term financing and consolidation raised the now “famous” too big to fail and too big to bail questions with all the associated problems, e.g. increased moral hazard. Also, the number of banking failures began to rise again. The most prominent failure was, of course, the failure of the famous hedge fund LTCM in the late 1990s. After LTCM’s downfall, central banks began to finally issue Financial Stability Reports and the Financial Stability Forum was established in 1998. Shortly thereafter, the Forum proposed a set of twelve standards to promote financial stability. Consistent with the thinking back then, however, decision makers didn’t initially think of these systemic problems to be a sufficient cause for reassessing the costs and benefits of the liberalized sector. The crises were mainly in Emerging Economies, such as Russia. It took almost another decade, until 2007, until a more fundamental re-evaluation of the regulatory regime finally began to take place. The initial response to concerns about uneven playing fields was the Basel I framework. Recommended by the Basel Committee on Banking Supervision, and signed into law during the following years by national legislators, the Basel I framework is a good example of an international “soft law” that does not have the force of an international treaty but depends on the national legislation. As the bankruptcy numbers went up, the Committee began to work on a new framework, now known as Basel II. This framework should ensure the same even playing field but also refine the risk weights to be much more sensitive in order to reduce regulatory arbitrage.<sup>66</sup>

Prudential regulation has as its objectives the safety of individual institutions (micro prudential) and the stability of the financial system as a whole (macro prudential). One goal of prudential regulation is the reduction of expected losses arising from defaults. This can be achieved by various measures that reduce either the probability or the magnitude of defaults or both.<sup>67</sup>

The more traditional way of regulating the financial sector is the micro prudential regulation. Its focus lies on the health of individual banks. The underlying assumption is that, if each bank is healthy, the system will be healthy as well. Interdependency issues are not taken into account and risks are assumed to be exogenously given. Basel III is essentially such a micro prudential, static, approach. The macro prudential approach would focus more on dynamic dimensions and the system as a whole.

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<sup>66</sup> White (2014)

<sup>67</sup> Ibid.

It recognizes the possibility of shared shocks and accepts the notion that these shocks can be dangerous for the system. Systemically important financial institutions, commonly known as “too big to fail” banks, receive special attention as well. The macro prudential approach takes both the probability and the magnitude of a crisis into account. Its time dimension reflects the Minskyan notion of a changing risk appetite.<sup>68</sup>

The Basel III framework rests on the famous three pillars. The first pillar includes the important capital- and risk coverage requirements as well as requirements for the leverage ratio. The second pillar addresses the risk management and supervision behavior, the third pillar targets market discipline. Furthermore, the Basel committee, obviously impressed by the downfall of Lehman Brothers, also targets liquidity standards and systemically important financial institutions (SIFIs). The interesting fact about the Basel III is, that even Basel III consistent banks sometimes fail stress tests indicating, that a new Basel IV needs to be established. However, what do the pillars actually require banks to do?

Pillar 1 focuses on capital, risk and leverage. Basel III requires a minimum equity ratio of 4.5% up from 2% in Basel II. It also requires banks to additionally hold common equity of 2.5% on top of the already-required minimum of 4.5%. This capital conservation buffer, together with the countercyclical capital buffer of 0-2.5% should increase the stability during times of crisis. Pillar 1 takes also on the issue of excessive risk taking. The Pillar tightens the regulation for certain complex securitizations and makes sure that banks seek more rigorous external credit analyses. Significantly higher capital requirements for trading and derivatives activities and some securitizations as well as the use of a stressed value-at-risk framework should help mitigate procyclicality. Higher capital requirements for incremental risk insure further stability. The counterparty risk is met with higher capital requirements as well as most other exposures. The leverage ratio will serve as a limit to the risk-based capital requirements. So far, Basel III only contained capital requirements. Pillar 2 addresses firm-wide governance and risk management issues such as off-balance sheet risk exposure, short-term focus and remuneration schemes as well as stress testing, accounting standards and corporate governance. Pillar 3 introduces enhanced disclosure requirements, including an explanation of how a bank calculates its regulatory capital ratios. On the liquidity side, Basel III requires banks to withstand a 30-day stressed funding scenario. The liquidity framework also contains a common set of monitoring metrics and a longer-term structural net stable funding ratio requirement. SIFIs have to meet even higher capital requirements.<sup>69</sup>

The higher capital requirements for SIFIs make only sense in that they might reduce the default probability. The surcharge of 1%-2.5% seems pretty small and it is unclear whether the proposed capital ratios are too low or high enough. The Vickers’s Committee in the UK proposed a higher

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<sup>68</sup> Ibid.

<sup>69</sup> Bank for International Settlements, Basel III; online at: <http://www.bis.org/bcbs/basel3.htm>

initial capital requirement of 4%, US regulators have announced a 5% standard.<sup>70</sup>

Mervyn King pointed out, that banks shouldn't get big enough as long as countries believably commit to letting banks go bankrupt. According to Sinn, the notion, that a world with only small banks works better, is not true. It is possible, that an economy with only small banks is much more inefficient.<sup>71</sup> The history of banking in the UK can lead to the same conclusions.

Basel III does little to nothing for the macro prudential side of regulation. It only uses capital requirements and some "new" incentives but counts on national regulators to supplement the framework.<sup>72</sup>

Besides the fact, that big banks are probably needed for efficiency, it is not very likely, that the additional factors imposed on large banks by the Basel III framework, would provide any security for the system. Furthermore, this leverage ratio measure seems odd because it does not address directly the issue that leads to SIFIs. Among the most famous proposals are the Volcker rule in the United States, the Liikanen proposals in Europe, and the Vickers report in the United Kingdom. The proposals are similar in the aspect, that they suggest that problems are most probably to emerge in investment banking rather than commercial or retail banking. The conclusion is, that some bank activities need to be "ring-fenced".

The Volcker rule seems like a pretty good regulation. There are, however, strong arguments against the Volcker rule. Despite all the exceptions, it is still likely, that the Volcker rule will negatively affect market making and liquidity provision for many securities, especially high-risk securities. Customers might not only see their securities' fall in value but are likely to be forced to recognize losses immediately. The rule will also reduce network economies of market making, lead to higher funding costs for companies and lower investments with a focus on riskier, short-term, gains. Due to the artificial constraint imposed by the Volcker rule, banks will not be able to perform their risk management tasks as efficiently as possible. The measure will also have an impact on market structure. The Volcker rule prohibits any banking entity, including its affiliates, from sponsoring or investing in a hedge or private equity fund or any other type of privately offered fund except for funds that are offered by banks as long as the bank doesn't own more than 3 percent of the fund, does not invest more than 3 percent of its Tier 1 capital into the fund and satisfies other requirements. Furthermore, the Volcker rule bans proprietary trading, defined as short term trading with the intent to profit from differences between the purchase and sale price. Exempt from this ban are trading activities involving municipal bonds, market making activities, hedging activities and trading activities on behalf of customers.<sup>73</sup>

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<sup>70</sup> White (2014)

<sup>71</sup> Sinn (2010), page 376

<sup>72</sup> White (2014)

<sup>73</sup> Thakor (2012)

Historically, the Volcker Rule has its historical roots in the Glass-Steagall Act of 1933. The Glass-Steagall Act eroded de facto but not de jure in the 1980s and 90s after the invention of “securitization”. Securitization is a way to convert loans into bonds. With this, banks were bypassing the law that prohibited banks to underwrite securities. The Volcker Rule attempts to bring some parts of the Glass-Steagall Act back. It remains an open question whether the new rule can survive longer than the old one.<sup>74</sup>

Derivatives are now subject to new margin and reporting requirements that banks are struggling to meet. The clearinghouses are also having difficulty establishing the required trading infrastructure. The extent to which these rules will push risk into less regulated areas have been a great concern for the Financial Stability Board. The Dodd-Frank Act created the Financial Stability Oversight Council (FSOC) and charged it with designating nonbank systemically important institutions, in addition to assuring financial stability. As of March 2014, the FSOC has designated three nonbanks as systemically important financial institutions in addition to eight others designated as systemically important financial market utilities.<sup>75</sup>

The Vickers proposal effectively demands that the deposit and lending functions are separated from investment banking. While splitting up universal banks would be a sharp but clean reform, the Vickers Commission’s focus was on a combination of retail and investment banking. The Commission’s estimates included a 10% equity ratio requirement for SIFIs and the demand to ring-fence banking.<sup>76</sup>

The Liikanen Report concluded that there should be a strict separation between investment and retail banking. The experts also proposed forcing institutions to hold more capital, bail-in capital and other forms of recapitalization measures. Whereas the Vickers proposal wants to fence-off the retail banking part, the Liikanen proposal wants to fence-off the dangerous parts of a bank.<sup>77</sup>

The Basel Committee in March 2013 issued an additional document containing a proposal to reduce interbank exposure for systemically important institutions. The proposal would require SIFIs to limit their individual exposure to other big banks.<sup>78</sup>

Other areas that should be of particular interest in light of the crises are the interbank and the derivatives markets. The ECSC, which focuses on this topic, is now known as the Committee on the Global Financial System (CGFS) and has no judicial power at all. This is a problem because the lack of judicial power leads to credibility issues.<sup>79</sup>

Other instruments that ensure a more stable system such as minimum down payments for consumer

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<sup>74</sup> Ibid.

<sup>75</sup> Ibid.

<sup>76</sup> Edmonds (2013)

<sup>77</sup> Liikanen (2012)

<sup>78</sup> Thakor (2012)

<sup>79</sup> Deutsche Bundesbank, online at: [www.bundesbank.de](http://www.bundesbank.de)

credits, lower loan to value ratios for mortgages, and dynamic reserve requirements were commonly used in the 20<sup>th</sup> century, in the 1950s and 60s. They were, however, gradually stopped in light of the then modern financial deregulation trend. Most regulatory actions during the years since have been procyclical. There haven't been many automatic stabilizers. During downswings, however, regulatory requirements were tightened. The question is if it is effective to lean against the upswing, to soften the downswing, with macro prudential tools? Empirical evidence on this matter is rather mixed. Consider for example Spain with its "dynamic provisioning". Although there has been a macro prudential tool in place, Spain still experienced a massive credit bubble. The use of macro prudential measures should reflect the asymmetry of long and slow upswings and short and abrupt downswings. The Basel Committee has suggested raising capital requirements when the credit/GDP ratio rises above a threshold such as the long-term trend<sup>80</sup>. The choice and combination of macro prudential measures, however, is a big problem. Conclusions are not easy to draw because they depend to a large amount on the institutional structure and mentality as well as the fiscal policy, and are therefore country-specific. The introduction of macro prudential measures would be a natural experiment and should not be carried out too hastily. It is also not clear if monetary policy should complement these macro prudential measures. It is evident, that Greenspan was quite wrong in his view that monetary policy is always able to clean up the mess after the bust.<sup>81</sup>

What also needs to be taken into account are estimation problems related to different accounting standards in various countries, related to different auditing standards, transparency and the quality of risk monitoring and oversight. Stress tests might also be flawed because they are too static and hold constant too many factors that would usually change accordingly. People just can't imagine all the possible states an economy could find itself in.

Basel II and the enhancements to the Basel II framework have been fully adopted in almost all the participating countries. The Basel III requirements, however, are still not fully adopted in most of the countries, notably the US, Switzerland and the European Union. While the risk-based capital rules are already approved in all of these countries and have been effective since 1 January 2014, the requirements for globally and domestically important banks are still work in progress. Additionally, in terms of the liquidity coverage ratio, a regulatory measure that underpins the short-term resilience of a bank's liquidity risk profile, countries are a little bit behind, beginning adaptation in 2015. Leverage ratio regulation, i.e. disclosure requirements, is mandatory from January 2015 on.<sup>82</sup> The Federal Reserve's final rule implementing the Basel III capital framework will lead to full implementation in 2019. The strengthening of banks' capital and liquidity positions has already led to far-reaching changes in the way financial institutions operate. And while banks are still adapting to this new

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<sup>80</sup> this would, on the other hand, influence the long-term trend, which would again influence the threshold,...

<sup>81</sup> White (2014)

<sup>82</sup> Basel Committee on Banking Supervision (2014)

legislation, there is already the need for a new Basel framework, Basel IV. A study by KPMG<sup>83</sup> finds, that “no sooner was the ink dry on the final rule than there emerged the prospect of a further tightening by regulators of capital and liquidity requirements”. The US is requiring banks to fulfill minimum capital ratio requirements even after the impact of an unfortunate event, which can be rather useless, and is pushing for higher liquidity standards and leverage ratios than those required under Basel III. Additional costs related to the clean up of the financial crisis are also being factored into the capital requirements. Regulators are still concerned about the banks’ internal modeling and the accuracy of the resulting risk weighted assets. A new, simpler Basel IV might be the outcome of such discussions.<sup>84</sup>

These higher requirements of individual countries lead to regulation outside of the Basel framework. Apart from regulations that govern capital and liquidity requirements, the US supervisory agencies have finalized rules restricting prop trading<sup>85</sup> by banks and investments in hedge funds and private equity funds which is quite striking, because hedge funds and private equity funds were not really at the edge of the last crisis.

#### **h) Best practice regulation**

I mentioned the plan for a post-crisis regulatory master plan earlier in this thesis. Some parts of the plan are already implemented or in the process of implementation.<sup>86</sup>

- Institute a macro prudential approach to supervision
- Assign a clear mandate to a “systemic stability regulator”
- Expand financial sector surveillance on unregulated and less regulated segments
- Ensure incentives that support stability, discourage regulatory arbitrage and assure effective regulation
- Focus on the procyclicality of the existing capital requirements and try to counter the cycle
- Resolve the issues associated with cross-border institutions, harmonize regulatory frameworks
- Strengthen the central banks ability to respond and aid
- Establish a framework that coordinates different regulators
- Develop an exist strategy for withdrawing public money and a transition mechanism to a more stable system

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<sup>83</sup> KPMG (2014)

<sup>84</sup> Ibid.

<sup>85</sup> see Volcker Rule

<sup>86</sup> Cortavarria (2009)

The guiding principle here must always be that the financial sector should serve the real economy and not the other way around. Although the new Basel III, which is arguably crippling the financial sector's lending capacity right now, institutes a little bit of macro prudential regulation, there is still a long way to go towards a more stable and no less efficient system, as I already mentioned before. The global financial system has its job, which is, amongst others, to ensure an efficient allocation of funds, to pursue term transformation and to share and diversify risks. Instead, the sector's record is a little bit more modest. History saw bubbles, excess liquidity, inefficient allocation and crises.

#### **i) Instability due to institutional decay**

It's been more than five years since the recession finally ended in the United States<sup>87</sup>, the European Union is still on the brink of a recession<sup>88</sup>. The so-called 'recovery' that followed the severe downturn was and has been extremely disappointing compared to other recoveries. Economic growth has been far too low to positively influence unemployment rates over a longer term. It has also been far too slow to close the gap between real GDP and the output potential. This facts stand in contrast to previous recoveries, like the recovery from the 1980s recession. Economic instability has more than tripled when one takes the percentage gap between real and potential GDP into account. This deviation from potential GDP rose from 1,5% during 1984-2006 to 5,5% during the 2007-2013 period.<sup>89</sup>

One thing that needs particular consideration is that the policy actions, that were taken before, during, and after the financial panic in the fall of 2008, might have played a crucial role in shaping the recovery or even in protracting the necessary 'repair measures'. A careful analysis of the 10 years between 2003 and 2013 shows that economic policy changed significantly. Monetary policy, regulation and fiscal behavior became not only more interventionist and unpredictable but also pretty arbitrary. Policy should be on the list of causes for the slow recovery and the depth of the recession, because it added uncertainty in the years leading up to the crisis. This is quite ironic, because the one thing central bank's and government did since the outbreak of the crisis has been to continue to be discretionary and even openly admit to throw out the textbooks by doing unusual things.<sup>90</sup>

It is therefore quite save to assume that the shift in policy which began around the year 2000 largely continued, and is now a candidate for causing the slow recovery.<sup>91</sup>

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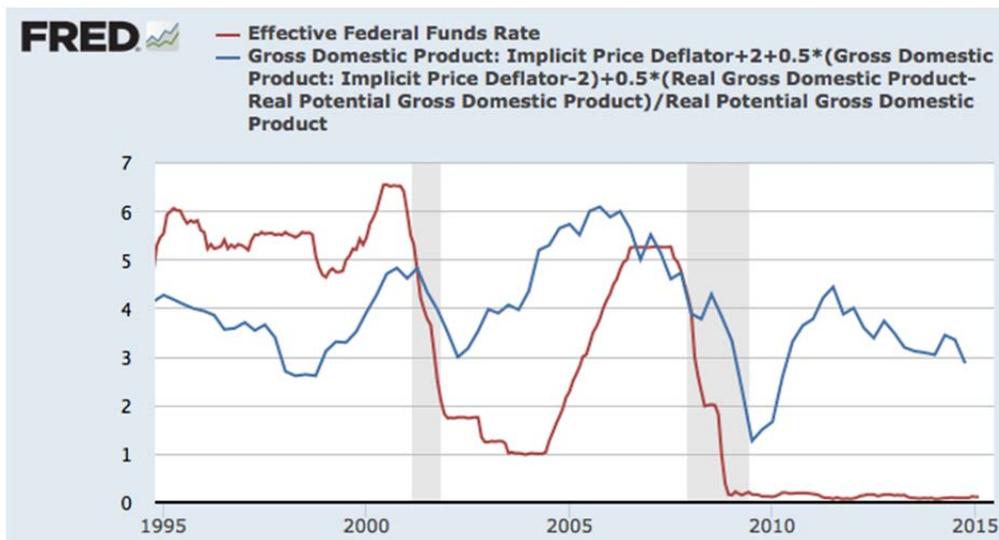
<sup>87</sup> Taylor (2014)

<sup>88</sup> Eurostat, online at: [ec.europa.eu/eurostat](http://ec.europa.eu/eurostat)

<sup>89</sup> Taylor (2014)

<sup>90</sup> Ibid.

<sup>91</sup> Ibid.



Source: Federal Reserve Bank of St. Louis

As one can see in the figure above, the Federal Reserve Bank started to act differently. It held the interest rate unusually low and threw sanity over board. The interest rate was hundreds of basis points below recommendation. One can also compare interest rate decisions from different years. In 1997, the Fed decided to set a 5,5% funds rate with a 2% inflation rate. In 2003, the board decided to target a 1% interest rates with the same 2% inflation rate in the economy. Until then, it was pretty unusual for the Fed funds rate to be below the inflation rate. The likely explanation for this is that there was a shift in policy during this era. The Fed partially explained this with deflationary tendencies in the economy<sup>92</sup>. Based on many economic theories, however, such a big policy shift had to have strong adverse consequences on the economy.<sup>93</sup>

A relatively low interest rate should „buy“ a boom episode but also lead to excessive risk taking, busts, defaults and many bad projects on the companies' balance sheets. One could argue that the demand for housing depends more on long-term fixed rate loans but the short term rates do not only influence the demand for housing but make low teaser rates on ARM<sup>94</sup>s possible.

The liquidity increase as a counter measure against the crisis didn't stop after the panic was over. The Fed rather began an expansion never seen before via their QE programs. History has never seen these magnitudes of money being pumped in the economy at a very fast pace. The Fed's balance sheet expanded from \$10billion before the crisis to unbelievable \$2400 billion now. There is no way to call these policies rational, rules-based or anything else that can be counted as save and sane. While the intention was to stimulate the economy, the outcome is still disappointing at the least and dangerous at the most.<sup>95</sup> The ECB followed the Feds example and has recently started an asset buying program.

<sup>92</sup> see e.g. [http://money.cnn.com/2004/04/20/news/economy/greenspan\\_inflation/](http://money.cnn.com/2004/04/20/news/economy/greenspan_inflation/)  
Or <http://www.smh.com.au/news/business/bernanke-nominated-as-greenspan-successor/2005/10/25/1130006086743.html>

<sup>93</sup> Taylor (2014)

<sup>94</sup> adjustable rate mortgage

<sup>95</sup> Taylor (2014)

This asset purchase program has, however, not shown any results besides disrupting the exchange rate against the dollar a little bit. In the longer term, the inflation differences between Europe and the US should lead to a change in the exchange rate according to the purchasing power parity theory. With an equilibrium rate of about \$1,20 per Euro, according to my calculations, the exchange rate had to come down anyways from its high around \$1,35. The rising interest rates in the US, as the Fed increases its target rate by the end of the year, should exert pressure on the exchange rate as well. The ECB's program might therefore also be dangerous or useless.

Usually, one policy shift is not enough to disbalance the economy. To add to the monetary policy shift, there were also shifts in regulatory policy. It is obvious now that the hundreds of regulators and supervisors failed pretty big. The regulators of Fannie Mae and Freddie Mac, for example, failed to closely monitor these institutions and allowed them to take too many steps beyond prudence. The affordable housing requirements were too much for the private sector. When the SEC decided to relax the capital ratio for investment banks, including Bear Stearns and Lehman Brothers, the change most definitely raised overall risk by allowing these banks to create their own risk management rules.<sup>96</sup>

When the interest rate spread began to become bigger, the Fed thought, this was just a liquidity problem and began to pump money into the interbank market through their Term Auction Facility and when risk and interest spreads did not move much, the government began to bailout institutions such as Bear Stearns; that's the point in time where rules-based policy faced bankruptcy.<sup>97</sup>

When risks spreads did not move accordingly, the bailouts began. The unpredictable bailout policy was toxic for the credibility of the regulator. It trampled over laws, added more and more deviations from predictable policy. This obviously created uncertainty. When Bear Stearns was bailed out, everyone expected Lehman to be bailed out as well, and why not? With no framework beside the implicit government guarantee to support all creditors, it was rational to believe this. The non-bailout of Lehman was, therefore, a disaster. Policy uncertainty went up immensely. Hundreds of new bills didn't help either. The number of government employees involved with regulation activities has tripled between 2006 and 2012.<sup>98</sup>

Alternative solutions to answer the question about why the recovery remains so slow are the secular stagnation and weak-recoveries-follow-deep-recessions hypotheses<sup>99</sup> as well as the theory that deleveraging is a necessary requirement for a full recovery<sup>100</sup>.

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<sup>96</sup> Taylor (2014)

<sup>97</sup> Taylor (2014)

<sup>98</sup> Ibid.

<sup>99</sup> Ibid.

<sup>100</sup> Dobbs et al. (2015)

## j) Systemic instability and secular stagnation

When a Minsky crisis is not handled the right way, a country might fall into a debt trap where unemployment goes up, inflation becomes deflation and growth is practically non-existent. The usual scholars concerned with the theoretical and empirical analysis of the likely “Liquidity trap” are New Keynesian economists. Kiley (2014) and Wieland (2014) summarize the forecasts of new-Keynesian analyses near the zero nominal interest rate band. Eggertsson and Woodford (2003) focus on monetary policy in a liquidity trap and highlight the solution, that the Fed could keep interest rates low even after the economy is out of the trap. This notion is also at the heart of Wernings (2012) analysis and a deeper analysis of Werning by Cochrane (2015). Some analyses find large fiscal multipliers, and multipliers that react on the duration of loose fiscal policy<sup>101</sup> others analyze the “paradox of toil”<sup>102,103</sup> or the contractionary effects of the European structural reforms<sup>104</sup>.

The new-Keynesian literature, mentioned above, analyzes many equilibria. What the analyses all have in common is that equilibria are not selected by what the Fed will do but by what people’s expectations are. Inflation and output expectations are the factors that select the equilibrium. It is always crucial to analyze what people really expect to happen in the future.<sup>105</sup>

As Krugman<sup>106</sup> points out, Summer’s formulation of his secular stagnation hypothesis is similar to his own “liquidity trap” analysis in that Summers also works from the understanding that the post-crisis economy offers an environment where monetary policy faces the limitation of the zero lower bound, and that this zero nominal interest rate is still not enough to lead to full employment. Therefore, the natural interest rate, i.e. the rate that corresponds with full employment, is expected to be negative.<sup>107</sup>

Why is it then, one may ask, that this “secular stagnation” also leads to financial instability? Unemployment and low inflation, together with the ineffectiveness of monetary policy in low interest rate environments are unfortunate but don’t always lead to financial instability. Three factors are, however, dangerous:<sup>108</sup>

- increase risk-taking as investors desperately reach for yield
- promote irresponsible lending as interest payments on debt become very low and very easy to meet
- they make Ponzi financial structures more attractive

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<sup>101</sup> Eggertsson (2011)

<sup>102</sup> that negative productivity can be expansionary

<sup>103</sup> Wieland (2014)

<sup>104</sup> Eggertsson et al. (2014)

<sup>105</sup> Cochrane (2015)

<sup>106</sup> Krugman (2013)

<sup>107</sup> Ibid., Summers (2014)

<sup>108</sup> Summers (2014)

As many economists point out, even if monetary policy could lower the interest rate even further, the interest rate consistent with full employment might not be able to ensure financial stability. Low interest rates are dangerous for financial stability but go hand in hand with low growth. So let me wrap up the hypothesis of secular stagnation in order to explain, why low growth might be problematic this time and might not be a problem in different times. It has now been a few years, since the US economy reached its bottom in 2009 and almost as long since the systemic risk, reflected by LIBOR spreads or risk premia, was at its peak. Yet the growth rates are still poor, averaging only 2% over the period of 2009-2014, despite having started from a depressed state, where one might expect higher growth to catch up with the output potential. If a financial crisis can be circumscribed as something like a power failure, everything should be alright once the problem is solved. Therefore, one could argue, that the underlying problem, the problem that is not only responsible for the slow recovery, has been around for a longer time.<sup>109</sup> Since the 1970s and 80s, debt became, partly due to innovations, partly due to other factors, the demand generating source. Aggregate demand gaps were filled with debt over the last years which led to artificially high potential supply. This might explain, why we will never reach the predicted potential GDP again, c.p., without looking at other factors of growth, such as population growth and so on. If this theory is correct, the way to resolve the crisis is twofold – grow via wage increases and be patient and let the malinvestment restructure itself; don't focus on high pre-crisis output potential estimations. A short run solution would be, of course, to finance growth with ever more debt, which could lead to another crisis that would be even more expensive for us to buy our way out of. All these issues led to a situation where low interest rates might not even be close to be causing full employment but are also inconsistent with financial stability. Now that's what I call a dilemma. Krugman, Summers, and others have suggested that structural conditions lead to a situation where aggregate spending would only be enough to ensure full employment in the presence of negative real interest rates. This "investment drought" view or "savings glut" view may make sense. Financial excess prior to the crisis masked structural problems that are now obvious. A global savings glut and global imbalances complement the narrative. The economy has created more savings than businesses wish to use, even at the nowadays-low interest rates. Prior to the crisis, the United States took all of the global savings and put them in often-unproductive investments. It looks like there are simply not enough promising investments or innovation opportunities.<sup>110</sup>

A commitment to raise the level of demand would be the first best approach out of the mess. Fiscal policy would ask for the government to borrow and spend while at the same time rebalance its long-term finances and lower its debt burden.<sup>111</sup> The second best option is to lower the relevant interest rates. This solution, sometimes called the "solution that cannot be named", focuses on a higher inflation target. A higher inflation target would help alleviate the impact of the zero interest lower bound. It is much easier to get lower interest rates with higher inflation. A 4% inflation target would

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<sup>109</sup> Ibid.

<sup>110</sup> Canuto et al. (2014)

<sup>111</sup> Ibid.

ease the constraint on monetary policy and lean against the economic stagnation. It is important, however, to note, that the main policy goal here is full employment and not stability. A higher inflation target would, however, undermine central banks' track records on price stability as well as governments' reputation, which would in turn generate even more financial instability. The costs of losing credibility are probably way higher than bearable. Some economists also suggest, that inflation would become more volatile and inflation expectations less stable above 4 percent. It is also doubtful if central banks are actually able to achieve 4 percent inflation when they are not even able to achieve 2 percent at the moment. Another solution would be a better integrated global financial framework. The excessive demand in Asia could be the solution for the lack of demand in other parts of the world.<sup>112</sup>

Schumpeterians do not see public policy action at the heart of propping up aggregate demand. In their view, it is not boosting the aggregate demand that helps against stagnation but innovation. "If you are postulating a stagnation across the longer run, ultimately it will have to boil down to supply side deficiencies". They argue, that declining investments in the low interest rate environment are caused by disadvantageous rates of return. Technological evolution might lead to stagnation trends. The "low hanging fruits" of innovation are simply exhausted and the only way to get out of stagnation is to foster innovation and wait. The pre-crisis GDP is seen as bolstered by debt. More borrowed growth, called the "Keynesian formula" creates the illusion of normalcy and helps in the immediate aftermath of a crisis but is disadvantageous once the crisis is over, since it is no solution for a fundamental growth problem. Other critics argue, that the low equilibrium real rate of interest is not to blame. Bad policy decisions, rather than "secular stagnation", are keeping the economy from getting back on track. New and complex regulations, such as the Dodd-Frank Act, failed stimulus packages, such as the "Abwrackprämie" in Germany, higher government debts and bad monetary policy have generated uncertainty and externalities. Whether secular stagnation, a fundamental growth problem, or bad policy choices are holding back the economy does not really matter. More money for innovation and education, increases in real wages, a better integration of foreign banks in a globally coordinated banking system rather than a national regime and the mid-term goal to consolidate balance sheets and government debt burdens are to be seen as a win-win policy mix, no matter what actually causes the stagnation.<sup>113</sup>

It is important to grow again not only for the reason of less unemployment and easier debt repayments but also for financial stability. The current inflation in asset prices is an indicator for the risk-seeking behavior of private and institutional investors in a low interest rate environment. They want to invest their capital and need to balance their losses from the crisis with new profits.

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<sup>112</sup> Ibid.

<sup>113</sup> Ibid.

## k) Conclusion

Seven years after the global financial crisis, global debt and leverage have continued to grow. From 2007 through the second quarter of 2014, global debt grew by \$57 trillion, raising the ratio of global debt to GDP by 17%. This is not as much as the 23% increase in the years before the crisis, but it is enough to raise concerns. Governments in advanced economies have borrowed heavily to fund bailouts and offset falling demand in the recession, while corporate and household debt in some countries continues to grow rapidly. There are few indicators that the current trajectory of rising leverage will change. This calls into question basic assumptions about debt and deleveraging and the adequacy of the tools available to manage debt and avoid future crises. It is unlikely that economies with total non-financial debt equivalent to three or four times of GDP will grow their way out of excessive debt. And the adjustments to government budgets required to start deleveraging of the most indebted governments are on a scale that makes success politically challenging. This situation demands a new set of approaches. High debt levels have historically placed a drag on growth and raised the risk of financial crises that spark deep economic recessions. A broader range of tools to avoid excessive borrowing and efficiently restructure debt when needed should be considered. A large body of research shows that high debt is associated with slower GDP growth and higher risk of financial crises<sup>114</sup>. Given the magnitude of the 2008 financial crisis, it is a surprise, then, that no major economies and only five developing economies have reduced the ratio of debt to GDP in the real economy. In contrast, 14 countries have increased their total debt-to-GDP by more than 50%. Some of the growth in global debt is good and even desirable. To some extent, rising debt ratios reflect a healthy financial system deepening. More concerning is the continuing rise of debt levels in advanced economies. Despite the tightening of lending standards, which obviously kills aggregate demand for lending, household debt has only declined significantly in the US, Ireland, the UK, Spain and of course Germany. Lending to the private sector is also still lagging despite a fast M3 growth.<sup>115</sup> Government debt in advanced economies increased by \$19 trillion between 2007 and Q2/2014. In the depths of the recession, the rise in government spending was a welcome counterbalance to the sharp decline in private-sector demand. But government debt has now reached high levels and is projected to continue to grow. Given current primary fiscal balances, interest rates, inflation, and consensus real GDP growth projections, the government debt-to-GDP ratios will likely continue to rise over the next five years in most of the developed economies. It is unclear how countries will reduce this debt. Attaining and sustaining the necessary dramatic changes in fiscal balances would be challenging. Furthermore, these efforts could be self-defeating, inhibiting the growth that is needed to reduce the leverage. Nor are these economies likely to grow their way out of

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<sup>114</sup> Reinhart et al. (2012)

<sup>115</sup> Dobbs et al. (2015)

high government debt, which was essential to some previous successful deleveraging periods. Many of the world's largest economies are trying to deleverage at the same time and in an environment of limited global growth and low inflation. <sup>116</sup>

The growing debt of the global economy is an unwelcome development seven years after the financial crisis began. It slows recovery, raises the risk of new crises, and it limits the ability to respond to them. While significant deleveraging may prove elusive for many countries, effectively managing the growth of debt, and reducing it where necessary, is a must. There are several ways to Rome and I augment the best practice regulation with strategies for a low growth environment. <sup>117</sup>

- Encourage innovations in mortgage contracts
- Improve processes for private-sector debt resolution
- Use macro prudential tools to dampen credit cycles
- Reduce tax incentives for debt, ensure incentives that support stability, discourage regulatory arbitrage and assure effective regulation
- Consider a broader range of tools for resolving sovereign debt
- Improve data collection and monitoring of debt, assign a “systemic stability regulator”
- Create a healthy mix of bank and non-bank credit intermediaries and harmonize regulatory frameworks across borders
- Promote financial deepening in developing economies
- Establish a framework that coordinates different regulators
- Develop an exit strategy for withdrawing public money and a transition mechanism to a more stable system

It is safe to say that the financial sector has become healthier. At a time when banks remain constrained in their lending capacity, non-bank credit can be an important resource for the economy. Companies all over the world have issued record amounts of corporate bonds since 2008 and while the new Basel rules are restraining the banks ability to lend, the bond markets are liquid and open to help bigger companies. Private placements are the best way for smaller companies to issue bonds, allowing pension funds, insurers, and other institutions to provide credit directly and diversify. <sup>118</sup> It is therefore crucial to offer access to new money, while banks are busy implementing new regulations. When there is, however, enough supply of credit but not enough demand, as might be the case right now, increasing wages and changing expectations are the most important tools.

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<sup>116</sup> Ibid.

<sup>117</sup> Ibid.

<sup>118</sup> Ibid.

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