1.) Introduction

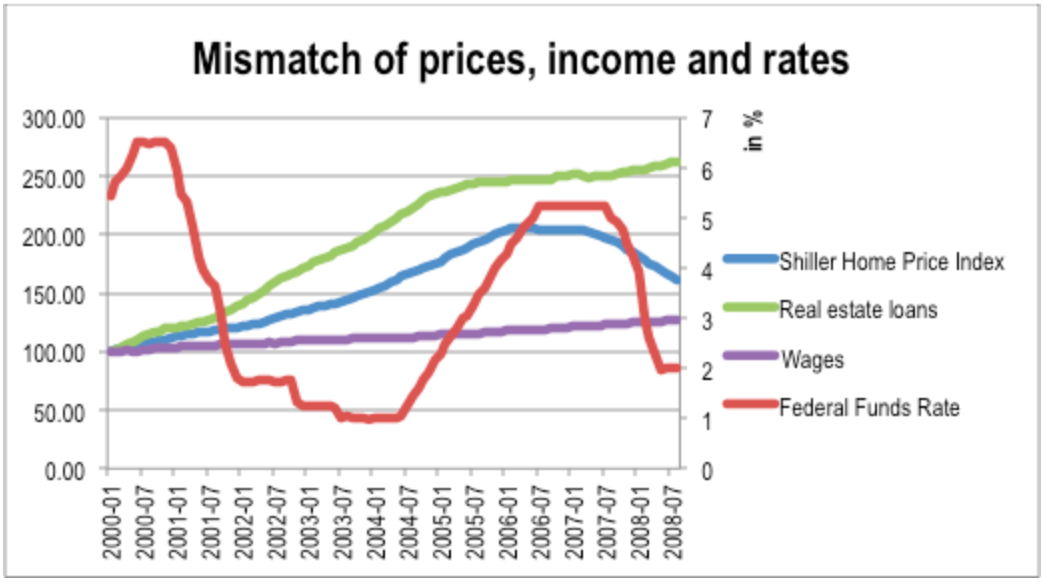
"If you owe the bank $100, that's your problem. If you owe the bank $100 million, that's the bank's problem." (J. Paul Getty)

In his paper, "How the economic machine works" (2013), Dalio compares economic depressions of many different countries in the world. All show the same pattern: High leverage and high economic growth up until a turning point. The economy crashes and subsequently a painful deleveraging begins. The reason for this turning point is due to a mismatch of inflation, debt/income and interest rates.

This mismatch that caused the current financial crisis begins with too low real interest rates, which, in consequence, increases the debt/income levels. Furthermore, it gives low-income people access to credit, especially mortgages. The higher money supply is reinforcing and causes inflation to hike. To avoid inflation to increase further the central bank steps in and sets higher interest rates. The higher interest rates slows credit growth and, in this case, made low income people default on their mortgages, which caused home foreclosures and housing prices to decline.

Figure 1.) below demonstrates the mismatch of interest rates, inflation and debt/income of the US between 2000 and 2008. The Shiller home price index, an index of US residential real estate prices, an index of real estate loans and an index of wages (where all indexes are normalized to 100 in 2000) are referring to the left vertical axis and the federal funds rate to the right vertical axis. Between the beginning of 2000 and mid 2007 housing prices have doubled, real estate loans have increased by 250%, whereas wages have only increased by around 20%. Up until interest rates hit 2.5%, at the beginning of 2005, real estate loans increased rapidly, however, stopped increasing in mid 2005 when interest rates reached 3.5%; housing prices continued to climb up until March 2006. 2.5% seems to be an important barrier, because any rate below 2.5% was below the CPI inflation during that time. Although housing prices started to decline slowly, interest rates were kept constant until July 2007. In late 2007, interest rates were declined rapidly; this, however, could not help to stabilize housing prices.

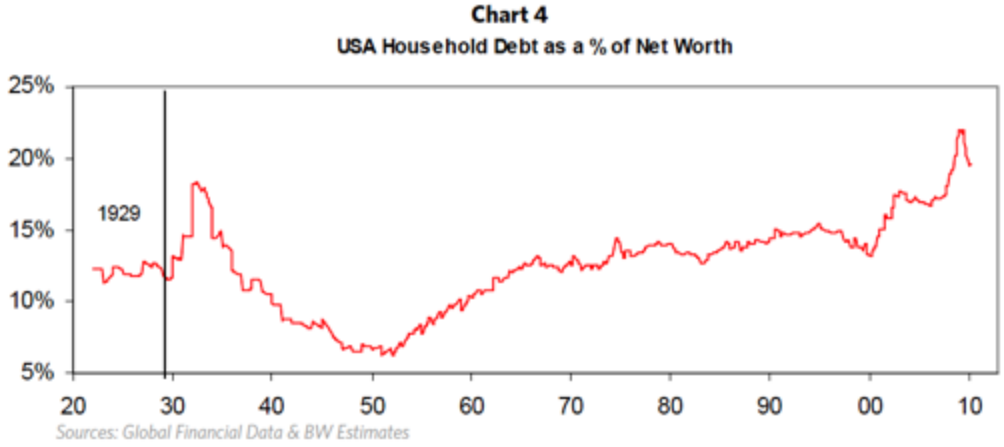
Figure 1.)



Source: Federal Reserve

In economic theory, lowering interest rates should increase the money demand and eventually lead to higher money supply. This leads to higher aggregate demand for goods and services, such that, on the other hand, the aggregate supply of goods and services increases. At the same time, inflation works against rising aggregate demand and dampens its rise.

Ray Dalio (2013) analyzes that economic recessions occur due to a misbalance in the debt/income ratio and the following deleveraging causes an economic recession as depicted in the below graphic.

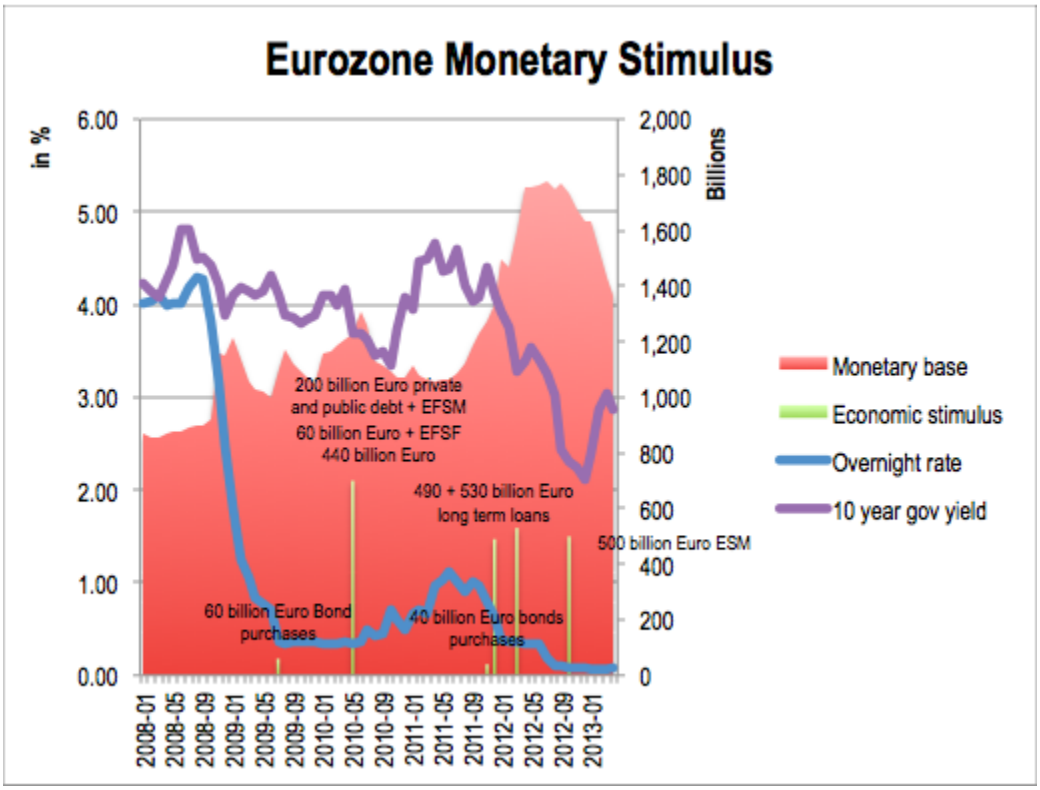


The spikes in the debt/income ratio, both shortly after 1929 and 2007, are due to falling income from declining stock and real estate prices. Nonetheless, the cause of the economic crises that evolved after 1929 and 2007 do not seem to be due to a high debt/income ratio, since the debt/income ratio in 1929

was the same as between 1965 and 2000. The reason is rather that people invested their savings in risky assets like stocks and, in addition, borrowed even more money due to low interest rates to invest in stocks and houses, which caused these asset prices to increase further. Since asset prices were increasing, income was increasing as well leaving the debt/income ratio stable. Interest rates play a crucial role in this sense, since higher interest rates dampened borrowing and therefore less money was invested in stocks and houses (beginning with low income mortgage takers, who were defaulting on their debt).

The purpose of this paper is to find out which monetary policy has been the most successful in stabilizing the economy and creating economic growth. The aim is to find out *how* monetary policy can reverse declining aggregate demand for goods and services. John Maynard Keynes (1936) suggested first in his book "General theory of employment, interest rates and employment" that fiscal and monetary policies are the key drivers to stop aggregate demand for goods and services declining. In section 2, monetary stimulus of the five most developed regions in the world, the USA, Eurozone, Japan, United Kingdom and Switzerland, will be compared in the period between the beginning of 2008 and April 2013. This analysis should point out which monetary policy and fiscal stimulus have been the largest in size and the most efficient and consistent in its actions. Section 3 will then further go into detail by revisiting money supply and bringing it into context under financial regulatory pressure. This analysis will then give insight into why certain economic regions perform better over others. A comparison of the economic development in the Eurozone and the USA, in section 4, will demonstrate that monetary policy plays a key role in the performance of an economic region as a whole. As a result not only the size of monetary expansion is important, but, in particular, the consistency in setting interest rates and a stable outlook is key in stimulating credit markets and guiding investors' expectations, such that aggregate demand can be activated over the medium term. Finally, section 5 will provide a conclusion to complete on what is the most successful monetary policy to reverse declining aggregate demand.

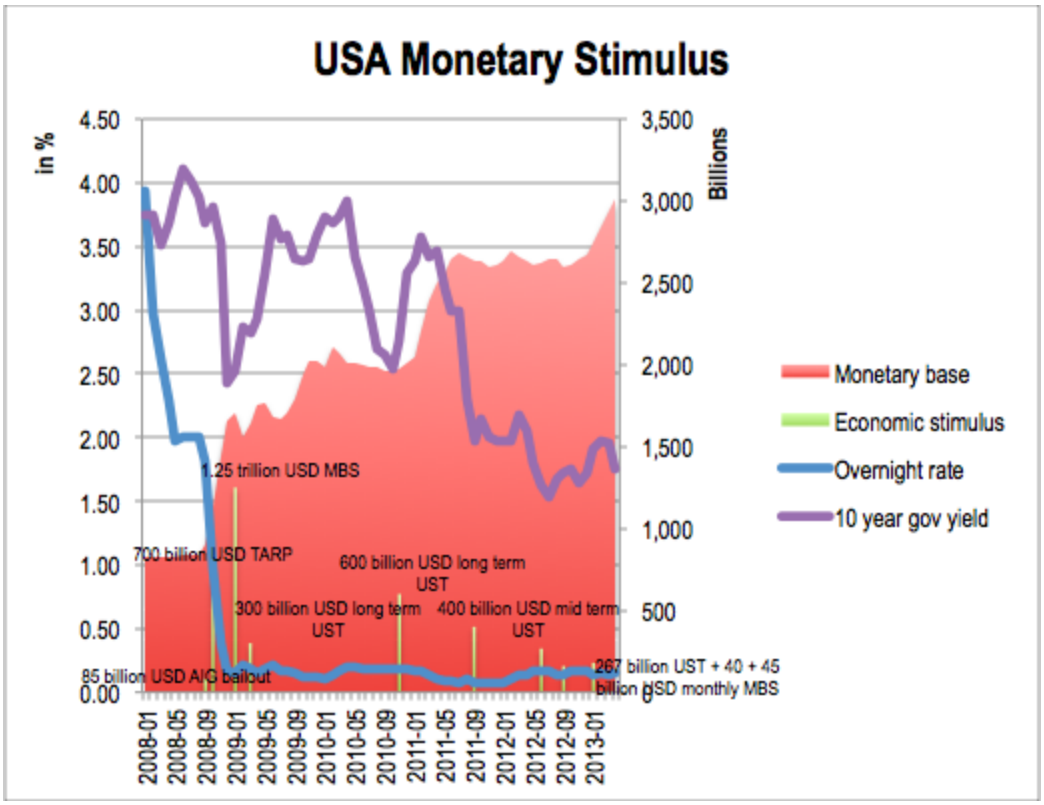
2.) Monetary Stimulus:



Source: European Central Bank, European Commission, EFSM, EFSF, ESM

The European Central Bank has reacted by far the most conservatively to the current economic crisis. At the end of 2008, the overnight rate was at 250 basis points (bps), whereas in the USA, Japan, UK and Switzerland the overnight rate was much lower at 16 bps, 10 bps, 165 bps and 1 bp respectively. At the same time, the monetary base grew among the slowest in the Eurozone and involved sudden falls. The first active participation of the ECB in the bond market was also the latest in comparison to the other regions. In July 2009, the ECB announced to purchase up to 60 billion Euros in covered bonds until June 2010. In May 2010 when government bond yields started to diverge among Eurozone countries, the ECB announced a 200 billion Euro private and public debt purchasing programme – the Securities Market Programme. The public debt purchases were only aimed at high yield debtors, namely Greece, Portugal, Ireland and partly Spain and Italy. Fiscal policy has so far only been active within each country of the member states, each with its own economic stimulus programme. In May 2010, the first time European governments worked together and established two government agencies, the European Financial Stability Facility (EFSF) with guarantees of 780 billion Euros and lending capacities of 440 billion Euros and the European Financial Stability Mechanism (EFSM) with lending capacities of 60 billion Euros, used to support the economically struggling periphery states. 10-year government yields in the Eurozone fell from 416 bps

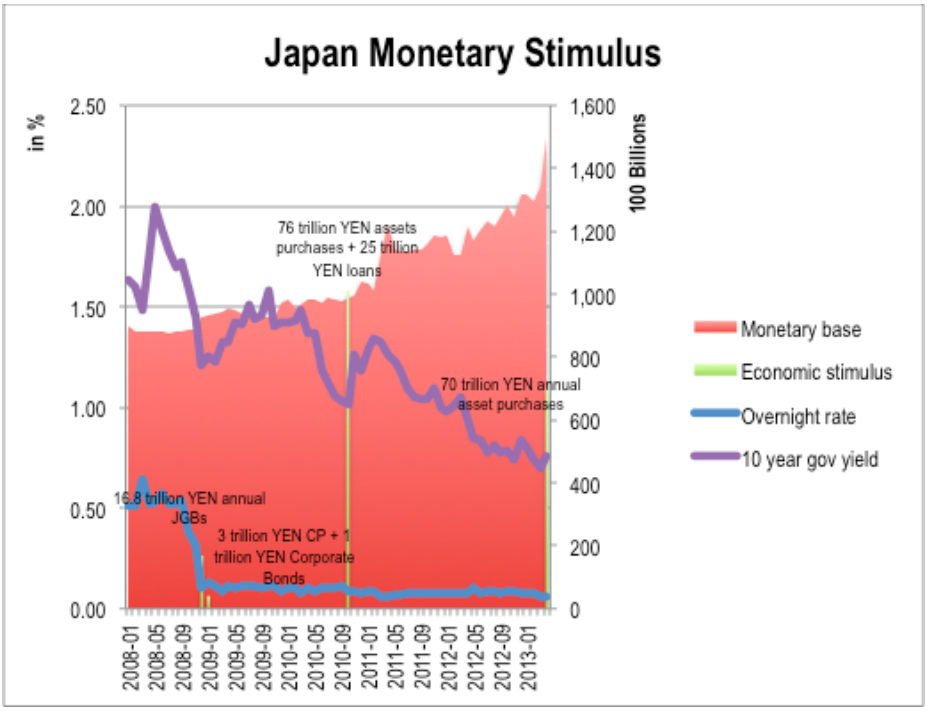
in April 2010 to 334 bps in October 2010. However, simultaneously the overnight rate was increased due to signs of economic improvements. In other regions, the overnight rate continued to stay constant or decreased even further. In November 2010, the ECB acted again by purchasing 40 billions Euros of covered bonds until October 2012. In December 2011, the ECB became the first time more active than the FED in terms of monetary base expansion. The ECB lent out 490 billion Euros of loans with 36 months to maturity to support the banking sector and another 530 billion Euros in March 2012. This is a monetary base expansion of 27%, whereas the FED kept its monetary base stable during this period of time. This money was urgently needed to allow banks to increase their capital ratios in order to match BASEL III requirements. Last but not least, in October 2012, the Eurozone governments agreed to establish the European Stability Mechanism (ESM) with guarantees of 700 billion Euros and lending capacities of 500 billion Euros. Only 109 billion Euros out of 500 billion Euros of the ESM were being used to support the struggling banking system of Spain (100 billion Euro) and Cyprus (9 billion Euro) so far. Similarly, only 192 billion out of 440 billion Euros were being used of the EFSF by Portugal, Ireland and mainly Greece. Nonetheless, by April 2013 10-year government yields were at 300 bps, and hence 100 bps lower than at the beginning of 2008. On the other hand, 10-year government yields in the USA were at 200 bps, and hence, around 100 bps lower than in the Eurozone in April 2013. However, the trend of overnight rates does affect government yields and seems to explain the increasing 10-year yields between the end of 2010 and mid 2011.



Source: Federal Reserve Bank, US Treasury

The USA has been by far the most active and consistent in its monetary policy. The Federal Reserve (FED) pumped a total of 3,242 billion USD into the economy by buying long- and medium-term US treasuries (UST) and Mortgage backed securities (MBS) between 2008 and April 2013. Whereas the Eurozone increased its monetary base/GDP from 9.5% in 2008 to 14.5% in April 2013, the USA increased its monetary base/GDP much more from 5.8% to 20.25% in the same time period. The speed of the adjustment of the overnight rate was also much faster, such that by the end of 2008 the overnight rate was at 16 bps in comparison to 394 bps at the beginning of 2008, whereas the overnight rate in the Eurozone fell only 150bps to 250bps in the same period. Additionally, the FED made very clear announcements, by naming the monthly amount to invest in the above-mentioned assets. When the ECB raised interest rates between mid 2010 and mid 2011, the FED actually decreased interest rates from 19 bps to 9 bps. When government bond yields began to climb in late 2010, the FED acted again faster than the ECB by buying 600 billion USD of long-term UST. Interestingly, 10-year UST fell from 410 bps in June 2008 to 282 bps in March 2009 and increased thereafter to 372 bps in June 2009. Similar movements in 10-year UST can be seen between April 2010 with 387bps and October 2010 with 254 bps and an increase thereafter to 358 bps in February 2011. This suggests that investors speculated that the FED would buy medium term UST both in March 2009 and November 2010 when the FED decided to buy long-term UST instead. With the so-called 'Operation Twist' in September 2011, when the FED sold 3 years or less maturity UST and bought 6 – 30 years maturity UST, 10-year government yields decreased to below 200 bps and stayed between 150 bps and 200 bps. This made fiscal policy less costly; such that the government could increase spending, yet pay lower interest on the debt. Different from the Eurozone, the US only established one government agency at the beginning of the crisis: 'TARP". Similarly, again only 475 billion USD were used from the 700 billion USD provided.

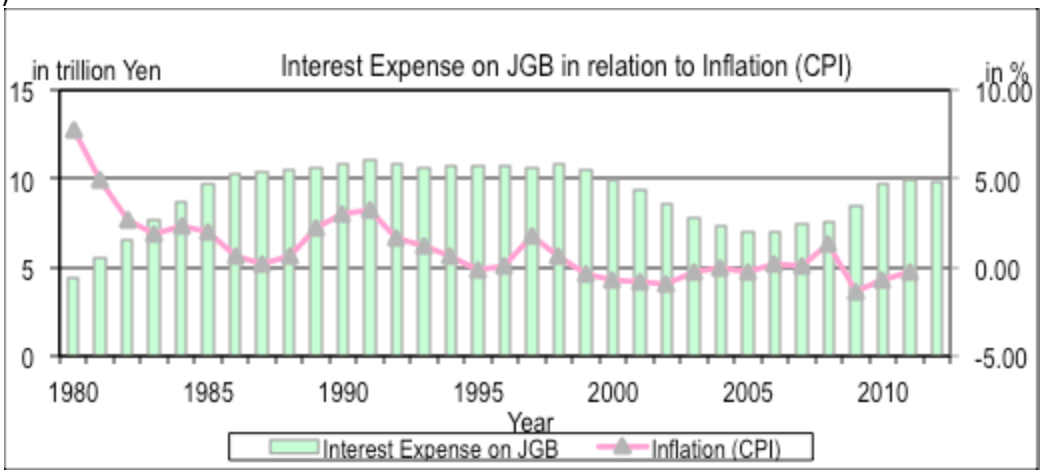
The reason for the reluctant use of governmental agency funds by companies and governments are the tough conditions that are being stringed to those. Companies face reputational risks and high ownership by the government when taking funds of the government agencies. The governments standing behind these agencies would try to cut costs and lower risks since the funds are backed by taxpayers' money and are highly criticized by the public.



Source: Bank of Japan

The situation in Japan looks very different. Japan has experienced sharp declines in asset prices already in the early 1990s and introduced quantitative easing (when interest rates cannot be lowered further and the Central Bank additionally buys long-term government bonds) as early as 2001 (until 2006) to revert the continuous decrease of stock, housing and consumer prices. Figure 4.) depicts that inflation stopped decreasing after 2001 and, moreover, interest expenses on government bonds decreased by 25% from 9.5 trillion Yen in 2001 to 7 trillion Yen in 2005.

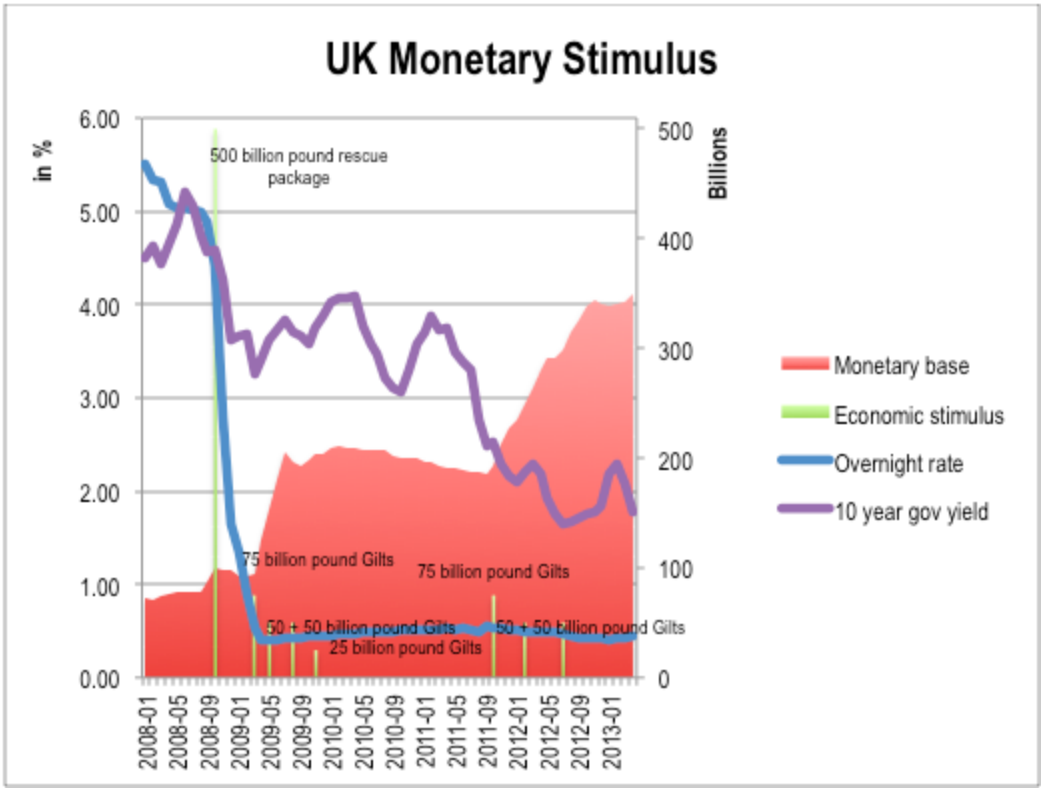
Figure 4.)



Source: Bank of Japan

For this reason, overnight rates in Japan were more than 350 bps lower than in the US at the beginning of 2008. With the collapse of Lehman Brothers in September 2008, the Bank of Japan (BOJ) decreased the overnight rate to 10 bps by the end of the year, which was 6 bps lower than in the USA, but a less bold move considering the overnight rate was already at 50 bps at the beginning of 2008. Similarly, 10-year government yields were with 160 bps around 200 bps lower than in the USA at the beginning of 2008. The annual purchases of Japanese Government Bonds (JGBs) increased slightly from 14.4 trillion Yen to 16.8 trillion Yen. In addition, the BOJ started buying 3 trillion Yen of Commercial Papers (CPs) and 1 trillion Yen of corporate bonds at the end of 2008. In October 2010, the BOJ began an aggressive monetary policy by announcing to purchase 76 trillion Yen of assets and giving out a total of 25 trillion Yen loans to kick-start the economy. This would mean an increase of the monetary base/GDP of 20%. The credibility of this announcement is rather low though, considering that the monetary base grew only by around 23 trillion Yen between October 2010 and April 2011, and until the end of 2012 stayed constant. The overnight rate decreased to 6 bps after the announcement, and ranged between 6 bps and 10 bps from November 2010 onwards. 10-year government yields declined to around 80 bps by April 2013. This has helped, especially, to lower interest rates on government bonds once again. Next to high monetary easing, the Japanese government also spent 130 trillion Yen and 24.4 trillion Yen in 2008 and 2009 respectively to support the economy as Iwaisako (2010) states in his paper. The most recent 70 trillion annual asset purchases by the BOJ in April 2013 were partly aimed at devaluing the Yen and were part of the new economic stimulus programme known as “Abenomics” that promises the combination of accommodative monetary policy, high fiscal spending and deregulation over the next two years.

Ugai (2007) concludes in his paper “Effects of Quantitative Easing Policy: A Survey of Empirical Analyses” that the effect of monetary easing on inflation and asset prices has been rather limited in Japan during the early 2000s, however, the effect on lowering government yields has been very stimulating. Especially, quantitative easing has been an important driver in the expected future path of short-term interest rate.

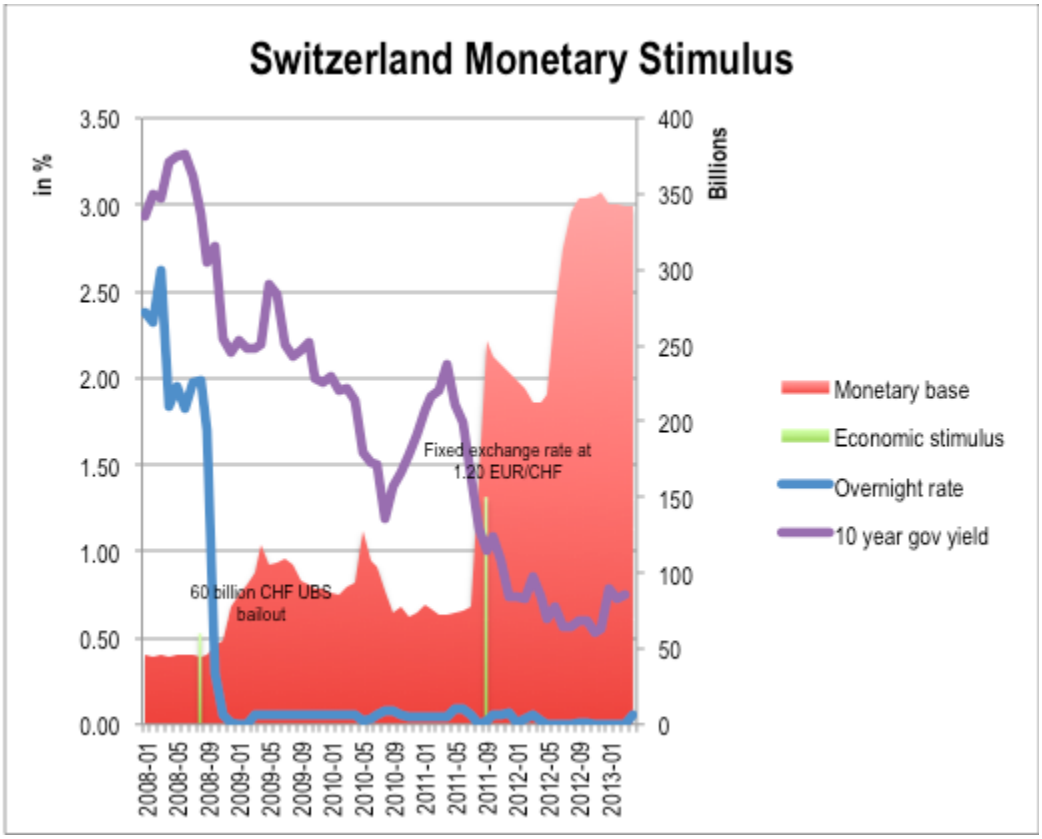


Source: Bank of England

At the beginning of 2008, overnight interest rates in the United Kingdom (UK) were the highest among the five developed regions with 550 bps. At the end of 2008 rates were decreased dramatically to 165 bps, lower than in the Eurozone, 249 bps, yet higher than in the US, Japan and Switzerland, 16 bps, 10bps and 1bp respectively. Until mid 2009 the overnight rate decreased further down to 40 bps. At the end of 2009 and until April 2013, however, the overnight rate slightly increased and ranged between 41 bps and 55 bps, higher than in any of the other four regions. Similar to the US, the BOE also bought government bonds in several steps amounting to total purchases of 300 billion pound between the end of 2008 and 2009 and the end of 2011 and 2012. There has also been one large rescue package in October 2008 with a size of 500 billion pound in loans to troubled banks, yet much larger compared to the US, Eurozone or Japan, since the total size of the UK economy is only 1,562 billion pound as of 2012, i.e. 15% of the GDP of the USA. By the end of 2009, only 316 billion pound of this rescue package were used. Similar to Japan, the BOE also bought private sector debt, 2.25 billion pound commercial papers, which was more than one third of the total market, as well as a single digit billion pound amount of corporate bonds.

The BOE acted similar to the FED in the consistency and frequency of its bonds purchases between 2008 and April 2013. The size of the bond purchases relative to GDP in both countries was exactly the same at 20%. Interestingly, 10-year government bond yields in the UK and the USA were at 450 bps and 380 bps

respectively at the beginning of 2008. By April 2013, however, 10-year yields were in both regions slightly below 200 bps, although the overnight rate in the UK was with 44 bps around 30 bps higher than in the US. At the same time, and especially during the second half of 2008, the Sterling lost up to 30% of its value against the USD.

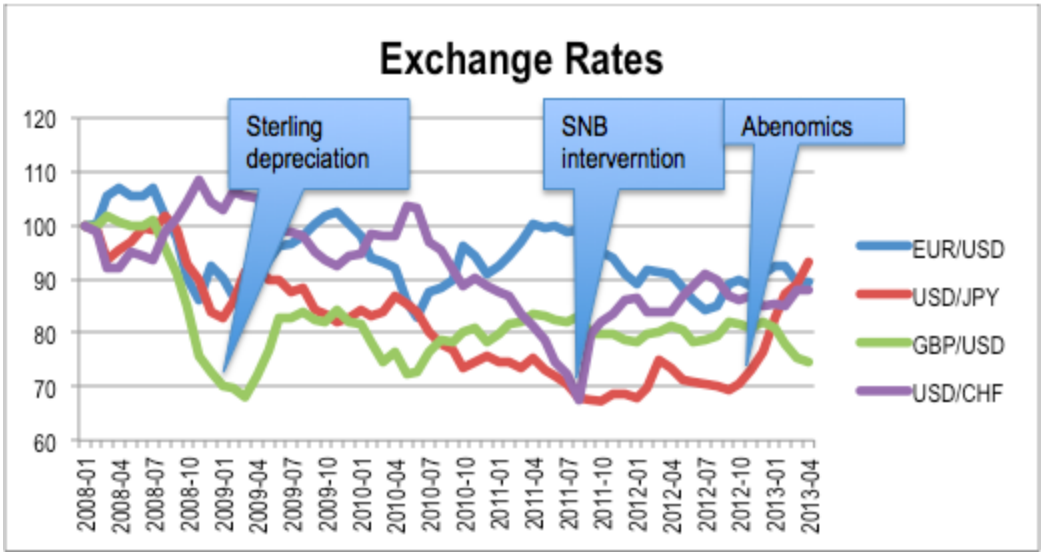


Source: Swiss National Bank

Switzerland is home to two of the largest banks in the world, UBS and Credit Suisse, yet the Swiss GDP is only around 4% of the US GDP size measured in USD in 2012. The Swiss National Bank (SNB) decreased the overnight rate dramatically to only 1 bp at the end of 2008 – faster and lower than any other central bank. On the other hand, the SNB only bought assets worth 60 billion CHF from UBS and did not buy any Swiss Federal Bonds (SFBs). However, at the end of 2012 the monetary base has accounted for 58% of Swiss GDP in comparison to 18.75% of GDP in the US. The reason for this large increase in the monetary base is the appreciation of the Swiss Franc. Switzerland, different to the other regions and, in particular, different to other peripheral Eurozone countries, managed to decrease its debt/GDP between 2008 and 2013. Unemployment dropped after 2009 and ranged between 3.5% and 4.5% thereafter. This increased the money inflow into Switzerland, made the Swiss Franc a safe haven currency, increased its value and, in effect, threatened the Swiss export industry. In turn, the SNB decided to keep the exchange rate fixed

above 1.20 EUR/CHF by buying foreign bonds with newly printed Swiss Francs (Figure 5.). The lower debt/GDP ratio made SFBs the safest assets in the world and by April 2013 yields on 10-year government bonds were at 61 bps compared to 176 bps in the US.

Figure 5.)



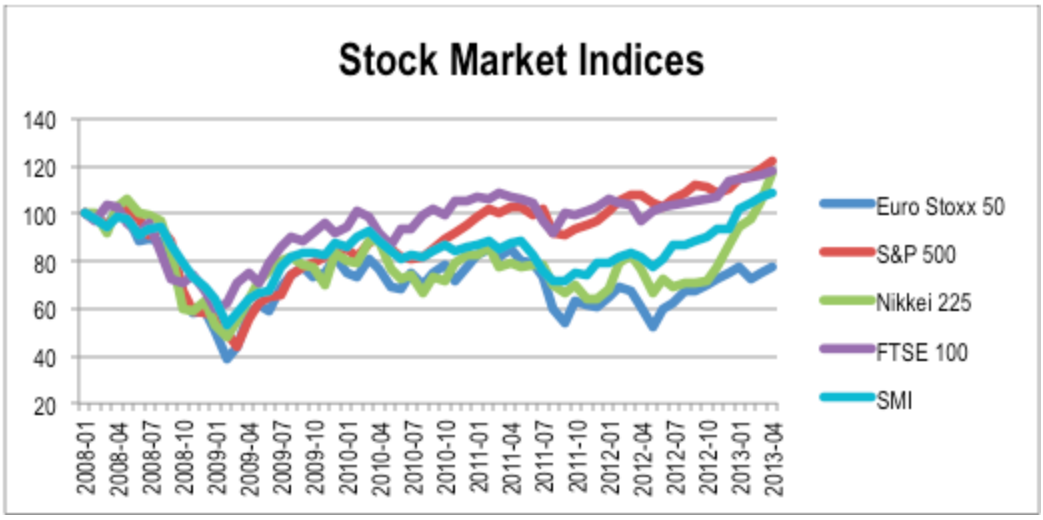
Source: Yahoo Finance

When comparing the monetary bases of all five regions between the beginning of 2008 and April 2013, the following ranking according to monetary base changes can be found:

1.) Switzerland: 636% increase to 341 billion CHF = 58% of GDP
2.) United Kingdom: 378% increase to 350 billion GBP = 22.7% of GDP
3.) United States: 265% increase to 3,242 billion USD = 20.25% of GDP
4.) Japan: 66% increase to 150 trillion Yen = 30.1% of GDP
5.) Eurozone: 56% increase to 1,370 billion Euro = 14.5% of GDP

Important to note is that not only the size of bond purchases is relevant when considering government bond yields, but also the timing of the bond purchases as well as the speed of adjustment of the overnight rate. The bond purchases in general do seem to have helped in the recovery of stock prices and the confidence in functioning financial markets as at around the same time as the bond purchases, the major stock indices began to recover (Figure 6.).

Figure 6.)



Source: Yahoo Finance

Nonetheless, how important is monetary easing really? When a central bank buys safe assets from the banking sector, how will the economy as a whole be affected? Where is all the newly printed money flowing?

In the following section, the model of money supply will be revisited and it will be investigated how the money supply is affected by financial regulation.

3.) Money Supply and Regulation:

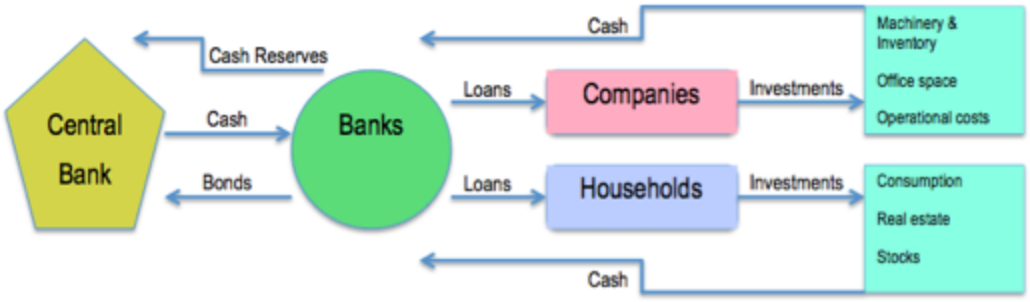
The monetary base (MB) is defined as currency in circulation (CiC), required reserves (RR), and excess reserves (ER) with the Central Bank.

$$MB = CiC + RR + ER$$

Currency in circulation and the required reserve ratio are controlled by the Central Bank. However, banks decide the amount of excess reserves. Instead of holding excess reserves, banks can also give loans to companies and households. With these loans companies can buy machinery & inventory, office space or pay for operational costs, whereas, households invest them in real estate, shares of companies or use it for consumption. In this way, money gets transferred into another bank account, such that the other bank has money available to lend out as well (Figure 7.)). Therefore, money can only be supplied when banks

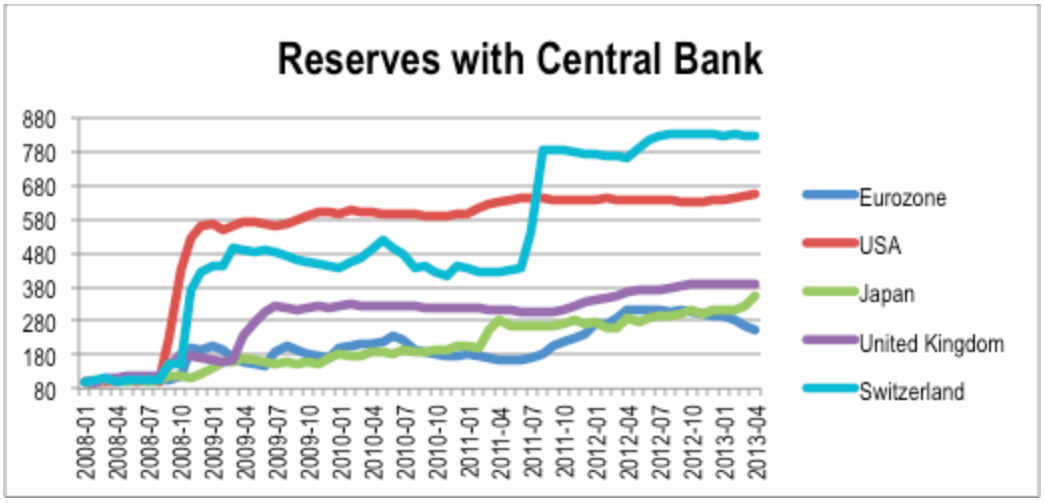
decide to give loans to households and companies and not by pledging their cash reserves back at the central bank.

Figure 7.)



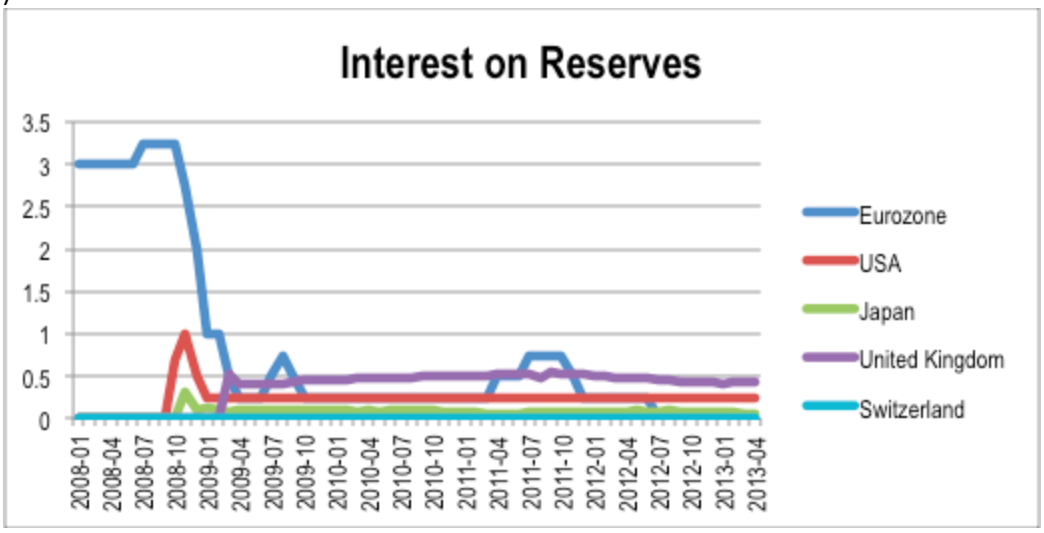
As shown in section 2, the monetary bases of all five regions that were being compared grew extensively over the period between 2008 and April 2013. The reasons for this large increase are excess reserves hold by banks with the central bank. (Figure 8.)). Correlations between the monetary base and excess reserves with the central bank ranged between 98% and 100% in the five regions during this period, compared to no significant correlation between 2000 and 2007 (except Japan due to its quantitative easing between 2001 and 2006). One reason of the increase in excess reserves with the central bank is the introduction of interest being paid on reserves with the central bank (Figure 9.)).

Figure 8.)



Source: ECB, FED, BOJ, BOE, SNB

Figure 9.)



Source: ECB, FED, BOJ, BOE, SNB

Whereas the ECB has always been paying interest on its reserves, the FED introduced this system in October 2008 as another monetary policy tool to control money supply. The function is mainly to limit excess loans to corporations as a result of the large money supply in response to the disfunctioning interbank lending market. Japan followed shortly after and the UK introduced the same principle in March 2009. In the fall of 2008 the ECB decided to keep the interest paid on reserves close to the EONIA rate, which meant the elimination of the spread between the interest paid on reserves and the EONIA. Japan and the UK even equalized interest paid on reserves with their respective main riskless interest rate since the introduction of this new monetary tool. The fact that Switzerland has not introduced any interest paid on reserves, but still having the largest increase in excess reserves suggests that there are other reasons for the holdings of excess reserves with the central bank.

Another reason for the high accumulation of cash might be the implications of Basel III, which aim to make three major changes to bank regulation (simplified from the BASEL III summary table by the Basel Committee on Banking Supervision reform):

1.) Risk weighted assets require 4.5% common equity reserves up from 2.5% from Basel II, plus 2.5% capital conservation buffer, plus 0 – 2.5% countercyclical buffer ~ 7 – 9.5% capital reserves

2.) A non-risk based leverage ratio that includes off-balance sheet exposures, which aims to limit vast balance sheet expansions of banks

3.) Liquidity coverage ratio: Requires banks to have sufficient high quality assets during stress tests of 30 days specified by the regulators

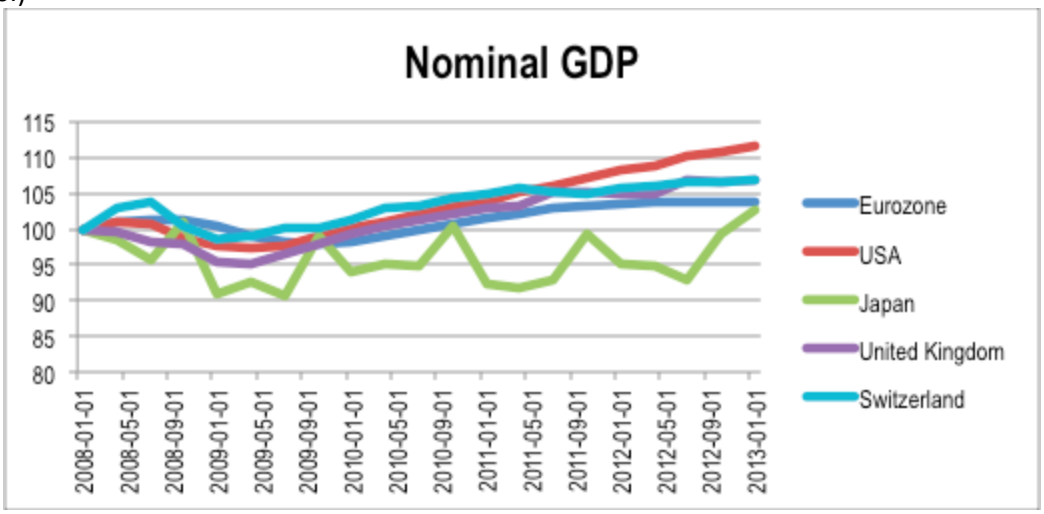
After all, the impact on Basel III and the new monetary policy tools still seem difficult to anticipate. Basel III might have put downward pressure on interbank lending and balance sheets of banks. The new capital requirements are already measurable and can explain the impact Basel III has on balance sheets of banks and does explain at least some proportion of the large reserves hold with central banks worldwide. Moreover, lending capacities of banks will be affected significantly by these new regulations and changes in monetary policy have larger impacts on banks than before until the requirements are met. On the other hand, there seem to be enough cash in the market to comply with Basel III. One indication is that of the 1 trillion Euros long-term loans supplied by the ECB, more than half of these loans have been repaid one year before maturity.

The sensitivity to changes in monetary policy will be analyzed in the following, section 4, in which economic divergences between the USA and the Eurozone are discovered.

4.) Economic divergences

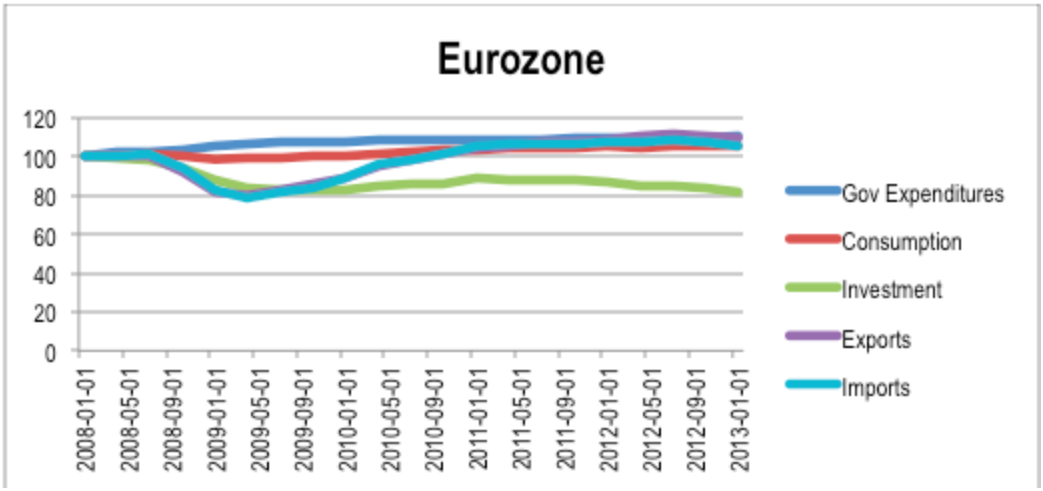
Considering the amount of money being supplied and the low interest rate environment, money demand should have increased and investments flourished. The nominal GDP figure of the five different regions demonstrates that the USA outperformed and the Eurozone underperformed other regions, ignoring Japan (Figure 10.)). When comparing the economic indicators of the GDP between the USA and the Eurozone, it becomes clear that investments play the crucial role in the direction of GDP among the two regions between 2008 and April 2013(Figure 11.) and 12.)).

Figure 10.)



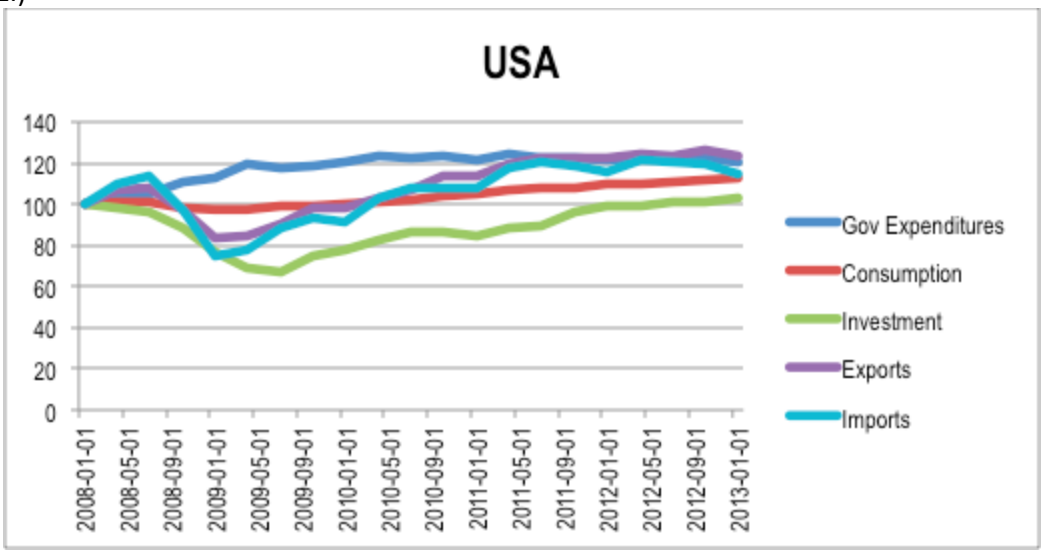
Source: ECB, FED, BOJ, BOE, SNB

Figure 11.)



Source: ECB (nominal data)

Figure 12.)

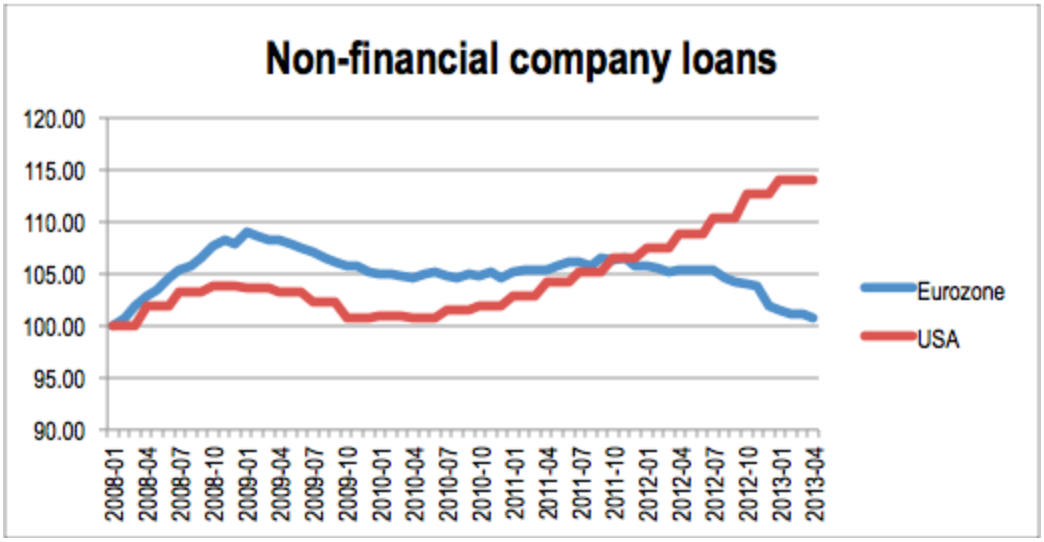


Source: FED (nominal data)

The diverging investment indicator of both regions starts at the beginning of 2011, in line with the interest rate hike of the ECB in April 2011 to 125 bps and in July 2011 to 150 bps when other central banks, such as the FED, kept interest rates low.

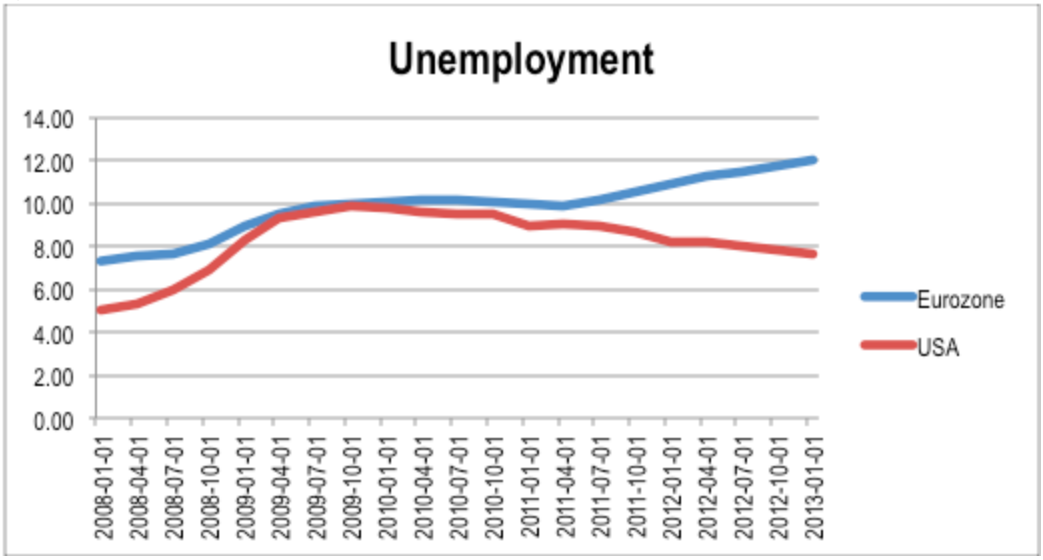
Not only investments have diverged from the beginning of 2011, but also non-financial company loans (Figure 13.)) and unemployment (Figure 14.)).

Figure 13.)



Source: ECB, FED

Figure 14.)



Source: ECB, FED

According to the bank lending survey of the ECB credit standards tightened in April 2011. This credit tightening continued in the bank lending survey of July 2011, increased further in October 2011 and peaked in the fourth quarter 2011, in line with the rate hike in April 2011 and July 2011. Credit tightening continued in 2012 and 2013. The reason for the credit tightening is two-fold: Margin on risky loans increased and demand for loans declined. The latter demonstrates to be the stronger reason for the continuous decline in credit tightening since margins only increased in 2011 and the beginning of 2012 whereas credit demand has fallen continuously. When the ECB decided to cut interest rates again in

December 2011 and throughout 2012 and 2013, credit demand should have gone up again, however, quite the opposite occurred and credit demand further deteriorated.

5.) Conclusions

Trying to find out the reason why an economic performance of a region is lower during a certain period of time compared to another period of time is a complex goal, since there is not a single answer. This paper focused only on money supply and how monetary policy can stimulate the economy positively. Even though this approach is narrowed down, during the process of the analysis the limits of a precise conclusion on what the best monetary policy in response to a financial crisis and how aggregate demand can be vitalized were breached frequently. This gave reason to make this analysis rather descriptive than conclusive, since many correlations between different economic indicators and activities exist; yet unexplainable discrepancies over different periods of time occur. In fact, there is not a single correlation that proves to be stable over a long period of time and different economic activities have diverse impacts on each other over variant frequencies of time. An economic analysis seems to be similar to beating financial markets over the long term. You may succeed for a certain period of time, but over the long term most economic models and laws get revised over time due to the increasing complexity. Especially, the comparison between the USA and the Eurozone after 2011 going forward raised questions on why the economic performance of the Eurozone continues to deteriorate. What Japan called the lost decade in the 1990s seem to repeat itself in nowadays Eurozone.

The comparison of monetary policy between the Eurozone, USA, Japan, UK and Switzerland has one similarity: Interest rate cuts. Four years after the bankruptcy of Lehman Brothers, interest rates among all five economic regions are equal or close to zero. With the SNB, the FED and the BOJ lowering the interest rate at the fastest pace, the BOE and the ECB acted slower in response to rate cuts. The FED, BOE and BOJ began their asset purchase programmes at around the same time in the beginning of 2009. The asset purchase programmes do seem to have given a positive response to the market and investors, as stock prices began to recover at around the same time. The speed of the cut in interest rates was crucial as the interbank lending market froze and cheap funding was of high importance. The Eurozone in particular lowered the interest rate at the slowest pace and also did not start an asset purchase programme until mid 2009, around three months after the other central banks except the SNB. The search for safety began after stock prices have recovered to pre-crisis heights in 2011. This has led to capital inflows into Japan and, in particular, Switzerland. The appreciation of the Swiss Franc has been limited through foreign bond purchases and active participation in currency markets by the SNB; yet this led to a massive expansion in the monetary base and reached 58% of GDP in April 2013. The war between central banks, as it was cited

recently, is happening, since the central bank that acts the fastest in its monetary policy benefits its economy the most.

The money supply and regulatory analysis gives insight onto what the money that is being supplied is used. The large increases in reserves with the central bank are partly due to the capital requirements of Basel III. However, the fact that Euro 500 million of the Euro 1 trillion has been repaid one year in advance of the maturity gives indication that enough cash is in the market to comply with Basel III. In addition, the interest paid on reserves with the central bank also do not explain the large increase in reserves, since the SNB, the central bank with the largest reserves hold, does not pay any interest on its sight deposits. The new regulatory requirements do increase the sensitivity to interest rates and other monetary policy changes. Since a capital increase from 2.5% to up to 9.5% takes time to implement, banks need to rely on stable monetary policy to adapt smoothly to these changes.

This key interest rate change by the ECB in April and July 2011 is further analyzed in the last section of this paper, a comparison of the economic development of the Eurozone and the USA. In this section the economic divergence between the Eurozone and the USA demonstrates to be caused by changes in the key interest rates in the Eurozone. This might be a very strong conclusion, but it does provide some facts. Since the key interest rate in the Eurozone was increased twice, in April 2011 and July 2011, credit dynamics have stalled. The sovereign debt crisis began during the same time, but more importantly investments and loans to non-financial corporations began to slow down significantly and unemployment started to rise, whereas in the USA the opposite happened. This observation is key to further studies on how to deal with a financial crisis that is far more reaching than initially thought. The obscure thing is that these economic indicators further deteriorated even though the ECB lowered interest rates continuously since the end of 2011 until now. Most importantly, loan demand has continued to decrease, which could lead to similar outcomes that Japan experienced after its asset and real estate bubble burst in 1989/1991.

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