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**Impact of Global Financial Crisis on United States GDP**

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# **Introduction**

This is a report based on the analysis of the data during the years 2007 – 2010 and provides an insight into the US market during that time, the lessons that we learnt during the global financial crisis of 2008. The Financial crisis occurred due to the housing bubble that was created in the US economy because of the banks lending to the people without properly checking for their creditworthiness and credit rating agencies rating the securities improperly without completing all the due diligence backed by these loans higher. Further, in this analysis we are looking at the scenarios that occurred before and after the crisis as well as during the crisis.

## **GDP**

Gross Domestic Product (GDP) is the market value of final goods and services produced in a country during a year. (*Blankenburg and Palma, 2009).* GDP is the generally used measure of a country’s economic activity. During the Stipulated time, the US GDP contracted sharply in the later parts of 2008 and almost the entire year 2009. This crisis had a huge impact on the economy, leading to decline in consumer spending, investments, and international trade. Us GDP took a slump due to this crisis and took another 11 Quarters to regain its pre-crisis figures. The 2007-08 financial shocks significantly impacted the gap between current output and pre-crisis trends, with estimates suggesting the economy is unlikely to recover. This highlights the importance of preventing or containing future financial crises. (*Barnichon, Matthes and Ziegenbein, 2018*)

*Figure 1: US GDP Index Monthly 01.01.2007 to 31.12.2010*

A graph with lines and dots

Description automatically generated

## **S&P500**

Standard and Poor’s 500 is a US stock market index tracking top 500 stocks listed on the exchange. (*Lynch and Mendenhall , 1997)*It is calculated by adding all the 500 top performing stocks in the index based on different weights. It is one of the equity indices that is followed the most worldwide. In the time frame of our analysis the index hits a high around Q3 2007 and then takes a huge hit due to the financial crisis and hit a bottom in Q1 2009 and later recovers gradually over time. Financial markets are crucial for a functioning economy, facilitating efficient resource use and liquidity transformation. They encourage early depositing, resulting in long-term returns on illiquid deposits. The "Great Depressions of the Twentieth" led to production declines, but other studies show similarity with financial crises in the 21st century, including recessions and economic downturns. (*Kolte et al., 2021*)

Figure 2: S&P 500 Daily 01.01.2007 to 31.12.2010

A graph with lines and dots

Description automatically generated

## **US Bond Yield**

A bond yield is the rate of return on a bond. (*Bandholz, Clostermann and Seitz, 2009*)It is usually calculated by Annual Interest Payment divided by the face value of the bond. (*Bandholz, Clostermann and Seitz, 2009*) The bond yield are usually affected by inflation, interest rate, government debt and the economic growth of the country. As we see in the graph below, US bond yields around 2007 were low and so you could say that the demand for the bonds were very high indicating that there was low confidence in the economy before the financial crisis. The Federal Reserve's September 2007 lowering of the federal funds rate could have led to higher interest rates on default-free Treasury securities and wider credit spreads due to a weaker economy. This would have resulted in higher interest rates and a decline in the household and firm spending. Government intervention helped prevent a deeper recession and depression. (*Mishkin, 2011*)

Figure 3: US 10 Year Treasury Bond Yield 01.01.2007 to 31.12.2010

A graph of a person

Description automatically generated with medium confidence

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# **Linear Regression Analysis**

In this analysis we are trying to create a model to analyse the US GDP based on certain macroeconomic factors which could affect the GDP. Therefore, taking GDP as the dependent variable and for the independent variable we are considering S&P500 index and the average of the US government Bond yields, since during our analysis, while we were using a single US bond, we found that it did not have a huge impact on the GDP alone or we could say it was insignificant.

## **Model:**

Dependent Variable (Y): US GDP

Independent variables:

(C1): S&P500

(C2): US Bond Yield average

Adjusted R2: 66.7%

Suggesting that the US GDP can be predicted or calculated using this model and it would correctly calculate it 66.7% of time. We could increase this by taking the data in an even larger time frame.

**Y (US GDP) = 15614.79 + 1.56(C1) – 248.23 (C2)**

## **Interpretation**

This suggests that we will have a US GDP of $15164.79 even if we did not consider the S&P500 index and the average bond yield, furthermore, GDP increases by 1.56 times of S&P500 index, if there is 1 unit change in the S&P500 index considering everything else is kept constant and similarly the US GDP decreases by 248.23 times the average bond yield if the average bond yield reduces by 1 unit and considering everything else is constant. Suggesting there is a inverse relation between these two macroeconomic factors.

## **Conclusion**

Based on the Linear Regression Analysis, we could conclude that the US GDP grows when the S&P500 Index grows, and the US GDP contracts when the US bond yields go down. So we could have anticipated some financial downturn during 2007 as the yields were falling and could have moved our capital into safer assets as to preserve our wealth.

# **Global Impact**

There was a huge and widespread impact of the Global Financial Crisis, affecting most economies and societies. The crisis occurred in United states, but its effects could be seen across the globe and specifically on the global trade. The crisis also led to uncovering a lot of bad practices and loopholes in the financial system and financial institutions. It had a lot of long-term consequences as well such as the increase in income inequality, weakening the trust in financial institutions as the trust was reduced and way more intervention of the governments in the economy and the markets. Later, there were a lot of measures taken to reduce the impact such as bailout of financial systems, quantitative easing, and regulatory reforms, due to which the economies slowly recovered, but the long-term consequences could still be felt.

# **Recommendation on Changes that could be made.**

There were various reforms made for such an incident to not happen in the future. Among there three were targeted the most were we had major reforms

**Financial Regulation**

**Dodd-Frank Wall Street Reform and Consumer Protection Act (2010):** This act was passed to strengthen the consumers, regulating derivatives, and installing oversight mechanisms for the finance industry. *(Pope and Lee, 2012)*

**Basel III Accords:** This is a set of regulations which is used to reduce the risks involved in international banking and was passed by G20 members in November 2010. It requires bank to maintain certain leverage rations and hold certain levels of reserve capital and cash in hand. *(Kou, Peng and Heyde, 2013)*

**Volcker Rule:** This is a Dodd-Frank Act provision that prohibits banks from engaging in proprietary trading for their own account, which was a major factor in the subprime mortgage crisis. *(Bao, O’Hara and Alex) Zhou, 2018)*

**Financial Transparency**

**Credit Rating Agency Reform:** The Financial Crisis exposed a lot of flaws in credit rating agencies where they inflated the ratings to a lot of complex financial instruments, leading to a lot of mispricing of assets. So, Reforms were made for credit rating agencies which made them more transparent and accountable.

**OTC Derivatives and Market Reforms:** The crisis exposed the role of OTC Derivatives such as credit default swaps in the crisis, leading to the crisis. The reforms were made to bring transparency and regulation to OTC derivatives.

**Enhanced Disclosure Requirement:** Publicly traded firms and financial institutions had to enhance disclosures on financial risks, aiding investors and regulators in informed decision-making.

**Global Coordination**

**Financial Stability Board:** Established in 2009, the FSB coordinates global regulatory efforts, fostering financial stability. It crucially identifies and addresses the emerging risks in the worldwide financial system.

**G20 Leadership:** The G20, a key player, shaped the post-crisis reform agenda by serving as a forum for international cooperation and coordinated action.

**Stress Testing Exercises:** Regulatory bodies and financial institutions started regularly stress testing banks and the financial system for resilience against diverse economic shocks and scenarios.

I believe this is not a one-off event as people in the financial industry keep on looking for loopholes and opportunities to exploit there might not be the same crisis but there will still be a crisis in financial institutions in the future. As we move towards different products and different technologies in financial institutions loopholes need to be identified as soon as possible and be remedied so as to avoid facing a crisis.

One such issue that I see these days is due to the banks holding large wholesale books, resulting in the liquidity crisis, when the interest rate goes up as they are not able to sustain their liquidity and as well as the default risk due to large wholesale lending books for which I would like to discuss a solution that would be such that when a company comes to the bank for a huge loan, we can rather that providing the loan from just one bank provide the loan by a collection of banks mitigating the impact on a single bank as well as reducing the human risk and other risks involved as the loan could be reviewed by all the banks together. This will eventually lead to banks performing better and businesses also taking calculated risks.

# **Profits in this scenario**

During this time period of analysis, I could have made profits investing in zero coupon bonds when the bond yields went down substantially and after the crash, I could have moved the money into the equity market in anticipation on the markets rebounding back after some years and we could predict the entry into the bond before the crash because of the data that shows the yields being too low and we could have moved our money from the zero coupon bond to the equity market once the yields started to go up in the bond yields.

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# **Appendix**

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| **Model Summary** | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .843a | .711 | .667 | 136.7455 |
| a. Predictors: (Constant), yeild\_avg, SNP 500 | | | | |
| b. Dependent Variable: Gross Domestic Product (USD, Billions) | | | | |
|  | | | | |

Table 1 Linear Regression Model Summary

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Coefficients** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 15614.790 | 202.233 |  | 77.212 | <.001 |
| SNP 500 | 1.561 | .292 | 1.458 | 5.341 | <.001 |
| yeild\_average | -248.235 | 71.734 | -.945 | -3.460 | .004 |
| a. Dependent Variable: Gross Domestic Product (USD, Billions) | | | | | | |

Table 2 Linear Regression coefficients