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The global financial crisis

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Abstract
A financial crisis is associated with a panic during which investors sell off assets or withdraw money from accounts because the assets value drop, businesses and consumers are unable to pay debts, and financial institutions experience liquidity crunch. When such crisis spread worldwide, it is known as *Global Financial Crisis*.
Since ages there are various reasons why financial markets see a fallout just originating from a single or a group of countries together. But stock markets are driven by just two emotions: greed and fear. This paper attempts to model reasons and impact of the major financial crisis in the history which affected various economies in different ways. To be precise, financial crisis discussed in the report are: The Great Depression (1929-1939), the Black Monday (1987), the Dot Com bubble (1998-2003), the great Global Financial Crisis (GFC) (2007-2009) and the Coronavirus pandemic (2019). Till March 2020, the GFC (2007-09) was the worst meltdown over economic markets. But, impact by recently emerged Coronavirus pandemic is likely to break all records.

Keywords: gross domestic product (GDP), financial markets, recession, dow jones industrial average (DJIA)

1. Introduction
As discussed, greed and fear remain constant factors for every financial crisis globally, there are some factors which are triggered by these emotions which lead to crisis. The general account of each of the abovementioned global crisis is discussed here.

1.1. The Great Depression (1929-1939)
The Great Depression of the late 1920s and early 1930s was triggered by a stock market crash in October 1929 and remains the most tragic economic downturn in recent history. Between 1921 and 1929, the Dow Jones Industrial Average (DJIA) increased six-fold as markets expanded significantly on the back of rapid growth in the bank credit cycle. In August 1929, the Federal Reserve Bank of New York raised interest rates in order to reduce the money supply and tighten prevailing credit conditions. However, the sudden hike in interest rates dampened existing market euphoria and a stock market crash followed two months later on 24October 1929. Early on that day, the Dow Jones dropped 11%, closed at 299.47. On October 28, it fell 13% to 260.64. Over 16 million shares were traded that day, and the market fell another 12% on 29 October. The Dow continued to decline for 3 years in the wake of these three mayhem days.[1]
While economic growth was already slowing, the steep 30 percent drop in US markets on a single week destroyed the confidence of all industry participants, more because of fear. Consumer spending collapsed and investments took a pause. The economy went into a long downward spiral as businesses suffered huge losses and nearly half the banks in the US collapsed in the next 4 years.

1.2. The Black Monday (1987)
"Black Monday" refers to the catastrophic stock market crash that occurred on Monday, October 19, 1987. The crash occurred worldwide, starting in Hong Kong and spreading throughout Asia and Europe before reaching the United States. The DJIA cracked 22 percent on Black Monday. The S&P 500 Index declined over 20 percent. Many systems created a multifold effect, continually accelerating the pace of selling as the market dropped, thus causing it to drop even further, as fear drove the sentiment. Though the 1987 crash was a significantly shorter-lived phenomenon in the markets, it shook for the world immensely.

1.3. The Dot Com bubble (1998-2003)
The dot-com bubble refers to the period between 1995 and 2000 when there was a tremendous rise in the equity valuations of technology stocks of US as well as of other countries. The advent of internet, use of computers and the growth of internet-based companies in the early 90s had set a favourable context for the Information Age. US Federal Reserve Bank also kept the interest rates low, discouraging fixed investments. This led to greed among investors, who named it opportunity. They invested heavily in new technology and internet-based companies with quite poor ground reports. This created a bubble that investments in such companies would fetch seamless profits. But then US Federal reserve bank raised the policy from June 1999, which exposed the bubble and led to bankruptcy of many tech companies, market crashed. Such a fire was fuelled by the September 2001 terrorist attacks as well as the Enron accounting and window dressing scandal.

1.4. The Great Global Financial Crisis (2007-09)
The global financial crisis (GFC) refers to the period of extreme stress in global financial markets and banking systems between mid-2007 and early 2009. The downturn in the US housing market acted as a catalyst for the crisis that spread across to the rest of the world and pushed the world's banking system towards the edge of collapse. The 2008 financial crash had long roots [3]. In September 2008,

Lehman Brothers, world's fourth biggest bank, went bankrupt. The impact of such crisis was so huge that for the first time in 75 years International Monetary Fund (IMF) declared a global recession a with negative growth for world GDP in 2009-11.

1.5. The Coronavirus pandemic (2019)

After GFC 2009, the global economies were set to recover, led by Asian markets, especially China. The unstable governments in Britain and political tensions led to cause Brexit, which caused huge trade deficits. This was followed by the trade war between USA and China in June 2018. Also, during these periods middle east countries (mainly OPEC) suffered terrorist attacks destroying the valuable oil, leading to heavy losses. But the worst was yet to come.

In around 2019 November, Wuhan (located in central China) gave birth to a new virus commonly called “Coronavirus”, a communicable virus which became a killer of almost two lakh people in world. Due to the increasing scale of human infection with SARS-Cov-2 causing COVID-19 disease, the risk of further infections increases rapidly. This became so dangerous that only way to save the human lives was the complete lockdown, which forced almost all countries of the world to put life on a halt.

The huge period of lockdown in various countries led to a financial crisis as economic activities suspended, demand slumped to new low, wailing the whole situation all together. This massacre slumped DJIA by a huge 35% between February and March 2020. Financial markets crashed in a freefall. Post recovery journey also seems uncertain. The level of ambiguity regarding the scale of the negative impact on economic processes is very high and dodgy. The only thing seems certain is the uncertainty itself.

2. Literature Review

Among the key lessons of previous major financial crises, Friedman and Schwartz (1963) suggest causes that start with monetary contraction and ends up with declining prices and output.

2.1. The Great Depression1929: The crash of 1929 and the following depression of the 1930s was a period of extreme financial and real consequences to the world economy. Maury Klein, in his business history review published by Presidents and fellows of Harvard College in 2001 mentioned about many scholars and economists with different views regarding the causes. Some of which are mentioned here. H. Parker Willis singled out the Fed Reserve system as fundamental and primary a cause of the panic of 1929 by permitting the use of banking funds in an unduly large degree and without adequate protection. One of the Federal Reserve’s Board member, Adolph Miller called 1929 depression one of the costliest errors committed by the Bank.

2.2. The Black Monday (1987) crash begun in Hong Kong, turned out to be merely the picking of a stock market bubble. Ben Bernanke, writing in 1990, noted that “making these loans must have been a money-losing strategy from the point of view of the banks (and the Fed); otherwise, Fed persuasion would not have been needed. But lending was a good strategy for the preservation of the system as a whole”. He opined that the 10 largest New York banks nearly doubled their lending to securities firms during the week of October 19 even though discount window borrowings didn’t themselves increase (Garcia 1989).

2.3. Dot Com bubble 1999

Opining about the Dot Com bubble, Brian McCullough, a brilliant internet historian, felt that ‘Even now when entrepreneurs talk about how their technology will change the world, in the back of their minds is the cautionary tale of the dot-com bubble’s implosion. The bubble era engendered a fever for entrepreneurship. In the book *‘The smartest guys in the room’* by Bethany McLean and Peter Elkind highlighted that the follow through of the Dot Com bubble crisis lasted for years because the smartest people (i.e. the conspirators of the *Enron scandal*) created doubt in the minds of investors of the similar tech firms all over world.

2.4. **The 2008 financial crisis** was so immense that it has not been consigned to history. As Ben Bernanke, then chairman of the Federal Reserve, said in 2010, the financial crisis “was an extraordinarily complex event with multiple causes". That said, the basic causality has been firmly established since: from interest rates that were kept too low for too long in the aftermath of the dot-com crash, pushing asset prices, rising housing prices that encouraged people to borrow with very little equity, to lenders stumbling into the trap of lending even to people who had no capacity to repay [3]. Raghuram Rajan, former governor of the Reserve Bank of India, argued that the growth has put on a halt in the west because demand has collapsed, a casualty of massive amount of debt accumulated before the crisis, in his book *‘I do what I do’*.[2] Alan S. Blinder, one of the world’s most trusted economists, in his book *‘After the Music Stopped: The Financial Crisis, the Response, and the Work Ahead’* had focused on monetary policies of that time, financial rescue and credit decline in both demand and supply. One shutters to think what would have happened to this country had the people opposing the measures taken to avoid a great depression been successful.

2.5. **The 2019 Coronavirus Crisis** -Although the effects of the financial crisis of 2019 coronavirus pandemic are yet to be observed, the key take takeaways suggest that this is going to be worst economic recession world would have ever noticed. David A.Hsieh, a Bank of America professor at Duke University, worries that, "Simply protecting jobs, or the income of newly jobless workers, does not help speed it up. You want to protect the income of furloughed pilots but make productive use of their skills." Ian Goldin, professor at Oxford university in England suggests that, "The priority now needs to be the immediate needs of pandemic management, with governments collaborating to accelerate the development of vaccines, to produce urgently needed medical equipment and other supplies, and to coordinate restrictions on movement and the treatment of foreign nationals”. Greenstone, had a different view, that what would a nuanced social distancing policy look like on the way down, and there is need to assess the benefits of relaxing social distancing, and measure that against the likelihood of a second wave.

3. Discussions

3.1. The Great Depression (1929-1939): Almost ninety years later too, the story of the crash remains well known as well as heart-throbbing but continue to defy clear or convincing explanation. Some factors are discussed below:

- **Factors**

Had one looked, there were signs that the market of the Roaring Twenties was unsustainable. Stocks were already overvalued and liquidity crunch hit the economy. But the same thing that caused these problems was the same thing that helped the corporate profits that led people to believe in the stock market: income inequality.

- **Income Inequality**

In 1928, the top 1% made a whopping 19.6% of the nation's income. Economic growth would inevitably stall. Although, the Roaring Twenties meant great employment numbers throughout the decade as industries expanded swiftly, the pay of workers did not rise to the same degree that of corporate profits. Products were being made, but many were unable to afford them. Spending slowed, leading in stock prices declining.

- **Smoot-Hawley Tariff Act**

The Smoot-Hawley Tariff Act was first introduced in 1929 and became official law in 1930 after the stock market crash. This act was meant to protect America's farmers from overseas competition by putting in a protectionist policy, but the tariffs were warned against before being signed into law, immediately unpopular, and were quickly retaliated against. Other countries increased their tariffs as well, and trade between nations plummeted for several years, affecting various global economies.

- **Federal Reserve**

The Federal Reserve did not give aid to banks and thousands of smaller ones collapsed, in part because the Fed declined to create more cash as the money supply tightened. This was far different than the Fed of the Roaring Twenties, which increased money supply plenty throughout the decade. Some argue that had the Fed been more active and aggressive, it could have been held to a recession.[1]

- **Impact**
- **Banks Failed**

After the market crash, belief in the U.S. financial system was shattered, and this affected banks greatly. Bank accounts were being withdrawn all together, and the banks did not have the cash on hand necessary to cover all withdrawals. Depositors were in the hopes of getting their money out of banks before they completely collapse in a worst-case scenario. Consequently, over 9,000 banks failed and billions of dollars that bank depositors were unable to recoup.

- **Financial Markets Crashed**

After October 29, 1929, stock prices had nowhere to go but up, so there was reasonable recovery during succeeding weeks. However, prices dropped further as US slumped into depression, and by 1932 stocks were worth only about 20 percent of their value in the summer of 1929.

- **Unemployment Skyrockets**

Wages for a lot of workers weren't exactly high right before the depression. The Great Depression started with the unemployment rate rising, but still under 10%. As it reached its bottom, it worsened magnificently. It blew past 20% in 1932 and by 1933, it was approximately 25%.The unemployment level was over 10% until the early '40s, when the U.S. entered World War II.[1]

3.2 The Black Monday (1987): Here are some reasons of stock market crash on Black Monday, October 19, 1987.

- **Factors**
- **Program Trading & Portfolio Insurance**

On that day, in the United States, sell orders piled upon other sell orders as the S&P 500 and DJIA both fell in excess of 20%. Exchanges were busy trying to lock out program trading orders as use of computer systems was still relatively new to Wall Street, and the consequences of a system capable of placing thousands of orders had never been tested before.

One automated trading strategy that caused the crash was portfolio insurance. The strategy is intended to hedge a portfolio of stocks against market risk by short-selling stock index futures.

The computer programs automatically began to liquidate stocks as certain loss targets were hit, pushing prices lower. Program trading led to a domino effect as the falling markets triggered more stop-loss orders, which dragged markets into a downward spiral. Since the same programs also automatically turned off all buying, bids vanished all around the stock market at basically the same time.[4]

- **Ominous Signs Before the Crash**

Economic growth had slowed, inflation rose, strong dollar was putting pressure on U.S. exports, stock market and economy were diverging in the bull market, resultantly, valuations climbed to excessive levels, with the overall market's P/E ratio climbing above 20, which is way high.

Under the Plaza Accord of 1985, the Fed agreed with the central banks of the G-5 nations–France, Germany, the United Kingdom, and Japan–to depreciate the U.S. dollar in international currency markets to control mounting U.S. trade deficits. By early 1987, that goal had been achieved which contributed to the U.S. stock market boom of the mid-1980s.

The Plaza Accord was replaced by the Louvre Accord in February 1987, under which the G-5 nations agreed to stabilize exchange rates. In the U.S., the Fed tightened monetary policy under the new Louvre Accord to halt the downward pressure on the dollar in the second and third quarters of 1987 leading up to the crash.

Market participants were aware of these issues, but portfolio insurance gave a false sense of confidence to institutions and brokerages. The general belief was that it would prevent a significant loss of funds if the market were to crash, due to which excessive risk-taking begun, which only became apparent when stocks began to weaken in the days leading up to that fateful Monday.[4]

- **Impact**

The Black Monday crash of 1987 didn't have the sustained, negative impact, with the Dow regaining 288 points within three trading days and recovering all stock market losses by September1989. Additionally, the U.S. economy didn't suffer lasting damage, with not even a small recession following the October crash. That's due to immediate intervention from the Fed, which cut interest rates and stabilized the financial markets by opening its doors for loans and capital.

After the crash, exchanges implemented circuit breaker rules and other precautions to slow down the impact of irregularities and to prevent panic selling in hope that markets will have more time to correct similar problems in the future.

3.3 The Dot Com bubble (1998-2003): In the mid- to late-’90s, society’s expectations of what the Internet could offer were unrealistic. Factors responsible for this are as follows:

- **Factors**
- **'Being listed' hype**

The greed among the investors and traders grew which led to millions of investments in the tech companies with no such future promise to deliver profits. The entrepreneurs of these companies were inspired by companies like Amazon, eBay, and Kozmo and filed for IPO like anything. To the surprise, these IPO's received a whopping response. Prior to the Dot Com Bubble crash, number of tech and internet related firms that issued IPOs constituted approximately one-third of all IPOs.

Table 1: Number of IPOs and Average Returns: Before, During, and After the Dotcom Bubble [5]

Period	Tech Company		Non-Internet Company	
	No of IPOs	Average Return	No of IPOs	Average Return
1990-1998	1081	22.20%	2315	11.30%
1999-2000	585	80.60%	218	23.10%
2001-2004	86	11.40%	276	9.12%

- **The Use of Metrics That Ignored Cash Flow**

Many analysts focused on aspects of individual businesses that had nothing to do with *how* they generated revenue or their cash flow. The value of a network increased exponentially as the series of nodes (computers hosting the network) increased. Although this concept made sense, it neglected the ability of the company to use the network to generate cash and produce profits for investors.

- **Significantly Overvalued Stocks**

Analysts used very high multipliers in their models to valueTech companies, which resulted in unrealistic and overly optimistic values. As per HSBC Holdings' research on the P/E ratios of newer, tech-savvy companies, these were overvalued by 40%. Huge funds were invested in these overvalued stocks.

- **Impact**

The effects of the bubble bursting were that several companies went bankrupt. An example is WorldCom who admitted to billions of dollars of accounting errors as well. Many other struggling companies became acquired or merged with other companies. It was found that there was an increase in mergers and acquisitions during the dot-com bubble and surprisingly, the pricing of such mergers and acquisitions did not change. Many companies changed their names to remove any association as a dotcom company. Investors react positively to name changes for firms that remove dot-com from their name.

The investment bond market was badly hit by the bursting of the dot com bubble.

The NASDAQ composite, index for Dot Com bubble, rose from 751.49 to 5,132.52, a 682% increase, from January 1995 to March 2000. But then NASDAQ has corrected by almost 85% from its high after the crash. Since then, NASDAQ Composite could not regain its all time high until 2015, i.e. after almost 17 years.

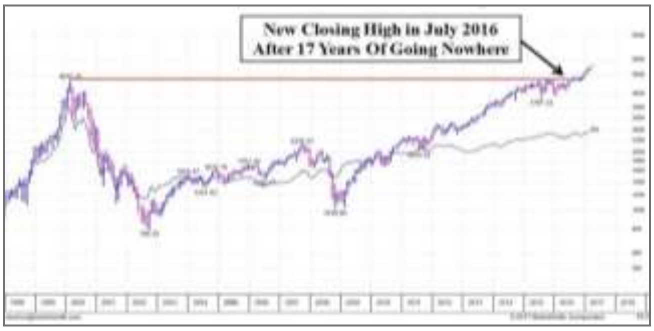

Fig 1: 20 years chart of NASDAQ 100 since 1998

3.4 The great Global Financial Crisis (2007-2009): August 9, 2007. 15 September 2008. 2 April 2009. 9 May 2010. 5 August 2011. From sub-prime to downgrade, the five stages of the crisis to hit the global economy since the Great Depression can be found in those dates.

Table 2: Five stages of GFC (2007-09)

Dates	Action/Triggering Event	Significance
August 9, 2007	BNP Paribas cease activity in hedge funds that specialized in US mortgage debt.	It was clear that trillions of dollars' worth dodgy derivatives swilled and were highly overvalued.
September 15, 2008	The US government allowed the investment bank Lehman Brothers to go bankrupt.	The notion that banks were "too big to fail" no longer held true, resultantly, every bank deemed to be risky. This forced western governments to inject vast sums of capital into their banks to prevent them collapsing.
April 2, 2009	Commitment to a $5 trillion fiscal expansion at the London G20 summit to help IMF and other global institutions boost jobs, growth and to reform of the banks. Interest rates were cut to bone & e-money created through quantitative easing.	From this point, when the global economy was on the turn, international co-operation started to disintegrate as individual countries pursued their own agendas.
May 9, 2010	Budget deficits ballooned during the recession, because of lower tax receipts higher welfare spending and fiscal packages announced in 2008-09. The IMF and EU agreed provide financial help to Greece.	The focus of concern switched from private sector to public, i.e., not the solvency of banks but the solvency of governments.
August 5, 2011	America's bond yields remained low as growth prospects became so poor that China could overtake US and fear of losing AAA rating turned optimistic too.	The day when US hegemony was lost. Eastern governments feel bold to not follow US in running their economies.

- **Factors**
- **Sub-prime mortgage**

With easy availability of credit at low interest rates, real estate prices in US had increased rapidly since the late 1990s and investment in housing had assured financial return. Banks went out of their way to lend to sub-prime borrowers who had no collateral assets. Risks inherent in such mortgages were not known to low income individuals who took out risky sub-prime mortgages. But the housing bubble burst in 2007[6]. Home prices fell between 20 per cent and 35 per cent from their peak and in some areas more than 40 per cent; mortgage rates also rose.

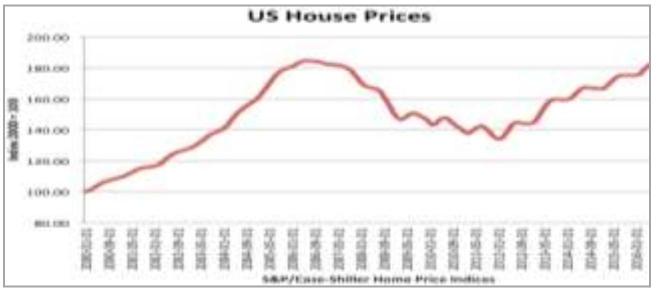

Fig 2: US House prices from 2001 to 2016

- **Securitization and Repackaging of Loans**

The banks/ lenders or the mortgage originators that sold sub-prime housing loans did not hold onto them. They sold them to other banks and investors through a process called *Securitization*. Lenders originated and sold poorly underwritten loans without demanding appropriate documentation or performing adequate due diligence and passed the risks along to investors and securitizes without accepting responsibility for subsequent defaults. They had a strong incentive to lend to risky borrowers as investors, seeking high returns and were eager to purchase securities backed by sub-prime mortgages. The booming housing sector brought to the fore a system of repackaging of loans. The system was such that big investment banks such as Merrill Lynch, Morgan Stanley, Goldman Sachs, Lehman Brothers or Bears Stearns would encourage the mortgage banks countrywide to make home loans, often providing the capital and then the Huge Investment Banks, would purchase these loans and package them into large securities called the Residential Mortgage Backed Securities (RMBS)[6].

- **Excessive Leverage**

Investors bought MBS by borrowing. Some Wall Street Banks had borrowed 40 times more than their worth. In 1975, the Securities Exchange Commission (SEC) established a net capital rule that required such banks to limit their leverage to 12 times. However, in 2004 the Securities and Exchange Commission allowed the five largest investment banks – Merrill Lynch, Bear Stearns, Lehman Brothers, Goldman Sachs and Morgan Stanley – to more than double the leverage they were allowed to keep on their balance sheets, i.e. to lower their capital adequacy requirements. Highly leveraged institutions reported huge losses. Leveraged investors have had to return the money they borrowed to buy everything from shares to complex derivatives. That sends financial prices even lower [6].

- **Failure of Global Corporate Governance**

Since1930s, many of America's big banks moved out of the "lending" business and into the "moving business". They focused on buying assets, repackaging them, and selling them. Dr. Manmohan Singh (2008) told that nothing has been done even to address their perverse incentive structures, which encourage short-sighted behaviour and excessive risk taking. The weakness in prudential oversight was partly due to characteristic of the US financial system [6].

- **Impact**

In the climate of extreme uncertainty, business and consumer confidence collapsed. This led to a variety of effects on the global economy in different ways.

- **Falling GDP**

As late as mid-2008, the IMF forecast for world growth in 2009 was almost 4 %. Revised forecasts reduced the growth to around negative 1½ %. A downward revision to the world outlook by more than 5 percentage points in both G7 and global growth in just a few months is unprecedented in the period in which these kinds of forecasts have been regularly constructed [7].

- **Decline in Production**

As the world economy lost consumer confidence, demand was negatively affected as well. Households responded by cutting discretionary spending, especially demand for manufactured goods. The result was an exceptionally sharp fall in global industrial production towards the end of 2008. More generally, firms around the world sought to economise on inventories in response to weaker expected demand and reduced availability of working capital (see Fig. 3) [7].

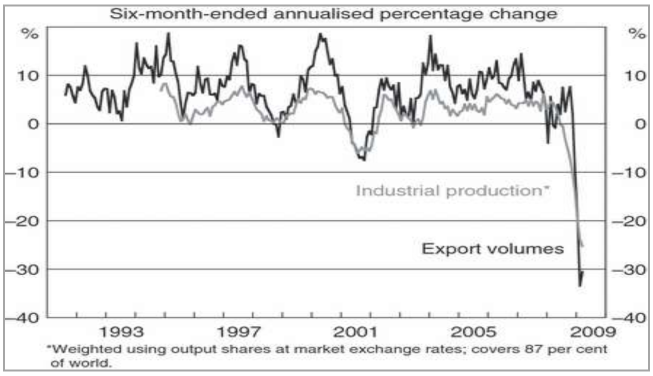

Fig 3: Industrial production and Exports in 2009

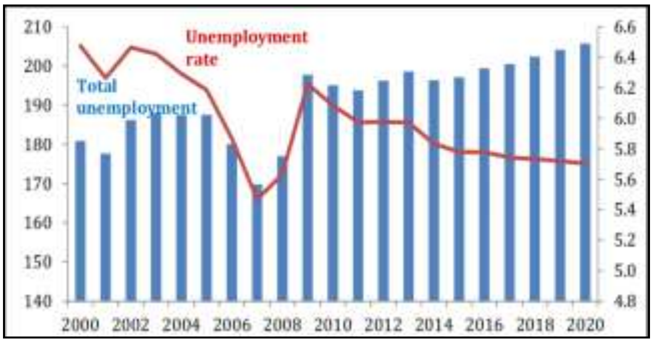

Fig 4: Unemployment during 2000 to 2020

- **Debts and Unemployment skyrocketing**

Part of the slowdown in the pace of global activity reflected the inevitable pullback in some sectors to the high levels of household debt in many countries prior to the crisis. Since 2007, Debt to GDP have increased multi-fold to almost 94% of GDP in 2015 across the globe. So is the case with unemployment as depicted in the graph above (see Fig. 4).

- **Synchronised economic recession**

Due to deterioration in confidence, households around the world made a rapid re-evaluation of their spending plans, cutting back on discretionary spending. Private consumption fell sharply in the industrialised and emerging market economies in late 2008. Similarly, business investment contracted in few of countries in late 2008. Global cross-border capital flows have declined 53% since its peak in 2007 [7].

3.5 The Coronavirus pandemic (2019): The outbreak of SARS-CoV-2 began in Wuhan, a city in Hubei district of Central China, in the illegal wildlife market which was not banned by the government there. Studies suggest that this virus is transmitted from animals (most likely from bats) to humans. It spreads from person to person with close contacts. Only solution found yet is lockdown.

The following question then becomes relevant: Can a coronavirus pandemic trigger a global economic crisis in 2020, including a recession? Answer is obviously a yes.

- **Impact**
- **Fall in GDP**

Global lockdowns are pushing major economies to the brink. The IMF has revised its global GDP growth estimate from 3.3% in December 2019 to a contraction of 3%, something not seen since the Great Depression of the 1930s. The GDP figures of major countries of the world, shown in the table below, are projected by International Monetary Fund.

Table 3: GDP growth of major economies of world

Economy	GDP growth in 2019 (%)	Expected GDP growth in January (%)	Expected GDP growth in April (%)
United States	2.30	2.00	-5.90
China	6.00	6.00	1.20
Japan	-0.70	0.70	-5.20
Germany	0.40	1.10	-7.00
United Kingdom	1.10	1.40	-6.50
France	0.90	1.30	-7.20
India	4.70	5.80	1.90
Italy	0.90	0.50	-9.10
Brazil	1.67	2.20	-5.30
Canada	1.80	1.80	-6.20

- **Unemployment Surges**

The International Labour Organization warns of almost 25 million layoffs if the virus is not controlled, reflecting the deepest peacetime recession since the 1930s.

At JPMorgan Chase & Co., economists predict their measure of unemployment in developed markets will jump by 2.7 percentage points by the middle of 2020. While healing will happen as economies recover, they still predict unemployment of 4.6% in the U.S. and 8.3% in the Euro area by the end of 2021 (see Fig. 5)

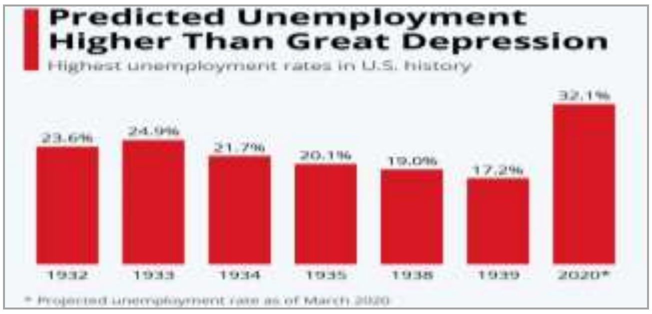

Fig 5: Unemployment comparison in 1929 and 2020

- **Oil price slumps**

WTI Crude Oil futures for May 2020 delivery slipped to as low as -$37.63 per barrel (first time in history that it became negative) on April 20. The fear in the market is that US storage facility will run out of space by mid-May. NYMEX crude May 2020 contract has slipped below $9 per barrel for the first time since March 1999. June contract is down 18 percent near $18.40 per barrel. Supply may exceed demand by 12.4 million barrels a day in the second quarter 2020, forecasts suggest [11].

- **Capital flight from developing countries**

The rapid-fire of financial markets, along with tightened liquidity conditions, have led to unprecedented outflows of capital from developing countries. UNCTAD reports net debt and equity outflows from the main emerging economies, amounted to USD 59 billion from 21 February to 24 March, when crisis went global.

- **COVID-19 will set back the achievement of the SDGs**

The United Nations (UN) is concerned that the COVID-19 crisis will lead to a reversal of decades of progress in the fight against poverty, and that already huge levels of inequality within and between countries will impair. The pandemic is expected to negatively influence almost all SDGs.

- **Production and supply severely hampered**

China experienced a 13.5% reduction in industrial production in the first two months of 2020, says BBC. China is the world's largest exporter and produces one-third of all global manufacturing goods. Though China remains the epicentre of the crisis, but developing Asia (like India, Asean-5) has only been hit by a 7.7 per cent decrease in industrial production, still showing a positive growth rate. US and other European countries would be badly hit (see fig. 6).

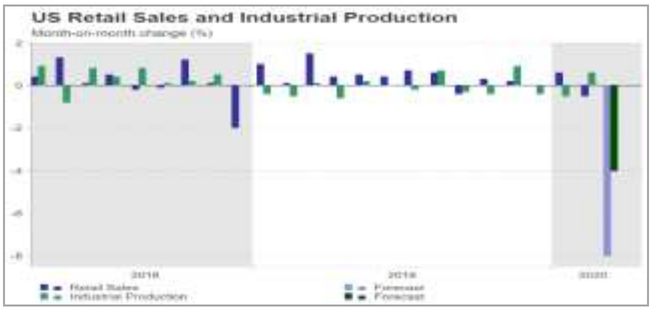

Fig 6: US Industrial Production comparison in last 3 years

- **Others**

Since the Coronavirus is still under fighting stage and is not eradicated completely, its total impact on the world economy is very difficult to predict. Although the very immediate impact has been discussed, there may be many more impacts in the financial world that may not be discovered even in five years from now, but this is for sure that this has become the worst financial crisis reason ever in the history.

4. Findings

History has taught us number of big lessons about global economic crisis, even if they have generally been studiously ignored by subsequent generations.

4.1. The Great Depression (1929-1339): Learnings from the Depression are discussed as below.

1. The biggest learning from The Great Depression 1929 was that financial sector shall never be left to its own devices. At times of crisis, pumping money into the economy leads to demand creation.

2. Poorly regulatory banks shall never lend to speculators, as was so back then in 1930s.
3. The Federal Reserve predicated the recession primarily on one country's perceived national interest, not on what might be good for the whole international system.
4. The absence of a leader or "hegemon" willing to play a role as a lender (and market) of last resort to maintain an open economic system was decisive for crash.
5. The Depression also demonstrated the cost of not maintaining a stable and productive economic order. The rise of extremism, even in the US, is a salutary reminder of the link between politics and economics, and how vulnerable it becomes to collective madness in troubled times [8].

4.2. The Black Monday (1987): Keeping the eye to factors of the crash on Black Monday, as discussed earlier, learnings can be summed up as follows:

1. In investing, asset prices become expensive when investors are optimistic (least concerned about risk), and cheap when they are pessimistic (risk averse), always opposite turns out to be correct. That's not a reason to sell, but it is a great time of assessing portfolio risk.
2. Diversification works better on the way up than the way down. During the '87 crash, equities from all countries suffered, and oil, gold and high-yield debt fell in value, too. Only safe assets such as cash and Treasury's held up. Being diversified across strategies and across asset classes, doesn't mean that investments behave the same way in the short term at extreme stress points.
3. Timing the market is not something anyone should try themselves but ensuring that an investment portfolio is not riskier than a person can handle always works. Mental preparedness of falling market reduces panic.
4. Lastly, time heals all wounds. Dow fell around 30% that week but after 33 years too, the Dow is still more than 10 times higher. Taking money out of the market at lows locks in losses. Let time work for the investor.

4.3. The Dot Com Bubble crash (1998-2003)*:* The tech bubble crash taught the following.

1. Despite investors' efforts to provide an influx of cash into a rapidly growing market, there are no guarantees. While this is obvious for any investor, in the early days of the Internet it seemed like the dot-com industry was a truly mushrooming market that would produce big results [9]. Investors had high hopes as well as greed that they would be the first to capitalize on a developing area for growth and profit. Priority does matter.
2. New businesses were entering the stock market, filing IPOs, with literally nothing more than one sheet of paper representing their entire business. Investors overlooked more real factors to become a part of a newly emerging market. Investors shall have a deeper look in the financials and not invest only as per the trend.
3. Essentially, investors who lost money during the dot-com bubble were engaging in risky investments. But as the Internet became a more pervasive part of life, there was less of a rush for investors to capitalize on a new market and the investments therefore became relatively safe than earlier [9].

4.4. The Great Global Financial Crisis (2007-2009)*:* Some of the key lessons learnt are:

1. Too Big to Fail - The notion that global banks were 'too big to fail', was also the justification lawmakers and Fed governors leaned upon to bail them out to avert a planetary catastrophe that may have been several times worse than the crisis itself. If the 4th largest bank of the world can be dissolved, any other can too [10].
2. Reducing Risk on Wall Street - Banks made careless bets with their own money and sometimes in blatant conflict with those they had on behalf of their customers. Lawsuits piled up and trust eroded. The so-called Volcker Rule, proposed legislation aimed at prohibiting banks from taking on too much risk with their own trades in speculative markets [10]. It took until April of 2014 for the rule to be passed – nearly 5 years after some of the most storied institutions on Wall Street like Lehman Bros. and Bear Stearns disappeared from the face of the earth for engaging in such activities.
3. Overzealous lending in an Overheated Housing Market - The boiler at the bottom of the financial crisis was an overheated housing market that was stoked by corrupt lending to un-fit borrowers, and the re-selling of those loans through mortgage backed securities that warmed their way through the global financial system. Fannie Mae and Freddie Mac, the two government sponsored entities that underwrote much of the mortgage risk and resold it to investors, had to be bailed out with taxpayer money and taken into receivership by the federal government. While lending standards have tightened, risky lending still runs rampant for automobiles and short-term cash loans. So, this risky lending needs to be reduced.
4. Investing differently **-** Investors have enjoyed a spectacular run since the depths of the crisis, witnessing the birth of robo-advisors and automated investing tools that have brought a new demographic of investors to the market and thence added trillions of dollars since then. But the most important development is the rise of exchange traded (ETF) products and passive investing. While ETFs offer lower fees and require less oversight once launched.

Hence if an investor needs to safeguard his portfolio, he should diversify as well as include more of such kind of funds to his portfolio, to remain relatively less prone to volatility [10].

4.5. The Coronavirus Pandemic (2019): The economic consequences of the coronavirus pandemic are wide-ranging, affecting the way the world economy works. Several lessons can be learned till now.

1. Health is a global public good - Health as a fundamental right, cannot be produced as a commodity and sold on the market to individual consumers. The specificity of health as a global public good has been now acknowledged even in World Bank policies for the prevention of pandemics (Stein and Sridhar, 2017). Health, welfare, labour rights and the environment must be protected by international standards, which should be binding for the movement of capitals and goods globally.

2. The welfare state is an effective alternative to the market - Public health systems play a fundamental role in responding to the coronavirus pandemic. As Stiglitz (2020) argued, “when we face a crisis like an epidemic or a hurricane, we turn to government, because we know that such events demand collective action”. Therefore, many governments have provided free facilities as well subsidised necessary items tom the daily wage workers and also funded many public hospitals.
3. In the current debate on the return of industrial policies, the report ‘*What is to be produced?’* proposes to identify three priority areas where public and private research and investment could be concentrated in order to develop a good economy: environment and sustainability, knowledge information and communication technologies, and health and welfare activities.
4. As an investor, just by diversifying the portfolio, as learned from past crisis, across various equities and mutual funds would not be enough in such a case where all industries are frozen and all sectors are collapsing. A much safer move would be seeking fixed investments, as well as commodities like gold.
5. Others - Although each country has adopted its strategic tools to give a financial boost to the down economy and cope with the situation, this might not be enough for coming on track. As far we have come along, China is in a better position from the rest of the world, it is likely to dominate again. Learnings can be immense, but it could be possible only after the pandemic is under control and economic boost given by many institutions does not prove fatal after lockdown in all countries end.

5. Conclusion

The lessons from the past financial crisis were painful and profound. Yet again the fundamental of the recession remain sentiments. Several measures were put into place by governments, regulatory authorities and banks of different economies ofthe world over time to stem the crisis to prevent a repeat of the disaster. But, broader reforms to protect consumers, investors and borrowers have not, asthese are in the process of being repealed. Yet we are safer today than in past not because we may prevent any financial recession but obviously, we may predict the likely courses of actions to be taken that we had acknowledged from history.

Although the ongoing financial crisis (Covid-19 pandemic) is a very different scenario all together from what we had been witnessing since ages, yet the study presented here was important to gain a deeper insight of the past errors that were committed in previous crisis, so that the same can be shared and applied for the betterment of the current massacre. It is possible now to say that fear and greed should not force economies to take a decision, but moral and financial wisdom can. Therefore, the Covid-19 situation is handled morally as when human resources are safe, mitigating a financial recession becomes possible at a larger pace.

As investors, the best and only thing we can do is to stay diversified, spend less than we make, adjust our risk tolerance appropriately, and do not believe anything that appears too good to be true.As a learner of finance, the basicapproach to gain knowledge is to watch and study history, assessing the present and attempting to make opinions about the future!

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