

# Young Adults and Money: The COVID-19 Pandemic

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#### **ABSTRACT**

This study looks to explore the relationship between the effect of the COVID-19 pandemic on the economy and young investors. More specifically, this research looks to answer the question: how young adults, ages 18-25, are responding to the economic distress caused by the COVID-19 pandemic with their investing decisions? Through analyzing a sample of young adults, ages 18-25, this study develops a deeper and broader perspective on the unique impact that the COVID-19 pandemic has on the investing decisions of young adults. Using a mix of literary studies on similar historical events and a sample study of young adults who have experienced the COVID-19 pandemic first-hand, this study looks to offer a new point of view on the changing investment trends of young adults and the unprecedented effects that the COVID-19 pandemic has on their banking decisions.

#### INTRODUCTION

The purpose of this honors thesis is to find whether there is an apparent relationship between the effect of the COVID-19 pandemic on the U.S. economy and the investment decisions of young adults; primarily ages 18-25. The study begins with a look into literary research articles in order to better understand how similar historical events have affected the investment decisions of young adults in the U.S. These events are primarily the Spanish Flu pandemic, the Great Depression, and the 2008 financial crisis. These events, while each has a number of differences from the COVID-19 pandemic, have a great number of similarities when compared to the COVID-19 pandemic. Using these historical events, and the studies that have been done on them, will hopefully allow us to see how the COVID-19 pandemic truly affected young investors and if the effects of the COVID-19 pandemic were unique when being compared to similar crises.

This study will allow for a better understanding of how young adults' investment and banking decisions are impacted by worldwide recessions, viral outbreaks such as the COVID-19 pandemic, and nationwide shutdowns. While we may hopefully never see such a large-scale outbreak such as COVID-19, the analyzation of the decisions that young adults have made during the COVID-19 pandemic may give some insight into the innate investment tendencies that young adults would have in crisis situations or during times of economic distress, even if it may be on a smaller scale. While there have been a number of studies done on U.S. citizens and their investment decisions in previous times of economic distress, it seems as though the COVID-19 pandemic has an unprecedented effect on the U.S. economy and the world as we know it. Additionally, with new options for young investors, namely Robinhood and other mobile banking and brokerage apps, we hypothesize that the investment and banking decisions of young adults during the COVID-19 pandemic will vary greatly from those of previous recessions and crises.

#### **THE 1918 SPANISH FLU PANDEMIC**

#### Background

The 1918 Spanish Flu pandemic, also known as the Influenza pandemic, was the deadliest pandemic of the twentieth century. The virus was first detected within the United States in

March of 1918 in an Army training camp. Unfortunately, World War I was still raging at the time and the United States had ramped up training and deployments of soldiers in an attempt to end the War once and for all.

Within the span of a few months, the U.S. military had grown its numbers to approximately 4.7 million soldiers; training thousands of soldiers at a time in order to keep up with its necessity for manpower on the front lines. The training of these soldiers created ideal conditions for the virus to spread like wildfire among the troops. The virus spread rapidly across the world with its main vehicle being the travelling and fighting of troops during the end of World War I, along with the celebration of the end of the War and the transition into the 'Roaring 20s'. Like many other countries, the pandemic took a firm grip of the United States. Over its two-year rampage, the Spanish Flu killed an estimated 50 million people with approximately 675,000 of them being U.S. citizens (Del Angel et al., 2021).

#### Impact on the Market

When the death rates of the 2-year Spanish Flu pandemic are compared to data from the New York Stock Exchange, you are able to see that the 1918 Spanish Flu had a significant and negative impact on U.S. stock prices. The main factor that must be considered when looking at the change in stock prices during this time period would be the end of World War I. However, when controlled for the impact of the end of the War through news articles of the time, the evidence of the negative impact of the pandemic becomes apparent (Del Angel et al., 2021).

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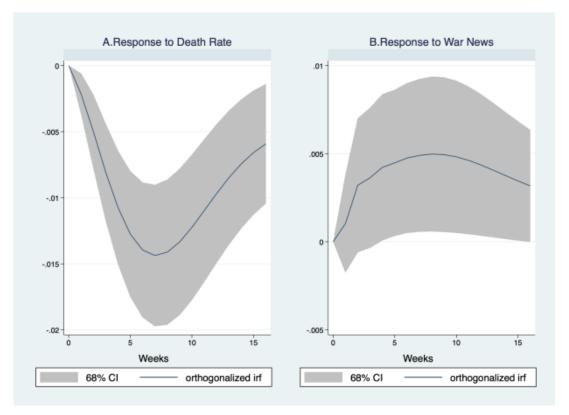


Figure 1: Impulse Response Functions for Aggregate Stock Market Index (Del Angel et al., 2021)

#### Impact on Investment Decisions and Sentiment

The Spanish Flu's impact on the U.S. stock market was profound when controlled for the impact of the news of the end of World War I (Del Angel et al., 2021). The most significant impacts from the pandemic on investors that they are able to see can be found in the movement of sector indices. The authors have found that the death rates of the Spanish Flu can account for: 21.4 % of the movements in the trade and service index, 23% of the movements in the industrial index, 23.3% of the movements in the consumer products index, and 24.1% of the movements in the utility sector (Del Angel et al., 2021). These large fluctuations in these industries shows how a global pandemic affects the minds of investors. Investment within these four sectors was most significantly impacted by the death rates of the Spanish Flu pandemic during this time. This exemplifies how fear of death rates from a worldwide pandemic creates fear in investors for the futures of sectors like consumer goods that are responsible for everyday household shopping or the industrials sector that is responsible for being the backbone of our country's manufacturing and production. Investors

seem to feel that their futures, as well as their country's future, are unsure when there are hundreds of thousands dying around them due to virus.

"While the Spanish Flu pandemic a century ago offers a reasonable point of comparison in terms of mortality, it took place in a very different social, political and economic context. The scale of ongoing containment and mitigation policies is also unprecedented in the modern era" (Baker, Bloom, Davis, Kost, Sammon, and Viratyosin, 2020). While the Spanish flu was very similar to COVID-19 in terms of the death rate, it also took place in a different time. The ability for the U.S. government to contain and prevent the viral outbreak of disease through nationwide quarantine and lockdown has increased an incredible amount through the use of technology and media that can be delivered to U.S. citizens at a moment's notice. Not only this, but the Spanish Flu occurred during World War I. This makes it more difficult to differentiate the effects of the War and the pandemic on the economy. However, what the authors find is, "substantial short-term declines in real returns on stocks and short-term government bills" (Barro, Ursua, and Weng, 2020). These macroeconomic effects of the Spanish Flu pandemic are similar to what we are experiencing during the COVID-19 pandemic. "However, extreme mitigation efforts—such as widespread cancellations of travel, meetings, and major events—will themselves contribute to the depressed economic activity" (Barro et al, 2020). The authors identify that there are many similarities in terms of economic effects between the two pandemics. However, the reasoning behind these effects may be tough to differentiate with extreme measures being taken to prevent COVID-19 outbreaks and the effects of World War I in play during the Spanish Flu.

#### **THE GREAT DEPRESSION**

#### Background

Shortly after World War I and the Spanish Flu Pandemic, the U.S. entered the age of the 'Roaring Twenties' where U.S. citizens had unbelievable confidence in their economy, families became wealthier, new technology like telephones and cars were invented, and everything seemed to perfect. During this timeframe, the stock market skyrocketed to record highs, growing "six-fold from sixty-three in August 1921 to 381 in September 1929"

(Richardson et al., 2013). A new industry allowed citizens to trade on margin accounts which enabled investors to take a stake in a security for a fraction of the share price and borrow the rest from a financial institution. This allowed people with little capital to trade in equity markets, and the money poured in. Eventually, stocks reached such highs that the Federal Reserve felt the need to step in. The Fed attempted to request that banks begin to deny credit loans to borrowers, to no avail. The Fed ultimately accepted the Federal Reserve Bank of New York's request to raise their state discount rate. "This action would directly increase the rate that banks paid to borrow funds from the Federal Reserve and indirectly raise rates paid by all borrowers, including firms and consumers" (Richardson et al., 2013). However, due to the gold standard, international banks began to raise their own interest rates. After high levels of volatility in September of 1929, investors began to question their stakes in the market. In order to attempt to restore investor confidence, large financial institutions began purchasing enormous amounts of stock shares at record-high prices. Quickly, investors caught on and the market experienced a sellout that sent share prices plummeting. Funds from the selloff flooded into banks that were quickly swarmed as people frantically tried to claim their money. These bank rushes left many banks short on reserves and the Fed was left to clean up the mess by expediting lending to commercial banks, lowering the discount rate, and purchasing government securities on the open market. Even with the Federal Reserve's efforts, the U.S. was plunged into its most extreme recession to date, lasting nearly ten years.

#### Impact on the Market

The Great Depression, unlike most of the related recessions mentioned in this thesis, actually began with a crash in the U.S. stock market. This event is known as the Great Crash of 1929 and occurred from Wednesday October twenty-third to the thirty-first and included events such as Black Monday and Black Tuesday. "During these eight frantic sessions, a total of nearly 70.8 million shares were traded... Altogether the Dow lost 39 percent" (Klein, 2001). Throughout the 1930's, the market began to slowly rise out of the recession. However, investors were hesitant to trust financial markets again and the length of recovery speaks to this fact.

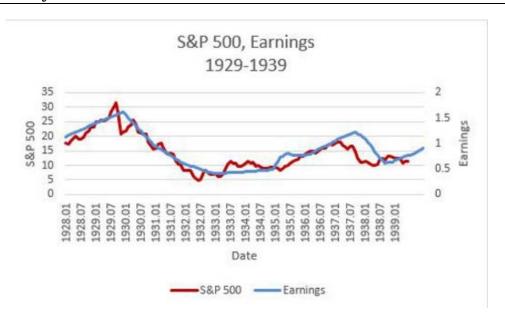


Figure 2: The time paths of the S&P 500 and associated earnings during the period 1929 through 1939. (Hersh, 2020)

#### Impact on Investment Decisions and Sentiment

The Great Depression, while having nothing to do with a viral outbreak like COVID-19, was the deepest and longest recession in U.S. history. This makes it valuable to find similarities to the economic recession that was experienced during the COVID-19 pandemic and how it might have adverse effects on those who have lived through the pandemic. This literary review has shown that, "investors with adverse macro-economic experiences (e.g., growing up during the Great Depression or entering the labor market during an economic recession) or who grow up in a lower socioeconomic status rearing environment have a stronger value orientation several decades later" (Cronqvist, Siegel, and Yu, 2015). What the authors see with the Great Depression is a generation that has witnessed the effects of a strong recession first-hand and have chosen to change their lifestyles due to the trauma that it caused them. They see an entire generation that, for decades after the Depression has ended, chooses to hold their money close in a tight fist. Many people in this generation began to not trust capitalism and not want to take risks with their investments. "For example, those who grew up during the Great Depression have portfolios with average P/E ratios that are significantly lower several decades later in life" (Cronqvist et al, 2015). In terms of the investment styles of these individuals who lived through the Great Depression, they have found a much more

value-oriented investment style. Looking at their portfolios, these individuals have a significantly lower P/E ratio compared to other investors due to their fear of volatility and risk with their investments. These are the typical types of behaviors that can be seen from those who have lived during the Great Depression.

#### THE GREAT RECESSION

#### Background

The Great Recession, also referred to as the 2008 Housing Crisis, began after the U.S. housing market peaked in 2006. Residential construction and housing market activity sharply increased in the early 2000's due to the ease of lending from financial institutions. At the time, it was a part of the status quo to become a part of the middle-upper class, which first began by owning a home. Mortgage debt was considered 'good debt' to U.S. citizens and was considered reasonably stable and safe.

Average home prices in the United States more than doubled between 1998 and 2006, the sharpest increase recorded in US history... Home ownership in this period rose from 64 percent in 1994 to 69 percent in 2005... Roughly 40 percent of net private sector job creation between 2001 and 2005 was accounted for by employment in housing-related sectors. (Weinberg, 2013)

The housing market was reaching record highs and creating an immense number of jobs and opportunities. Not to mention that the federal funds rate was historically low at the time, meaning that interest rates made borrowing from financial institutions very enticing. The expansions in the market and in job creations were accompanied by increasing mortgage borrowing. The increasing of average home prices and the ease of borrowing meant that citizens with poor credit risk and the lack of capital for a down-payment needed to borrow increasing amounts of money in order to purchase homes. However, financial institutions made it relatively easy for these citizens to borrow as they would create mortgage-backed securities to transfer the risk from themselves to another financial institution. These mortgage-backed securities were bundles of mortgages from a lender that would be sold to other financial institutions so that the buyer would receive the principal and interest payments from the mortgage borrower. However, these mortgage-backed securities would be a mixed-bag; meaning that most of the mortgages were from low-risk borrowers but mixed in would be

subprime loans from high-risk borrowers. This meant that individuals with poor credit history were able to borrow a lot of money from financial institutions relatively easily because the lenders would just transfer the risk over to another financial institutions in mortgage-backed securities. Unfortunately, these borrowers had trouble paying their mortgage payments because they would borrow immense amounts of money so easily that, most of the time, they would barely be able to pay it back. Also, most of the mortgage loans during this period were adjustable rate loans because of the record lows that interest rates were reaching. However, this became very dangerous because once the rates began to climb, these subprime borrowers would no longer be able pay their mortgage payments and default on their mortgage loans. On the other end of the spectrum, once the prices of homes began declining, financial institutions would no longer make their money back by seizing and selling the homes that backed the mortgages. Eventually, in 2007, the housing bubble burst and led to a steep decline into recession until late 2009 with lasting negative effects until about 2012.

#### Impact on the Market

The 2008 financial crisis did not only affect the housing market, but also the stock market. In fact, there were many large financial institutions on Wall Street that held large sums of these mortgage-backed securities; one of the most well-known being Lehman Brothers which filed for bankruptcy in the fall of 2008. Chong observes that, with some of the biggest names on Wall Street failing, people began to not trust large financial institutions with their money (Chong, 2011). Not only this, but there were a lot of citizens that needed to try to get themselves out of piles of debts that seemed to be realized immediately. Alongside the fall that the housing market experienced, the stock market took a dive as well.

There was a long gentle decline in U.S. equities at the start of Subprime crisis in mid of 2007 through September 2008. The stock market indices in both U.S. market and emerging markets exhibited a dramatic decline in September with extreme volatility after that. The reason given was that the news announcements such as Lehman bankruptcy led to a massive impact on the equities markets. (Chong, 2011)

While the stock market did not experience as drastic of a downturn as other markets, prices fell, nonetheless. The Great Recession shows that investors seem to take their money and run when there is a scare in the greater economy. It may not always last for long, but the fear in

investors and the drop in the equity market are more or less consistent with nearly every recession.

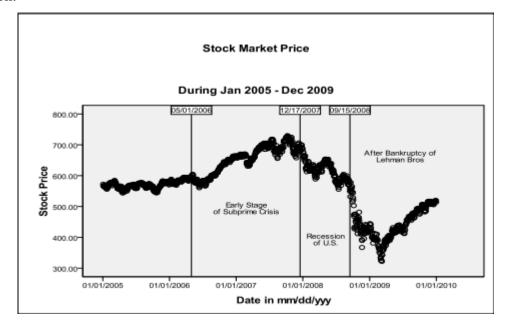


Figure 3: Stock Market Price during Jan 2005 to December 2009 (Chong, 2011)

#### Impact on Investment Decisions and Sentiment

Comparing the 2008 Financial Crisis to the Covid-19 pandemic, a similar sharp drop by the U.S. economy can be observed. The 2008 Financial Crisis was a little different from the Covid-19 pandemic due to the nature of the recession in 2008 being due to banks failing rather than a worldwide pandemic. Osili and Paulson find that "financial instability may decrease investor confidence. Decreased confidence in the banking sector can prolong recovery following a crisis and reduce the perceived credibility of post-crisis reforms" (Osili and Paulson, 2008). This effect of investor confidence and loss of trust in the banking industry was a very apparent theme during the 2008 Financial crisis. However, the recession caused by the Covid-19 pandemic, while very similar in comparison to magnitude and speed, had different effects due to its cause. Also, they find that, during the 2008 Financial Crisis, citizens were losing their homes and bank accounts. This was different during the Covid-19 pandemic because most people were just at a standstill due to the pause in the economy from the quarantine and lockdown. This means that, rather than losing confidence in the market, a lot of people saw the sharp drop in the market to be an opportunity to make extra cash. "The effect of bank crises does not impact stock market participation. This suggests that, although

investors are unable to ignore their past bad experiences with banks in interacting with U.S. banks, these experiences do not spill over to non-bank investments" (Osili and Paulson, 2008).

#### **COVID-19 PANDEMIC**

#### Background & Impact on the Market

The COVID-19 virus, also known as Coronavirus, began in Wuhan, China where it rapidly spread throughout the country and eventually eclipsed the entire world in a global pandemic. By early January, the effects of COVID-19 could be felt throughout the global economy and by mid-March, President Donald Trump declared a nationwide emergency in the United States. The world seemed to come to a halt as numbers of infected patients grew at a rapid pace. For weeks, states were shutdown in mandatory quarantines where travel and any inperson contact with others was extremely limited. By the end of May of 2020, the U.S. COVID-19 death toll had reached 100,000 victims and by December of 2020, the death toll had reached 300,000. It was at this time that pharmaceutical companies Moderna, Pfizer and Johnson & Johnson began mass-distributing the newly-FDA approved COVID-19 vaccinations. By March of 2021, the CDC announced that people could begin returning to inperson work and school with social distancing and mask mandates in place. Eventually, CDC released statements concerning its overwhelming support for citizens to get a second dose of the vaccines and ultimately encouraged the administration of COVID-19 booster shots. By early-2022, the states around the U.S. began lifting mask mandates, reverting back to a somewhat normal, in-person society once again. Due to the arrival of COVID-19 in the United States, the market experienced extreme volatility and a plummet in March of 2020 known as The Coronavirus Crash of 2020. This crash occurred from February 12<sup>th</sup> to March 23<sup>rd</sup>, where the Dow lost 37%. However, by the end of fiscal year 2020, the Dow had gained 43.7% on the year, rising above pre-pandemic levels

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# RESEARCH ON THE IMPACT OF COVID-19 ON INVESTMENT DECISIONS AND SENTIMENT

#### Research Methodology

In order to complete this research, I am utilizing a survey in order to understand the investment decisions of the population. The sample group that is completing the survey are young adults ages 18-25 with the many of them attending an undergraduate college or university. The majority of these survey participants were Bryant University undergraduate students and alumni that participate anonymously. The Qualtrics survey that is used was twenty-six questions long and is designed to take roughly seven minutes to complete so that the survey participants do not lose interest very easily. After collecting the necessary data from slightly over one hundred survey participants, the data is cleaned and analyzed in order to better understand how they might help in answering my thesis question.

#### Potential Research Issues and Ethical Considerations

It is important to note that this research is not perfect and has potential issues that may have potentially affected the results of the data that was collected from the survey. One potential research issue that may affect the results of this research would be the fact that some young adults may not have full access to their bank accounts and funds due to parental controls. Also, out of the number of people who do have access to their funds, it might be difficult to find a large enough sample of young adults that are choosing to invest their money into the U.S. stock market. Many college students have limited funds that they most likely use for discretionary spending on recreational events, clothing, food, and other expenditures. Other research issues may arise if the sample population does not represent a diverse enough group of people. At a business school such as Bryant University, you have a majority of the students coming from predominantly white, middle-class families. This fact may change the amount of discretionary funds that these young adults have access to. Also, access to a higher education may change the way that the young adults involved in the sample choose to use their money. These issues and possibly several others may have the potential to skew the research data and should be considered when making conclusions.

#### **Research Questions**

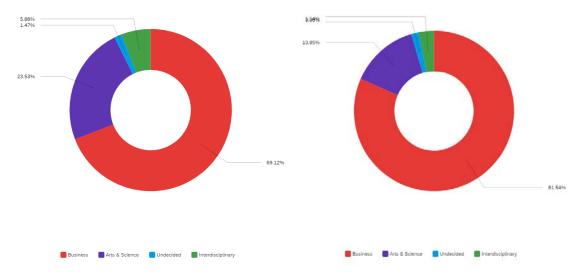
I believe that the most effective way to answer this thesis question is to ask specific questions about how young adults have chosen to use their money before the pandemic and then ask questions about how they have chosen to spend their money during the COVID-19 pandemic. These questions are also aimed on identifying the knowledge and experience that the survey-takers have with the U.S. stock markets. It is also important to inquire knowledge on how young adults, if they have experience in the stock market, have been acquiring their knowledge on the buying and selling of securities and through what brokerage they are accessing the U.S. stock market.

First, the survey begins with basic identifying questions that asked for age, gender and if the participants are currently attending a university. From there, if students are attending a university, they are asked for their academic year along with their minors and majors. These questions are designed to help us decipher how far along the participants are throughout their college careers, along with what interested them. The survey then begins asking questions about how many, if any, finance classes the participants have taken. This allows us to control for the level of proficiency in finance that the students should have depending on their choice of taking zero to five or more finance classes. It then asks if they own a brokerage account, when they opened their first brokerage account, and for what purpose. This helps to find a timeline for when participants began investing in the market and what purposes are the most popular among these young adults. Participants are then asked about how they have historically received information on trading, what sources they typically used, how the news about the pandemic is affecting their decisions, and if the pandemic is changing how they've invested their money. These questions are aimed to give enough information to be able to effectively answer the thesis question.

#### Results

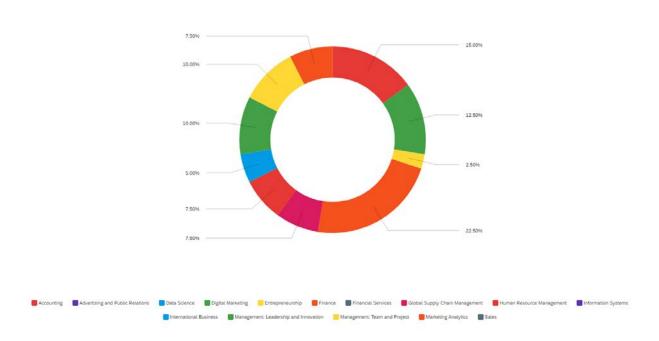
After analyzing the data from the Qualtrics survey, there are some important findings that can be seen from those who participated in the study. The majority of the participants in this study are Bryant University undergraduate students. When these Bryant University students are asked which college they attend, it is apparent that, of the students who do not own a personal brokerage account, 69.1% are in the college of business. However, of those students who do

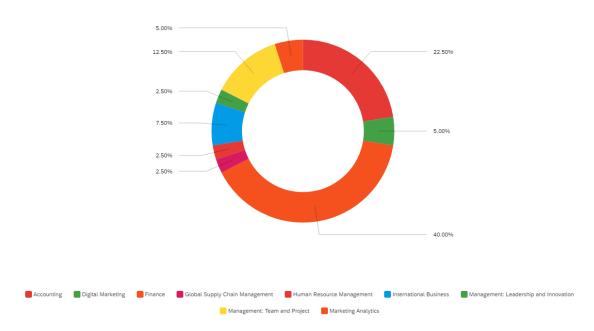
own a personal brokerage account, 81.5% of them attend the college of business here at Bryant.



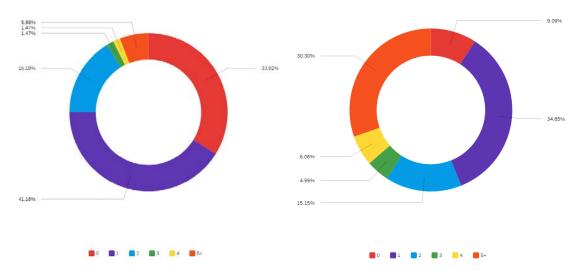
Figures 4 & 5: Results of college attended, non-investors (left) vs investors (right)

Diving deeper, we see that 37.5% of non-investors are majoring in finance, financial services or accounting compared to almost 60% of investors.



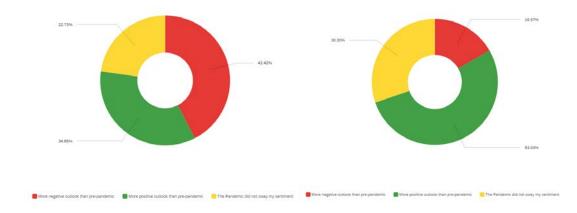


Figures 6 & 7: Results of business major, non-investors (top) vs investors (bottom) When these students are asked how many finance classes they have taken during their academic career, 25% of non-investors have taken at least 2 finance classes with about 6% having taken 5 or more. However, of those that own a personal brokerage account, 56% have taken at least 2 finance classes with about 30% of them having taken 5 or more.



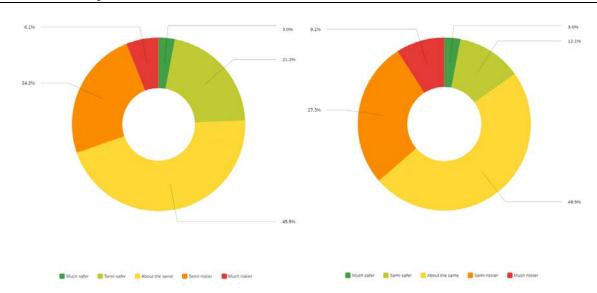
Figures 8 & 9: Results of finance classes taken, non-investors (left) vs investors (right) Ironically, when the non-investors are asked why they didn't own a personal brokerage account, 59% of them answer, "I do not understand the investment process and the market well enough".

After filtering for those who answered "yes" to owning a personal brokerage account, there are even more significant findings. When asked how much they believe the news of the COVID-19 pandemic affected their investment decisions over the past 2 years or so, we see that 69% believe that their investing decisions have been impacted a moderate amount or more. It is also shown that 36.4% of these investors opened a new account during March of 2020 with another 54.6% that deposited additional funds into an existing account. Also, about 76% of these investors answer that the main reason that they are investing in their brokerage account was for long-term investing.



Figures 10 & 11: Results of sentiment towards short-term performance (left) vs long-term performance (right)

When these investors are asked about their sentiment towards the short-term performance of the market, we see that about 42% said that they have a more negative outlook on the short-term performance of the market when compared to their pre-pandemic outlook. However, when they are asked about their confidence in the market's long-term performance, it is apparent that a substantially larger population has a more positive outlook on the market's long-term performance when compared to their pre-pandemic sentiment. This finding seems to be consistent with previous recessions and similar viral outbreaks that are being studied in this paper. Investors don't like uncertain conditions; it worries them and gives them an uneasiness about short-term economic performance. However, unlike similar historic market drops, the data shows that investors didn't take their money and run, in fact they jumped into the fire in an attempt to lock down discounted prices and the potential of enormous earnings in the long-run regardless of short-term market drops.



Figures 12 & 13: Results of safer or riskier securities and indexes (left)

vs safer or riskier trading strategies (right)

When investors are asked about whether they are investing in safer or riskier securities and indexes due to the pandemic, we're able to see a slight skew towards the riskier side of securities and indexes with approximately 30% of investors admitting to investing in semi-riskier or much riskier securities. However, when asked if they are utilizing safer or riskier trading strategies due to the pandemic's effects, the data shows a much more significant differentiation between risk and safety with approximately 36% of investors admitting to utilizing semi-riskier or much riskier trading strategies. These charts show that, unlike investors that were impacted by previous recessions, investors during the COVID-19 pandemic are willing to take on more risk in order to potentially increase their return on their investments.

#### **CONCLUSION**

The literature review of previous U.S. recessions and similar events shows that, economic downturns such as the one that the COVID-19 pandemic has created, have a tendency to instill fear into investors and cause them to pull their money from the market in the short-term. Along with this, comes lasting impacts of value-based investing and an unwillingness to take risk. However, this is why studying the COVID-19 pandemic is so vital. We live in a world where information travels nationwide in the matter of minutes and where investing has

become gamified into phone applications, cryptocurrencies, and meme stocks. Investors, most notably young adults who are invested in the market, are dealing with an entirely different value-system and rulebook where high-risk, high-reward securities might be more enticing than investing in a retirement plan and the discounted prices and seemingly unlimited time to sit at home in quarantine might have been the perfect breeding ground for this new generation of investing. Building off this study, future research could include studying a larger, more diverse population of young adults that might attend universities that aren't as business-oriented or those who may have chosen to not attend college. Future research could also be done further down the line when the impact of COVID isn't as apparent.

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#### REFERENCES

- Washington Post. "A Guide to the Financial Crisis 10 Years Later." Accessed March 7, 2022. <a href="https://www.washingtonpost.com/business/economy/a-guide-to-the-financial-crisis--10-years-later/2018/09/10/114b76ba-af10-11e8-a20b-5f4f84429666\_story.html">https://www.washingtonpost.com/business/economy/a-guide-to-the-financial-crisis--10-years-later/2018/09/10/114b76ba-af10-11e8-a20b-5f4f84429666\_story.html</a>.
- Baker, Scott, Nicholas Bloom, Steven Davis, and Stephen Terry. "COVID-Induced Economic Uncertainty." Cambridge, MA: National Bureau of Economic Research, April 2020. https://doi.org/10.3386/w26983.
- Baker, Scott R., Nicholas Bloom, Steven J. Davis, Kyle J. Kost, Marco C. Sammon, and Tasaneeya Viratyosin. "The Unprecedented Stock Market Impact of COVID-19." Working Paper. Working Paper Series. National Bureau of Economic Research, April 2020. <a href="https://doi.org/10.3386/w26945">https://doi.org/10.3386/w26945</a>.
- Baker, Scott R, Nicholas Bloom, Steven J Davis, Kyle Kost, Marco Sammon, and Tasaneeya Viratyosin. "The Unprecedented Stock Market Reaction to COVID-19." Edited by Jeffrey Pontiff. *The Review of Asset Pricing Studies* 10, no. 4 (December 1, 2020): 742–58. https://doi.org/10.1093/rapstu/raaa008.
- ——. "The Unprecedented Stock Market Reaction to COVID-19." *The Review of Asset Pricing Studies* 10, no. 4 (December 1, 2020): 742–58. https://doi.org/10.1093/rapstu/raaa008.
- Barro, Robert J., Jose F. Ursua, and Joanna Weng. "The Coronavirus and the Great Influenza Epidemic:: Lessons from the 'Spanish Flu' for the Coronavirus' Potential Effects on Mortality and Economic Activity." American Enterprise Institute, 2020. <a href="https://www.jstor.org/stable/resrep24600">https://www.jstor.org/stable/resrep24600</a>.
- Bouri, Elie, Riza Demirer, Rangan Gupta, and Jacobus Nel. "COVID-19 Pandemic and Investor Herding in International Stock Markets." *Risks* 9, no. 9 (September 2021): 168. https://doi.org/10.3390/risks9090168.
- Choy, Yoke, and CY Chong. "Effect of Subprime Crisis on U.S. Stock Market Return and Volatility." *Global Economy and Finance Journal* 4, no. 1 (March 2011): 102–11.
- Cortes, Gustavo S., Bryan Taylor, and Marc D. Weidenmier. "Financial Factors and the Propagation of the Great Depression." *Journal of Financial Economics*, August 29, 2021. https://doi.org/10.1016/j.jfineco.2021.08.018.
- Cronqvist, Henrik, Stephan Siegel, and Frank Yu. "Value versus Growth Investing: Why Do Different Investors Have Different Styles?" *Journal of Financial Economics* 117, no. 2 (August 1, 2015): 333–49. <a href="https://doi.org/10.1016/j.jfineco.2015.04.006">https://doi.org/10.1016/j.jfineco.2015.04.006</a>.
- Del Angel, Marco, Caroline Fohlin, and Marc Weidenmier. "Do Global Pandemics Matter for Stock Prices? Lessons from the 1918 Spanish Flu." Cambridge, MA: National Bureau of Economic Research, January 2021. https://doi.org/10.3386/w28356.
- Díaz, Fernando, Pablo A. Henríquez, and Diego Winkelried. "Stock Market Volatility and the COVID-19 Reproductive Number." *Research in International Business and Finance* 59 (January 1, 2022): 101517. <a href="https://doi.org/10.1016/j.ribaf.2021.101517">https://doi.org/10.1016/j.ribaf.2021.101517</a>.
- Dorn, Daniel, and Martin Weber. *Christoph Merkle, and Participants at the 2012 Boulder Summer Conference on Consumer Financial Decision*, 2013.
- Dwyer, Rachel E., Lisa A. Neilson, Michael Nau, and Randy Hodson. "Mortgage Worries: Young Adults and the US Housing Crisis." *Socio-Economic Review* 14, no. 3 (July 1, 2016): 483–505. <a href="https://doi.org/10.1093/ser/mwv018">https://doi.org/10.1093/ser/mwv018</a>.
- ------. "Mortgage Worries: Young Adults and the US Housing Crisis." *Socio-Economic Review* 14, no. 3 (July 1, 2016): 483–505. https://doi.org/10.1093/ser/mwv018.

- Fallahgoul, Hasan. "Inside the Mind of Investors During the COVID-19 Pandemic: Evidence from the StockTwits Data." *ArXiv:2004.11686* [Econ, q-Fin], May 8, 2020. <a href="http://arxiv.org/abs/2004.11686">http://arxiv.org/abs/2004.11686</a>.
- Farmer, Roger E. A. "The Stock Market Crash of 2008 Caused the Great Recession: Theory and Evidence." *Journal of Economic Dynamics and Control* 36, no. 5 (May 1, 2012): 693–707. https://doi.org/10.1016/j.jedc.2012.02.003.
- Kiruba, Angelin, and Vasantha Vasantha. "Determinants in Investment Behaviour During The COVID-19 Pandemic." *The Indonesian Capital Market Review* 13, no. 2 (July 30, 2021). https://doi.org/10.21002/icmr.v13i2.13351.
- Klein, Maury. "The Stock Market Crash of 1929: A Review Article." *The Business History Review* 75, no. 2 (2001): 325–51. https://doi.org/10.2307/3116648.
- McInerney, Melissa, Jennifer M. Mellor, and Lauren Hersch Nicholas. "Recession Depression: Mental Health Effects of the 2008 Stock Market Crash." *Journal of Health Economics* 32, no. 6 (December 1, 2013): 1090–1104. https://doi.org/10.1016/j.jhealeco.2013.09.002.
- Naseem, Sobia, Muhammad Mohsin, Wang Hui, Geng Liyan, and Kun Penglai. "The Investor Psychology and Stock Market Behavior During the Initial Era of COVID-19: A Study of China, Japan, and the United States." *Frontiers in Psychology* 12 (2021). <a href="https://www.frontiersin.org/article/10.3389/fpsyg.2021.626934">https://www.frontiersin.org/article/10.3389/fpsyg.2021.626934</a>.
- Ortmann, Regina, Matthias Pelster, and Sascha Tobias Wengerek. "COVID-19 and Investor Behavior." *Finance Research Letters* 37 (November 1, 2020): 101717. https://doi.org/10.1016/j.frl.2020.101717.
- ——. "COVID-19 and Investor Behavior." *Finance Research Letters* 37 (November 1, 2020): 101717. https://doi.org/10.1016/j.frl.2020.101717.
- Osili, Una Okonkwo, and Anna Paulson. "Bank Crises and Investor Confidence." Working Paper. Working Paper, 2008. <a href="https://www.econstor.eu/handle/10419/70564">https://www.econstor.eu/handle/10419/70564</a>.
- Pagano, Michael S., John Sedunov, and Raisa Velthuis. "How Did Retail Investors Respond to the COVID-19 Pandemic? The Effect of Robinhood Brokerage Customers on Market Quality." *Finance Research Letters*, January 26, 2021, 101946. https://doi.org/10.1016/j.frl.2021.101946.
- Pisani, Bob. "How the Financial Crisis Changed Stock Trading on Wall Street." CNBC, September 10, 2018. <a href="https://www.cnbc.com/2018/09/10/how-the-financial-crisis-changed-stock-trading-on-wall-street.html">https://www.cnbc.com/2018/09/10/how-the-financial-crisis-changed-stock-trading-on-wall-street.html</a>.
- Richardson, Gary, Alejandro Komai, Michael Gou, and Daniel Park. "Stock Market Crash of 1929 | Federal Reserve History." ..Org. Federal Reserve History, November 22, 2013. https://www.federalreservehistory.org/essays/stock-market-crash-of-1929.
- Shefrin, Hersh. "Great Depression Economics 101: What Historical Numbers And Charts From The Great Depression Foretell About The Economy And Stock Market." Forbes, April 12, 2020. <a href="https://www.forbes.com/sites/hershshefrin/2020/04/12/great-depression-economics-101-what-historical-numbers-and-charts-from-the-great-depression-foretell-about-the-economy-and-stock-market/">https://www.forbes.com/sites/hershshefrin/2020/04/12/great-depression-economics-101-what-historical-numbers-and-charts-from-the-great-depression-foretell-about-the-economy-and-stock-market/</a>.
- Singh, Amanjot. "COVID-19 and Safer Investment Bets." *Finance Research Letters* 36 (October 1, 2020): 101729. <a href="https://doi.org/10.1016/j.frl.2020.101729">https://doi.org/10.1016/j.frl.2020.101729</a>.
- Talwar, Manish, Shalini Talwar, Puneet Kaur, Naliniprava Tripathy, and Amandeep Dhir. "Has Financial Attitude Impacted the Trading Activity of Retail Investors during the COVID-19

- Pandemic?" *Journal of Retailing and Consumer Services* 58 (January 1, 2021): 102341. https://doi.org/10.1016/j.jretconser.2020.102341.
- "The Great Recession and Its Aftermath | Federal Reserve History," November 22, 2013. https://www.federalreservehistory.org/essays/great-recession-and-its-aftermath.
- "The Stock Market Crash of 2008 Caused the Great Recession Theory and Evidence | Elsevier Enhanced Reader." Accessed March 10, 2022. https://doi.org/10.1016/j.jedc.2012.02.003.
- Thorbecke, Willem. "The Impact of the COVID-19 Pandemic on the U.S. Economy: Evidence from the Stock Market." *Journal of Risk and Financial Management* 13, no. 10 (October 2020): 233. https://doi.org/10.3390/jrfm13100233.
- MIT Sloan. "To Navigate the Current Markets, Look Back to 2008 and 1918." Accessed March 7, 2022. <a href="https://mitsloan.mit.edu/ideas-made-to-matter/to-navigate-current-markets-look-back-to-2008-and-1918">https://mitsloan.mit.edu/ideas-made-to-matter/to-navigate-current-markets-look-back-to-2008-and-1918</a>.