



Undergraduate Honors Theses

2018-04-19

The Rise and Fall of the Stock Market: A Look at Financial Professionals Suicide Ideation

Jefferson McClain

Follow this and additional works at: https://scholarsarchive.byu.edu/studentpub_uht



Part of the [Economic Theory Commons](#), [Finance Commons](#), and the [Psychiatric and Mental Health Commons](#)

BYU ScholarsArchive Citation

McClain, Jefferson, "The Rise and Fall of the Stock Market: A Look at Financial Professionals Suicide Ideation" (2018). *Undergraduate Honors Theses*. 24.
https://scholarsarchive.byu.edu/studentpub_uht/24

This Honors Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Undergraduate Honors Theses by an authorized administrator of BYU ScholarsArchive. For more information, please contact ellen_amatangelo@byu.edu.

Honors Thesis

THE RISE AND FALL OF THE STOCK MARKET:
A LOOK AT FINANCIAL PROFESSIONALS
SUICIDE IDEATION

by

Jefferson T. McClain

Submitted to Brigham Young University in partial fulfillment
of graduation requirement for University Honors

Management Departments

Brigham Young University

March 2018

Advisor: Peter Madsen

Honors Coordinator: Mark Hansen

ABSTRACT
THE RISE AND FALL OF THE STOCK MARKET:
A LOOK AT FINANCIAL PROFESSIONALS
SUICIDE IDEATION

Jefferson McClain

Management Department

Bachelor of Science in Management –

Organizational Behavior/Human Resources

Key words: Suicide ideation, suicide, stock market, finance, mental health

On October 24, 1929, the United States stock market crashed. Will Rogers, a local newspaper writer, said of that experience, “When Wall Street took that tail spin, you had to stand in line to get a window to jump out of, and spectators were selling space for bodies in the East River” (Lowenthal 1987). Tales of ruined stockbrokers jumping from the windows of tall buildings ran across the country. These stories have prompted interest in the interaction between workplace environment and mental health. In this study, we looked at the relationship between stock market performance and suicide ideation for working professionals. By analyzing data from the National Survey on Drug Use and Health, we compared financial professionals and public administrators to see how the stock market affected both groups suicide ideation and

whether the effect was larger for one working population than the other. We hypothesize the relationship between stock market performance and suicide ideation to be positive for those in the financial market. We further hypothesize that the effect of stock market performance on suicide ideation will be greater for those in the financial market than for academic professionals. The results of our study will provide further key steps in understanding workplace environment and suicide ideation.

TABLE OF CONTENTS

Contents

Abstract..... 3

List of Tables & Figures 6

Introduction 7

Literature Review and Theory..... 9

Methods..... 14

 Participants 14

 Materials 16

 Design and Procedure 17

 Analysis & Results 17

Discussion 20

References 26

LIST OF TABLES & FIGURES

Figure 1	15
Table 1.....	16
Table 2.....	18
Table 3.....	19
Table 4.....	20

Introduction

On October 24, 1929, the United States stock market crashed. Will Rogers, a local newspaper writer said of that experience, “When Wall Street took that tail spin, you had to stand in line to get a window to jump out of, and spectators were selling space for bodies in the East River” (Lowenthal 1987). Reporters appear to be quick to point out the psychological rather than the financial ramifications of the crash by writing stories about men like John G. Schwitzgebel who shot himself at the Kansas City Club on the evening of October 29th (James, 2010). In his book, *The Great Crash*, author John Galbraith tells a story of two men jumping, “hand-in-hand” from a high hotel room because of the loss of income from their joint stock market account (Galbraith, 2009).

Professors at Cambridge University conducted a study to try to establish the causal relationship between systemwide financial crisis and increased deaths from heart disease. They focused their study on wealthy nations and developing countries as these areas were more likely to feel a greater impact from the 1929 market crash. David Stickler, the lead author, stated, “Our findings show that financial crises are not just about money – they also impact on people’s health” (Cookson, 2008).

Reports of increased health risks, including heart disease and suicide, continue to emerge anytime the market takes a drop. Black Monday, a term used to describe worldwide market crash on October 19, 1987, provides more examples of the emotional toll resulting from a falling stock market. One such example comes from the Vernon Lamberg, a wealthy investor who lost \$500,000 as a result of the crash. In an interview, a friend of Lamberg stated that Lamberg considered himself a market expert and that he

felt his friend had, “exposed himself to too much risk, and . . . got caught in the worst market day in the history of this country” (Investor, 1987). After suffering the \$500,000 loss, Lamberg wrote a long-handwritten note and said he, “couldn’t live with the shame.” He committed suicide shortly after that in a hotel room.

Lamberg’s experience is of particular interest as he is one who (1) believed he was an expert in the workings of the stock market and (2) who had invested a large amount of money, and we can also assume time, in the market. We know that stock market drops can have a negative impact on the overall health and mortality of the market populous in aggregate. However, little is scientifically known as to the psychological effects a stock market drop has on those who, like Lamberg, have ample experience in working with the market and who invest heavily, whether it be through time or monetary means, in the market.

In this article thesis, we seek to discover whether the stock market behavior has a significant impact on financial workers suicide ideation. Financial professionals are likely to share similar characteristics with Lamberg and therefore can provide a unique perspective to researchers interested in workplace stress and mental health outcomes. We believe financial professionals to be in a position of particular vulnerability to the stock market price as their livelihood depends greatly on the rise and success of the market. We seek to help the literature address further the total effects, whether positive or negative, the stock market has on the mental wellbeing. While most previous studies have looked at such effects across entire countries or continents (Chang et al., 2013; Stuckler et al., 2011), we desire to look closely at those who work most directly

with the market. To ensure that we are not biased in our observation and calculation, we will identify another comparable workplace group to compare the effect of stock market price on suicide.

Literature Review and Theory

The stock market crash of 1929 provides a rich theoretical case study from which we can start to see the effects the stock market has on the health of the general populous. “The unique feature of the American panic [that lead to the 1929 market crash] is that no one has ever been able convincingly to explain what caused it, or even what the specific trigger for the panic might have been” (James, 2010). The unexplainability of the 1929 crash is one of several reasons that it comes back to prominently to investors minds when they perceive a potential stock market crash.

Consider the response of investors to the global stock market collapse of October 1987. Directly after the October 1987 crash Robert Shiller and his team of researchers conducted surveys with investors and institutional agents inquiring about their behavior during the crash. He concluded that:

Investors had expectations before the 1987 crash that something like a 1929 crash was a possibility, and comparisons with 1929 were an integral part of the phenomenon. It would be wrong to think that the crash could be understood without reference to the expectations engendered by this historical comparison. In a sense many people were playing out an event again that they knew well (Shiller, 1987).

The reference to the 1929 market crash is, therefore, a continuous and necessary driver of financial crises (James, 2010). In other words, when the market is doing well, investors look at the future with bright hope and optimism. However, when the market starts to look sour investors previously cheerful dispositions collapse and replaced with memories or stories of previous disasters.

In the months and years following the 1929 crash deaths from heart disease rose from 257.4 (per 100,000) in 1928 to 275.5 in 1932 (James, 2010). In more recent stock market crashes, individuals have self-reported decreases in well-being (Deaton, 2011), while exhibiting increased symptoms of depression, anxiety, and other mental health disorders (McInerney, Mellor, & Nicholas, 2012) which led to an increase in hospitalization for psychological disorders (Engelberg & Parsons, 2014).

Sudden drops in the stock market, economic shocks, are linked with suicide (Stuckler et al. 2009; Reeves, McKee, & Stuckler, 2013; Durkheim, 2013). These shocks increase the economic stress placed on individuals and are often accompanied with melancholy thoughts of continued redundancy in the future (Haw et al., 2014). An individual experiencing increased economic stress can directly lead to feelings of hopelessness, depression, and impulsive behaviors which in turn leads to an increased risk of suicide (Haw et al., 2014; Schneiderman, Ironson, & Siegel, 2005; Rabkin and Struening, 1976). The 2008 Great Recession was associated with a significant rise in suicides among many in Europe and the United States (Chang et al., 2013; Stuckler et al., 2011).

What happens, then, if an individual's job is tied to the stock market? Most studies only consider the effect the market has on the mental health of the investors rather than looking at the mental health of the individual working daily with the market (Chang, et al., 2013; Stuckler, et al. 2011; Deaton, 2011; McInerney, Mellor, & Nicholas, 2012; Haw, et al., 2014). One study has looked at the influence the stock market returns had on suicide rates across the country (Choi, 2016). This study sought to further understand the implications of Baker and Wurgler's (2006) finding of a significant relationship between stock market returns and the sentiment, or mood, of stock market investors. Choi's study, however, explains how the overall mood (as measured by suicide) affected the prices in the stock market rather than how the stock market affected suicide rates in stock market participators. We are interested in the opposite relationship, that is to say, what relationship or influence the stock market has on investor suicide or suicide ideation.

We know that the workplace may play a contributing role in experiencing stress. Job strain, low decision latitude, role ambiguity, work relationships, low social support, and high job insecurity have all been shown to have a relationship with poorer mental health, particularly among men (Cartwright & Cooper, 2002; Ferrie et al., 2002; Labuschagne et al., 2005; Martin, 2005; Rollinson, 2005; De Bruin & Taylor, 2006; Kim et al., 2006; Coetzer & Rothmann, 2007; László et al., 2010; Meltzer et al., 2010). Research shows that experiencing high levels of work-related stress can lead to increased and intensified feelings of depression, anxiety, irritability, tension, and mental blocks (Cartwright & Cooper, 2002; Martin, 2005, Coetzee & de Villiers, 2010). Stress

experienced at work also appears to be strongly linked with attempted and actual suicides in both men and women (Feskanich et al., 2002; Ostry et al., 2007; Routley and Ozanne-Smith, 2012).

Organizational scholars also have found that individuals who work in an external locus of control are more prone to feelings of helplessness which is a common element found in suicide and suicide ideation (Gerber et al., 1981; Topol & Reznikoff, 1982, Baumeister, 1990). Such individuals often find themselves in workplace situations where outside factors control the pace, amount, or monetary gain of their labor. Sales personnel can easily find themselves in such a situation as their job is based on the decisions of potential buyers. While he or she does have influence and hopefully the ability to persuade the customer into purchasing their good or service they do not have full control over the outcome of their job.

It is fair to say that individuals working in the financial sector are, as a result of their work, more likely to interact with the stock market on a more frequent basis than individuals in other jobs. As such, they may be more sensitive to economic shocks than individuals with other occupations. Psychological effects resulting from changes in the stock market can be observed in relatively short periods of time. Depressive symptoms can develop in two weeks and major life events, such as losing a job or having financial problems, can have measurable mental health effects within one month (Dohrenwend, 1973; Kendler et al., 1999; McInerney, Mellor, & Nicholas 2012). As such, we find it appropriate to concentrate our findings on suicide ideation rather than a suicide attempt. While it is more common for individuals to engage in suicidal ideation than to

commit suicide, suicidal ideation is an important risk factor for completed suicide in short (Isometsa et al., 1997) and long-term studies (Goldstein, Black, & Nasrallah, 1991; Brown, Beck, Steer, & Grisham, 2000). It has also been shown that stressful life events involving economic loss, are among the strongest situational correlates of suicide ideation (Turvey et al., 2002).

For our analysis, we will be looking at the effect the stock market has on suicide ideation of financial professionals. Individuals working in the finance sector work closely with the stock market and will, therefore, be more sensitive to market changes. They are also more likely to have investments in the stock market which will add to their sensitivity to potential market shocks. Further, financial professionals may operate in an external locus of control when it comes to the stock market as their influence on the market is less than the potential influence the market has on their job and investments. Thus:

Hypothesis 1: Financial professionals suicide ideation and the behavior of the stock market have an inverse relationship. That is to say when the stock market drops in value the likelihood of financial professionals to experience suicide ideation increases.

To understand the relative magnitude of any potential increased risk of suicide ideation experienced by financial professionals, we will run a second analysis with public administrators. From the sample in the National Survey on Drug Use and Health (NSDUH), we find these two groups to have the most similar distribution in income.

Thus:

Hypothesis 2: Public administrators suicide ideation and the behavior of the stock market will have no relationship.

Methods

Participants

Participants in this study were randomly selected via a multistage probability sample for each of the 50 states as well as the District of Columbia to participate in the NSDUH. The eight states with the largest proportion of the total US population had target sample sizes of 3,600 participants. The remaining 42 states, as well as the District of Columbia, had sample sizes of 900 participants. The actual sample size of the 2002-2015 survey was 68,073 individuals. The data that we used in our study included data collected from 2004-2014 and had fewer individuals included. We are interested in looking at working professionals in the finance market. As such, we will be using the following screening criterion. First, we look at respondents who indicated they were currently working in the finance sector- as designated by their response to question WRKIDST2 ("What type of Business or Industry do you work in?"). Further, we screened those who are working in the finance sector by looking at those who showed their primary job was "Executive/ Administrative/ Managerial/ Financial" of "Professional (not Education/Entertainment/Media)" in question WRKOCUP2 ("What kind of work do you do? That is, what is your occupation?"). As we want to be able to compare our

findings to a group similar in work demographics we also did the same screening for individuals who work as public administrators. Figure one shows a histogram comparing the different income distributions of surveyed financial workers and public administrators. The two groups appear to have a similar distribution. Table 1 includes summary statistics of the two distributions. A t-test was run to see if the means of the groups were statistically different from each other. Based on a two-sided p-value of .4552 we failed to reject the null hypothesis and conclude that the two means are equal. This was sufficient evidence for us to believe that the two samples were similar in their distributions. Having similar distributions was important because we wanted to compare two groups who had relatively the same income levels so that both groups would be as likely as the other to participate in the stock market.

Density of Income by Industry

Figure 1

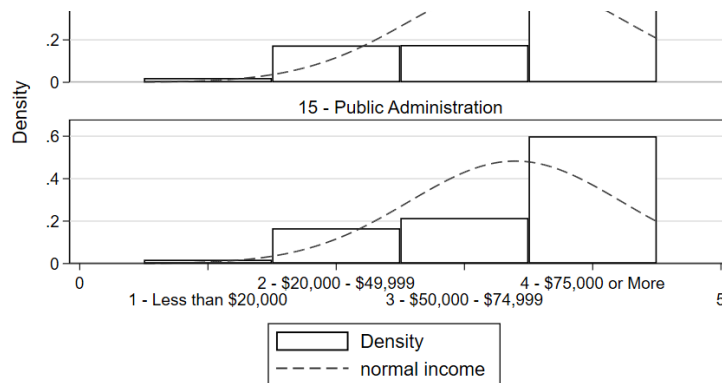


Table 1

Summary Statistics for Income

Group	Observations	Mean	St. Dev.	Min	Max
Finance	3,022	3.414295	0.845046	1	4
Public Administration	2,180	3.396789	0.826305	1	4

For our stock performance measure, we used the S&P500's quarterly percent return between the first open and the last close for each yearly quarter. We lagged this variable by one quarter to be able to establish causality. The S&P500 is highly correlated with other general stock market indices and may be considered a general measure of the stock market in general.

Materials

The NSDUH survey is administered quarterly. The variables included in the 2002-2015 NSDUH survey are only those variables that were collected comparably across all years of the survey. Each participant was asked questions about their demographics, income, education, and general living experience. They were also asked questions concerning drug use, treatment received, and perceived need for treatment. Also collected were metrics concerning mental health and mental health treatment. The measures for this survey are proven to be reliable over the longevity of the study.

For the purposed of our study, we looked at the metrics concerning mental health and basic demographics.

Design and Procedure

The research design of this study is retrospective and non-experimental. We performed a logit regression with the suicide ideation variable as our dependent variable. To ensure our model controls for as many confounding variables as possible, we included additional items outside of stock market performance and suicide ideation. Specifically, we included items that measure each individual's gender, age, race, marital status, and educational achievement and income levels. Since anxiety and depression have been shown to be highly correlated with suicide ideation (Feskanich et al., 2002; Ostry et al., 2007; Routley and Ozanne-Smith, 2012; Engelberg & Parsons, 2014) we included a variable for anxiety as well as depression. Since we hypothesized that an individual's increase in suicide ideation is caused by a drop in the stock market, we used anxiety and depression measures that ask participants whether they had a clinically diagnosed anxiety or depressive episode within the past year. This was our attempt to control for anxiety and depression generally while still allowing it to be a factor that is influenced by the stock market.

Analysis & Results

Before performing the logit analysis, we checked to ensure that none of the independent variables were highly correlated. Table 2 provides a representation of our correlation analysis. The highest correlating variables are anxiety (anxdyr) and depression (deprsy). We expect this to be the case as prior research has found these

two mental illnesses to be correlated. Their correlation, however, does not exceed .4 so we left them in our model.

Table 2

Correlation values of independent variables used in logit regression

	irsex	NEWRACE2	irmarit	EDUCCAT2	income	anxdyr	deprsy	CATAG6	SP500_Lag
irsex	1.00								
NEWRACE2	0.05	1.00							
irmarit	0.08	0.06	1.00						
EDUCCAT2	-0.20	-0.07	-0.02	1.00					
income	-0.14	-0.10	-0.38	0.27	1.00				
anxdyr	0.07	-0.04	0.03	-0.01	-0.03	1.00			
deprsy	0.12	-0.05	0.05	-0.03	-0.06	0.37	1.00		
CATAG6	-0.02	-0.10	-0.21	-0.09	0.12	-0.05	-0.01	1.00	
SP500_Lag	-0.01	0.02	0.00	0.02	0.03	0.01	0.00	-0.01	1.00

The results of our logit analysis are found in Tables 3 and 4. Table 3 shows the results when we did not lag the stock market performance variable. The only significant predictor in this model was depression in public administrators. This finding supports the well-accepted theory that depression and suicidal thoughts are correlated.

Addressing Hypothesis 1, we found evidence that stock market performance effects suicide ideation in financial professionals. Based on the p-value of less than .05 we reject the null hypothesis and find the odds ratio of reporting suicide ideation in financial professionals based on the stock market performance to be 19.09, or more precisely, 19.09 to 1. This finding does not confirm our hypothesis that the stock market performance and suicide ideation among financial professionals has a negative relationship, but rather suggests that the stock market and financial professionals suicide ideation have a positive relationship.

Table 3

*Summary of Logit Regression Analysis for Variable
Predicting Suicide Ideation*

Predictor	Finance		Public Administration	
	Odds Ratio	Std. Er.	Odds Ratio	Std. Er.
irsex	0.88	0.22	1.21	0.42
CATAG6	0.99	0.15	0.79	0.17
NEWRACE2	1.06	0.06	0.95	0.09
irmarit	0.93	0.10	1.07	0.14
EDUCCAT2	1.03	0.16	1.08	0.25
income	0.65	0.10	0.92	0.17
anxdyr	1.38	0.50	1.92	0.77
deprsyr	8.89	2.61	8.69**	3.12
SP500_Lag	1.00	1.31	0.36	0.57
Constant	0.07	0.08	0.02	0.03
χ^2	73.81		63.07	
<i>df</i>	9		9.00	

Note: Controls are irsex, CATAG6, NEWRACE2, irmarit, EDUCCAT2, income, anxdyr, & deprsyr

* $p < .05$. ** $p < .01$

As we looked at public administrators, we failed to reject the null hypothesis based on a p-value greater than .5 and found that stock market performance did not have a significant influence on whether working professionals in this sector experienced higher levels of suicide ideation. Thus, we confirm Hypothesis 2 that there is no relationship between stock market performance and stock market ideation among public administrators. Our finding does not imply that other professions do not experience suicide ideation as a result of stock market drops. As the public administrator category had an income distribution most similar to those in the finance professional category we elected to compare results between these two groups under

the impression that both groups had similar discretionary income available for stock market investment. Since the relationship is significant for finance professionals and not for public administrators, the confirmation of Hypothesis 2 helps us to solidify the idea that the stock market’s performance influences finance professionals suicide ideation differently than other working professionals with a similar discretionary income.

Table 4

Summary of Logit Regression Analysis for Variable Predicting Suicide Ideation

Predictor	Finance		Public Administration	
	Odds Ratio	Std. Er.	Odds Ratio	Std. Er.
irsex	0.88	0.22	1.23	0.43
CATAG6	0.96	0.15	0.79	0.17
NEWRACE2	1.06	0.06	0.95	0.09
irmarit	0.93	0.10	1.07	0.14
EDUCCAT2	1.03	0.16	1.08	0.25
income	0.65**	0.10	0.92	0.17
anxdyr	1.43	0.52	1.87	0.75
deprsyr	8.83**	2.60	8.87**	3.18
SP500_Lag	19.09*	27.65	1.56	2.70
Constant	0.08	0.09	0.02	0.03
χ^2	78.19		62.73	
df	9		9.00	

Note: Controls are irsex, CATAG6, NEWRACE2, irmarit, EDUCCAT2, income, anxdyr, & deprsyr

* $p < .05$. ** $p < .01$

Discussion

Our study was conducted to ascertain whether there was a difference in suicide ideation as a result of the changes in the stock market between financial professionals and another comparable group based on income. We selected to compare the findings

from financial professionals with those of public administrators since we found their income distributions to be similar. We hypothesized that since financial professionals have increased proximity to the stock market regarding workspace and potential time investments, they would have an increased sensitivity to market changes as measured through suicide ideation. We found our hypothesis to be partially correct in that we found a relationship between the stock market performance and suicide ideation, just not a negative relationship. We found a positive relationship between stock market performance and concluded that there is a significantly high odds ratio for financial professionals to exhibit suicidal thoughts when the market experiences a measurable change. Our second hypothesis, stating that those not working in the financial sector would not be as sensitive (as measured by suicide ideation) to market changes was also correct. We found no significant increase in the risk of suicide ideation for those working in the public administration sector.

Our findings help to uncover new light on specific tolls drops in the stock market take on financial professionals. While many stories have been shared of financial analysts committing suicide after a drop in the market, these stories have been standardized with statistics showing the average number of suicides in the general population does not increase after a significant market drop (Galbraith, 2005). Our findings do not contradict these findings but help us to identify a new nuance of suicide risk after market drops. We find that those working in the financial sector are at additional risk of suicide ideation than those who do not spend as much time watching the rise and fall of the market.

The positive odds ratio found in our logit regression when the S&P500 was not negatively scored shows the positive relationship between suicide ideation of financial professionals with an *increasing* stock market. This finding is interesting as we would expect the opposite. One reason we theorize that explains our finding is based on the effects of a growing financial portfolio. We know that as the stock market increases the financial portfolios managed by financial professionals hopefully also increase. CEO's, included in our finance professional metric, typically pay special attention to the growth or decline of their personal and company financial portfolios. These financial professionals understand that there is an inherent risk in any financial investment. Further, as the value of the portfolio(s) they have a specific responsibility to protect and grow increase the risk of losing money gained, also increases. They also do not want to do anything that would cause these portfolios to decrease in value. What may increase suicide ideation in a growing market is the stress of continually trying to ensure investors that their portfolios are increasing. The worst situation a financial professional could be in would be one where the portfolios they are managing decrease in value during a rising market.

The knowledge of this increased suicide ideation risk will be of use to practitioners. The first step to resolving any problem is proper identification of the issue. This study helps to increase practitioners awareness of additional market investment risks. Organizations can now be aware that immediately following an economic shock in the market the need to provide mental health services for their financial employees is greater. Further, since the screening variable WRKOCUP2 helped to identify workers in

the executive offices, it is important to note that drops in stock prices can greatly increase the risk of suicide ideation among upper-level management. This knowledge can be used to help CEO's and CFO's understand that the emotions, stress, and feelings they are experiencing as a result of the stock market drop are normal. This knowledge can be beneficial as one factor that leads an individual to attempt suicide is the thought that they are the only one who feels the way they do (Baumeister, 1990).

Organizational Scholars will find our results interesting as they open up several potential research avenues. In our screening process, we screened for individuals working in the financial sector who were either executives, administrators, managers, or had specific financial concerns for the company or were professionals (not in education or the entertainment media). We did not screen the data to look exclusively at business executives. One suggestion for future research would be to go back through the data and screen for executives to see whether they had a particular risk of suicide ideation following an economic shock. Another research avenue that would be beneficial would be to see at what magnitude does an economic shock need to reach before it causes a significant influence on suicide ideation. An analysis of this sort would most likely need to look at more time-specific data to understand the specific nuances the market must display to effect suicide ideation seriously.

We do understand that this thesis has its limitations. The work category we used to screen financial professionals from other professionals included real estate, rental, and leading individuals along with finance workers. We attempted to include a real estate market measure (specifically the REIT- real estate investment trusts) but found

this measure to be too highly correlated with the S&P500. The resulting correlation violated the assumptions of logit regression and correspondingly couldn't be used in the model. We theorized that most of the real estate, rental, and leasing workers would have been screened out in the secondary, job title, screening process but we are not sure if they all were or were not. After looking at the trends of the REIT and the S&P500 we concluded their trends were similar, hence the collinearity, and decided it was acceptable just to use the S&P500 historical quarterly data. Another limitation of our data is that suicide ideation is often underrepresented in survey results (Turvey, 2002). The social stigma surrounding suicide often prevents survey participants from always disclosing such thoughts. We did not see any reasonable means of working around this limitation other than to say, as did Turvey, we expect that suicide ideation is higher than what is reported.

Previous studies on stock market performance and health implications have looked at such effects across entire countries or continents (Chang et al., 2013; Stuckler et al., 2011). Our study adds to the small, but growing, literature that desires to understand the nuances of the stock market effects on specific groups. As such we studied financial professionals whom we considered to be especially at risk to stress, anxiety, depression, and particularly suicide ideation because of their working proximity and external locus of control relating to the stock market on job success. We invite and encourage future research to help further understand the implications a falling or rising stock market has on the mental health of those most at risk.

References

- Baker, M., & Wurgler, J. (2006). Investor sentiment and the cross-section of stock returns. *Journal of Finance*, 61, 1645–1680. <http://doi.org/fttrdnj>
- Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review*, 97(1), 90-113. doi:10.1037//0033-295x.97.1.90
- Beck, A., Brown, G., Steer, R., Dahlsgaard, K., & Grisham, J. (1999). Suicide ideation at its worst point: a predictor of eventual suicide in psychiatric outpatients. *Suicide Life Threat Behav*, 29, 1-9.
- Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *Journal of Consulting and Clinical Psychology*, 68(3), 371-377. doi:10.1037//0022-006x.68.3.371
- Cartwright, S., & Cooper, C. (2002). An Organisational Stress Screening Tool: The Management Guide. *ASSET*.
- Chang, S., Stuckler, D., Yip, P., & Gunnell, D. (2013). Impact of 2008 global economic crisis on suicide: time trend study in 54 countries. *Bmj*, 347(Sep17 1). doi:10.1136/bmj.f5239
- Choi, S. (2016). Stock Market Returns and Suicide Rates: Evidence from the United States. *Social Behavior and Personality*, 44(1), 89-102.
- Coetzee, M., & De Villiers, M. (2010). Sources of job stress, work engagement and career orientations of employees in a South African financial institution. *Southern Africa Business Review*, 14.
- Coetzer, C., & Rothmann, S. (2007). Job demands, job resources and work engagement of employees in a manufacturing organisation. *Southern African Business Review*, 11(1), 17-32.

Cookson, C. (2008, February 25). Bank crises ‘increase heart attacks’. Retrieved from

<https://www.ft.com/content/a4779bfc-e3cf-11dc-8799-0000779fd2ac>

De Bruin, G., & Taylor, N. (2006). *Sources of Work Stress Inventory: Technical Manual*.

Johannesburg: Jopie van Rooyen & Partners.

Deaton, A. (2011). The financial crisis and the well-being of Americans: 2011 OEP Hicks

Lecture*. *Oxford Economic Papers*, 64(1), 1-26. doi:10.1093/oen/gpr051

Dohrenwend, B. S. (1973). Life Events as Stressors: A Methodological Inquiry. *Journal of*

Health and Social Behavior, 14(2), 167. doi:10.2307/2137066

Durkheim, E. (2013). *Suicide: a study in sociology*. Snowballpublishing.

Engelberg, J., & Parsons, C. A. (2016). Worrying about the Stock Market: Evidence from

Hospital Admissions. *The Journal of Finance*, 71(3), 1227-1250.

doi:10.1111/jofi.12386

Ferrie, J.E, Shipley, M.J., S.A. Stansfeld, M.G. Marmot (2002). Effects of chronic job

insecurity and change in job security on self reported health, minor psychiatric

morbidity, physiological measures, and health related behaviours in British civil

servants: the Whitehall II study J. Epidemiol. Community Health, 56, pp. 450-454

Feskanich, J.L. Hastrup, J.R. Marshall, G.A. Colditz, M.J. Stampfer, W.C. Willett, I.

Kawachi (2002)

Stress and suicide in the Nurses’ Health Study J. Epidemiol. Community Health,

56 , pp. 95-98

Galbraith, J. K. (2009). *The great crash 1929*. Boston: Houghton Mifflin Harcourt.

doi:978-0547248165

Gerber, K. E., Nehemkis, A. M., Farberow, N. L., & Williams, J. (1981). Indirect Self-

- Destructive Behavior in Chronic Hemodialysis Patients. *Suicide and Life-Threatening Behavior*, 11(1), 31-42. doi:10.1111/j.1943-278x.1981.tb00997.x
- Goldstein, R., Black, D., Nasrallah, A., & Winokur, G. (1991). The prediction of suicide: sensitivity, specificity, and predictive value of a multivariate model applied to suicide among 1906 patients with affective disorders. *Arch Gen Psychiatry*, 48, 418-422.
- Haw, C., Hawton, K., Gunnell, D., & Platt, S. (2014). Economic recession and suicidal behaviour: Possible mechanisms and ameliorating factors. *International Journal of Social Psychiatry*, 61(1), 73-81. doi:10.1177/0020764014536545
- Investor who lost in stock market crash commits suicide. (1987, October 27). Retrieved from <https://www.upi.com/Archives/1987/10/27/Investor-who-lost-in-stock-market-crash-commits-suicide/6373562309200/>
- James, H. (2010). The New York Stock Market Crash Of 1929. *Representations*, 110(1), 129-144. doi:10.2307/j.ctt7zw809.11
- Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal Relationship Between Stressful Life Events and the Onset of Major Depression. *American Journal of Psychiatry*, 156(6), 837-841. doi:10.1176/ajp.156.6.837
- Kim, I.H, Muntaner, C. , Y.H. Khang, D. Paek, S.I. Cho (2006). The relationship between nonstandard working and mental health in a representative sample of the South Korean population. *Soc. Sci. Med.*, 63, pp. 566-574
- Labuschagne, M., Bosman, J., & Buitendach, J. (2005). 'Job insecurity, job satisfaction and work locus of control of employees in a government organization. *SA Journal of Human Resource Management*, 3(2), 26-35.

- Lowenthal, B. (1987, October 25). THE JUMPERS OF '29. Retrieved October, 2017, from https://www.washingtonpost.com/archive/opinions/1987/10/25/the-jumpers-of-29/17defff9-f725-43b7-831b-7924ac0a1363/?utm_term=.48e9bd2edad6
- Martin, J. (2005). *Organisational Behaviour and Management*. London: Thomson.
- Mcinerney, M., Mellor, J. M., & Nicholas, L. H. (2013). Recession depression: Mental health effects of the 2008 stock market crash. *Journal of Health Economics*, 32(6), 1090-1104. doi:10.1016/j.jhealeco.2013.09.002
- National Survey on Drug Use and Health Codebook. (2016, August 30). Retrieved from NSDUH-2002- 2015
- Rabkin, J., & Struening, E. (1976). Live events, stress, and illness. *Science*, 194(4269), 1013-1020. doi:10.1126/science.790570
- Reeves, A., & Stuckler, D. (2013). Economic shocks and suicides: cross-national analysis of causes and protective factors in Europe and North America during the Great Recession. *European Journal of Public Health*, 23. doi:10.1093/eurpub/ckt126.019
- Reeves, A., Mckee, M., Gunnell, D., Chang, S., Basu, S., Barr, B., & Stuckler, D. (2014). Economic shocks, resilience, and male suicides in the Great Recession: cross-national analysis of 20 EU countries. *European Journal of Public Health*, 25(3), 404-409. doi:10.1093/eurpub/cku168
- Rollinson, D. (2005). *Organisational behaviour and analysis: an integrated approach*. Harlow: Financial Times Prentice Hall.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and Health: Psychological, Behavioral, and Biological Determinants. *Annual Review of Clinical Psychology*,

1(1), 607-628. doi:10.1146/annurev.clinpsy.1.102803.144141

Shiller, R. (1987). Investor Behavior in the October 1987 Stock Market Crash: Survey Evidence. doi:10.3386/w2446

Stuckler, D., Basu, S., Suhrcke, M., Coutts, A., & Mckee, M. (2009). The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *The Lancet*, 374(9686), 315-323. doi:10.1016/s0140-6736(09)61124-7

Stuckler, D., Basu, S., Suhrcke, M., Coutts, A., & Mckee, M. (2011). Effects of the 2008 recession on health: a first look at European data. *The Lancet*, 378(9786), 124-125. doi:10.1016/s0140-6736(11)61079-9

Topol, P., & Reznikoff, M. (1982). Perceived Peer and Family Relationships, Hopelessness and Locus of Control as Factors in Adolescent Suicide Attempts. *Suicide and Life-Threatening Behavior*, 12(3), 141-150. doi:10.1111/j.1943-278x.1982.tb00936.x

Turvey, C., Stromquist, A., Kelly, K., Zwerling, C., & Merchant, J. (2002). Financial loss and suicidal ideation in a rural community sample. *Acta Psychiatr Scand*, 106, 373-380.