

The Decision Making of a Financial Psychopath

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Abstract

In this paper, we examine the relationship between psychopathic personality traits and financial risk and time preferences amongst business majors. 118 Business majors participated in this study by completing the revised Psychopathic Personality Inventory test to examine their psychopathic personality traits and the Dynamic Experiments for Estimating Preferences test to determine risk and time preferences. Given the prevalence of anti-social behavior amongst finance majors, we first examine fundamental differences between finance majors and other business majors. We find that finance majors are significantly more narcissistic and less fearless than other business majors. Furthermore, we find that psychopathy is related to more linear utility function, and negatively related to loss aversion. Additionally, we find that this result is primarily driven by the secondary trait of Self-Centered Impulsivity and primary trait Rebellious Nonconformity. Moreover, the results show that Self-Centered Impulsivity is negatively related to the present bias while psychopathy is negatively related to the discounting rate. Overall we find that these traits may be beneficial to more rational financial decisions.

Keywords: Financial Psychopath, Risk Aversion, Present Bias, Risk Preferences, Time Preferences

JEL Classifications: A12, D03, G02, G11,

1. Introduction

In the general population, psychopaths make up about one percent of the population (Hare, 1991). However, in the finance and economic professions, up to four percent can be clinically diagnosed as psychopaths (Babiak and Hare, 2006). Furthermore, Christopher Bayer, a psychologist who provides therapy to Wall Street professionals, argues that the number of psychopaths working on Wall Street is closer to ten percent (DeCovny, 2012). In fact, Robert Hare, a leading researcher in psychopathy, states that: “If [he] wasn’t studying psychopaths in prison, [he’d] do it at the stock exchange” (Babiak and Hare, 2006). Additional evidence of the high prevalence of psychopathy in the finance/economic professions comes from criminal/legal studies of Ponzi schemes, embezzlement, insider trading, and other white-collar crimes. This line of research shows that individuals who commit these types of white collar crime have significantly higher scores of psychopathy than individuals who commit non-white collar crime (Ragatz et al., 2012). Furthermore, the evidence of psychopathic type behavior in the finance industry remains largely anecdotal, with the behavior found in rogue traders, such as Jérôme Kerviel, Yasuo Hamanaka, Kweku Adoboli, and Nick Leeson, and fund managers, such as Bernard Madoff, Robert Allen Stanford, Scott Rothstein, and Reed Slatkin.

The purpose of this study is to examine the relationship between “financial psychopaths” and the strengths/weaknesses in making rational financial decisions based on the psychopathy and “sub-factors” that describe the umbrella term as a whole as research and anecdotal evidence suggests a large presence of psychopathy in the financial sector. Psychopathy has been implicated in a wide range of *social* risk-reward decisions. However, its role in *financial* decisions is poorly understood. Therefore, we find two imperative unaddressed questions in the finance literature. The first issue is whether clinical psychopaths have a greater natural tendency

towards careers in finance who will be making financial decisions more often than other careers. The second question is how a psychopathic predisposition influences financial decisions. This is the only study, to our knowledge, to examine the various characteristics of psychopathy in a financial setting.

The psychopathic personality trait can be decomposed into several underlying factors, such as superficial charm, egocentricity, profound dishonesty, callousness, risk-taking, and poor impulse control (Cleckley, 1988; Hare, 1991). The term “corporate/financial psychopath” has been coined by finance professionals to describe individuals working in the business industry who have little or no conscience, and are willing to lie, manipulate others, and be ruthless in order to gain a financial advantage. For example, Boddy (2015) claims that many former employees of Enron, including its CEO, exhibited traits of the stereotypical psychopath – a conclusion consistent with their catastrophic financial actions. Previously, Boddy et al. (2010) had shown that corporate psychopaths have a significantly negative influence on the value of corporations. Similarly, Babiak et al. (2010) show that while financial psychopaths can rate well in creativity, strategic thinking, and communication skills, they tend to rate poorly in cooperation, management skills, and overall accomplishments. The present study advances this body of evidence by showing how psychopathy personality traits relate to financial decision-making.

The present study examines the psychopathic tendencies of business majors and more specifically investigates the relation between fundamental (or underlying) psychopathic traits and financial risk and time preferences. To our knowledge, studies examining the role of psychopathy in decision-making and behavior invariably use the umbrella psychopathy trait in incarcerated individuals. The use of an incarcerated sample creates severe limitations in this line

of research, including cohesion and survivorship bias. In order to avoid these drawbacks, we use a non-incarcerated group of participants to understand better how individuals in the business industry make decisions. Additionally, our study is, to the best of our knowledge, the first to differentiate between different types of “financial psychopaths” according to their primary underlying sub-traits. We already know that personality traits play an important role in investment choice (Chitra and Sreedevi, 2011; Conlin et al., 2015), stock market performance (Durand et al., 2008), the disposition effect (Durand et al., 2013a), overconfidence (Durand et al., 2013b), risk aversion (Filbeck et al., 2005), loss aversion (Durand et al., 2018), trading behavior (Tauni et al., 2017) and risk tolerance (Wong & Carducci, 2016). However, to the best of our knowledge, there are no studies on the role of psychopathy in financial decision-making.

Overall, we find that finance majors are significantly more narcissistic and less fearless than other business majors. Additionally, we find that psychopathy is related to a more linear utility function, and negatively related to loss aversion. Moreover, we find that this result is primarily driven by the secondary trait of self-centered impulsivity and primary trait rebellious nonconformity that show similar results. Moreover, we find that psychopathy is negatively related to the discounting rate and that Self-Centered Impulsivity is inversely related to the present bias. These results indicate that these three traits may be beneficial in the financial industry as they are related to more rational financial decisions.

2. Overview of the Literature

2.1 Portrait of the “Financial Psychopath” in the Literature

Research examining the behavior of economists versus non-economists in financial decision-making shows that economists often engage in greater anti-social behaviors than their

counterparts¹. For example, economists are more likely than non-economists to free ride and not contribute towards the public good (Marwell and Ames, 1981), to give less to charity (Frank et al., 1993), to care less about fairness (Carter and Irons, 1991), to be greedier or accept greedy behavior (Long et al., 2011), and to be more willing to bribe an official for personal gain (Frank and Schulze, 2000). Gandal et al. (2005) explain this anti-social behavior by finding that individuals who are exposed to the self-interest model place more value on achievement and less value on the welfare of others compared to individuals who have not been exposed to the self-interest model.

In the traditional psychology literature, antisocial-like behavior is most closely related to the psychopathic personality disorder. In fact, Shank (2018) finds that business majors are more psychopathic than non-business majors. Similarly, Kowalski et al. (2017) find that narcissism and psychopathy are traits related to individuals pursuing business careers, while Vedel and Thomsen (2017) find that business students have higher scores of narcissism, Machiavellianism, and psychopathy compared to psychology, law, and political science students. As such, one purpose of this paper is to discern whether said anti-social behaviors are a consequence of a greater incidence of psychopathic traits among business professionals. This paper differs from the prior literature as previous research demonstrates strong anti-social behaviors amongst business majors, our study examines if finance majors display different fundamental traits than the other business majors as finance majors are further introduced to the self-interest model than non-finance majors.

¹ The term “economist” is usually understood and described by the related literature as any individual with sophisticated knowledge of rational choice theory (i.e., the rational/self-interest model of economics). For example, individuals who train or pursue careers in economics or a closely related field, such as finance, fit this description.

Two hypotheses that might explain the prevalence of antisocial-like behavior in economists are 1) the learning hypothesis and 2) the self-selection hypothesis. The learning hypothesis states that exposure to the self-interest model of economics makes individuals behave in a more antisocial manner during financial decision-making. The self-selection hypothesis states that individuals with a natural tendency to behave in antisocial ways are more likely to pursue careers in finance/economics. These two hypotheses are not necessarily mutually exclusive, given that antisocial individuals may self-select into finance and economics, and at the same time, become further exposed to the self-interest model of economics, leading to a subsequent reinforcement of their antisocial-like tendencies. Therefore, we posit that individuals pursuing careers in finance have higher psychopathic tendencies than their counterparts.

Research shows that top business schools deteriorate the morals of their business students as they move their views of what the priority of the company should be from satisfying customers when they start the program to maximizing shareholder value at the end of their program (Schneider & Prasso, 2002). Richards et al. (2002) suggests that the unethical behavior may be caused by the business curriculum. Others argue that the social environment of the business school may shape individuals values and behavior differently for students with different majors (Sims & Keon, 1999, 2000). In fact, Cohn et al. (2014) find that the culture in the financial industry could cause psychopathic behavior.

2.2 Psychopathy and Financial Risk Preferences

Research shows that psychopaths display greater risk-taking behavior than non-psychopaths in an economic setting using the Iowa Gambling Task (Blair et al., 2001; Mitchell et al., 2002). However, the Iowa Gambling task solely examines economic risk taking and does not examine different aspects of financial decision making. Additionally, incarcerated psychopaths

display significantly lower levels of loss aversion in a lottery type of task, even to their detriment (Newman et al., 1987). However, the results using an incarcerated sample may not transfer to the financial sector. We look to contribute to the literature in two ways. First, we use a better measure of financial risk taking (Discussed in Section 3.2) to understand rational decision making. Second, while we examine the role of the global trait of psychopathy, psychopathy is made up of several traits that previous literature largely ignores (see Appendix A).

Rebellious nonconformity, Machiavellian egocentricity, and stress immunity are among the best understood primary traits of psychopathy. In general, the literature indicates that rebellious nonconformity has a positive relationship with social risk-taking as Edens et al. (2008), among others, find that rebellious nonconformity is positively related to the number of infractions committed by inmates. Alternatively, research shows that stress immunity has a negative relation with risk-taking. That is individuals who are less stressed exhibit lower levels of loss aversion (Kandasamy et al., 2014; Schulkin et al., 1994; Nofsinger et al., 2017). Shank (2018) finds that primary traits of Machiavellian egocentricity, rebellious nonconformity, stress immunity, as well as second order traits of self-centered impulsivity, fearless dominance, and overall psychopathy levels are related to deceiving others for financial gain². Moreover, research shows that narcissism, which is related to Machiavellianism egocentricity, makes individuals more likely to bet on whether they answered previous questions correctly (Campbell et al., 2004) and increases gambling frequency and monetary expenditures (Lakey et al., 2008) and risk-taking in the Iowa Gambling Task (Brunell and Buelow, 2017). Finally, the second order trait self-centered impulsivity (SCI) is linked to sensation-seeking and social risk-taking (Edens et al.,

² A second order trait is a combination of primary traits obtained using Principal Component Analysis, while overall psychopathy is the combination of all primary traits.

2008; Uzieblo et al., 2007). However, the majority of these studies look at social risk taking rather than financial risk taking. Therefore, we examine the impact of psychopathic sub-traits in a financial setting and expect that many psychopathic underlying traits to be related to loss aversion, diminishing curvature, and distortion of probability.

Medical research strongly suggests that psychopaths' differing decision making may be rooted in neurological differences compared to "normal" individuals. For example, a plethora of research has shown that psychopaths have structural and functional differences in the amygdala and prefrontal cortex, areas responsible for regulating emotions and playing an important role in financial decision-making such as fear, stress resilience, pleasure, monetary reward-seeking behavior, and higher brain functions (Kiehl et al., 2001; Blair 2007; Blair, 2008; Glenn et al., 2009; Yang et al., 2009). Furthermore, medical research also shows that amygdala hypoactivity results in a reduction of loss aversion during financial tasks (Bechara et al., 1999; De Martino et al., 2010; Sokol-Hessner et al., 2012; Weber et al., 2007). Finally, Lo and Repin (2002) suggest that several peripheral physiological processes such as respiration, heart rate and skin voltage, which are all controlled by the aforementioned brain structures, are involved in risk-taking during financial decisions. Overall, these results provide a biological explanation as to why psychopaths behave differently from non-psychopaths when making social decisions and why we expect to find that psychopathic traits will be related to financial decision making.

2.3 Psychopathy and Financial Time Preferences

Edens and McDermott (2010) use the Barratt Impulsivity Scale and find that inmates with high overall psychopathy and high self-centered impulsivity scores exhibit higher levels of impulsivity than the average inmate population. Similarly, Newman et al. (1992) find that

inmates with clinically high psychopathy scores are less likely to delay gratification³. Additionally, Jones and Paulhus (2011) find that overall psychopathy is linked to dysfunctional impulsivity, which suggests that psychopaths' impulsivity stems from poor self-regulation. Moreover, Lapiere et al. (1995) find that psychopaths have a structural deficit in the orbitofrontal-ventromedial, which may explain their impulsive behavior. From these studies, we expect psychopathic traits to be significantly related to financial time preferences.

3. Method

3.1 Participants

In order to create a sample of individuals who have been exposed to the self-interest model of economics we recruited subjects from upper-level undergraduate finance and economics courses that are required for all business majors. With Internal Review Board (IRB) and instructor approval, a total of 135 individuals were recruited and took part in the experiment. Participants were offered a small amount of bonus points towards their course grade as an incentive to participate in this study, following the findings of Luccasen and Thomas (2014) who find no significant difference in outcomes can be detected in experiments using class credit versus monetary incentives. In order to receive credit, participants had to complete three questionnaires. First, the Psychopathic Personality Inventory-Revised (PPI-R) test is employed to measure eight primary psychopathic traits, two secondary psychopathic traits, and a global psychopathy trait (Lilienfeld et al., 2005)⁴. The PPI-R is equipped with two validity scales that detect whether subjects display defensiveness, malingering, or careless or random responding.

³ Clinically high denotes a diagnosis of psychopathy.

⁴ The PPI-R test contains 154 questions.

Second, we employ the Dynamic Experiments for Estimating Preferences (DEEP) methodology (Toubia et al., 2013) to measure three types of financial risk preferences and two types of financial time preferences⁵. This DEEP experiment has been used in previous experimental research such as Nofsinger and Shank (2018). At the beginning of the DEEP risk and time surveys, the subjects are given a welcome page with instructions about the tasks and are asked to answer a few simple questions to ensure that they understand the various aspects of the study, on topics such as probabilities and the time value of money. Therefore, subjects who completed the survey and passed validity scales were given class extra credit, as we posit that extra credit is a more enticing reward than the \$2 given in the experiment conducted by Toubia et al. (2013). Overall, seven participants were disqualified due to invalid responses in the PPI-R survey and ten students were disqualified for failing to fill out the required demographics questionnaire (third questionnaire).

Table 1 displays the sample statistics. The sample is composed of 118 subjects, with 51 males (43%) and 67 females (57%). The median age of participants is 22.7 years, with a standard deviation of 5.2 years. Additionally, 32 of the 118 (27%) subjects are finance majors.

3.2 Measuring Financial Risk and Time Preferences

DEEP captures risk and time preferences by dynamically adjusting the series of questions presented to each subject while using data about the distribution of the parameters. Preferences are elicited by finding the convergence on the simulations of cumulative prospect theory (CPT) and quasi-hyperbolic time discounting (QTD) models.

⁵ The risk-preference survey contains 16 questions and the time-preference survey 20 questions.

Cumulative prospect theory has the following main features: a value function defined on gains and losses explaining how sensitive individuals are to changes in wealth (instead of total wealth), a loss aversion feature reflecting how sensitive individuals are to losses and gains of the same amount, and probability weightings considering how individuals tend to weigh probabilities in a nonlinear fashion, largely near certainty. These parameters are captured by giving the subject a series of pairs of gambles, defined by $\{x, p; y\}$ where the outcome of the gamble is equal to x with a probability p , and equal to y with a probability $1-p$. These parameters extract the distortion of probabilities (α), the curvature of the value function (σ), and the degree of loss aversion (λ). A truncated normal distribution is used to ensure that the parameters stay within acceptable range. We thus impose $\alpha \in [0.05, 2]$, $\sigma \in [0.05, 2]$, and $\lambda \in [0,10]$ following Toubia et al. (2013). The utility or value of a gamble can, therefore, be denoted by $U(x, p, y, \alpha, \sigma, \lambda)$ and is equal to:

$$\begin{cases} v(y, \sigma) + \pi(p, \alpha)(v(x, \sigma) - v(y, \sigma)) & \text{if } x > y > 0 \text{ or if } x < y < 0 \\ \pi(p, \alpha)v(x, \sigma) + \pi(1-p, \alpha)v(y, \sigma) & \text{if } x < 0 < y \end{cases}$$

where

$$v(x, \sigma) = \begin{cases} x^\sigma & \text{for } x > 0 \\ -\lambda(-x)^\sigma & \text{for } x < 0 \end{cases}$$

and where $\pi(p, \alpha) = \exp[-(-\ln p)^\alpha]$

When x and y have the same sign, $v(y, \sigma)$ acts as the value reference point, $\pi(p, \alpha)$ is how much the individual weights the probability p , and $v(x, \sigma) - v(y, \sigma)$ is the utility of the gamble. When $x < 0 < y$, the term $\pi(p, \alpha)v(x, \sigma) + \pi(1-p, \alpha)v(y, \sigma)$ represents the perceived weighted average of the loss and the gain. The parameters are elicited by asking subjects a series of choices

between pairs of gamble where the decisions are indexed by i ($i=1, \dots, I$) whereby w_i denotes the vector of decisions for subject i : $w_i = [\alpha_i, \sigma_i, \lambda_i]$. Questions are indexed by j ($j=1, \dots, J$), where question j for subject i entails choosing between gamble $X_{ij}^A = \{x_{ij}^A, p_{ij}^A, y_{ij}^A\}$ and gamble $X_{ij}^B = \{x_{ij}^B, p_{ij}^B, y_{ij}^B\}$. A value of α that is lower (higher) than 1 reduces (increases) the weight of the probability p . When α is exactly equal to 1, the probability p remains unchanged. Additionally, a σ value of 1 yields a linear utility function, while values departing from 1 in either direction imply more curvature in the value function. Finally, higher values of λ capture higher levels of loss aversion.

In the time preference survey, the subjects are presented with two situations where they must choose between a smaller but nearer reward and a larger reward at a later date. The decision task is written as $\{x, t\}$ where the reward x is received in t periods (i.e., days). The model can then be written as $U(x, t) = v(x)d(t)$, where v is the utility gained from reward x and d is the discount function. The time preference models used is a quasi-hyperbolic discount function (Phelps and Pollak, 1968; Laibson, 1997; Angeletos et al., 2001; Frederick et al., 2002; Benhabib et al., 2010).

The quasi-hyperbolic time discount model used follows Benhabib et al. (2010), Laibson (1997), and Phelps and Pollak (1968):

$$U(x, t, \beta, r) = xd(t, \beta, r)$$

where

$$d(t, \beta, r) = \begin{cases} 1 & \text{for } t = 0 \\ \beta \exp(-rt) & \text{for } t > 0 \end{cases}$$

The discount function using r as a discount rate shows a discontinuous drop at $t = 1$ when $\beta < 1$. This shows an overweighed value at time $t = 0$ compared to a future time $t > 0$. This phenomenon is called the present bias (O'Donoghue and Rabin, 1999). The parameters of the quasi-hyperbolic time discount model are $w_i = [\beta_i, r_i]$ where subject i must make decisions for a series of choices between a pair of delayed payments and where the delay of immediate payment is zero. Question j for respondent i involves a decision between $X_{ij}^A = \{x_{ij}^A, t_{ij}^A\}$ and $X_{ij}^B = \{x_{ij}^B, t_{ij}^B\}$. A lower β value demonstrates a stronger present bias, while a higher r value reveals a higher daily discounting rate. As in CPT, we follow Toubia et al. (2013) and use a truncated normal distribution to keep parameters within an acceptable range for QTD: we impose $\beta \in [0, 2]$ and $r \in [0, 0.05]$.

3.3 Measuring Psychopathic Traits

The Psychopathic Personality Inventory-Revised (PPI-R) test is one of the most widely used instruments to break down the umbrella psychopathic personality profile into eight distinct primary subcategories and two distinct secondary subcategories (Lilienfeld et al., 2005). Appendix A provides a detailed description of the various PPI-R traits and the test validity measures. Raw test scores are standardized to account for differences in age and gender following the PPI-R guidelines. In the general population, every factor has a mean score of 50 and a standard deviation of 10. Standard scores of 65 or above are significantly above the mean and may be classified as “clinically high”⁶. Appendix B provides a correlation table of the PPI-R traits in the sample. These correlations are consistent with those of the original instrument, and thereby the population. While Appendix B shows somewhat high correlation levels among the

⁶ As the psychology literature typically deals with an individual being a psychopath or not, there is no low group.

variables, the Variance Inflation Factor (VIF) shows that there are no multicollinearity issues with the models as the VIF is less than 2.0

4. Results

Table 2 displays a probit regression to examine fundamental differences among finance majors compared to other business majors where the dependent variable is 1 if the subject is a finance major or 0 otherwise⁷. The first column depicts the model where the dependent variable is run against only the global psychopathy trait. The second column shows the results where the dependent variable is run against the two secondary traits. Finally, the third column displays the results where the eight primary traits are run against the dependent variable. Moreover, we take the natural log of all psychopathic Additionally, differences in PPI-R scores between finance majors and non-finance majors are plotted in Figure 1 for ease of readability.

First in Table 2, we see minor support for our hypothesis that finance majors will be more psychopathic than other business majors as the coefficient of the global psychopathy variable is 0.204, however, the result is not significant. When we examine the primary traits, we find that finance majors score significantly higher on Machiavellian Egocentricity and lower on Fearlessness than other business majors. This result demonstrates that finance majors are more narcissistic and ruthless and have higher anticipatory anxiety concerning harm and willingness to participate in risky activities. Overall, primary traits of psychopathy can account for about 13% of the fundamental differences between finance majors and other business majors.

⁷ We simulate the null distribution 1,000 times to calculate the coefficient and t-statistics for all regressions in this study. This bootstrapping procedure is widely used in econometric work and is found to generate distributions extremely close to the true underlying distribution (for more information see Mooney & Duvall (1993)). This bootstrapping procedure has been used in previously published papers (for example see Crespi-Cladera & Pascual-Fuster (2014), Durack et al. (2004), or Keef & Roush, (2005))

When we examine Figure 1, we find that finance majors score higher than the population average on five of the eight primary traits including slightly higher on the global psychopathy measure. Additionally, we find that finance majors also score substantially higher on the traits of stress immunity and cold-heartedness compared to other business majors on the graph even though the results are insignificant in Table 2. Moreover, we find that both finance and non-finance majors score nearly one full standard deviation below the mean of 50 on the carefree nonplanfullness consistent with the results in Shank (2018). As Jones and Paulhus (2011) find that psychopaths impulsivity is due to poor self-regulation, the extremely low levels of carefree nonplanfullness could be what allows economists to function, illustrating the term “functional psychopath” when referring to “financial psychopaths” in business. These results of Table 2 and Figure 1 are important from an academic standpoint, as caution should be exercised when using solely a global measure to examine the psychopathic nature of businessmen as due to the extremely low scores of the carefree nonplanfullness trait, both finance majors and non-finance majors appear to score near the average population for the global psychopathy trait. Therefore, our results show that it is necessary to break down the global psychopathy trait into subcategories

Table 3 presents the relationship between psychopathic behavior and financial risk preferences. Similar to Table 2, three regressions are performed, one for each type of antisocial trait to avoid multicollinearity issues (i.e., global trait, secondary traits, and primary traits). Additionally, we include the variables of age and gender as the literature shows they have an impact of financial decision making (Barber & Odean, 2001; Byrnes et al., 1999; Dwyer et al, 2002; Van den Bos et al., 2009) and a dummy variable if the subject is a finance major is included as their extensive knowledge of finance may make them gravitate to different financial

decisions. We find that the global trait of psychopathy is significantly related to having a more linear utility function with a coefficient of 2.043 implying that psychopaths need to take less risk in order to gain the same level of utility as normal scoring individuals. Thus, a more linear utility function can be seen as making more rational decisions.

The trait of self-centered impulsivity is negatively related to α suggesting that individuals high in this trait distort the probability of gains and losses more. Moreover, self-centered impulsivity is positively related to diminishing curvature and negatively related to loss aversion. Similarly, we find that the primary trait of rebellious nonconforming is positively related to having a more linear utility function with a coefficient of 2.675 while being inversely related to loss aversion with a coefficient of -5.44. There are two main implications of these results. First, our results imply that investors with higher scores of psychopathy, higher self-centered impulsivity, and rebellious nonconformity may earn higher returns as Shiv et al. (2005) show that individuals who are more loss averse earn less money than individuals who are not while Fellner and Sutter (2009) show that individuals who exhibit less myopic loss aversion earn higher investments. Second, these results show the importance of examining the sub traits of the umbrella term of psychopathy as the significant relationship between the global psychopathy term is mostly due to the secondary trait of self-centered impulsivity rather than fearless dominance.

Table 4 displays the results from the regression where the dependent variable is one of the financial time preferences. We find that Blame Externalization is negatively related to the discount function which implies a stronger present bias. The ability to control or suppress the present bias, as is the ability to manage other investment biases, may lead to improved rationality during financial decision-making. Therefore, individuals who score highly on Blame

Externalization may possess a natural disadvantage for rational economic behavior and potentially deleterious effects on financial performance. The results show that the secondary trait of Self-Centered Impulsivity is positively related to the discounting rate, demonstrating that individuals who are narcissistic, reckless, and ruthless are less capable of delaying gratification, which can be harmful when investors are looking for long-term financial gains. Additionally, we find that the primary trait stress immunity, a trait that factors onto the secondary trait of fearless dominance, is also positively related to the discounting rate with a coefficient of 0.079. Finally, the results show that both males and finance majors display a higher discounting rate.

Our next exercise involves separating out individuals who are clinically high on each trait and comparing them to subjects who score normal levels. Table 7 presents the results where each clinical trait variable is a 1 if the subject scores greater than or equal to 65 for that specific trait or 0 otherwise. The results indicate that individuals who score clinically high on stress immunity are less likely to distort the probability of gains and losses while those who are clinically high on the traits of carefree nonplanfulness and cold-heartedness are significantly more likely. Furthermore, we find that clinical psychopaths have a more linear utility function compared to normal scoring individuals with a coefficient of 1.578, which is consistent with Table 3. Finally, we find that clinical scores of stress immunity are inversely related to σ signifying that clinical stress immunity is related to a more curved utility function. This finding indicates that high levels of stress immunity are associated with a lower sensitivity to changes in wealth. These individuals are thus less affected by negative changes in wealth which is a beneficial trait during times of high stress and volatility.

Table 6 presents the results for how clinical scores of psychopathic traits relate to financial time preferences. The results show that clinical scores of the secondary trait Self-

Centered Impulsivity are significantly related to the discount function signifying a lower present bias. Similarly, clinical scores of the primary trait Carefree Nonplanfulness is positively related to the discount function with a coefficient of 1.104. These results demonstrate that high scores of these two traits may possess superior time preferences. When examining the discount rate, we find that clinical psychopaths have a lower discounting rate demonstrating that psychopaths are more capable of delaying gratification than normal scoring individuals. The result that high psychopathy scores are more capable of delaying gratification contradicts previous research (Newman et al., 1992; Lapierre et al., 1995; Edens and McDermott, 2010). However, Newman and Kosson (1986) find that psychopaths are more likely to make rational decisions when tasks involve money, which may explain their ability to delay financial gratification. This result in addition to our use of a non-incarcerated sample leads to the conclusion that psychopaths with more advanced knowledge of finance are more likely to delay gratification and make better financial decisions, benefiting them when working in the financial industry. Finally, we find that clinical scores of carefree nonplanfulness and fearlessness are also inversely related to the discounting rate, which may be detrimental to financial decisions. The results in Table 2 and Figure 1 show that all business majors' scores well under the average for carefree nonplanfulness and that finance majors are significantly lower on fearlessness. These underlying traits may be beneficial for finance majors in order to make more rational financial decisions.

Table 7 and 8 present the results to test nonlinear relationships between psychopathy and financial risk and time preferences by including the continuous psychopathic variable used in Tables 3 and 4 and the clinical variable used in Tables 5 and 6. Overall Table 7 shows no nonlinear relationships to financial risk preferences. Table 8 presents the results of the continuous and clinical psychopathic traits and financial time preferences. We find that the

global psychopathic trait displays nonlinearity as the continuous variable of psychopathy is negatively related to the discount function while the clinical variable is positively related. This result demonstrates that while higher scores of psychopathy are related to a lower discount function (higher present bias) that those who test in the clinical category possess a lower present bias. Similarly, psychopathy is positively related to the discounting rate, while the clinical trait is inversely related to the discounting rate. When examining the secondary traits, we find that Self-Centered Impulsivity is inversely related to the discount function while the clinical trait is positively related to the discount function demonstrating a lower present bias. Panel C shows that the trait of Carefree Nonplanfullness is negatively related to the discount function and positively related to the discounting rate while the clinical trait of Carefree Nonplanfullness displays the opposite result.

5. Conclusion

This paper is the first, to the best of our knowledge, to explain how psychopathic traits relate to financial decisions and providing clues about how psychopaths operate in the business industry. We find that while finance majors are not necessarily more psychopathic than other business majors at the overall (global score) level, they display psychopathic traits that differ from the other business majors by being significantly higher on Machiavellian Egocentricity while scoring significantly lower on Fearlessness. This finding shows the importance of studying the primary traits that makeup psychopathy, rather than the global trait only and can help explain the behavior of corporate executives.

We find that that that psychopathy, thus having a greater probability of matching the features of the prototypical psychopath, have a more linear utility function (displaying less curvature) and are less loss averse. These results are largely due to higher scores of the

secondary trait self-centered impulsivity and primary trait rebellious nonconformity also being positively related to a more linear utility function and less loss aversion. As previous research shows that more rational risk taking and being less loss averse results in higher returns in the finance industry (Shiv et al., 2005; Fellner & Sutter, 2009), overall psychopathy self-centered impulsivity, and rebellious nonconformity may be a positive trait in the business industry. We also find that the secondary trait of self-centered impulsivity is negatively related to the present bias while psychopathy is negatively related to the discounting rate. Overall, these results demonstrate that psychopathy and self-centered impulsivity are once again beneficial traits in the finance industry when examining financial time preferences. These two findings suggest that psychopaths can make more rational financial decisions than the average individual, a possible advantage in the business industry.

These results have several real-world implications. Financial institutions are at the heart and soul of a matured and healthy economy. To the extent that individuals with psychopathic tendencies are involved in the corporate decisions of financial institutions, the impact of said decisions should not be underestimated. The results of this study strongly advocate for the careful hiring and monitoring of finance professionals with psychopathic tendencies. Said professionals are perfectly capable of making optimal financial decisions under times of stress, such as high market volatility, and hostile takeovers. In this respect, a certain level of psychopathy may be necessary or even required. However, history is full of examples of white-collar crimes at the individual and the corporate level. Therefore, this study should serve as a cautionary tale of the devastating consequences of financial decisions made by finance professionals that find themselves unable to control deleterious psychopathic tendencies. Additionally, these results can be helpful in the hiring process. Richard Peterson, a managing

partner of MarketPsych, provides psychological and behavioral finance training to portfolio managers, analysts, and financial advisors in order to help companies with the hiring and training process. Additionally, companies such as EquitySim put potential hires through testing to try to examine the best candidate for financial jobs by looking past items that would typically be included on resumes such as education and experience. Understanding which traits are beneficial to sound financial decision-making and which are not is valuable, since companies may be able to select and mold candidates that will be best able to thrive in the competitive and stressful industry of finance.

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Table 1

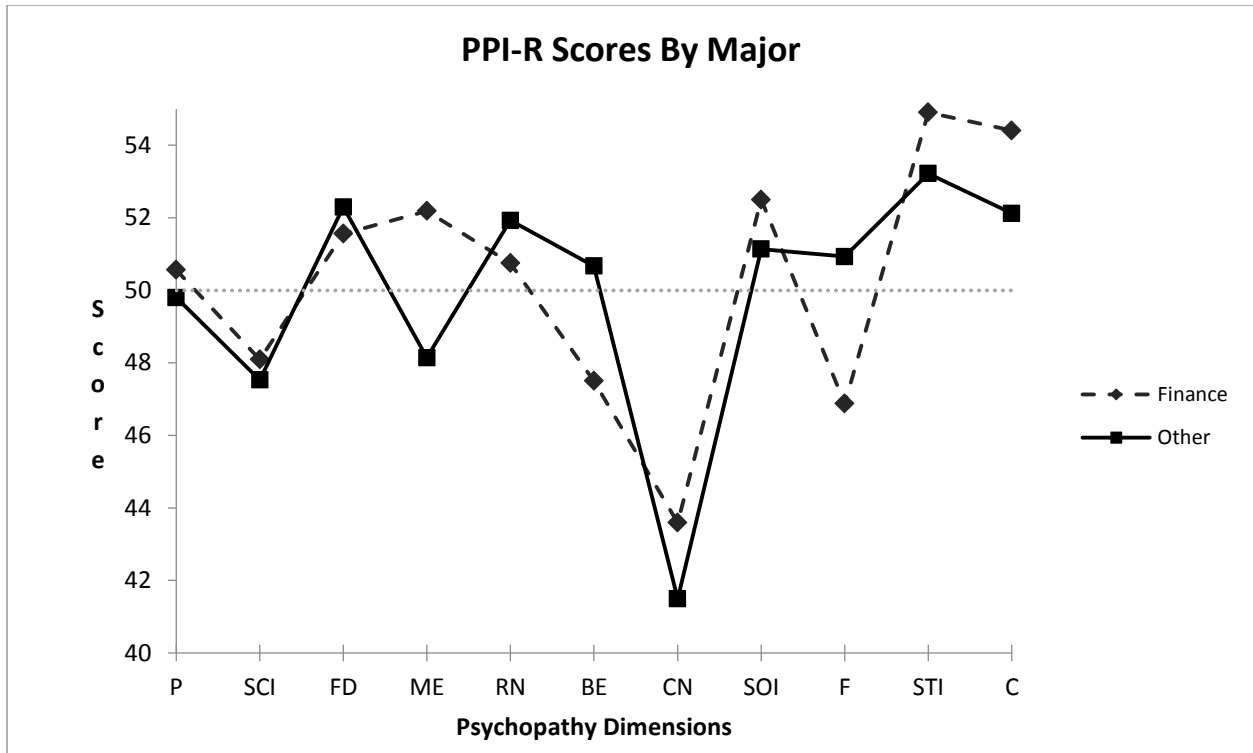
Subject Sample Statistics				
Total	Male	Female		
118	51	67		
	Age			
Mean	24.6			
Median	22.7			
Accounting	Finance	Information Systems	Management	Marketing
28	32	9	39	10

Notes: This table displays the subject sample statistics including gender, age, and academic major.

Table 2: Psychopathic Profile of Finance Majors

	Global Psychopathy	Secondary Traits	Primary Traits
Psychopathy	0.204 (0.269)		
Self-Centered Impulsivity		0.149 (0.204)	
Fearless Dominance		-0.197 (-0.291)	
Machiavellian Egocentricity			2.057* (1.834)
Rebellious Nonconformity			0.338 (0.310)
Blame Externalization			-1.203 (-1.037)
Carefree Nonplanfulness			0.673 (0.707)
Social Influence			-0.324 (-0.364)
Fearlessness			-2.413** (-2.094)
Stress Immunity			1.302 (1.092)
Cold-Heartedness			0.181 (0.192)
R-Squared	0.001	0.001	0.128

Notes: This table displays the results from a probit regression where the dependent variable is 1 if the student is a finance major or 0 otherwise against the global psychopathy trait in Model 1, the two secondary traits in Model 2, and the eight primary traits in Model 3 for the full sample (n=118). The natural log of all psychopathy traits has been taken to account for nonlinearity of the data. A description of these traits are presented in Appendix A. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels.



Notes: This figure displays standardized scores on the PPI-R test for finance majors and non-finance majors in the sample. The dotted gradient line represents the population mean score of 50 for every psychopathic trait. The traits are Machiavellian Egocentricity (ME), Rebellious Nonconformity (RN), Blame Externalization (BE), Carefree Nonplanfulness (CN), Social Influence (SOI), Fearlessness (F), Stress Immunity (STI), Cold-Heartedness (C), Self-Centered Impulsivity (SCI), Fearless Dominance (FD), and Psychopathy (P). Appendix A provides a description of each trait.

Table 3: Relationship Between Psychopathic Behavior and Financial Risk Preferences

	Lack of Probability Distortion (α)			Diminishing Curvature (σ)			Loss Aversion (λ)		
Psychopathy	-0.769			2.043*			-2.904		
	(-0.629)			(1.906)			(-1.373)		
Self-Centered Impulsivity	-1.884*			2.120**			-2.958*		
	(-1.914)			(2.459)			(-1.761)		
Fearless Dominance	0.895			0.427			-2.038		
	(0.844)			(0.372)			(-0.900)		
Machiavellian Egocentricity			0.265			-0.200			-0.070
			(0.205)			(-0.193)			(-0.030)
Rebellious Nonconformity			-0.787			2.675**			-5.244*
			(-0.568)			(2.190)			(-1.895)
Blame Externalization			-1.960			0.670			-0.286
			(-1.325)			(0.508)			(-0.110)
Carefree Nonplanfulness			-0.296			0.588			1.506
			(-0.223)			(0.503)			(0.680)
Social Influence			-0.097			0.556			-2.912
			(-0.073)			(0.473)			(-1.150)
Fearlessness			1.227			-1.380			1.199
			(0.839)			(-1.208)			(0.458)
Stress Immunity			0.092			0.441			1.698
			(0.055)			(0.314)			(0.518)
Cold-Heartedness			-1.213			1.194			0.047
			(-1.197)			(1.180)			(-0.180)
Age	0.036	0.034	0.031	-0.002	-0.000	0.007	0.079	0.076	0.069
	(0.949)	(0.902)	(0.783)	(-0.058)	(-0.006)	(0.193)	(1.015)	(0.986)	(0.891)
Male	0.017	0.041	-0.078	0.227	0.175	0.244	-0.143	-0.145	0.062
	(0.036)	(0.093)	(-0.169)	(0.572)	(0.419)	(0.592)	(-0.170)	(-0.170)	(0.073)
Finance	0.100	0.120	0.117	-0.051	-0.037	-0.128	0.287	0.253	0.133
	(0.198)	(0.249)	(0.211)	(-0.117)	(-0.083)	(-0.274)	(0.299)	(0.282)	(0.131)

R-squared	0.011	0.047	0.061	0.032	0.044	0.077	0.023	0.033	0.076
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Notes: This table reports the regression results where the dependent variable is one of the financial risk preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The natural log of all psychopathy traits has been taken to account for nonlinearity of the data. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Table 4: Relationship Between Psychopathic Behavior and Financial Time Preferences

	Discount Function (β)			Discounting Rate (r)		
Psychopathy	-1.782 (-1.287)			0.042 (1.466)		
Self-Centered Impulsivity		-2.281 (-1.525)			0.051* (1.726)	
Fearless Dominance		0.309 (0.233)			0.006 (0.197)	
Machiavellian Egocentricity			-0.948 (-0.532)			0.045 (1.080)
Rebellious Nonconformity			3.593 (1.466)			-0.015 (-0.313)
Blame Externalization			-4.127** (-2.180)			0.066 (1.611)
Carefree Nonplanfulness			-3.006 (-1.408)			0.049 (1.106)
Social Influence			1.196 (0.563)			0.003 (0.072)
Fearlessness			-1.556 (-0.831)			-0.036 (-0.898)
Stress Immunity			-3.417 (-1.435)			0.079* (1.813)
Cold-Heartedness			1.195 (0.630)			-0.044 (-1.259)
Age	-0.041 (-0.590)	-0.043 (-0.635)	-0.046 (-0.620)	0.001 (1.012)	0.001 (1.119)	0.002 (1.169)
Male	-0.260 (-0.422)	-0.199 (-0.300)	-0.393 (-0.597)	0.024* (1.918)	0.023* (1.775)	0.021* (1.689)
Finance	-0.469 (-0.692)	-0.469 (-0.706)	-0.498 (-0.665)	0.025* (1.703)	0.025* (1.752)	0.019 (1.296)
R-squared	0.017	0.028	0.117	0.069	0.079	0.131

Notes: This table reports the regression results where the dependent variable is one of the financial time preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The natural log of all psychopathy traits has been taken to account for nonlinearity of the data. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Table 5: Relationship Between Clinical Psychopathic Behavior and Financial Risk Preferences

	Lack of Probability Distortion (α)			Diminishing Curvature (σ)			Loss Aversion (λ)		
Clinical Psychopathy	-0.444			1.578*			-0.865		
	(-0.405)			(1.791)			(-0.543)		
Clinical Self-Centered Impulsivity	-1.632			0.059			2.592		
	(-0.884)			(0.039)			(0.918)		
Clinical Fearless Dominance	0.548			0.315			-0.404		
	(0.671)			(0.532)			(-0.303)		
Clinical Machiavellian Egocentricity		0.256		-0.568			0.672		
		(0.289)		(-0.808)			(0.368)		
Clinical Rebellious Nonconformity		-0.810		0.238			-1.886		
		(-1.095)		(0.339)			(-1.044)		
Clinical Blame Externalization		-0.688		0.031			-0.174		
		(-0.760)		(0.031)			(-0.090)		
Clinical Carefree Nonplanfulness		-1.224***		-0.473			1.127		
		(-2.971)		(-1.232)			(1.520)		
Clinical Social Influence		-0.496		0.561			-1.981		
		(-0.690)		(1.237)			(-1.532)		
Clinical Fearlessness		0.498		0.092			1.875		
		(0.661)		(0.096)			(1.088)		
Clinical Stress Immunity		1.200**		-1.071**			1.531		
		(2.319)		(-2.241)			(1.402)		
Clinical Cold-Heartedness		-1.155**		0.600			-0.107		
		(-2.091)		(1.252)			(-0.087)		
Age	0.034	0.032	0.031	0.006	-0.002	-0.000	0.075	0.088	0.089
	(0.858)	(0.795)	(0.794)	(0.156)	(-0.053)	(-0.005)	(0.964)	(1.159)	(1.140)
Male	0.039	0.052	0.015	0.207	0.089	0.067	0.024	0.215	0.227
	(0.089)	(0.115)	(0.035)	(0.534)	(0.219)	(0.163)	(0.030)	(0.250)	(0.264)
Finance	0.068	0.066	0.103	0.051	-0.018	-0.069	0.196	0.251	0.519
	(0.141)	(0.140)	(0.189)	(0.118)	(-0.039)	(-0.145)	(0.207)	(0.262)	(0.535)

R-squared	0.009	0.027	0.094	0.032	0.002	0.041	0.011	0.020	0.055
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Notes: This table reports the regression results where the dependent variable is one of the financial risk preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The independent variables are a 1 if the subject tests clinical for the given variable (standardized score ≥ 65) or 0 otherwise. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Table 6: Relationship Between Clinical Psychopathic Behavior and Financial Time Preferences

	Discount Function (β)			Discounting Rate (r)		
Clinical Psychopathy	1.299 (1.553)			-0.038** (-2.386)		
Clinical Self-Centered Impulsivity		1.789** (2.285)			-0.012 (-0.321)	
Clinical Fearless Dominance		-0.452 (-0.480)			-0.000 (-0.016)	
Clinical Machiavellian Egocentricity			-0.429 (-0.320)			-0.010 (-0.333)
Clinical Rebellious Nonconformity			0.296 (0.234)			0.017 (0.738)
Clinical Blame Externalization			-1.800 (-1.023)			0.047 (1.550)
Clinical Carefree Nonplanfulness			1.104** (1.994)			-0.062*** (-5.523)
Clinical Social Influence			0.030 (0.022)			0.027 (1.011)
Clinical Fearlessness			0.865 (0.873)			-0.034* (-1.790)
Clinical Stress Immunity			0.337 (0.313)			-0.021 (-0.995)
Clinical Cold-Heartedness			-0.558 (-0.696)			0.009 (0.432)
Age	-0.033 (-0.480)	-0.035 (-0.518)	-0.040 (-0.556)	0.001 (0.854)	0.001 (1.012)	0.001 (0.810)
Male	0.025 (0.038)	-0.053 (-0.079)	-0.251 (-0.354)	0.016 (1.219)	0.019 (1.484)	0.023* (1.698)
Finance	-0.452 (-0.660)	-0.486 (-0.701)	-0.591 (-0.855)	0.024* (1.679)	0.025* (1.833)	0.025* (1.743)
R-squared	0.015	0.017	0.038	0.073	0.058	0.129

Notes: This table reports the regression results where the dependent variable is one of the financial time preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The independent variables are a 1 if the subject tests clinical for the given variable (standardized score ≥ 65) or 0 otherwise. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Table 7: Nonlinear Relationship Between Psychopathic Behavior and Financial Risk Preferences

	Lack of Probability Distortion (α)	Diminishing Curvature (σ)	Loss Aversion (λ)
<i>Panel A: Global Trait</i>			
Psychopathy	-0.626 (-0.477)	1.416 (1.263)	-3.006 (-1.318)
Clinical Psychopathy	-0.059 (-0.212)	0.258 (1.170)	0.042 (0.104)
Age	0.035 (0.885)	0.004 (0.092)	0.080 (1.033)
Male	0.004 (0.009)	0.282 (0.673)	-0.134 (-0.158)
Finance	0.088 (0.178)	0.005 (0.010)	0.296 (0.332)
R-squared	0.011	0.045	0.023
<i>Panel B: Secondary Traits</i>			
Self-Centered Impulsivity	-1.728* (-1.725)	2.326*** (2.624)	-4.300** (-2.344)
Clinical Self-Centered Impulsivity	-0.242 (-0.529)	-0.168 (-0.422)	0.931 (1.393)
Fearless Dominance	0.614 (0.486)	0.469 (0.333)	-2.765 (-1.019)
Clinical Fearless Dominance	0.110 (0.485)	-0.006 (-0.039)	0.208 (0.537)
Age	0.031 (0.830)	-0.002 (-0.064)	0.089 (1.134)
Male	0.028 (0.065)	0.143 (0.346)	0.081 (0.095)
Finance	0.102 (0.208)	-0.042 (-0.098)	0.267 (0.290)
R-squared	0.055	0.047	0.059

Table 7: Continued

	Lack of Probability Distortion (α)	Diminishing Curvature (σ)	Loss Aversion (λ)
<i>Panel C: Primary Traits</i>			
Machiavellian Egocentricity	0.739 (0.404)	-0.397 (-0.268)	1.431 (0.442)
Clinical Machiavellian Egocentricity	0.022 (0.089)	-0.165 (-0.785)	0.272 (0.533)
Rebellious Nonconformity	0.532 (0.277)	3.049* (1.800)	-6.433* (-1.826)
Clinical Rebellious Nonconformity	-0.235 (-1.073)	-0.137 (-0.599)	0.068 (0.132)
Blame Externalization	-2.356 (-1.230)	0.906 (0.559)	-1.051 (-0.323)
Clinical Blame Externalization	0.014 (0.054)	-0.019 (-0.071)	0.099 (0.174)
Carefree Nonplanfulness	-0.405 (-0.272)	0.527 (0.411)	0.530 (0.203)
Clinical Carefree Nonplanfulness	-0.238 (-0.940)	-0.035 (-0.159)	-0.436 (-1.029)
Social Influence	-0.002 (-0.001)	0.679 (0.454)	-3.046 (-0.978)
Clinical Social Influence	-0.187 (-0.863)	0.148 (0.747)	-0.492 (-1.091)
Fearlessness	0.808 (0.415)	-1.091 (-0.878)	-1.078 (-0.338)
Clinical Fearlessness	0.077 (0.314)	-0.059 (-0.224)	0.758 (1.477)
Stress Immunity	-0.751 (-0.388)	0.811 (0.464)	1.714 (0.498)
Clinical Stress Immunity	0.291*	-0.177	0.171

	(1.700)	(-1.126)	(0.425)
Cold-Heartedness	0.408	1.301	0.366
	(0.219)	(0.784)	(0.115)
Clinical Cold-Heartedness	-0.271	0.001	-0.048
	(-1.339)	(0.008)	(-0.119)
Age	0.026	0.007	0.076
	(0.614)	(0.160)	(0.886)
Male	0.007	0.189	0.344
	(0.014)	(0.423)	(0.369)
Finance	0.121	-0.144	0.048
	(0.200)	(-0.287)	(0.044)
R-squared	0.120	0.101	0.116

Notes: This table reports the regression results where the dependent variable is one of the financial risk preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The independent variables is either the normal psychopathic traits or the clinical variable which is a 1 if the subject tests clinical for the given variable (standardized score ≥ 65) or 0 otherwise. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Table 8: Nonlinear Relationship Between Psychopathic Behavior and Financial Time Preferences

	Discount Function (β)	Discounting Rate (r)
<i>Panel A: Global Trait</i>		
Psychopathy	-3.167* (-1.932)	0.080** (2.386)
Clinical Psychopathy	0.569** (2.253)	-0.016*** (-3.095)
Age	-0.028 (-0.394)	0.001 (0.755)
Male	-0.140 (-0.208)	0.020 (1.603)
Finance	-0.346 (-0.482)	0.021 (1.425)
R-squared	0.039	0.107
<i>Panel B: Secondary Traits</i>		
Self-Centered Impulsivity	-2.989* (-1.757)	0.063* (1.927)
Clinical Self-Centered Impulsivity	0.678*** (2.863)	-0.008 (-0.781)
Fearless Dominance	0.439 (0.272)	0.014 (0.423)
Clinical Fearless Dominance	-0.079 (-0.302)	-0.002 (-0.369)
Age	-0.035 (-0.484)	0.001 (1.007)
Male	-0.098 (-0.151)	0.020 (1.624)
Finance	-0.439 (-0.617)	0.025* (1.718)
R-squared	0.049	0.087

Table 8: Continued

	Discount Function (β)	Discounting Rate (r)
<i>Panel C: Primary Traits</i>		
Machiavellian Egocentricity	-0.075 (-0.033)	0.055 (1.204)
Clinical Machiavellian Egocentricity	-0.143 (-0.422)	-0.005 (-0.555)
Rebellious Nonconformity	5.034* (1.662)	-0.073 (-1.149)
Clinical Rebellious Nonconformity	-0.329 (-0.886)	0.010 (1.449)
Blame Externalization	-3.711* (-1.723)	0.038 (0.852)
Clinical Blame Externalization	-0.197 (-0.467)	0.011 (1.384)
Carefree Nonplanfulness	-4.365* (-1.810)	0.075* (1.679)
Clinical Carefree Nonplanfulness	1.097*** (3.393)	-0.030*** (-4.209)
Social Influence	1.472 (0.626)	0.005 (0.118)
Clinical Social Influence	-0.171 (-0.451)	0.004 (0.484)
Fearlessness	-2.790 (-1.146)	-0.015 (-0.301)
Clinical Fearlessness	0.405 (1.276)	-0.008 (-1.085)
Stress Immunity	-4.451* (-1.762)	0.116** (2.458)
Clinical Stress Immunity	0.192 (0.663)	-0.009 (-1.467)
Cold-Heartedness	1.503 (0.648)	-0.065 (-1.463)
Clinical Cold-Heartedness	-0.021 (-0.079)	0.005 (0.734)
Age	-0.036 (-0.486)	0.002 (0.972)
Male	-0.518 (-0.745)	0.023* (1.668)
Finance	-0.307 (-0.404)	0.015 (0.918)
R-squared	0.157	0.225

Notes: This table reports the regression results where the dependent variable is one of the financial risk preferences and the independent variables are the psychopathic measures using the entire sample (n=118). The independent variables is either the normal psychopathic traits or the clinical variable which is a 1 if the subject tests clinical for the given variable (standardized score ≥ 65) or 0 otherwise. A description of these traits are presented in Appendix A. Finance is a dummy variable that is equal to 1 if the subject is a finance major or 0 otherwise. We simulate the regression 1,000 times and calculate the corresponding T-statistics which are listed in parenthesis and significance is shown at the 10% (*), 5% (**), and 1% (***) levels. Coefficients are multiplied by 10 to make them easier to read.

Appendix A

Description of Psychopathy Measures

Scale	Construct Descriptions	
Panel A: Psychopathy (Global)		
P	Psychopathy (SCI + FD + C)	The greater the probability that the respondent matches the features of the prototypical psychopathic individual, such as guiltlessness, callousness, dishonesty, manipulativeness, superficial charm, egocentricity, risk taking, and poor impulsive control
Panel B: Secondary Traits		
SCI	Self-Centered Impulsivity (ME + RN + BE + CN)	Tendency toward self-centeredness, ruthless use of others, brazen flouting of traditional values, propensity to attribute blame to others for ones mistakes, and reckless impulsivity
FD	Fearless Dominance (SOI + F + STI)	Lack of anticipatory social and physical anxiety, low levels of tension and worry, low harm avoidance, and high levels of interpersonal dominance
Panel C: Primary Traits		
ME	Machiavellian Egocentricity	Narcissistic and ruthless attitudes in interpersonal functioning
RN	Rebellious Nonconformity	Reckless lack of concern regarding social norms
BE	Blame Externalization	Tendency to blame others for one's problems and to rationalize one's misbehavior
CN	Carefree Nonplanfulness	Attitude of indifference in planning one's actions
SOI	Social Influence	Perceived ability to influence and manipulate others
F	Fearlessness	Absence of anticipatory anxiety concerning harm and willingness to participate in risky activities
STI	Stress Immunity	Absence of marked reactions to anxiety-provoking events
C	Cold-Heartedness	propensity toward callousness, guiltlessness, and lack of sentimentality
Panel D: Validity Scales		
VR	Virtuous Responding	Positive impression management
DR	Deviant Responding	Tendency to admit bizarre symptoms not indicative of known psychopathy

Note: This table displays the descriptions of the psychopathic dimensions described in the PPI-R (Lilienfeld, Widows, and Staff, 2005).

Appendix B

Correlation of Psychopathy Variables

	ME	RN	BE	CN	SOI	F	STI	C
ME	1.00							
RN	0.36***	1.00						
BE	0.31***	0.35***	1.00					
CN	0.36***	0.11	0.31**	1.00				
SOI	0.10	0.01	-0.36***	-0.28**	1.00			
F	0.21**	0.47***	0.13	-0.01	0.17*	1.00		
STI	-0.10	-0.17	-0.50***	-0.31***	0.50***	0.12	1.00	
C	0.34***	0.18**	-0.00	0.26**	0.08	0.21**	0.24***	1.00

Notes: This table shows the correlation coefficients between the 8 primary psychopathy dimensions for the sample (N=128). The psychopathic dimensions are machiavellian egocentricity (ME) rebellious nonconformity (RN) blame externalization (BE) carefree nonplanfulness (CN) social influence (SOI) fearlessness (F) stress immunity (STI) and cold-heartedness (C). Appendix A provides descriptions of these factors