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An Inescapable Truth: Finance is Gambling

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An Inescapable Truth: Finance Is Gambling

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TO THE PACE UNIVERSITY PFORZHEIMER HONORS COLLEGE:

As thesis advisor for __James G. Lainas_____,

I have read this paper and find it satisfactory.

Thesis Advisor: Prof. Jouahn Nam

May 7, 2008

PRÉCIS

The comparison between gambling and investing has been a familiar reference throughout the years. The *Wall Street Journal*, CNBC, and other media outlets repeatedly use allusions to gambling when talking about the financial markets. Investments, despite their thorough research and risk assessment, are still frequently referred to as "bets." Betting, however, gives a perception of thrill seeking and trying to turn a quick profit. As an undergraduate senior in finance, I have been taught that gambling is the antithesis of finance. Nevertheless, the various materials I have studied while earning my degree support the view that gambling and business are two sides of the same coin. However, gambling is not simply placing random bets for the purpose of momentary excitement. Comparable to financial markets, some types of gambling require the same risk-return assessments in the decision-making process.

My thesis is based on my research of books and articles written by economists, stock analysts, and business professors, as well as my own daily reading of the business sections of *The New York Times* and *The Wall Street Journal* and my own thinking inspired by the many business classes I have taken these past four years. This examination has led me to conclude that finance and gambling have more than just superficial commonalities. This thesis argues that various aspects of business, especially in the field of finance, possess similar underlying principles and characteristics to certain forms of gambling, especially poker. Regardless of how conservative or skillful, investors are all subject to a certain level of risk just by participating in the market. The market in many ways can be seen as a fifty-two-card deck. Each card turned over is a company earnings report or the country's unemployment number. These figures can be speculated upon but never predicted with a great deal of certainty. In investing, as in poker, it is essential to minimize the risk that can be controlled.

My research reveals that a similar pattern of human psychology emerges in both investing and gambling. The ability to remain levelheaded in the face of adversity and failure is an important quality for investors and games players. Personality traits can determine whether a person will be a successful investor or a winning card player. In both environments, emotions cannot be allowed to cloud one's judgment. Every decision must be evaluated objectively. People exhibit similar psychological patterns of behavior in both settings. These results are significant because investors, as well as gamblers, are drastically and detrimentally affected by the illusion of control. The market cannot be controlled and neither can a deck of cards. In identifying these behavioral characteristics, I wish to provide insight into why bubbles, such as the tech bubble and more recently the housing bubble, inflate and implode in the markets. Both investors and gamblers very often fall into a perilous mindset. Achieving initial success leads them to believe that they can control future odds and make more money. This belief in their winning streak frequently causes detrimental effects as we see in the current state of the financial markets. The majority of the twenty major banks lost billions of dollars in mortgage-backed securities because they acted more like compulsive gamblers than sophisticated money managers. Instead of treading cautiously, a gambler's mentality emerged among the financial firms as each flocked into mortgage securities to avoid being left out. It seems that the investment banks forgot the most basic principle taught to undergraduates, that diversification is essential. It is necessary to become aware of how these psychological responses affect our judgment or we risk turning investing into another form of compulsive gambling. In addition, my thesis shows that similar strategies can be employed successfully in both fields to generate positive returns. Exploring the compatible strategies between gambling and investing has the potential to make business students better-equipped investors in the future.

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I

Introduction

James Altucher recently concluded an article in the *Financial Times* with this statement: "There are two sayings that apply to investing. First, 'those who chase straights or flushes go home on Greyhound buses.' In other words, don't buy a stock hoping for a good earnings report as the only way you're going to win on the investment. And 'if you can't spot the fish at the table, then it's you.' There are a lot of sharks at the table: hedge funds, mutual funds, day traders, Mr. Buffett, and so forth. But if you accumulate tiny advantages you have a better chance of winning"(14). In his article, Altucher adapted traditional poker advice for use in the stock market. The comparison between investing and gambling has been a familiar reference throughout the years. Even "Blue-chip stocks" received their name from the highest value poker chip. The *Wall Street Journal*, CNBC, and other media outlets repeatedly use allusions to gambling when talking about the financial markets. For instance, recently a deluge of articles has contained headlines concerning the billions of dollars in losses suffered by financial firms from "bets" on sub-prime mortgages. Obviously, the investments made in the various mortgage securities were not arbitrarily selected by the large investment banks. The banks carefully evaluated the risk return benefits of collateralized debt obligations and the other exotic securities that have caused the recent turmoil in the market. Unfortunately, the risks were much higher than most people anticipated. These investments, despite their thorough research and risk assessment, are still referred to as "bets." Betting, however, gives a perception of thrill seeking and trying to turn a quick profit. As an undergraduate senior in finance, I have been taught that gambling is the antithesis of finance. One professor who read my intended thesis topic stated that he hoped that

at the end of the course I would see only differences between the two subjects. He went as far as to say that the entire class should ultimately refute my claim. He strongly believed that finance, investing, and money management had nothing to do with gambling. Nevertheless, even after that semester had finished, I felt that my beliefs were only bolstered. From the various materials I have studied while earning my degree, it seems that gambling and business are two sides of the same coin. However, gambling is not simply placing random bets for the purpose of momentary excitement. In its numerous forms, gambling is based on the principles of mathematics, statistics, probability, and especially human behavior. Coincidentally, calculus, statistics, and econometrics are all required courses for finance undergrads. I believe that finance and gambling have more than just superficial commonalities. In this paper, I will seek to prove that various aspects of business, especially in the field of finance, possess similar underlying principles and characteristics to certain forms of gambling. Numerous aspects of finance, for instance portfolio construction, investment strategies, the unpredictability of the market, and the evaluation of risk and return, are extremely compatible to the tenets of professional gambling. I also intend to prove that a similar pattern of human psychology emerges in both investing and gambling. In identifying these behavioral characteristics, I wish to provide insight into why bubbles, such as the tech bubble and more recently the housing bubble, inflate and implode in the markets. In addition, I hope to show that similar strategies can be employed in both fields and can be used successfully to generate positive returns.

II

Poker and the Financial Markets

I realize now why my professor had so adamantly opposed my thesis topic. The class he had taught was a portfolio construction and management elective. This is a course based primarily on mathematics. The purpose of constructing a portfolio is to maximize return and minimize risk according to investor preferences. Security selection in a portfolio should be a careful and deliberate process and I agree that it should not be compared to random betting. However, there are some types of gambling that do require the same risk-return assessments in the decision-making process. Poker, for example, which I will be primarily focusing on, is not a game based strictly on chance. It is composed of several variables and only one of them is random. Seymour Schulich, a mining billionaire and long-time poker player contends that "the lessons you learn in poker are the same you learn in business: patience, reading your opponent and calculating the risk and return of your poker hand-those are the same things you need to do in business" (Gray 97). One finance professor at McGill University once stated to his students that "he could tell who would be successful and who wouldn't by playing poker with them"(Gray 97). Poker is a game with two primary elements: a deck of cards and the actual players at the table. It is a game of probability and human behavior. Financial markets are also made up of various interrelated groups acting upon each other. The numerous variables in the market create an element of unpredictability. Both poker and the financial markets are made up of a set of unpredictable occurrences paired with human psychology. These similarities have made poker the game of choice of many financial professionals. David Nelson, a senior vice-president of Baltimore-based Legg Mason Funds Management, even gave a presentation at an investment conference entitled

“What Poker Can Teach You about Investing.” In his presentation “he likened investing strategy to the poker maxim of ‘raise or fold.’ If a hand is worth being in, it's worth raising. Inversely, if you can't raise with the hand, you had better fold it. You can save a lot of money in poker and investing if you know when to say adios" (Gray 97+). Greg Dinkin, a former professional poker player and author of *The Poker MBA: Winning in Business No Matter What Cards You're Dealt,* insists that he learned more about business playing cards than he did studying for his MBA at Arizona State University: "Business is about decision-making, and good poker players know how to consider many variables in their decisions. They understand risk and return, they understand the numbers and can read the tells and body language of other people" (Gray 97+).

The poker mindset has been adapted by many of Wall Street’s most successful fund managers. Bond guru Bill Gross, who manages Pimco Total Return, which is the world's largest bond fund, asserts that the application of poker strategy to investing can prove tremendously beneficial. "You have to look for the market's tells," says Gross, using the term for the unintentional gestures that can betray a poker player's intentions and provide opponents with critical information. “It's a principle investors should learn to follow. The market can move for irrational reasons, and you have to be prepared for that” (Gandel 107). Gross’ vigilance toward “market tells” has proven effective in the past as he noticed one of these unintentional gestures in the market in 2004. Bond prices had risen 35% during the past five years, yet investor optimism remained high (Gandel 107). Considering the growing federal budget deficit, Gross maintained a more pessimistic outlook and decided to diversify. He expressed his worries in February of 2004 when he announced that he had lost confidence in his own bond fund and sold a portion of his personal stake. His actions turned out to be prudent as bond yields rose quickly in April and May, causing prices to dive. He reversed his position later in the year after recognizing another

market tell. An exodus of overly inflation-conscious investors from the bond market triggered Gross to increase his position in interest rate sensitive Long-term bonds. This move proved lucrative as rates dipped and prices rose. The Pimco Total return fund ended the year up 7.4% and outperformed 71% of all other bond funds. Today Gross continues to stress the importance of identifying market tells and highlights one that he keeps an extra watchful eye for: "To me, the giveaway is when fundamentals like inflation change and prices don't" (Gandel 107).

The discovery of market tells has allowed Bill Gross as well as numerous investors before him to avoid financial distress and reap bountiful profits. The most common tell for many financial professionals throughout the years has been widespread public participation in the market. One famous story claims that Joseph Kennedy liquidated and then shorted his portfolio just prior to the 1929 crash because he was receiving stock tips from his barber. Art Collins, author of *Market Beater* and writer for *Futures* magazine, describes that a similar phenomenon occurred during the tech bubble:

> Certainly market fever preceded the bubble burst of 2000. It seemed only the professionals were getting short. Year after year, seasoned veterans with egg on their faces fought the move, knowing it wasn't in any market's nature to roil forever upward. All the while, the butcher and the cab driver and Aunt Gladys were boasting of spectacular personal returns… Anecdotal market evidence, while speculative by nature, is not as insignificant as you might think. Floor traders talk about the near imperceptible things that tip them (44).

III

The Role of Risk

Pace's Professor Menahem Rosenberg once stated that finance primarily stands on two legs: the time value of money and risk.[1] At a card table, the time value of money does not play a major factor since the payoffs are immediate. Financial analyst John Gray delineates this difference: "Unlike business, where the results of decisions are often not clear for months or even years, in

[1] Prof. Rosenberg made this statement when I was in his Finance 320 class, Spring 2008.

poker you know whether you made the right decision by the end of the hand" (97+). Risk, however, is an extremely important consideration in both investing and poker. When constructing a portfolio, the first rule is diversification. Company specific risk must be eliminated because there is no reward for bearing unsystematic risk. The right stocks must be chosen for the portfolio so that their corresponding correlations eliminate unsystematic risk. Nevertheless, despite careful portfolio construction, all risk still cannot be eliminated. Variance is composed of unsystematic and systematic risk. Systematic risk is the only risk an investor is rewarded for bearing. It is the risk of being part of the market. Regardless of how conservative or skillful, investors are all subject to a certain level of risk just by participating in the market. The market in many ways can be seen as a fifty-two-card deck. Each card turned over is a company earnings report or the country's unemployment number. These figures can be speculated upon but never predicted with a great deal of certainty. In investing, as in poker, it is essential to minimize the risk that can be controlled.

Even the most capable money managers cannot produce above average returns year after year from their portfolios. Financial markets are too unpredictable and contain far too many variables to generate guaranteed annual returns. For this reason, people are advised to take a long-term approach to investing instead of trying to exploit short-term opportunities. Attempting to make a quick profit on a stock rarely works out the way one anticipates. The usual outcome is either a loss or the stock price does not move at all. If a quick profit is actually made, this strategy can rarely be duplicated and only provides a false sense of confidence. The long-term approach to investing is the wiser decision because over time losses and gains will average out to consistent returns. Professional poker players also maintain a long-term view of profitability toward their occupations. They understand that just like the market, the poker table contains far too many

variables, and there is always a level of risk that cannot be eliminated. Successful players are not discouraged by the unpredictable nature of their professions. Chuck Ludwig, owner of Strokerz Billiard Parlor and host of poker tournaments, stresses that "luck plays some part in it, but a good player is going to win consistently"(Deprospero1). Unprofitable nights come with the territory. The common adage repeated by the defeated poker pro as he or she walks from the table is that "you cannot control the cards." *Financial Times* writer John Kay compares poker to investment: "If the measure of skill is how often good performance repeats itself, poker is a more skilful activity than investment management. Few fund managers remain persistently ahead" (15). The successful professional poker players are those who win more than they lose. "In life as in poker, the occasional coup does not necessarily demonstrate skill and superlative performance is not the ability to eliminate chance, but the capacity to deliver good outcomes over and over again. That is how we know Warren Buffett is a skilled investor and Johnny Chan a skilled poker player"(Kay 15).

IV

The Character Traits of "Players"

The personality traits and interests of prospective funds managers are considered heavily by mutual fund executives during the recruitment process. Two professors, one from the University of Chicago and the other from MIT once expressed their frustration at the lack of adequate research describing what kind of person makes a good fund manager. As a result, they conducted a study of 2,029 managers entitled "Are Some Fund Managers Better Than Others?" (O'Reilly 139). Certain hobbies and characteristics, in fact, are common to most successful money managers, and executives are well aware of what to look for. These character traits can be more

important than the Ivy-League diploma that a manager boasts or even an impressively high IQ. Fortune writer Brian O'Reilly explains that "while that diploma from Harvard will certainly be a nice touch for the office wall, it is hardly at the top of the list. Rather, the pros probe for intangibles. Character. Tenacity. Ego balanced with humility. A taste for risk tempered by caution. Pattern spotting. A love of numbers. A willingness to risk failure. Also they are ordinary in their appetite for poker, but far more likely to play bridge" (139). Many mutual fund executives believe that poker and bridge are two interests that provide insight into whether a money manager will enjoy and excel in his work. Norman Weinstein, who has worked as the Managing Director of Credit Suisse First Boston in New York City and who has been a member of the hedge fund Odyssey Partners, maintains bridge as one his primary hobbies: "I prefer bridge players to chess players, because bridge mimics the stock market the closest. Bridge is a probabilistic game. It's not purely about developing strategies. There is total uncertainty of the cards you and your opponent are being dealt. You have to have a partner. You are dealing against another team" (Katarzyna 26). Weinstein further believes that one's ability to play bridge represents a prime qualification in playing the market: "Give me a choice between 100 bridge players or 100 college grads, and I'll take the bridge players in a second-they're used to always being dealt a new hand" (Ross 162). These games allow many financial professionals to hone the valuable skills used in both settings. They are considered useful training simulations for dealing with the actual business environment. James Cayne, chief executive of the fallen Bear, Stearns & Co., has won eleven national bridge championships and represented the United States in international tournaments thirteen times. He also believes that "bridge is an excellent background for any fast-moving business. In bridge you never face the same problem twice" (Ross 162). Cayne's boss, Alan C. (Ace) Greenberg, is also an accomplished bridge amateur. Berkshire

Hathaway's Warren Buffett, who is worshipped by countless investors, is another strong amateur bridge player (Ross 162). The list of financial professionals who spend their leisure time away from the Street gambling is vast. Michael Becker, a champion bridge player and a trader on the American Stock Exchange, credits a great deal of success to his mastery of such games. Becker states that of Amex's 450 traders, 90 are accomplished games players. He claims he and Ronald Rubin, his partner in bridge and in business, have recruited and trained most of those 90: "I can unqualifiedly say that the people I've trained have outperformed the others. Each game helps form specific strengths. Backgammon and blackjack teach how to play the odds; poker teaches bluffing and other psychological skills; bridge, with its constant table chatter, adds social skills that can prove useful in the financial world's clubby atmosphere" (Ross 162). Blair Hull, an options trader who founded Hull Trading Co. in Chicago, now employs forty traders and fifty percent of them are accomplished games players. Hull himself earned his initial $25,000 investment stake using a card-counting strategy at the blackjack tables in Nevada. Hull attributes a great deal to his blackjack experience and how "it allowed him to learn how to manage his capital through losing streaks which is an important discipline in trading" (Ross 162). Hull assesses the value of gambling: "When I think of my blackjack experience, and the many ups and downs, and losing the bank on occasion and emotionally weathering the storms over five years, I think it trained me to have emotional stability" (Ross 162).

The ability to remain levelheaded in the face of adversity and failure is an important quality for investors and games players. In both environments, emotions cannot be allowed to cloud one's judgment. Every decision must be evaluated objectively. David "Chip" Reese, who is considered by many as the best poker player ever to live, was the embodiment of "calm and collected." Poker legend Doyle Brunson describes him as having the "the most even disposition

of anyone I've ever met" (Nakashima E6). Individual psychology plays a great role in long-term success. Personality traits can determine whether a person will be a winning card player or a successful investor. An especially important personality characteristic that determines the types of risks that a person is willing to take is the desire for control. Certain individuals are control freaks and others are more laid back and comfortable with relying on the judgment of others. Human personalities can fall anywhere along this spectrum of desired control. The locus of control is a trait describing the extent that a person attributes his or her failures and successes to his or her own actions. Those with an internal locus of control take responsibility for the outcomes that transpire while individuals with an external locus of control place blame on outside forces, luck for instance. Psychologist David Cohen mentions the influence that these personality characteristics have on financial decision-making in his book *Fear, Greed and Panic: The Psychology of the Market*: "There has been considerable research on how attitudes to control affect financial behavior. High-desire-for-control subjects gamble more on games where there is an element of skill. They prefer poker to roulette. No one has asked whether they are more likely to play the stock market than the horses, but it seems very likely, because few people see investment as just a matter of luck" (132). Here investment is paralleled to games that possess both elements of skill and luck. He provides a line of reasoning into why so many traders are drawn to games like poker and bridge. People exhibit similar psychological patterns of behavior in both settings. In 1986, John Burger conducted numerous experiments with high-control individuals to record their reactions to probabilities using coin tosses and the rolling of dice. The experiments produced valuable research showing how these personality characteristics affect decision-making. According to Cohen, "Burger discovered that high-control subjects became less rational when they got a string of answers right at the start of the experiment. A little

success distorted their perceptions. They then rated their level of control as far higher than it really was" (133). These results are significant because investors, as well as gamblers, are drastically and detrimentally affected by the illusion of control. The market cannot be controlled and neither can a deck of cards. Far too many people, however, feel that they can overcome this unpredictability because of superior skill. M. Walker in *The Psychology of Gambling* explains that "gamblers gamble because they think – mistakenly – they will make money at it. They feel that they can control the odds" (Cohen 148). This mirrors the belief of the so-called "masters of the universe" in finance: "Total control of the markets is unrealistic but it is the feeling you have when you are a master of the universe on a winning streak or a master of the universe who thinks he is about to hit a winning streak. For most investors it is a dangerous feeling" (Cohen 149). These statements are especially relevant today when we view the current state of the financial markets. The majority of the twenty major banks have shown billions of dollars in losses due to write-downs in mortgage-backed securities. It seems that these major investment banks and the "masters of the universe" who work there acted more like compulsive gamblers than sophisticated money managers.

V

Success Breeds Overconfidence

Gamblers refer to "a rush" as a short period of time when every move and every decision that a player makes turns out to be correct. During a rush, a gambler "cannot lose" until he or she inevitably does. Ultimately, a rush is just a streak, something fleeting that one struggles to extend as long as possible. However, the end is always looming. Each subsequent bet increases with each victory. The typical result is that the largest loss is the one that puts an end to the streak. The recent activity in the financial markets seems oddly similar to the conclusion of a gambler's

rush. For several years, financial firms earned large returns from the country's boom in the housing market and the mortgage securities that were packaged and sold to investors. The firms' actions during the housing boom relate back to John Burger's study of how a gambler's early success can distort the perception of control over a situation. The above-average returns early on gave financial firms a false sense of infallibility. Famed mortgage-bond pioneer Lewis Ranieri expressed his doubts and criticism before the downfall. He prophetically stated in an article in the *Wall Street Journal* in February of 2007 "that in the past few years the business has changed so much that if the U.S. housing market takes another lurch downward, no one will know where all the bodies are buried" (Hagerty B1). The housing market did in fact lurch downward and the peak came in the summer of 2007 after almost two years of lax lending by banks and over-construction by developers. Many sub-prime borrowers possessing weak credit scores were able to purchase homes with no down payments. According to Credit Suisse Group, more than 40% of sub-prime borrowers in 2006 were not even required to produce pay stubs or other proof of income and assets (Hagerty B1). Bear Stearns, which had created a niche in mortgage securities, began its decline during this time period. Two of its hedge funds collapsed during the summer of 2007 and Bear's stock price continued to tumble from its high of $171 in January. By March 2008, Bear Stearns needed to be saved by the combined efforts of the Federal Reserve and JP Morgan because of a liquidity crunch (Thomas A1+). Cohen describes this risky behavior: "While investment can be a gamble, a gamble is never an investment. If you place a bet on Lucky Loser in the 2 o'clock, you can lose the whole stake. When you invest in equities, it does not feel the same - and for good reason. However lousy your judgment, history says you are unlikely to lose all the money you invested. Total wipe outs are rare" (125). Bear Stearns' investors saw their holdings shrink to a small fraction of their previous glory. The ten dollars a

share JP Morgan agreed to pay as compensation, even up from the initial two- dollar offer, provided little consolation to Bears' shareholders.

Besides the rapid and well-publicized demise of Bear Stearns, the majority of financial firms showed tremendous losses due to mortgage-backed and other exotic securities. What is most perplexing is that these supposed experts all made the same mistakes. It is as if the financial firms forgot the saying that when things look too good to be true, they usually are. Instead of treading cautiously, a gambler's mentality emerged among the financial firms as each flocked into mortgage securities to avoid being left out. It seems that the investment banks forgot the most basic principle taught to undergraduates, that diversification is essential. At the start of 2007, outstanding U.S. mortgage securities had grown to nearly $7 trillion exceeding the $4.3 trillion of U.S. Treasury securities (Hagerty B1). In No-limit Texas Hold-em, a type of poker where players receive two cards face down then attempt to form the strongest hand from a board of five open communal cards, the best starting hand a player can hold is two aces. Professional poker players describe this hand as generating large victories or devastating losses. The reason is that the initial strength of the hand is meaningless if it does not remain the strongest at the end. The strength of the hand often breeds overconfidence and causes many players to overlook imminent threats. Instead of pocket aces, investment banks held AAA rated mortgage securities. These investment grade securities were considered almost risk free. Ranieri stated in his interview that rating agencies like Standard and Poor's struggled to keep up with mortgage finance and became overwhelmed (Hagerty B1). In hindsight, everyone now knows that he was correct and these securities were far from risk free. However, the initial strength of the security caused a fatal flaw common to investors and card players: overconfidence.

Human psychology is a tremendous factor in finance and poker, and it is imperative to understand it in both areas in order to be successful. Robert Schiller, a Yale economics professor, argues that "studying people's tendencies toward overconfidence, confirmation biases and the like is essential to understanding the market. These tics in investment behavior translate into sizeable changes in the stock market" (O'Doherty 7). Chris Coplin, chief investment officer of the US behavioral finance team for JP Morgan, further describes the effects of these psychological flaws. He declares that "people suffer from the confirmation bias. They decide whether they like a stock and then look for evidence that confirms that view" (O'Doherty 7). Whitney Tilson, a fund manager, founder of T2 Partners, and an *FT Wealth* columnist insists that human beings are innately vulnerable: "Humans are hard-wired to be irrational when it comes to financial decisions. We must understand that, so we don't become the sucker at the table" (O'Doherty 7). According to *Financial Times* analyst John O'Doherty, "Behavioral finance maintains that not only do individuals make mistakes with money, they do it in big enough numbers to drag markets with them. But those mistakes are predictable, so it is possible to use the theory to make money. Behavioral finance is a school of investment thought that expands the fool and his money theory to a bigger scale" (7).

Assessing human behavior is the same strategy that poker players have utilized for years. Professional players do not focus their efforts on predicting random variables. Instead, they zero in on the patterns of human conduct exhibited by players and calculate the appropriate odds. In a similar fashion, followers of behavioral finance seek to profit from the pattern of human behavior witnessed in the market. It promises "a way to profit from the many flaws that lead to bad investment decisions" (O'Doherty 7). Terry Odean, a professor of finance at Hass School of Business, states that "the individual investor has many blemishes. They trade too frequently, the

stocks they sell do better than the ones they bought, and they don't diversify" (O'Doherty 7). Obviously blemishes are not isolated to individual investors since many investment banks have suffered prolonged losses from the sub-prime crisis.

VI

The Psychology of Investing

There is an important relationship to identify between the psychology involved in investing and that in gambling. The same part of the brain is affected when people take risks involving money. It is necessary to become aware of how these psychological responses affect our judgment and turn investing into another form of compulsive gambling. Recently in the news, we have seen a rogue trader, Jerome Kerviel of Société Générale, lose $7.2 billion dollars betting on European stock markets (Lanchester 31). However, he is not the first trader to take the initiative and invest a great deal on a "sure" thing. His predecessors include Robert Citron of Orange County, Toshihide Iguchi at Daiwa, Yasuo Hamanaka at Sumitomo, and Nick Leeson of Barings. Each of these traders lost over a billion dollars and luckily for them it was their employers' money. However, it seems as if someone always has to come and up the ante and this is exactly what Kerviel did by surpassing Hamanaka's "measly" $2.6 billion in losses (Lanchester 31).

My research shows that gambling is intertwined with the financial markets and that the knowledge of its principles can be an invaluable resource for traders, investors, and students. It has even been theorized that spikes in gambling activities throughout the population act as indicators to approaching downturns in the market. The logic behind this assessment is that a similar psychology is involved in both activities and that rampant gambling in society will translate into a similar style of investment. It has been suggested that this psychology develops

from the release of certain hormones in the body. These hormones affect the willingness of individuals to take risks concerning financial decisions. This biological component also helps explain the predominance of males in both the financial markets and poker tables. The effects were described in a recent April article in the *Financial Times*:

> The waves of irrational exuberance and pessimism that destabilize [sic] the financial markets may be driven by naturally produced steroid hormones. Steroids such as testosterone and cortisol affect our moods, memories, and behaviour [sic]. Testosterone, for example, surges in males as they prepare for a competition, and continues to rise in the winner while falling in the loser. The winner, primed by elevated testosterone, experiences increased confidence and risk-taking and this improves his chances of winning again, leading to a positive feedback loop termed the 'winner effect.' However, at some point in this winning streak the elevated steroids begin to have the opposite effect on success and survival. As levels of testosterone rise, effective risk-taking gradually turns into dangerous behaviour…. Many traders [during the dotcom bubble] displayed manic behaviour and a sense of infallibility (Coates 11).

The years preceding the sub-prime crisis were very prosperous as money managers and traders boasted extraordinary returns. Winning seemed to have spawned increased levels of testosterone and resulted in excessive risk-taking. Risk seeking during this period was not confined only to the financial markets. Our current market downturn was preceded with the tremendous rise in internet gambling sites and the expansion of casino construction throughout the United States. For instance, *The Economist* reported that in 2007 popular websites such as Full Tilt Poker and PokerStars enjoyed peak traffic of tens of thousands of visitors at any given time, occasionally over 100,000 ("A Big Deal" 32). This evidence supports the theory that a prevalence of gambling in society is a foreboding sign of economic difficulties. Collins used the country's rising interest in gambling to predict the present recession. In an October 2005 article, he presaged our economic crisis:

> Gambling mania is rampant - the lure of something for nothing. The expansion of casinos is now considered to be fiscally inevitable. You can't afford not to build a casino. Many remember a similar mantra some years back, "you can't afford not to be in the stock market." Where else can you get that return? Poker is capturing everyone's imagination

> from 14-year-old boys to little old ladies. There is endless live TV coverage of the new "sport." You can play online - lose your shirt without leaving your house! There probably will be more mania to come just before it all buckles under its own improbable weight, and that's the time you really want to avoid getting sucked in (Collins 44).

The escalation in the popularity of poker and online gambling was nearly simultaneous to the extraordinary boom in the housing market. In both situations, individuals believed that they could get "something for nothing." Many homeowners assumed that the houses they purchased with adjustable fixed rate mortgages would continue to consistently appreciate. As a result, people began "mortgaging and second mortgaging with abandon and used their hyper-inflated home equities as personal piggy banks" (Collins 44). However, when prices plummeted, many were left in financial disarray with mortgages worth more than the value of their homes and property. The same exuberance was seen in the sudden rush of new poker players all expecting to win millions of dollars online. They were inspired by amateurs like Chris Moneymaker, who won the World Series of Poker in 2003 after qualifying through a satellite tournament on a poker website. Moneymaker (yes, his actual name) turned a $40 fee into the $10,000 World Series of Poker "buy-in" and ultimately into a $2.5 million dollar payday. Like a modern day gold rush, entries into the World Series main event went from 512 in 2000 to 8,773 in 2006 as a result of his victory ("A Big Deal" 32). However as is usually the case, this poker explosion produced far more losers than winners. This recent craze was not the first instance of increased societal gambling foreshadowing market trouble. A strong correlation can be seen in the period surrounding the 1929 stock market crash. Robert Shiller, an expert on market volatility, once documented the number of articles about gambling in the *Reader's Guide to Periodical Literature* and reported the percentage of all articles on the subject through the years leading to and following the collapse. He showed the results in his book *Irrational Exuberance* and stated that "these numbers do strongly suggest a sudden and temporary surge in public interest in

gambling between 1925 and 1932" (241). These statistics further exhibit the high correlation between the pattern of behavior involved in gambling and investing.

Year of Articles	Percentage of Gambling Articles
1919-1921	0%
1922-1924	0.004%
1925-1928	0.021%
1929-1932	0.035%
1933-1935	0.006%
1936-1938	0.003%
1938-1942	0.008%

Source: Shiller 241

Furthermore, this mania in both investing and gambling stems from their common root: money. Recently scientists have used magnetic resonance imaging (MRI) to study men's brain activity. They found that the same part of the brain responds similarly to gambling wins as it does to cocaine use. The journal *Neuron* reports that "money, in other words, excites much the same regions as a drug" (Begley 52). As many day-traders can attest, playing the stock market can be addictive.

VII

Conclusion

"Finance would be a poor, tepid, and ineffectual thing without the vitality imparted by the gambling instinct. Traders play a minor role in economics textbooks but their risk taking--essentially, gambling -- is the engine of capitalism" (Coy 134). These are the words of Aaron Brown who is an executive director at Morgan Stanley and holds degrees in applied math from Harvard University and finance from the University of Chicago. Brown is also a lifelong poker player, who has played with poker pros and business moguls. His best-selling book *The Poker Face of Wall Street* helps explain the huge popularity of poker especially among business

professionals. Personally, I play a fair amount of poker. My game of choice is No-Limit Texas Hold'em. I have played since high school when the popularity of the game was just starting to explode during my junior and senior years. My friends and I were not immune to the fever, and we began holding weekly poker nights. At first, my play was weak like most amateurs, but it improved with added experience throughout the years. When I got to college, I played a lot less and studied a lot more. After learning the fundamentals of business and finance over the course of my four years, I began to view the game in a much different light. I saw many principles that were applicable to the game and I began to change my style of play. Previously I would devote little thought on which hands to play, how much to bet, or the pot odds. Basically I would play for cheap thrills. I should clarify: they were expensive thrills since at first I lost a lot more than I won. Using a more academic outlook, I treated each hand as an equity investment priced at the ante or a pre-flop raise made by an opponent. Each hand possesses a certain potential to improve as the communal cards are exposed. There is a hierarchy of quality hands, yet high rankings in no way guarantee victory. It is similar to a stock's price-earnings ratio. Investors are willing to pay a high multiple above earnings if there are future growth prospects. In investing and poker, both stocks and the two cards held may never improve. It is a poker player's responsibility to establish a price range for the hierarchy of hands in order to determine when a hand is over or undervalued. By playing more deliberately and using the principles of finance, I saw winning nights begin to outnumber losing ones. This improvement in my game engendered the belief that it is possible to create a poker strategy that can eliminate risk to a minimum level in order to achieve a consistent long-term return. This strategy would be parallel to the method of eliminating unsystematic risk in portfolio construction through stock correlations. Winning consistently at poker is in fact possible. This has been proven by the track records of many top

professionals. The occupation “professional poker player” has even been recognized by the I.R.S. for tax purposes. One pro, Daniel Negreanu, is the top-ranked tournament poker player in the world and has won over thirty major international poker tournaments. He describes a strategy of poker very similar to way investments are evaluated using net present value: “Every poker decision can be broken down into two categories: those with positive expected value and those with negative expected value. A play that has positive EV is one that will make you money in the long run. The opposite occurs with negative EV; these plays will ultimately cost you chips” (2). I believe that it is possible to create a quantifiable strategy for winning in poker similar to that established by Harry Markowitz, the father of portfolio theory. In poker, unsystematic risk can be decreased through a combination of hand selection and well-placed bets. The systematic risk lies in the uncertainty of the communal cards and the opponents’ bets. In Markowitz’s graph of the security market line, investor preference governs the amount of risk and expected return of a portfolio. Levels of investor risk-aversion designate how much of the market portfolio and risk-free assets will be held. In poker, this can be translated into the number of marginal hands an individual plays or how often bluffs are attempted. In both cases, the expected return is higher, but risk is also substantially increased. Given the infinite scenarios that can arise in a game, it would take far more research and time to establish any definitive strategy at this point. However, I believe that it is possible to discover a style of play that can turn this common hobby into a reliable source of long-term return on investment.

Hopefully by this juncture in my thesis, I have established a valid congruency between many attributes of finance and gambling beyond merely superficial similarities. As I noted earlier, there are numerous financial professionals who attest to the value of knowledge and mastery of games like poker and bridge. As students of finance, we should heed the advice of

these individuals since we are striving to eventually reach their level. For this reason, I think that Pace University's Lubin School of Business should strongly consider offering an elective that introduces this unique outlook. Exploring the compatible strategies between gambling and investing has the potential to make business students better equipped investors in the future. Charles Nesson, a professor at Harvard Law School who founded the Global Poker Strategic Thinking Society (GPSTS) in 2007, declared: "Poker offers metaphors for a range of life skills and could be a wonderful educational tool" ("A Big Deal" 32). The goals of the GPSTS are "to highlight poker's role in teaching patience, strategy and money management, and in improving cognitive skills" ("A Big Deal" 32). I am aware that game theory is offered at Pace and taught by Professor Mark Weinstock. Game theory is a field of study employed by many top poker players including Chris "Jesus" Ferguson, who used it to win the 2000 World Series of Poker ("A Big Deal" 32). Ferguson has a doctorate in computer science and writes academic papers on probability theory with his father, a statistician at UCLA. Since there is a natural connection between game theory and poker theory, I believe that it is possible to create a class with a dual focus.

In addition, the study of market psychology should also be included in the curriculum because it is an important aspect of finance that is currently being overlooked. Human psychology plays a major role in market fluctuations. It has the power to foster widespread attitudes in the market: over-confidence and risk-seeking in a bull market and irrational risk aversion in a bear market. Undergraduates should have the opportunity to investigate the extent of its impact. Studying gambling behavior can provide insight into market movements because of its correlation to investing. Former chairman of the United States Federal Reserve, Alan Greenspan recently stated "that economics will never have a perfect model of risk because economists cannot fathom the

will o' the wisp of market sentiment" (Coates 11). If we begin to research the effects and causes of these market sentiments, it may allow us to develop a better assessment of risk and present us with an effective forecasting tool. Art Collins aptly reminds us that if the recent market crisis has taught us anything, it is that, "mass behavior doesn't change. Fear and greed are eternal. The only surprising thing is how memories are short enough to allow the game to go on. Either there wasn't enough pain in 2000 or people heal awfully fast" (44).

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