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TRUST AS RISK AND PSYCHOPHYSICAL NUMBING

Robert A. Olsen, Ph.D.

This presentation focuses on the multi factor nature of investment risk and Trust as an Affective risk attribute. The recent financial crisis has reacquainted investors with the key role that Trust plays in the financial marketplace. Without Trust the financial markets crash!

Efficient Financial markets require low transaction costs. However transaction costs become infinite when market participants no longer act in a trustworthy fashion. Recent financial crises were, in part, created by financial institutions focusing on short term fees and trading as the principal source of income, rather than trustworthy long term behavior (Gorton 2011, Lowenstein 2004). Financial professionals acted in callous disregard of the necessity to foster trust as the bond between borrowers and lenders. Trust was ignored because it was "hidden in plain sight" and taken for granted. As a sociological attribute trust was also formally ignored in theoretical financial models. This presentation will proceed as follows.

First, the nature of trust
Second, evidence of trust as a risk attribute
Third, Bubbles and Crashes as Affective Swarms

TRUST AND THE FINANCIAL SERVICES INDUSTRY – AN ANTHROPOLOGICAL PERSPECTIVE

Susan Menke, Mintel Group Limited

(The author did not submit this abstract by the due deadline)

TRUST AND CULTURE: A EUROPEAN PERSPECTIVE

Luigi Guiso, Ente Einaudi for Economics and Finance, Italy

(The author did not submit this abstract by the due deadline)

LOSS AVERSION, SURVIVAL AND ASSET PRICES

Liyan Yang

Abstract

Do loss-averse investors influence asset prices in the long run? In an economy with heterogeneous investors those who are loss-averse can influence long run asset prices only if they survive, and its not obvious that they can survive in the presence of investors who do not exhibit loss aversion. This paper addresses these issues in a dynamic asset market model in which arbitrageurs have Epstein-Zin preferences. Our analysis shows that if loss aversion is the only difference in investors' preferences, then for empirically relevant parameter values, loss averse investors will be driven out of the market and thus they do not affect prices in the long run. The selection process may be slow in terms of wealth shares; but it can be effective in terms of price impacts, because of endogenous withdrawal by loss averse investors from the stock market. We also show that if investors have differing elasticities of intertemporal substitution or time patience parameters, loss averse investors can survive and affect prices in the long run.

Key words: loss aversion; Epstein-Zin preferences; market selection; asset pricing JEL Classification Numbers: G12, D50

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SUBJECTIVE BAYESIAN BELIEFS

Constantinos Antoniou
University of Exeter, UK,
E-mail:c.antoniou@exeter.ac.uk

Glenn W. Harrison,
Department of Risk Management & Insurance and CEAR, Robinson College of Business
Georgia State University, USA
E-mail: gharrison@gsu.edu

Morten Lau
Durham University, UK
E-mail: m.i.lau@durham.ac.uk

Daniel Read
University of Warwick, UK
E-mail: Daniel.Read@wbs.ac.uk

Abstract

Do individuals behave differently when they have to infer the probability of some uncertain event compared to when they are told the probability of an uncertain event? The answer to this question goes to the heart of the application of the Bayesian approach to decision-making under risk and uncertainty. Assume that enough information exists to define the prior probability of some event, and that the sample data allows an individual to generate a unique posterior probability by the correct application of Bayes Rule. The traditional subjective expected utility theory approach would then treat that *inferred* probability exactly the same as it would treat a probability that had been given *directly* to the individual. Indeed, popular extensions of the traditional subjective expected utility theory approach that allow for probability weighting and rank dependent decision weights would also treat that posterior probability in exactly the same way as a probability that had been given directly to the individual. We apply theory, experiments, and econometrics methods to evaluate the manner in which individuals form subjective beliefs in this Bayesian setting.

There exists a large literature in experimental economics and psychology that suggests that individuals do not apply Bayes Rule correctly when making decisions that depend on them correctly pooling prior information and sample data. Our objective is not to document further behavioral mis-applications of Bayes Rule, but to model that behavior structurally. We replicate and extend a classic experimental study of this issue, due to Griffin and Tversky [1992], making sure that we employ methods that addressed many of the sneaking suspicions that economists have when they come across experiments run by psychologists. We employ real monetary consequences for decisions, and use a transparent and physical mechanism to generate the uncertain outcomes.

Our extension to their experimental design is to directly elicit bets about outcomes that we can use to infer subjective Bayesian beliefs, as well as having a task in which we can directly estimate the risk attitudes of individuals towards simple, objective lotteries in a separate task.

It is easy to confound the behavioral validity of subjective expected utility (SEU) and the behavioral validity of Bayes Rule. It is not the case that SEU assumes the valid application of Bayes Rule, although one often sees them combined. Together they form the distinct pillars of "behavioral finance."

Indeed, it is relatively easy to show that behavior violates Bayes Rule in our experimental setting if one assumes SEU. We do that, using behavior inferred from our experimental design and a formal structural econometric model. As a general behavioral matter, this result is well known, but our demonstration has the benefit of being more structural than others.

The key idea we examine is that inferred posterior probabilities are not precise and (statistically) degenerate in the way that stated objective probabilities are. If someone is told that a fair ten-sided die is to be rolled and that a good outcome occurs if the face is 1 through 7, they can be said to have a stated objective probability of that outcome of 0.7. Now imagine that someone is given some priors and sample data that imply a posterior probability of 0.7 when Bayes Rule is correctly applied. We hypothesize that the latter random process is better characterized as a subjective probability distribution that is non-degenerate. That is, it might consist of a three-point discrete distribution in which 0.65, 0.7 and 0.75 have equal weight, and have a weighted mean of 0.7. Or it might consist of a distribution which does not have weighted mean of 0.7.

The differences in there last two alternatives have serious implications for the characterization of behavior under SEU. In the first case the Reduction of Compound Lotteries (ROCL) axiom means that the decision maker would behave as if this compound lottery had been "boiled down" to a simple lottery with probability $0.7 = \frac{1}{3}\times 0.65 + \frac{1}{3}\times 0.7 + \frac{1}{3}\times 0.75$. Hence an SEU-consistent decision maker would behave as if Bayes Rule had been correctly applied. In the second case an SEU-consistent decision maker would behave as if Bayes Rule has been incorrectly applied.

These crisp inferences about the behavioral validity of Bayes Rule are conditioned on assuming SEU. If the decision maker violates SEU by not using the ROCL axiom, then it is conceivable that behavior is consistent with Bayes Rule. Thus, what "looks like" a behavioral violation of Bayes Rule might in fact be better characterized as a behavioral violation of ROCL. Of course, both could be violated.

Relaxations of ROCL are particularly attractive when examining Bayes Rule since they correspond to modern characterizations of uncertainty and ambiguity. Although there are some nuances in the manner in which these terms have been used, one can define risk as any setting in which the decision maker behaves as if consistent with ROCL. Hence SEU-consistent decisions are characterized as decisions under *risk*, just with subjective risk instead of objective risk. But

once we relax ROCL, we are characterizing *uncertainty* if we assume that the decision maker still behaves as if there is a well-defined, non-degenerate subjective probability distribution. The key differentiating characteristic from risk is that we then have to model the manner in which the non-degeneracy of the distribution matters for behavior: as we will see, ROCL is a mighty sword of an identifying assumption, and there are many ways it can be violated. When the decision maker cannot be said to even have a well-defined subjective probability distribution, we are characterizing *ambiguity*. Although it is common and natural to assume that ambiguity entails uncertainty, and a violation of ROCL, that is not formally essential.

Our approach, then, is to consider the behavioral validity of Bayes Rule when decisions are viewed as being made under uncertainty rather than risk.

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A PARADIGM FOR QUANTITATIVE BEHAVIORAL FINANCE

G. Caginalp

M. DeSantis

Abstract. With increasing evidence challenging the efficient market hypothesis, there is a need for a unified methodology capable of quantifying the various, sometimes conflicting, effects suggested by behavioral finance. A paradigm for quantifying these effects is presented in this paper. We review recent studies of large scale NYSE data modeling the daily price change, and formulate an augmented version of the methodology in which the impact of and over- or underreaction to news announcements are considered. Variables that are more difficult to consider, such as the "affect heuristic," are also considered within the context of this theory.

Key Words. Efficient market hypothesis, behavioral finance, stock market returns, trend (momentum) investing, money supply, overreaction and underreaction

DECISION, UNCERTAINTY AND COOPERATION: A BEHAVIORAL INTERPRETATION BASED ON QUANTUM STRATEGY

Abstract

KONG Xiaowei [1]
XU Fei [2]

The paper presents a new attempt to explore cooperative behavior in economic competition. By extending the prisoner's dilemma with cooperative inclination to Hilbert strategic space, we are able to verify the existence of quantum optimal strategy, which results in quantum Nash equilibrium and will degenerate into classic strategy when the quantum conditions are not satisfied.

Our model materializes individual quantum strategies by bringing in the quantum operator, which has a specific quantum phase to capture the fundamental inherent uncertainty in decision-making process. The quantum phase item shows uniform random distribution in individual person's decision strategy function. While in a two-player prisoner dilemma game, it can be affected by the cooperation inclination exist between the players, and lead to a new correlated equilibrium of quantum level. To detect and measure the existing cooperation inclination, we employ the dissimilarity index defined by the complex network surrounding the players. We set up quantum dynamic equations under Heisenberg Picture, in which the evolution operator is a function of the dissimilarity index, to solve out the quantum strategic correlated Nash equilibrium and verify its distinction from the known equilibriums. Additionally we perform study on the conditions of cooperation in a typical two-player prisoner's dilemma game.

Keywords: uncertainty cooperation quantum strategy

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[1] Department of Finance, Chuhai College of Higher Education, Hong Kong
[2] Department of Modern Physics, University of Science and Technology of China, Hefei, Anhui, P. R. China

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DIVIDENDS AS REFERENCE POINTS: A BEHAVIORAL SIGNALING MODEL*

Malcolm Baker
Harvard Business School and NBER

Jeffrey Wurgler
NYU Stern School of Business and NBER

April 20, 2011

Abstract

We propose a signaling model in which investors are loss averse to reductions in dividends relative to the reference point set by prior dividends. Managers with strong but unobservable earnings separate themselves by paying high dividends and still retaining enough earnings to be likely to at least match the same dividend next period. The model matches several important features of the data, including equilibrium dividend policies that can follow a Lintner partial-adjustment model; a modal dividend change of zero; a stronger market reaction to dividend cuts than dividend increases; and a signaling mechanism that does not involve public destruction of value, a notion that managers reject in surveys. We also find empirical support for some novel predictions.

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MODERATED CONFIDENCE AND UNDER- AND OVERREACTIONS IN THE FINANCIAL MARKETS

Tao Shu
University of Georgia

P. Eric Yeung
University of Georgia

April 2011

Abstract

Investors tend to bias their estimated signal precision toward the unconditional mean, causing predictable under- (over-) reaction to precise (imprecise) signals. We examine whether investors' *moderated confidence* predicts *both* under- and overreactions of stock prices in a single context. In the U.S. blockholding setting, the implication of a firm's earnings for its blockholder's performance is relatively precise, but the implication of blockholder's earnings for the firm's performance is relatively imprecise. Consistent with the *moderated confidence hypothesis*, we find that prices of blockholder underreact to the firm's earnings news but the prices of the firm overreact to its blockholder's earnings news.

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HETEROGENEITY IN BOUNDEDLY RATIONAL TRADERS? RESULTS FROM DOUBLE AUCTION EXPERIMENTS

Shu-Heng Chen[1], Chung-Ching Tai[2], and Lee-Xieng Yang[1]

[1]National Chengchi University, Taipei 11605, Taiwan
[2]Tunghai University, Taichung 40704, Taiwan

Abstract. In this paper, we are interested in the heterogeneity of sub- jects' bidding behavior in double auction markets. Our goal is to examine whether human factors in terms of cognitive capacity can explain the dif- ferences among subjects' behavior. To do this, we had two treatments. In treatment 1, subjects have maximize their profits when facing truth tellers–a kind of computerized agents which always submit bids according to their reservation prices. In treatment 2, subjects have to face software agents which are the bidding strategies collected from the auction litera- ture. We then have subjects compete with these agents in three different kinds of demand-supply schedules. We recruited 346 subjects and mea- sure their cognitive capacity by assessing their working memory capacity (WMC).

Our results show that there are significant differences for subjects with different levels of WMC. However, according to the regression analysis, the importance of WMC does not simply imply a positive linear relation- ship between WMC and subjects' performance. Instead, we can observe evidence that subjects may adopt different types of methods to tackle the problems. Also, the types of methods subjects adopted might be related to their cognitive capacity.

Although our results show no universal relationship between WMC and performances. It reminds us that the original idea of bounded rationality proposed by Herbert Simon states clearly that limited cognitive capacity and the structure of the environment, like two blades of scissors, shape our bounded rationality. Therefore, we think that a further exploration into subjects detailed bidding/asking behavior is needed before we can conclude the implications of cognitive capacity on people's trading be- havior in a market environment.

Keywords: experimental double auction markets, working memory, social heterogeneity, bounded rationality.

THE EFFECT OF NONCONSCIOUS GOALS ON INVESTOR CHOICE

Colleen P. Kirk, Pace University, ColleenKirk2000@gmail.com
Bernard McSherry, New Jersey City University, BernardMcSherry@aol.com

While goal-setting theory is rich and robust, recent experimental research in consumer psychology suggests that goals have an impact on consumer behavior at a nonconscious level as well. Indeed, the effects of nonconscious goals on behavior may be as strong as those of consciously set goals.

There is reason to think that nonconscious goals may also affect investors. In recent years there has been an accumulation of evidence indicating that, contrary to the assumptions of the efficient markets hypothesis, investors do not always make asset allocation decisions strictly on the basis of economic utility. Given the role of risk-taking in the recent sub-prime mortgage crisis, an understanding of factors that may affect the retail investor's investment choice, especially given clear delineation of risk, is vital. One of these factors may be the nonconscious activation of goals.

The objective of this paper is to extend the experimental work of consumer behavior researchers Chartrand, Huber, Shiv, and Tanner (2008) to examine whether nonconscious goal priming can affect individuals' investment allocation decisions and risk tolerance. Specifically, are people who are nonconsciously primed with luxury-oriented cues more willing to assume risk in a nonconscious effort to increase their return and satisfy their nonconscious goal of attaining luxury? In a demonstration of non-conscious goal activation, the results of this study suggest that priming people with luxury cues activates related goals, resulting in increased risk tolerance in a non-conscious attempt to achieve the activated luxury-oriented goal.

The Impact of Nonconscious Goals on Consumer Choice

Initial research into the effects of nonconscious goal-setting on consumer response originated in the behavioral sciences with the revelation that the way people perceive their environment is based not solely on a particular stimulus, but is influenced by their needs and motivations (Chartrand and Bargh 1996). Social-behavioral goals can be primed, or nonconsciously activated by a stimulus (Bargh and Gollwitzer 1994), nonconsciously increasing the accessibility of a goal in memory and impacting subsequent behavior.

In a series of four experiments, Chartrand et al. (2008) demonstrate that consumer choice of prestige-oriented or thrift-oriented products can be affected by nonconscious goal activation. Given that investors can be viewed as consumers of financial products, the present study examines whether a nonconscious prime, such as luxury or thrift, can affect investor choice of a low risk/low return or high risk/high return financial product through nonconscious activation of a related goal.

Demonstrating the Effect of Nonconscious Goal-Priming on Investor Choice

When examining nonconscious effects on consumer response, it is important to distinguish between priming of nonmotivational constructs, such as stereotypes and traits, and priming of motivational goals (Chartrand et al. 2008). Priming research in the consumer

behavior literature has demonstrated that merely a nonconscious association between a cue, such as a dog or a brand image, can affect consumer response, such as purchasing Puma products (Berger and Fitzsimons 2008) or even changing the way people think (Fitzsimons, Chartrand, and Fitzsimons 2008). In this way, risk-oriented primes have been shown to have a nonconscious effect on attitudes towards risk both in the social psychology (Erb, Bioy, and Hilton 2002) and in the behavioral finance literature (Gilad and Kliger 2008).

However, in addition to its effect on cognitive association, a nonconscious prime may motivate goal pursuit, thus also impacting behavior. For example, Chartrand et al. (2008) find that priming people with prestige versus thrift words motivates prestige versus thrifty goals, causing them to make more prestige-oriented versus thrift-oriented product choices. Further, support for their contention of nonconscious goal activation is demonstrated in that their results meet the temporal escalation criterion (Bargh et al. 2001). Rather than diminishing over time as would be the case if the effect of the prime were purely associational, the effect of the prime on subsequent goal-activated behavior strengthens over time until the goal is satiated (Bargh et al. 2001; Chartrand et al. 2008). It is possible that luxury-oriented versus thrift-oriented goals triggered by luxury and thrift priming may serve to motivate people to accept higher risk in exchange for the potential of higher return in order to achieve these goals.

Design and Procedure

This study randomly assigned 50 students at a major northeastern university to either a luxury or a thrifty condition in a single-factor, two-level (luxury or thrifty), between-subjects experimental design. As a cover story, participants were told that they were helping to test three independent and unrelated measures of consumer behavior to assist academic researchers in refining the measures. The study was conducted online using Qualtrics and all measures were counterbalanced.

Participants began the study by participating in a scrambled-sentence task, a nonconscious priming technique common in experimental research in social psychology, in which they were asked to construct proper sentences from a jumble of words. Following Chartrand and Bargh (1996) and Chartrand et al. (2008), 15 sets of 5 words each were presented to participants. In 13 of the 15 groups, words denoting luxury, such as “luxury,” “opulent,” or “affluent” (in the luxury condition) or “thrifty,” “frugal,” or “inexpensive” (in the thrifty condition) were embedded in the set. For each set of 5 words, participants were asked to construct a sentence with 4 of the 5 words.

Subsequently, following Chartrand and Bargh (Chartrand and Bargh 1996), participants completed a three-minute filler task in which they were asked to generate arguments for and against three controversial issues (reducing the legal drinking age to 18, capital punishment, and gun control). Finally, for the outcome measure of IRA investment choice, participants were presented with an IRA investment scenario and asked to choose between a low-risk, low-return federal money market fund and a more-risk, more return aggressive growth fund. Wording and graphics for the IRA descriptions were taken from a leading fund company website.

After subjects made their investment choice, a debriefing was conducted using a funneled questionnaire protocol (Chartrand et al. 2008) to ensure participants did not observe any link between the priming task and the mutual fund selection task.

Analysis, Results and Discussion

A binary logistic regression model was used for testing the hypotheses, with IRA choice as the dependent variable and the experimental condition (luxury or thrift), time taken to complete the study (as a proxy for time between the prime and the choice), and student major as predictor variables. Predictive results of the model were significant ($\chi^2 = 15.36$, $p < .005$, Nagelkerke R-square .387). Specifically, the following results were found:

Effect of Luxury vs. Thrifty priming manipulation. In the case of a luxury prime, the odds of a participant choosing an aggressive (high risk/high return) IRA were 248 times higher than the odds of choosing a conservative (low risk/low return) IRA ($p < .02$). The luxury prime appears to have the nonconscious effect of motivating people to want to earn more money, triggering them to choose a higher return investment vehicle, even though it also means accepting higher risk.

Temporal escalation criterion. Supporting our conceptualization, an interaction effect between the luxury/thrifty prime and duration suggests the nonconscious activation of a goal. In the case of a thrifty prime, the effect of the prime degraded as the duration increased ($p < .01$). However, in the case of a luxury prime, there was no degradation in the effect of the prime on investment choice ($p > .10$), likely because recently activated goals do not weaken with time, but rather maintain their intensity or strengthen (Chartrand et al. 2008; Chartrand 2005).

Business versus non-business majors. A main effect of major (business vs. non-business) was found. Business majors are significantly less likely than non-business majors to choose an aggressive IRA investment ($p < .01$). Nonetheless, no interaction effect between major and luxury vs. thrift condition was found ($p > .90$), so both business majors and non-majors were equally affected by the prime manipulation.

The current study appears to be the first in the behavioral finance literature to demonstrate that the results of priming with environmental cues can go beyond cognitive association to the activation of goals oriented towards attainment of luxury at a nonconscious level. Thus, the results of this study make a significant contribution not only by extending consumer behavior research to the context of finance, but also by suggesting a potentially fruitful new line of behavioral finance research. Further, experimental design is considered the most robust design for testing causal inference (Shadish, Cook, and Campbell 2002), and this study appears to be the first to demonstrate the nonconscious effects of goal priming using an online experimental methodology.

At a practical level, these findings suggest that investors may make sub-optimal allocation decisions at a nonconscious level when primed with luxury cues. At a minimum, this has important implications for the procedures that are utilized when individual investors are asked to make investment allocations for 401k plans and other types of pension vehicles. That is, regulatory officials should take steps to ensure that individual investors be asked to make 401k and pension plan allocations in an environment devoid of priming cues that may cause investors to make sub-optimal risk decisions. Further, the finding that IRA choice differs between business majors and non-majors may have implications for the understanding of the risk appetite of unsophisticated investors. Given, however, that both groups were equally affected by the luxury/thrifty prime, it would appear that being a more knowledgeable or sophisticated investor in and of itself would not be sufficient to negate the nonconscious effects of a luxury prime.

References are available from the authors upon request.

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LOST IN TRANSLATION? THE EFFECT OF CULTURAL VALUES ON MERGERS AROUND THE WORLD

KENNETH R. AHERN[a], DANIELE DAMINELLI[b], AND CESARE FRACASSI[c]

Abstract

We find strong evidence that three key dimensions of national culture (trust, hierarchy, and individu- alism) affect merger volume, synergy gains, deal structure, and the division of gains between bidders and targets in cross-border mergers. First, the volume and gains of cross-border mergers are lower when countries are more culturally distant. Second, firms from countries that are more trusting and hierarchi- cal capture a larger share of combined merger gains. Finally, the use of termination fees, tender offers, and the form of payment vary systematically by cultural differences. The results are the first large-scale evidence that cultural differences have substantial impacts on multiple aspects of cross-border mergers.

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[a] University of Michigan, Ross School of Business, 701 Tappan Street, Ann Arbor MI 48109-1234. Telephone: (734) 764-3196. E-mail: kenahern@umich.edu.

[b] Politecnico di Milano, Department of Management, Economics, and Industrial Engineering, Via Lambruschini 4, 20156 Milan, Italy; Telephone: +39 0223992805; E-mail: daminelli.daniele@gmail.com

[c] University of Texas at Austin, McCombs School of Business, 1 University Station B6600, Austin TX 78712. Telephone: (512) 232-6843. E-mail: cesare.fracassi@mccombs.utexas.edu .

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FEMALE LEADERSHIP AND GENDER EQUITY: EVIDENCE FROM PLANT CLOSURE*

Geoffrey Tate
UCLA

Liu Yang
UCLA

First Version: February 2011
Current Version: June 2011

Abstract

We use unique worker-plant matched panel data to measure the impact of female leadership on the relative pay of men and women. We measure differences in the wage changes experienced by newly hired men and women displaced from closing plants. We correct for endogenous selection of both the original and new employer, comparing the wage changes of men and women who move from the same closing plant to the same new firm. We observe larger wage losses among women than men immediately upon re- entering the workforce and continuing for the following three years. These differences exist throughout the wage and age distributions. However, we find a significantly smaller gap between men and women who move to a new firm with a higher fraction of female managers: the magnitude of the extra losses to women is cut in half. Moreover, we observe significant changes in the relative treatment of newly hired men and women when the gender composition of the firm's leadership team changes. Our results suggest an important externality to having women in leadership positions: they improve the prospects of other women inside their firms. To the extent that gender wage differences are not driven by differences in productivity, removing these distortions can improve firm value.

PRELIMINARY AND INCOMPLETE. DO NOT CITE WITHOUT AUTHORS' PERMISSION. We thank Tom Chang, David Hirshleifer and participants at the 2011 UCLA-USC Finance Day, the 2011 UCLA Ziman Center for Real Estate Housing Economics and Research Conference, and the 2011 UCLA/Berkeley Population Center Conference for helpful comments. We acknowledge financial support from the Richard S. Ziman Center for Real Estate and the Institute for Research on Labor and Employment. The research in this paper was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau. This research uses data from the Census Bureau's Longitudinal Employer Household Dynamics Program, which was partially supported by the following National Science Foundation Grants SES-9978093, SES-0339191 and ITR-0427889; National Institute on Aging Grant AG018854; and grants from the Alfred P. Sloan Foundation. Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.

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THE RIGHT AMOUNT OF TRUST

Jeffrey Butler
EIEF

Paola Giuliano
UCLA, NBER, CEPR and IZA

Luigi Guiso
European University Institute, EIEF and CEPR

18th May 2011

Abstract

We investigate the relationship between individual trust and individual economic performance. We find that individual income is hump-shaped in a measure of intensity of trust beliefs. Heterogeneity of trust beliefs in the population, coupled with the tendency of individuals to extrapolate beliefs about others from their own levels of trustworthiness, could generate this non-monotonic relationship: highly trustworthy individuals tend to form overly optimistic beliefs, to assume too much social risk and to be cheated more often, ultimately performing less well than those with a belief close to the mean trustworthiness of the population. On the other hand, less trustworthy individuals form overly pessimistic beliefs and avoid being cheated, but give up profitable opportunities, therefore underperforming. The cost of either too much or too little trust is comparable to the income lost by foregoing college. Our findings in large-scale survey data are supported and extended with experimental findings. In the trust game, own trustworthiness and beliefs about others' trustworthiness are strongly correlated and persistent. Earning losses due to incorrect beliefs are comparable to those in the survey data.

JEL Classification: A1, A12, D1, O15, Z1

Keywords: Trust, trustworthiness, economic performance, culture, false consensus

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BRAIN, FINANCIAL MARKET BUBBLES, AND INVESTING

Paul Zak, Claremont Graduate University

(We did not receive this abstract by the due deadline)

NEUROFINANCE: A BRIEF RESEARCH OVERVIEW

James Howard, University of Maryland University College- UMUC

(We did not receive this abstract by the due deadline)

BEHAVIORAL FINANCE & FINANCIAL ADVICE

Richard Peterson, Marketpsych, LLC

(We did not receive this abstract by the due deadline)

WORKING WITH CLIENTS IN VOLATILE MARKETS: AN ADVISOR'S PERSPECTIVE

A. Mark Harbour, Morgan Stanley Smith Barney

(We did not receive this abstract by the due deadline)

RELATION BETWEEN VIX'S RETURN AND VOLATILITY: A BEHAVIORAL EXPLANATION

Ju Xiang
Central University of Finance & Economics, China

Abstract

I investigate the relation between returns and volatility at daily to 1-min intervals for VIX ETNs (like ETFs) and futures. As VIX is the implied volatility index and also known as "fear gauge", this study is on relation between returns of volatility and volatilities of volatility. I find that, contrary to equity and commodity markets, volatility's return and volatility exhibit positive relation at daily basis. However, negative relation appears at the finer-grained 5-min and 1-min intervals, with the latter stronger. This paper discovers a stronger behavioral case than Hibbert, Daigler and Dupoyet (2008) and shows that behavioral explanation is the only feasible one, among the three explanations of leverage, volatility feedback and behavioral effect. Firstly, unlike equity, VIX ETNs and futures do not involve financial leverage. Secondly, the chance of any event having shocks to volatility of volatility is slim. Moreover, I observe negative relation only at very short intervals (less than 15-min) and a monotonic relation change from daily positive to intraday negative, while leverage and volatility feedback models suggest longer delayed effects and no such pattern of relation change. My findings imply that there are further behavioral effects when market deals with fear, which itself has already been a behavioral outcome.

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POSITIVE MOOD, RISK ATTITUDES, AND INVESTMENT DECISIONS: FIELD EVIDENCE FROM COMEDY MOVIE ATTENDANCE IN THE U.S.

Gabriele M. Lepori
Copenhagen Business School, Denmark

(February 2011)

Abstract

Positive mood has been repeatedly shown to affect risk attitudes in laboratory settings, where subjects' exposure to movie clips is among the most widely used and effective mood-induction procedures. Yet, conflicting lab results about the estimated sign of the mood effect have led researchers to formulate two alternative theories. The *affect infusion model* (AIM) argues that happy moods foster risk-prone behavior, whereas the *mood-maintenance hypothesis* (MMH) takes the opposite stance. In this paper I test the predictions of these two theories using real-world financial data and focusing on the same mood- shifting mechanism commonly employed in lab studies. More specifically, I exploit the time-series variation in the domestic theatrical release of comedy movies as a natural experiment for testing the impact that happy mood (proxied by weekend comedy movie attendance) has on investment in risky assets (proxied by the performance of the U.S. stock market on the following Monday). My hypothesis rests upon the evidence that individual investors are more likely to ponder trading decisions during the weekend and trade on Mondays. To control for unobserved factors that may contemporaneously affect movie attendance and equity returns, I employ the percentage of theater screens dedicated to the comedy genre as an instrument. Using a sample of data from 1995 to 2010, I estimate that an increase in comedy attendance on a given weekend is followed by a decrease in equity returns on the subsequent Monday, which supports the MMH.

JEL Classification Codes: A12, C22, D81, G11, G12, G14
Keywords: Positive mood, risk propensity, predictable irrational behavior, comedy movies, behavioral finance, U.S. stock market, abnormal returns.

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THE EFFECT OF SETTING GOALS AND HAPPY/SAD FEEDBACK ON ASSET ALLOCATION DECISIONS

James A. Sundali
University of Nevada, Reno
jsundali@unr.edu

Gregory R. Stone
University of Nevada, Reno
gstone@unr.edu

Federico L. Guerrero
University of Nevada, Reno
guerrero@unr.edu

An experiment was designed to resemble the type of repeated asset allocation decisions that an investor might have to make when managing an endowment of money over a long period of time (e.g. investing for retirement). The constructed task for subjects in the experiment was to allocate an endowment of money across four investment options.

Subjects made allocation decisions using a spreadsheet interface. Each subject was given an endowment to begin the experiment. Each "year," the subject chose how to invest their endowment. The subjects had four investment choices: United States Stocks (US), Bonds (B), Global Stocks (GS), and Cash (C). After the asset allocation decisions were made, the subject then received the annual performance return for the investment.[3]

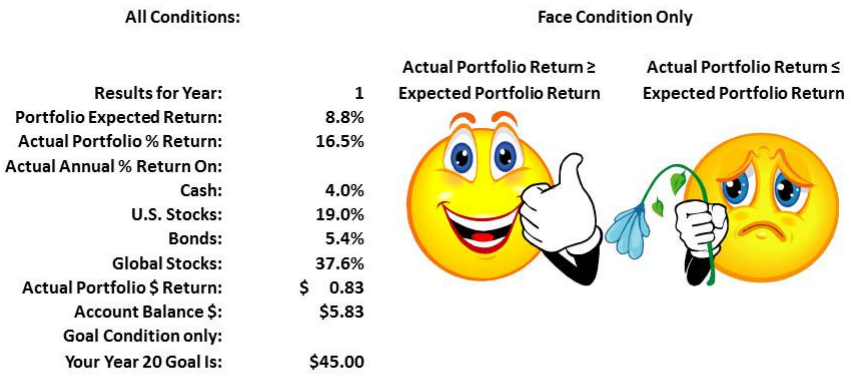
The manipulations included in the experiment varied the form and the content of performance feedback. The experiment has a two (Goal: Goal vs. No Goal) by two (Face: Face vs. No Face) between-subject design. In the "Goal" condition each subject is asked to set a goal as to how much money he or she hoped to have at the end of year 20 in the experiment. In the "Face" condition subjects received enhanced performance feedback information with the inclusion of a happy/sad face. As seen in Figure 1 below, a subject received a happy (sad) face if the actual return on the portfolio in the current year was above (below) the expected portfolio return. In the "No Face" condition subjects simply receive the quantitative feedback describing portfolio performance.

The main findings include: 1) subjects initially allocate assets in a manner roughly consistent with their stated preference for risk (as measured by a post experiment questionnaire); 2) prior year's returns strongly influence the subject's changes in asset allocation in a manner consistent

[3] Subjects were told that cash generated 4% returns with no risk; US Stocks had average returns of 11% with a standard deviation of 17%; bonds had an average return of 8% and standard deviation of 7%; and global stocks had an average annual return of 12% and a standard deviation of 22%. The asset returns that subjects received in the experiment were the actual annual returns on each of the assets during the time period from 1972-1991.

with the hot hand theory; and 3) subjects in the face condition made significantly greater changes to their asset allocations compared to subjects in the no face condition.

Figure 1 Experimental Feedback Interface



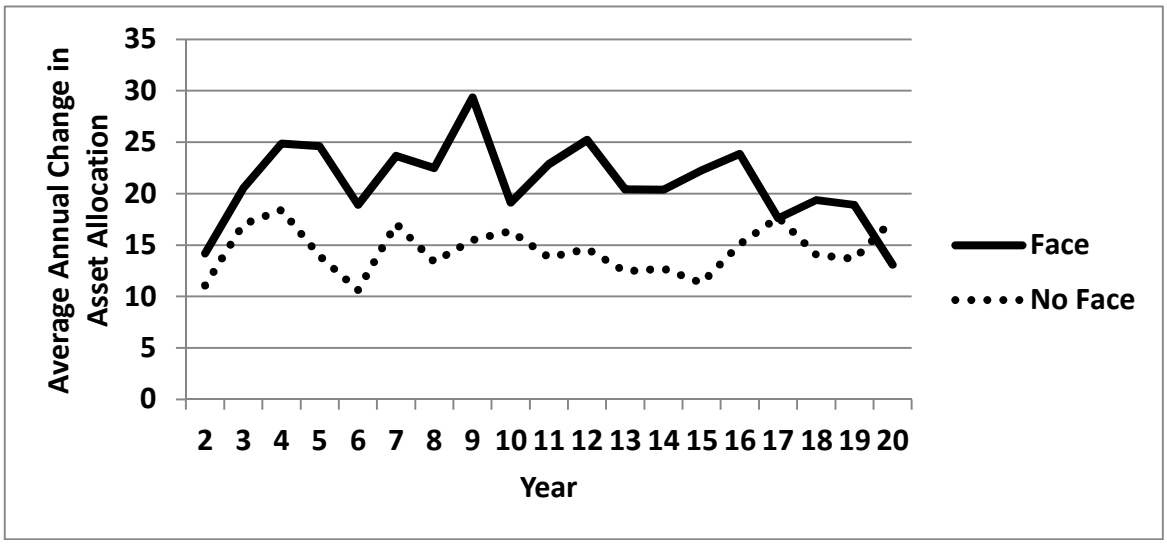
The average annual change in asset allocation change (AC) is defined as:

$$\left(\frac{\left(\left|wUS_t - wUS_{t-1}\right| + \left|wB_t - wB_{t-1}\right| + \left|wC_t - wC_{t-1}\right| + \left|wGS_t - wGS_{t-1}\right|\right)}{2}\right)$$

where w is the weight of the security and *t* is defined at time period 0.[4] The level of AC was not consistent across experimental conditions. As can be seen in the Figure 2, subjects exposed to the Face manipulation were significantly more likely to change their asset allocation.

Figure 2. Average Annual Change in Asset Allocation by Face Condition

[4] For example, if in Year 1 the subject held a portfolio of 20% US, 20% B, 30% C, and 30% GS, and in Year 2 held a portfolio of 50% US and 50% C, the amount of change from Year 1 to 2 in the portfolio was calculated as ((|20-50| + |20-0| + |30-50| + |30-0|) / 2) = 50. Similar results were obtained using the square of the change in Portfolio Expected Return from the prior year.



To interpret these results we apply the dual-process theory of cognitive functioning (Bazerman and Moore, 2009; Stanovich and West, 2000; Epstein, 1994; Mitchell and Beach, 1990). The dual-process theory posits that there are two distinct and separate cognitive systems that can be engaged in making decisions. While there is not universal agreement on the differentiation, structure, or even number of distinct cognitive systems, the dual-process approach posits that generally one system uses rational and analytic processes while the other engages intuitive or experiential decision processes. While these processes can operate independently of each other, most of the time it is likely that they operate in concert with each other. We suggest that subjects begin by making allocations in a rational manner as specified by Modern Portfolio Theory (Markowitz, 1959; Sharpe, 1964; Lintner, 1965; Tobin, 1958) and then make minor adjustments to that allocation based upon learning and experience. That is, investors learn through experience whether or not a particular allocation is providing them with the appropriate amount of risk and return and make adjustments, if necessary. We next suggest that asset allocation decisions are impacted by anticipated and anticipatory emotions as suggested by the risk-as-feeling perspective (Lowenstein,Weber, & Welch, 2001) *Anticipated* emotions will be accounted for in the cognitive evaluation stage as outlined by the expected utility model inherent in MPT. We propose that *anticipatory* emotions are created from past investment returns. We suggest that past returns are emotion-eliciting events that create anticipatory emotions and these anticipatory emotions will impact asset allocation decisions. And we further suggest that the impact of past returns on anticipatory emotions can be enhanced or diminished based upon context (e.g. vividness) in which past returns are delivered and received by the decision maker. Finally, our experimental results show that subjects' asset allocation behavior is consistent with the hot hand theory and inconsistent with Samuleson's (1969) theory that investor's asset allocation policy should be completely invariant to the time horizon.

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ASSET PRICE PATHS AND TRADER PERSONALITY: EVIDENCE FROM LABORATORY EXPERIMENTS

Jonathan Alevy
University of Alaska Anchorage

Michael Price
University of Alaska Anchorage

Abstract

Economics and finance have drawn on insights from cognitive psychology, particularly the seminal works of Daniel Kahneman and Amos Tversky (1974, 1979) in order to understand whether and how biased beliefs and non-standard preferences can affect behavior in economic environments, including financial markets (Barberis and Thaler 2003). More recently efforts have been made to integrate ideas and results from the field of personality psychology into economic analysis (Almund et al. 2011). In this study we compare the impact of advice and experience on behavior in an experimental asset market by incorporating insights from personality psychology to understand trader behavior and market outcomes.

The experimental protocols include a sequence of non-overlapping "generations" of players who participate in a stage game and are then replaced by other agents who continue the game in the same roles. Players in generation t can "communicate" with their successor in generation t + 1 by leaving them written advice. Incentives for leaving valuable advice are created by making compensation a function of both own performance and the performance of the successor in generation t + 1. Additional control sessions without advice are also implemented.

The stage game is an experimental asset market - fifteen periods in length - modeled on the seminal study of Smith, Suchanek, and Williams (1988; SSW hereafter). A robust finding in this setting is that with inexperienced traders, price can differ significantly from fundamental value and follow a path than can be construed as a price "bubble" followed by a "crash". With experience in the stage game, among a common cohort of traders prices move towards fundamental values. We observe that advice can be as powerful as experience in mitigating price bubbles. The current study examines the underlying dynamics of convergence looking to individual trader behaviors which are informed by the results of a survey of personality traits. A key contribution is to demonstrate that the impact of personality traits varies significantly across advice and experience treatments. For first generation (progenitor) sessions and additional control sessions in which advice is not available, the amount of trading activity is correlated with risk-taking as measured in the personality survey. The correlations are robust, with statistically significant relationships for various behaviors including number of bids and purchases above fundamental value. For novice traders who participate in sessions in which advice is available, trading behavior is no longer correlated with risk-taking, instead a broader array of personality traits that include, assertiveness, efficacy, and intellect are associated with specific trader behaviors.

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OVERCONFIDENCE, OVERREACTION AND PERSONALITY.

Robert B. Durand[*,•], Rick Newby[#], Kevin Tant[+] and Sirimon Treepongkaruna[#]

ABSTRACT

We demonstrate that personality traits are associated with overconfidence and overreaction in financial markets. Personality is captured using Norman's Big 5, *Preference for Innovation* and *Risk-Taking Propensity* (from Jackson's Personality Inventory) and Bem's sex-role inventory. We present meta-analysis which facilitates the development of *a posteriori* theories of how particular traits affect investment; there are important roles for *risk-taking propensity*, *negative emotion*, *extraversion*, *masculinity*, *preference for innovation* and *conscientiousness*.

JEL classification: G12

Keywords: Behavioral Finance, Norman's 'Big Five',Psychological Gender, Jackson's Personality Inventory,Overreaction, Overconfidence.

• Department of Finance and Bankding, School of Economics and Finance, Curtin University, Perth, Western Australia.
Accounting and Finance Discipline, University of Western Australia.
+ Department of Accounting and Finance, Monash University
* Corresponding author: Phone + 61 8 9266 9971. Fax +61 8 9266 3026
E-mail: Robert.Durand@curtin.edu.au

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PERSONALITY TRAITS AND RISK ESTIMATION IN RUSSIA

Elmira Erzinkyan, Central Economics and Mathematics Institute, Russian Academy of Sciences
erzink@cemi.rssi.ru

Financial decision-making in Russia is basically the same as in any other country – projections of costs and benefits are compared, discounted according to the appropriate risk level, and estimated according to the macroeconomic conditions, industry factors, financial statements analysis, etc. Although there are a variety of different approaches to the measurement of these inputs, all of them are use the classic Markowitz model, which states that market participants base their decisions on the trade-off between expected return and risk, so that the higher the expected return, the higher the risk. It is implicitly presumed in these models that risk does not have a behavioral nature – all market participants have the same expected risk. True, they do include one behavioral parameter - "risk aversion", but that parameter reflects personal aversion to existing risk, not the simultaneous or consecutive estimation and aversion of risk.

Russia started its transition to a market economy in 1991, after more than seventy years of communist rule. During this period, private enterprise had been prohibited by law – many entrepreneurs, merchants, and rich peasants were either sent to concentration camps or exiled; their only crime was the profession that they had before the revolution. Speculation (purchasing merchandise and reselling it at a profit) was punishable by the Soviet criminal code. The communist upbringing of children began at the age of seven, when Soviet children had to become members of the Octyabryata organization (communist organization for young children), then they went on to the pioneers (communist organization for older children), and eventually at the age of fourteen they were accepted to the Komsomol (Young Communist League). In all these organizations collectivism was a religion - Soviet people were supposed to be collectivists who worked for the well-being of the state and their comrades, not their own; the desire to earn a lot of money was considered to be wrong by official propaganda. Those who did not wish to participate in these organizations were not accepted to universities, colleges, or professional schools, i.e., they had to work at low-qualification jobs all their life.

Strangely enough, it turned out that Russians, who had been brought up as collectivists for more than seventy years, ranked first among other European and Asian countries on individualism, which has to do with their low level of trust. They are not able to form stable coalitions and to defend their interests cooperatively; this also has to do with their lack of trust of other people. The prevalence of survival values over self-expression values generated high levels of risk aversion and low levels of long-term orientation, values of survival dominate those of self-expression, and the level of orientation toward the future is low (Латов, Латова, 2008).

In other words people try to preserve the present status under living conditions which are unreliable in the absence of property rights. Human behavior under this scenario is characterized by lack of trust - they consider new events dangerous. It goes without saying that these qualities

do not promote trust in personal relations between people or in cooperation between banks and businessmen

In financial language, the personality traits of most economic agents make them prone to the overvaluation of risk and the preference for a short investment horizon over a long one. For example, less than one percent of Russian citizens own stocks, despite the fact that stock market returns in the second half of 2009 outperformed those of developed countries (Oakley, 2010). Clearly, the citizens are overestimating the stock market risk.

Polls in 2009 showed that 28.1% of the participants think that people can be trusted, and 66.8% think that in relations with other people, one should be as cautious as possible. This is a low level of trust in comparison with Anglo-Saxon and Scandinavian countries, but it is higher than in India, Latin America, and Western Asia.[5] In short, according to the level of trust, Russia is somewhere on the border between developed and developing countries (Сасаки, Латов, 2010).

In other words these polls provide evidence that there is no basis for economic stability, and consequently use of traditional valuation techniques based on NPV – an atmosphere of trust, which in the financial sector leads to a low discount rate. Furthermore, property rights in ex-state enterprises are not respected, which increases the lack of trust and in turn leads to the export of capital, the purchase of real estate for investment purposes abroad, etc. All these factors directly or indirectly increase the estimates of risk for investment projects, resulting in a situation where banks started to extend credit only to large enterprises supported by the state. To those without support from the state, credit is not provided (Цухло, 2009). I.e. we need a valuation method for a cautious investor, who wants to retain the ability to change his mind just in case, and second, to produce a formula that does not include a discount risk factor for a specific project, as the appropriate data are not widely available in Russia. An appropriate method actually has been known for a long time: the method of real options. There are many articles dedicated to this issue; however, their authors recommend this approach for high-risk venture projects only, and do not make use of all useful options it provides.

The main behavioral definition that stems form the concept of real options is the entrepreneur value of the project (V_e). It is the difference between the real options valuation (V_o) estimate of the project and its NPV valuation.

$$V_e = V_o - NPV \quad \text{.....(1)}$$

If V_e is equal to zero, i.e. both valuation estimates are equal, it means that this market is in equilibrium, and that entrepreneur talent is properly valued by all market participants. Obviously it happens rarely. If V_e is greater than zero, i.e. real options valuation estimate is greater than the NPV one, then the entrepreneur talent is overvalued by most market participants (provided that real options valuation estimate is correct). If V_e is less than zero, real options valuation estimate is

[5] Strange enough, there is also one developed country (France), that is slightly behind Russia on the level of trust (the reasons for this phenomenon are beyond the scope of this article).

less the NPV one, entrepreneur talent is overvalued by market participants. If the investor strongly believes in the entrepreneur talent of the firm management, then the stocks with negative entrepreneur value have good growth potential. If an entrepreneur believed in his own entrepreneur talent or/and technical superiority of his product, then his project is really worth his time, and/or money, it has high intrinsic value.

To sum it up the appropriate formula for valuation in Russia is

$$V_e = \sum_{i=1}^{n} V_i^c + \sum_{j=1}^{m} V_j^p - NPV \quad \text{.....(2)}$$

Where

V_e - Entrepreneur value of the project;

V_i^c - Value of an i-th call option in the project;

$\sum_{i=1}^{n} V_i^c$ - sum of all call options values in the project;

V_j^p - Value of an j-th put option in the project;

$\sum_{j=1}^{m} V_j^p$ - sum of all put options values in the project;

n - number of call options;

m - number of put options;

NPV – traditional net present value of the project.

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PERSONALITY AND PREFERENCE: A LABORATORY STUDY

Bin-Tzong Chie
Department of Industrial Economics
Tamkang University
brian.chih@gmail.com

Shu-Heng Chen
Department of Economics
National Chengchi University
chen.shuheng@gmail.com

This paper attempts to explain the relationship between personality traits and commodity preferences. The norm-referenced test of personality has been used so as to infer economic behavior with a limited sample size. In this study, we use Lai's Personality Inventory to measure introversion, extroversion, mental health, emotional stability and social adaptability of subjects. In addition to existing psychological measurements, we have also developed measurements for the rationale of decision-making over various commodities, based on the subjects' behavior of selectivity and utility maximization.

Our results suggest that consumers are capable of more than a simple product search. If technology and the market allow, consumers can locate the product that delivers the highest utility, based on respective interest and the budget constraint. Conventional studies on preference revolve around product quantity, assuming other things equal, while product quantity can be viewed as one of the product attributes that consumers consider in their decision-making process. In other words, consumers have a desired quantity for a specific product if asked to make a ceteris paribus decision.

In this study, preference lies in the combination of multiple product attributes and levels. The more attributes consumers can choose from, the higher the utility level consumers can achieve. Currently, neither the composition nor the decomposition method can look beyond existing product attributes. Only through the upgrading method and with a budget constraint can consumers' unspoken preference be unveiled and understood. Information regarding each consumer's willingness to pay is embedded in the upgrading process. In our experiment, participants are asked to satiate their needs to the best possible extent, while protecting the balance of the token value (which has a chance of being redeemed for cash). In short, this experiment gives power to describe not only the products desired by consumers, but also the prices consumers are willing to pay.

In addition, this study has found that behaviors can be partly explained by the variant degree of emotional stability. Despite its preliminary character, this study explores the relationship between personality and behaviors. Abundant observations of each personality type coupled with in-depth analysis are needed to support or revise the conclusions reached in this study. If

information embedded in the preference distribution of product selection can be distilled and matched to certain types of personality, producers may model the exclusively preferred factors of the target buyers in their innovation process. In addition, a leading market trend may stand a better chance of being captured and accurately forecasted once the population personality is known.

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INDIVIDUAL INVESTORS′ OPTION TRADING BEHAVIOR: IMPULSE TRADES OR STRATEGY?

Christof Beuselinck[a], Dries Heyman[b], Maarten Pronk[c]

[a]Department of Accounting, Tilburg University and Center, P.O. Box 90153, Tilburg ,5000, The Netherlands

[b]Department of Financial Economics, Ghent University, W. Wilsonplein 5D, Ghent, 9000, Belgium

[c]Department of Accounting, Erasmus University Rotterdam and Tilburg University, P.O. Box 90153, Tilburg ,5000, The Netherlands

Abstract

This paper analyzes trading records of online retail bank investors to assess whether attention□type events dominate return□feedback strategies in explaining individual investors′ stock option trading decisions. We find that individuals exploit the unique features of stock options to pursue contrarian investment strategies. Further, we identify optimism as a key psychological feature explaining variance in contrarian investment styles. Finally, we show that extreme optimists especially overweigh short□term compared to long□term return feedback information. Our study provides novel insights in the dynamics of individual investors′ option trading decisions and in the distinctive roles of cognitive biases underlying this process.

Keywords: Individual Investors; Option Trading; Optimism; Bull/Bear
JEL CLASSIFICATION: G11, G15, G24

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RISK-TAKING BEHAVIOR AND PROFITABILITY: A TRADE-BY-TRADE EXAMINATION OF RETAIL TRADERS IN FUTURES MARKET

Chun I Lee
Loyola Marymount University, Los Angeles

Teng Yuan Cheng
National Cheng Kung University, Taiwan

Chao Hsien Lin
National Kaohsiung First University of Science and Technology, Taiwan

We analyze risk-taking behavior of retail investors in the futures market by tracking their trade-by-trade history to examine how they respond, and the variations in their responses, to some threshold levels of losses and gains. Although in aggregate they exhibit a tendency to reduce risk and offset their trades after reaching the thresholds, their risk-taking tendencies vary with trading activity in a systematic fashion, which in turn affect profitability accordingly. Among profitable traders, those who take more risk by continuing to accumulate more positions in the face of threshold losses and gains are more profitable. On the other hand, among unprofitable traders, those who tend to reduce risk by offsetting their positions when faced with the thresholds suffer smaller losses. We also examine in detail the variations among traders in their profitability and document the direct relationship between profitability and trading activity, shedding new light on overconfidence.

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INVESTOR BEHAVIOR, HEDGE FUND RETURNS AND STRATEGIES

Andres Bello[1]
College of Business Administration University of Texas-Pan American Edinburg, TX 78539
arbello@utpa.edu

Gökçe Soydemir
College of Business Administration California State University Stanislaus Turlock, CA 95382
gsoydemir@hotmail.com

Jan Smolarski
College of Business Administration
University of Texas-Pan American Edinburg, TX 78539
jmsmolarski@utpa.edu

ABSTRACT
We quantify risks associated with investor behavior using several asset pricing models and hedge fund data. After finding that irrational sentiments play a role in hedge fund returns, our multi-beta CAPM estimations reveal that beta belonging to irrational component varies around .033 for risky hedge funds and .022 for relatively less risky ones. Investors can use this irrational beta to gauge the extent of irrational sentiments prevailing in markets and compare the values in turbulent periods with more tranquil periods to re-adjust their portfolios and use these betas as an early warning sign of future trends. It can also guide investors in avoiding those funds that display greater irrational behavior. Our approach offers investors a solid quantitative rather than subjective approach in assessing the oncoming of a financial downturn and in doing so better protect against unpredicted losses that may result from irrational trading.

Keywords:
Hedge funds, investor sentiment, CAPM, APT, VAR model

JEL classification codes:
G12, G14, C3

[1] Corresponding author, Department of Economics and Finance, College of Business Administration, The University of Texas Pan American, 1201 W. University Dr., MAGC 3.618, Edinburg, Texas 78539, Phone: (956) 665-3354, Fax: (956) 665-5020, E-mail: arbello@utpa.edu, Doctoral Student Business Administration Finance.

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SOURCES OF THOUGHT CONTAGION IN THE STOCK MARKET: A PROPOSAL

Xin Yan,[6] Lawrence R. Klein, Viktoria Dalko,[7] Ferenc Gyurcsány, and Michael H. Wang

Abstract

The key assumption in the pioneering literature on herding (or information cascade) of behavioral finance (*e.g*., Bikhhchandani, Hirshleifer, and Welch, 1992; Banerjee, 1992; Welch, 1992; Avery and Zemsky, 1998) is that *information is exogenous to all investors.* Informed investors follow the preceding investors in trading, giving up their private information. Thus, herding begins. Subsequently, hundreds of studies on herding are generated. However, little research is yet published on the source of the thought contagion that causes herding. This raises the question: Is this exogenous information assumption valid for every case when we observe herding in the stock market?

In response to the argument that sources of thought contagion in the stock market need to be further studied (Hirshleifer and Teoh, 2009), we review hundreds of recent securities litigation cases and vast empirical literature on price behavior and trading quantity change around selected business news events, such as: corporate announcements, business news stories, sell-side analyst recommendations, CEO media appearances and false rumors. In addition, we review studies on investment television shows and Internet newsletters, stock market posts on the Internet bulletin boards and e-mail spam messages.

For positive information releases, the first general pattern we find is that related share price continues to climb and trading quantities increase during days, or even weeks, prior to release date. This prompts us to propose that in such cases information is not exogenous for insiders. The second pattern is that on the event day, price jumps substantially and trading volume increases dramatically as well. This second stylized fact prompts us to propose that, in studied cases, business news release about public firms triggers herding by non-insiders. Therefore, certain business news events should be included as potential sources of thought contagion in further herding studies.

We also find that in our cases, all sources of thought contagion in the stock market are based on potentially price-moving information, publicity and credibility. When insiders disseminate potentially price-moving information through credible channels to a large number of investors, an information monopoly is formed. Such information monopoly can be, and often is, used for

[6] Xin Yan is with the Research Institute of Comprehensive Economics; Lawrence R. Klein with University of Pennsylvania; Viktoria Dalko with Harvard University and Hult International Business School; Ferenc Gyurcsány with Hungarian Parliament; and Michael H. Wang with the Research Institute of Comprehensive Economics.
[7] Corresponding author: Viktoria Dalko, vdalko@fas.harvard.edu

interests of those insiders. We have identified two types of such interests: seeking unfair trading profit through market manipulation and increasing market power of business media firms.

1. When the information monopoly is utilized in trading strategies, it entails market manipulation. In the prosecuted market manipulation cases, insiders exploit individual investors' psychological weaknesses in making trading decisions by inducing them to trade according to the insiders' publicized information. Subsequently, herding follows. Meanwhile, insiders trade against their publicized information right after release, and make sure but unfair profit. Non-insider investors will likely incur losses on those investments. This is why we find that the assumption of exogenous information in herding models has economically significant exceptions in reality.

2. When the information monopoly is utilized to increase a media outlet's market power, the consequences can be multifaceted, such as cultivating optimism among investors during times of stock market boom or instigating panic-selling as a result of accounting fraud or bankruptcy filing, particularly during market downturns.

In the first case, insiders need to rely on credible business media to disseminate news as they have designed to generate information monopoly for manipulative trading. In this sense, business media's cooperation is critical for the successful completion of such manipulation. In the second case, media itself can generate certain content, or seek out content, that is the basis of its information monopoly. Therefore, we find that understanding the role of business news reporting in thought contagion is critical.

When mini-bubbles triggered by various business news events occur repeatedly over the long run, such as over a number of years, what are the consequences to the stock market? One natural development is repeated herding. During stock market boom, most mini-bubbles are formed as a result of upward-biased news, such prolonged herding turns into mania in the stock market. The second half of the 1990s witnesses this connection, evidently in both analysts' upward-biased recommendations and business news reports' overly optimist reporting. History proves repeatedly that long-run mania leads to market-wide crisis.

Therefore, it is crucial to understand related sources of thought contagion over long run. As a preliminary endeavor, we propose a set of regulatory principles in order to design effective measures that will prevent related potential systemic risk.

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THE CENTRAL BANK IN THE LIBERAL MARKET ECONOMY: MARKET LEADER OR FOLLOWER? RECENT COMPARATIVE EVIDENCE FROM THE U.S. AND AUSTRALIA

Matthew Lampert, Department of Sociology, University of Cambridge; Socionomics Institute; International Institute for Applied Systems Analysis; mel46@cam.ac.uk

The paper applies a sociological perspective to what is conventionally considered to be a macroeconomic question: Why is there a relationship between the yield on Treasury bills (and other short-term debt instruments) and the central bank's key interest rate target? This appears to be a complex problem for a number of reasons. But it is a *problem* because the Treasury yield—set on an open, widely traded market—tends to change its trend prior to changes in trend in the central bank's monetary policy. If the central bank exogenously guides the market, then one would expect the bank's policy changes to precede the changes in trend in the Treasury yield. For a causal relationship to exist, the cause must precede the effect.

Scholars in economics and, indeed, sociology have proposed solutions to this problem. The leading arguments cluster around the expectations hypothesis. In the signaling variation of this hypothesis, the central bank signals its intended monetary policy action to market participants in advance of the formal public announcement thereby allowing the market to pre-emptively adjust the market yield prior to the official central bank policy pronouncement. In this way, the central bank remains an external coordinator of market forces. The literature allows that the signaling pathway between the bank and the market may be bi-directional. In other words, the links between the central bank and the market may result in mutual, self-fulfilling expectations regarding interest rates among both sets of actors. Regardless of whether the signaling pathway is presumed to be unidirectional or bi-directional, these variations on the expectations hypothesis propose that the market yield changes its trend as a result of market actors' reactions to conscious expectations of the central bank's future monetary policy actions.

However, this solution presents an ideological paradox. In democratic liberal market economies, why does the central bank, an institutional actor without direct public accountability to a constituency, have the autonomy to externally direct an economic system that is ideologically committed to and based on democratic principles, liberal capital markets, competition and price-based coordination? If we understand liberal democracy in a pluralist sense, the state in a democratic system is designed to serve the interests of its citizens in lieu of its own interests. Thus the installation of an independent central bank may contradict pluralist principles because the bank retains the potential power to subvert the interests of constituents in favour of its own interests.

To be fair, the central bank is not an entirely independent institutional actor. Its leadership is appointed by political actors who are directly beholden to constituencies, and thus there are actors in the political system who are publicly accountable for the bank's actions to a degree. Central bank leaders are also occasionally called to testify before the national legislature. One may suggest that perhaps if the central bank was incorporated more squarely into the public sector its actions would align more closely with democratic principles. Or perhaps, following

Keynes, central banks necessarily must act exogenously on liberal capital markets due to the capital markets' structure. In other words, if the structure of liberal capital markets makes them subject to instability, dynamism, abrupt swings in asset values, speculative bubbles and crashes, perhaps it makes sense for an economic system predicated upon such markets, i.e. liberal market economies, to install a semi-independent, external actor who can, in the interest of social welfare, steer the system away from the metaphorical cliff before it drives over the side. Could it be that precisely because capital markets are unstable that liberal market economies, despite an ideological commitment to the ability of markets to efficiently coordinate action, must rely upon a non-democratic external institutional actor to preserve the economic system? Such ideas assume that the central bank acts exogenously to steer capital markets and the economy. The assumption can be challenged theoretically and empirically.

This paper proposes an alternative explanation that draws on socionomic theory and the varieties of capitalism literature. The paper notes that liberal market economic systems are characterized by coordination via market forces. By 'market forces' it is here not meant 'supply and demand' or 'the invisible hand' and the like, but rather a construct conceptually more akin to Keynes's waves of optimism and pessimism situated in the broader context of socionomic theory. While Keynes theorized that the central bank was external to these market forces, and thus capable of managing them, this paper recognizes that the central bank is an actor endogenous to the economic system, and thus it, too, if the system logic is to be consistent, is influenced by social forces that also guide participants in the short-term debt market. In this way, market forces remain the coordinator of economic activity in the liberal market economic system.

In this way, the central bank can be thought of as a member of the metaphorical herd, driven to action and inaction through the social forces that guide other social actors in the economy. As an actor endogenous to the economic system, its actions regarding interest rates should resemble those of other endogenous actors. Thus we can understand the co-variance of interest rates as an expression of endogenous actors responding similarly in the face of common social forces filtered and translated by the structure of the economic system. Thus, market forces—and not an exogenous institutional actor—retain the role of coordinating economic action, consistent with the system logic of a liberal market economy, and also a liberal democracy in the pluralist sense. To be clear, the central bank is able legally to set nearly any interest rate it chooses. The argument in this paper is that even though this is the case, the liberal market system logic has persisted and instead of allowing itself to be guided by such an actor, the system appears to guide the central bank such that the bank acts in a way complementary to and consistent with the system's market-based structure and in accordance with the social forces that guide other economic actors despite the bank's ability, on paper, to do otherwise.

By developing an understanding of the institutional structure and system logic of liberal market economies, we can formulate a model that proposes two hypotheses about the central bank's behavior in the liberal market economic system. First, as an endogenous actor, its behaviour should resemble that of other endogenous market actors concerning interest rates. The paper proposes that the bank is not necessarily consciously nor rationally aligning its actions with the short-term debt market, but rather that the same social forces that drive market actors also influence the bank's monetary policy actions, thereby resulting in similar observable outcomes. Second, the yield on short-term debt need not be viewed as the result of market actors

consciously and rationally adjusting the yield in relation to expectations of the central bank's actions, as the expectations hypothesis suggests.

To test these hypotheses, I examine data generated by three sets of institutional actors (the central bank, the market for a short-term, low-risk debt instrument, and the interbank rate futures market) in two liberal market economies (the U.S. and Australia) from 2007-2010, a period covering the financial crisis. First, I examine the temporal association between the yield on a three-month debt instrument (three-month Treasuries in the U.S. and 90-day bank bills in Australia) and the central bank's key interest rate target (the target federal funds rate in the U.S. and the interbank cash rate in Australia). Consistent with the findings in the literature, I find a high degree of association. I then determine whether the short-term debt yield leads the central bank's rate target or vice-versa. Consistent with the findings in the literature, I find that the debt yield leads the rate target. Crucially, I then devise a test to determine whether the leading relationship can be explained by market actors' conscious expectations of the central bank's forthcoming monetary policy, as the expectations hypothesis suggests. To test this, I study data generated by the interbank rate futures market. If the expectations hypothesis is to hold, then actors in the futures market—who explicitly attempt to forecast the bank's rate—should be able to accurately expect forthcoming changes in the bank's monetary policy at least as well as the short-term debt yield predicts changes in the bank's rate. I find that from 2007-2010 in both the U.S. and Australia, futures markets were routinely unable to expect changes in the central bank's monetary policy trend a month in advance, whereas the short-term debt yield routinely led changes in monetary policy. The results add to those in the literature that challenge the expectations hypothesis but and are consistent with the model proposed in the paper.

This suggests that despite the myriad signals that the bank sends to the market—published economic forecasts, speeches by bank officials, signals that travel through informal channels of transmission such as social networks—the market's explicit, conscious expectation of the bank's forthcoming monetary policy is an insufficient explanation for interest rate co-variance. The results do not contraindicate the suggestion that the contextual relationships between these institutional actors within the liberal market economic system fosters the perpetuation of market forces that, while not necessarily rational nor consciously experienced, serve as a coordinating mechanism for action in the context of uncertainty. I conclude with a discussion of the implications of the findings and propose remedies to overcome limitations in the research.

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PREDICTING HERDING BEHAVIOR USING HOFSTEDE'S CULTURAL DIMENSIONS

Oliver Schnusenberg
University of North Florida

Abstract

As the study of behavioral finance progresses and globalization becomes a way of life, the importance of the study of culture on the psychology of financial markets becomes increasingly pertinent. Using survey results for 309 students from five universities in the US and in Germany, this study develops a herding behavior construct and existing cultural dimension constructs for individualism/collectivism, power distance, and uncertainty avoidance and confirms that culture affects the degree to which individuals are inclined to herd. Results indicate that cultural dimensions play a role in determining the extent to which people engage in herding behavior, particularly in Germany. A better understanding of behavioral implications within financial markets may decrease composition uncertainty and its negative affects by creating increased awareness of herd behavior within markets. Enhanced awareness may contribute to customized solutions within each country.

We would like to thank our colleagues and students at the four German universities that participated in this study: the Cologne University of Applied Sciences, the University of Applied Sciences and Arts Dortmund, the Berufsakademie Bad Mergentheim, and the University Duisburg-Essen.

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ACCUMULATION OF LARGE FOREIGN RESERVES BY CHINA: A BEHAVIOURAL MODEL OF OPTIMAL DECISION UNDER UNCERTAINTY

Zhichao Zhang Frankie Chau Li Xie*

Durham Business School

*Corresponding author. Mail address: Durham Business School, Mill Hill Lane, Durham, DH1 3LB,

Email: li.xie@durham.ac.uk

Abstract

In recent years, China has been experiencing remarkable GDP growth and massive international reserves build-ups and the reserves/GDP ratio has been more than 50% both in 2009 and in 2010. Conventional thinking of reserves accumulation has been rejected by this observed data. This paper builds a behavioural model by departure from the consumption-based approach in spirit of Barberis, Huang, and Santos (2001) to expound the behaviour of reserves accumulation by Chinese central banker, in which precautionary saving motive can be the main reason to accumulate reserves, due to China's economy exposure to substantial possible uninsured aggregate risks which have an adversity against its GDP growth. When loss aversion is embedded into the model, it strengthens precautionary saving motive.

Keywords: Foreign reserves, Precautionary saving motive, incomplete market, uninsurable aggregate risks, loss aversion.

ALL STUMBLE, LITTLE SCIENCE
HOW EMPLOYERS OFFER, HOW EMPLOYEES CHOOSE/USE BENEFITS

A series of vignettes on improving employee benefits decision-making at one Fortune 500 company

Jack Towarnicky
Employee Benefits Attorney
Willis

Decision-making among workers who have a choice of benefits is, at best, haphazard. Decisions made at hire by 20-something workers could potentially remain in effect for decades. Many firms offer a choice of benefits - requiring workers to make decisions, including: (1) Whether or not to participate, (2) Choosing among an array of options, and (3) Day-to-day utilization decisions (choose between generic and brand name drugs, etc.) Some employers have stepped back to review worker decision-making – and have responded with various forms of "choice architecture" designed to improve results/change worker behaviors. This presentation/paper will not meet academic standards for rigor and discipline. It simply recounts one employer's experiences as an "early adopter" of Behavioral Economics concepts and tools – proactive endeavors designed to improve workers' benefits decision-making, and in turn, engagement.

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THE ROLE OF FINANCIAL EDUCATION IN THE MANAGEMENT OF RETIREMENT SAVINGS

Edward Lawrence
Florida International University

Abstract

We investigate the role of financial education in the management of Defined Contribution retirement savings plans. We survey Finance and English professors from universities across the United States and compare the management of their savings in the TIAA-CREF® plans. We find that compared to English professors, Finance professors allocate a larger share of their retirement savings to Equities, they manage their retirement portfolios more actively and they are less likely to practice naïve diversification strategies. However, we find no significant difference in the proportion of their retirement savings that each of these groups invests in International Equities.

JEL category: G11, D14

Keywords: retirement portfolios, behavioral finance, financial education, asset allocation, household savings

RETIREMENT SAVING PLANS FROM A BEHAVIORAL ECONOMICS PERSPECTIVE

Susan Menke, Mintel Group Limited

(We did not receive this abstract by the due deadline)

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CONFUSION OF CONFUSIONS: A TEST OF THE DISPOSITION EFFECT AND MOMENTUM.

Justin Birru
New York University- NYU

Abstract

The disposition effect has received much empirical and theoretical support in the recent behavioral literature as a driver of return predictability. Using an investor level data set I document the inattentiveness of investors to nominal changes in stock price unrelated to fundamentals, resulting from stock splits. If investors fail to update their reference prices following a split, they will be more likely to perceive gains as losses. This inattentiveness results in a breakdown of the disposition effect following splits. To the extent that momentum is caused solely by the disposition effect, it should be absent when the disposition effect is absent. Furthermore, in the absence of the disposition effect, theory suggests that stock prices will revert to fundamentals. Consistent with the reversion of prices to fundamentals, I find a positive 2-day abnormal ex-date return of 1.3% between the top and bottom quintiles of portfolios sorted on unrealized gains prior to the split ex-date. However, I also provide evidence that momentum is still present in this sample of stocks void of the disposition effect and cannot be explained by the disposition effect, suggesting that the disposition effect is likely not the only factor driving momentum.

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DOES SIGN MATTER MORE THAN SIZE? AN INVESTIGATION INTO INVESTOR OVERCONFIDENCE

Rahul Chhabra[a], Sankar De[b], Naveen. R. Gondhi[c] and Bhimasankaram Pochiraju[d]

Present version: August, 2011.

Abstract

Using a unique and large dataset, the present paper contributes new insights to the growing litera- ture on behavioral biases in portfolio decisions of individual investors. We find that the sign of the outcomes of past stock trades of an investor increases her current trading volume if the sign is posi- tive, and decreases if the sign is negative. Further, the influence of the sign of past trades is noticeably stronger than that of the size of the gains or losses from the same trades. We also find that, on an average, trading under the influence of the sign of past trades consistently reduces profits from cur- rent trades for the investors. The effects of the trading pattern in question are economically large as well as statistically significant. The findings are consistent with a behavioral explanation suggested by recent research in experimental psychology that individuals are more sensitive to the presence or absence of a stimulus than to its magnitude. Our findings also suggest that the sign of the outcomes of past successful trades, rather then their dollar size, induces overconfidence in individual investors.

Key words: individual investors, institutional investors, trading behavior, overconfidence, rationality.
JEL classification: D19, G14

[a] Centre for Analytical Finance, Indian School of Business, Hyderabad 500032, India.
[b] Corresponding author. Centre of Analytical Finance, Indian School of Business, Hyderabad 500032, India. E-mail: Sankar_De@isb.edu
[c] Centre for Analytical Finance, Indian School of Business, Hyderabad 500032, India.
[d] Indian School of Business, Hyderabad 500032, India.

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A RANDOM UTILITY MODEL FOR INDIVIDUAL TRADING DECISION THAT EXPLAINS DISPOSITION EFFECT

Alfred Ka Chun Ma
Department of Finance, The Chinese University of Hong Kong, Hong Kong.
Email: alfred@baf.msmail.cuhk.edu.hk

August 18, 2011

Abstract

We study the possibility of applying the prospect theory on the random utility model to explain the disposition effect. This model differs from those in the literature in that empirical data of price and volume can be incorporated. We test our model with historical data from the NYSE TAQ database. Simulation results show that our model predicts the disposition effect in all circumstances.

DO FARMERS EXHIBIT DISPOSITION EFFECT? EVIDENCE FROM GRAIN MARKETS

Fabio Mattos, University of Manitoba, fabio_mattos@umanitoba.ca
Stefanie Fryza, University of Manitoba, umfryzas@cc.umanitoba.ca

This research focuses on wheat producers and hence marketing refers to the process of pricing and selling grain to food processors or consumers. Grain marketing studies have traditionally relied on standard economic theory in which producers make decisions that are logical and out of self-interest. However, Brorsen and Anderson (2001) discuss implications of behavioral finance for agricultural marketing and indicate psychological biases which can affect marketing decisions. Empirical studies show that individual producer's behavior does not necessarily follow the standard rationality assumption, but rather exhibit characteristics such as loss aversion and probability weighting, and tend to sometimes overestimate price and underestimate risk (Eales et al., 1990; Collins et al., 1991; Humphrey and Verschoor, 2004).

Little research on behavioral dimensions has been done in agricultural industry, but many studies have been conducted in financial markets. One of the most common types of behavior found in those studies is the disposition effect, which reflects the notion that investors tend to hold losing positions too long and close winning positions too fast (Odean, 1998; Locke and Mann, 2005; Brown et al., 2006; Dhar and Zhu, 2006). Weber and Camerer (1998) discuss that the disposition effect can be explained by two dimensions of prospect theory. One is the idea that individuals make decisions based on a reference points, with outcomes above this reference point being valued as gains and outcomes below it valued as losses. The second dimension is related to loss aversion, indicating that individuals would be willing to take more risk when faced with losses and take less risk when faced with gains.

The objective of this research is to explore the existence of disposition effect among farmers in Canada. More specifically, it investigates whether Canadian wheat farmers exhibit disposition effect when marketing their grain. This study tries to identify whether farmers wait too long to price their grain or whether they price their grain too soon, implying that they might miss opportunities to obtain higher prices. Further, it will be explored what producers' characteristics can help explain the disposition effect and whether the existence of disposition effect is costly to producers, i.e. whether it actually prevents them from selling their grain at high prices.

The grain marketing system in Canada offers a unique opportunity to explore how producers make decisions. All wheat produced in Western Canada and sold for human consumption and export must be marketed through the Canadian Wheat Board (CWB), which is the largest grain marketing agency in Canada and offers several marketing contracts providing distinct combinations of return, risk and cash flow. These contracts have distinct features but essentially allow producers to use futures markets to price their wheat. Since all producers have to market their grain through the CWB, it is possible to follow exactly when they chose to market their grain, what market conditions were prevalent during the period they made their decisions, and what price they received at the end of the crop year.

This study uses a unique data set of all wheat producers in Canada to perform a comprehensive analysis of the disposition effect in grain marketing. Exploring this phenomenon is relevant as it sheds more light on the decision making process in grain marketing. As indicated by Hagedorn et al. (2005), despite the importance of marketing in the agricultural industry it is alarming to realize that prevalent ideas about marketing decisions and performance still do not rely on a large body of evidence. This study aims to fill in these gaps and move us towards a more complete understanding of grain marketing.

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MEN ARE FROM MARS, WOMEN ARE FROM VENUS: GENDER AND MERGERS AND ACQUISITIONS*

Maurice Levi
Sauder School of Business
University of British Columbia
2053 Main Mall, Vancouver, BC V6T 1Z2
maurice.levi@sauder.ubc.ca

Kai Li
Sauder School of Business
University of British Columbia
2053 Main Mall, Vancouver, BC V6T 1Z2
kai.li@sauder.ubc.ca

Feng Zhang
Sauder School of Business
University of British Columbia
2053 Main Mall, Vancouver, BC V6T 1Z2
feng.zhang@sauder.ubc.ca

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Abstract

This paper examines the association between female director representation on corporate boards and mergers and acquisitions (M&As). Using acquisition bids initiated by the S&P 1500 firms during 1997-2009, we find that each ten-percent representation of female directors on a corporate board is associated with a reduction in the number of a company's acquisition bids by 4.7 percent: women are less acquisitive than men. Furthermore, using over 450 acquisition bids for which we have data on bidder and target firm characteristics and their board membership, we find that each ten-percent of female directors on the bidder board is associated with a reduction in the bid premium by 13.3 percent. There is no significant effect of gender of the target board. We argue that these results are what we would expect if, as other researchers have shown, women are less overconfident than men when facing difficult tasks lacking fast, clear feedback.
Keywords: bid initiation, bid premium, director gender, mergers and acquisitions, overconfidence
JEL classification: G34
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THE FINANCIAL JUDGMENT AND DECISION MAKING PROCESS OF WOMEN: THE ROLE OF NEGATIVE FEELINGS

Victor Ricciardi
Goucher College

victor.ricciardi@goucher.edu

This paper provides an extensive literature review of academic studies and non-academic research endeavors in the realm of negative emotions, gender, and decision making. The financial psychology literature on gender and negative feelings documents the hypothesis that women reveal greater degrees of negative affect (emotion) than their male counterparts about money, financial planning, and investment decisions.

Keywords: Finance, Investing, Worry, Gender, Risk, Negative Affect, Emotion, Behavioral Finance, Risk Tolerance, Children, Decision Making, Judgment, Anxiety, Stress, Depression, Fear, Behavioral Economics, Consumer Behavior, Money Sickness, Money Personality, Money Psychology, Consumer Spending, Happiness

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TRANSPERSONAL PRACTICES FOR PERSONAL WEALTH MANAGEMENT

Renée M. Snow, Ph.D.,CFP®
ASL Financial, LLC
Institute of Transpersonal Psychology
rsnow@itp.edu

Larry R. Taylor
Institute of Transpersonal Psychology
Larry.taylor@myitp.itp.edu

The need for financial literacy has received well-documented attention in the last few years due to the severity of our economic recession and widely publicized mortgage and debt related problems that impact many Americans. Individuals of all economic strata have been adversely impacted. Many who were earning in the top 2% now face excessive debt, underwater mortgages, and in many cases, unemployment. Hundreds of private and government organizations focus on providing financial education to consumers and there are dozens of professional certification and training organizations. The Financial Planning Association (FPA) provided financial planners who serve as "wealth coaches" to help clients establish goals and implement their plans. Despite these efforts, the problem persists as it exceeds the bounds of behavior modification and education. A purely mechanical approach fails to provide a complete framework necessary to create a future of greater economic stability that transcends generations. As the depth of the current crisis indicates, the pathology goes to the heart of our collective misidentification with wealth that spawns the fear and greed cycle. These emotional issues are often the key areas limiting individuals' ability to achieve financial strength or growth.

Our research suggests it is possible to improve individual economic performance through the exploration and implementation of practices rooted in transpersonal psychology. Transpersonal is defined as beyond ego. This type of psychology is unique in its ability to address life meaning, purpose, and unifying interconnectedness. Max Weber showed the power of a transcendent life purpose to create wealth in his famous book, *The Protestant Ethic and the Spirit of Capitalism*. Other religions, notably the Jains of India and Quakers of the United States, have demonstrated the power to create wealth driven by a quest for self-perfection rather than fear (Nevaskar, 1971). These communities show how mindfulness and self-disciplined money management can be brought by a connection to a force greater than the mundane. It is precisely this connection transpersonal psychology has the power to elicit.

The transpersonal practices of mindfulness and self-awareness address, not only financial mechanics and behavior, but also beliefs and judgments that limit growth and success at any level of individual capacity. By incorporating a balance of practice in the six domains (emotional, spiritual, community, physical, intellectual, creative) within the process of financial planning, we theorize that the relationship between the client and financial professional will be

significantly enhanced and ultimately lead to increased financial success for both parties. Our initial research shows the benefits of heightened consciousness for Certified Financial Planners, Snow (2009), and other studies Collins (2007), have shown the benefits to clients of a holistic approach to planning. Through this expanded focus, clients begin to resolve core issues that impede financial growth, resolve problems or prevent future reoccurrence. Together, clients and professionals, create an environment that clears limiting beliefs, fosters positive behavioral shifts, and creates new meanings and values about money in their lives. The result is a new trajectory for both parties.

Financial service providers tend to focus on providing advice and technical information. In a financial planning scenario, advisors rarely discuss past behaviors, family history of money, limiting beliefs inhibiting progress, or motivations driving the current situation. All of these factors play a role in the financial structure of clients but are rarely addressed. In settings where the services offered are strictly focused in economics (household management), problem resolution or financial progress may be less than the true scope of full client potential. Individuals may have serious financial problems that reoccur through generations. A lineage of debt and other financial issues may be uncovered through more thorough historical investigation of family dynamics. As individuals' financial decision-making process includes both a conscious and unconscious component, both have an impact on financial well being (Cheng, 2010). Therefore what is called for is a substantive program of financial coaching techniques and materials that address subjective interrelationship with wealth and money as well as the objective management of resources.

In 2008, 38,810 financial planners who are members of the CFP Board and/or the FPA were contacted in the Dubofsky and Sussman survey to gain their perspective on the scope of coaching and counseling in their profession (Dubofsky, 2008). Researchers found that advisors spend an average of 25% of their time on non-financial issues and 74% of the planners experienced sessions where the client was emotionally distraught. This study supports the theory that a transpersonal approach and additional training would be of significant benefit to both parties.

"Financial planners, whether they planned for it or not, may become personal coaches and counselors for their clients. While the need for coaching is increasing and while the bond between planner and client creates the foundation for discussing those issues, the ability of planners to provide that coaching is problematic at best" (Dubofsky, 2008, p.49). Almost half of the sample study had no training in non-financial coaching or counseling. Saundra David of Sage Financial Solutions provides the analogy where the planner serves as the 'mechanic' to maintain and 'tune up' the plan. Using a wider array of skills such as a transpersonal approach helps to fuel and activate the plan.

The need for new advisory approaches was highlighted by the stock market crash of 2008 when virtually all levels of the financial community were impacted by the decline in client portfolios. Relationships between practitioners and clients were damaged and trust eroded. These circumstances and emotional reactions often presented significant challenges to financial advisors faced with these client scenarios. Optimal client engagement and progress can be

achieved when elements of transpersonal psychology and supplemental coaching skills are a part of the advisor's approach. This includes using enhanced listening skills, avoiding defensiveness, facilitating a sense of greater control in the client's mind, encouraging positivity, facilitating a redefinition or reframe of the situation, seeking to find a new meaning to the situation, establishing more frequent communication, focusing on building or rebuilding trust and adapting communication styles to the client (Gounaris & Prout, 2009).

Through the application of transpersonal practices aligned with sound financial mechanics, clients are optimally positioned to achieve a greater degree of long-term financial well-being. This multi dimensional approach delivered through financial planners serves as a co-creative force that also contains benefits to service providers such greater retention, higher job satisfaction, and well-being derived from being of service to humanity. In conclusion, further research and development of a transpersonal model used by financial service providers is essential for both professionals and consumers.

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MARKET REACTION TO AN EARNINGS SHOCK: A TEST OF THE CONSERVATISM EFFECT

Abdulaziz M. Alwathainani
York University
Toronto ON, Canada M3J 1P3
wathnani@yorku.ca

In this paper, I empirically test the conservatism effect of Barberis, Shleifer and Vishny (1998). Conditioning on a shock to quarterly earnings, firms ranking in the top (bottom) earnings shock quintile exhibit substantial price momentum over the next three-month periods following the initial earnings shock. In the subsequent quarter, firms reporting earnings performance that maintain their ranking positions in the highest (lowest) earnings quintile exhibit a marginal incremental price run above that of the initial earnings signal. However, firms that fail to keep (succeed at moving out of) their ranking positions in the highest (lowest) earnings quintile experience a strong price reversal. These findings are robust to the four-factor regression (the Fama-French three-factor model extended by the momentum factor) and various robustness tests. Evidence reported in this paper is not consistent with the view that investors underreact to a recent earnings change. Rather, the evidence points to a market that systematically overreacts to extreme earnings news.

Key words: Earnings shock; Confirming earnings signals; Disconfirming earnings evidence; Conservatism effect; Earnings momentum; Price reversals; Overreaction.

JEL classification: G12; G14; M41

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INFORMATION, OVERCONFIDENCE AND TRADING: DO THE SOURCES OF INFORMATION MATTER?

Margarida Abreu
ISEG-Technical University of Lisbon and
UECE–Research Unit on Complexity and Economics,
e-mail: mabreu@iseg.utl.pt

Victor Mendes
CMVM-Portuguese Securities Commission and
CEFAGE-UE
Email: victormendes@cmvm.pt

The more often individual investors invest in information, the more they trade in securities. This strong and positive association between the frequency of individual investors trading and the financial information they collect is sustained by finance literature. Rational investors who invest more time in information receive more signals and can therefore be expected to trade more frequently.

On the other hand, recent literature in Behavioral Finance argues that overconfidence leads to higher trading volume. This idea was first presented by Barber and Odean (2001) who claim that gender is a good proxy for overconfidence (overconfidence among men is higher than among women), and find that men trade more than women. Statman et al. (2006) present empirical evidence for the US market and argue that trading volume is higher after high returns, as investment success increases the degree of overconfidence. This finding is consistent with the hypothesis that a higher degree of overconfidence leads to higher trading volume as long as we accept that high past returns are positively correlated with overconfidence. Glaser and Weber (2007) confirm this higher trading propensity for overconfident investors when they identify overconfident investors as those who think they are above average in terms of investment skills or past performance. The same conclusion doesn't hold when the authors use measures of miscalibration as proxies for overconfidence. This finding is consistent with other recent studies (Deaves et al., 2009).

It has also been suggested that the quality of the information signals has an influence on investor trading behaviour. News from a trustworthy source should lead to more trades (portfolio rebalancing) than news from a less reliable one (Epstein and Schneider, 2008). Fisher and Gerhardt (2007) argue that financial advice from professionals should lead to a better self-evaluation by investors of their own skills and, therefore, to more rational investment decisions, with a clear positive impact on trading. Ivkovic and Weisbenner (2007) claim that the word-of-mouth effect is a "broad phenomenon that affects financial decisions made by … individual

investors" for they "may seek to reduce search costs and circumvent their lack of expertise by relying on word-of-mouth communication with those around them". However, those predictions have never been tested and, as far as we know, there is no direct evidence of the impact of the sources of information as the foundation of investors' financial choices on the frequency of trading.

In this paper, we attempt to add to this literature by investigating how the strength of the positive association between information acquisition and frequency of trading is dependent on the sources of information used by investors. Considering the importance of overconfidence on investors' trading behaviour, we also investigate whether this influence is different for overconfident and non-overconfident investors. We test the robustness of our results controlling for differences in investor profiles and characteristics. In fact, there is evidence that investors' behaviour with regard to information depends on socio-economic and psychological characteristics. Investor behaviour may vary according to age (DaSilva and Giannikos 2004), occupation (Christiansen et al. 2008) or the environment in which they live. Peress (2004) shows that wealthier investors value information more and poor investors trade little even with very precise information. Graham et al. (2005) found that investors who feel competent trade more often. Calvet et al. (2007) provide evidence that active rebalancing is more pronounced for sophisticated households. Seemingly irrational behaviour diminishes substantially with investor wealth1 or with investor sophistication. In short, investor's characteristics may have an impact on trading and on the acquisition of information. On the other hand, Verrecchia (1982) shows that risk-averse investors acquire less information. Irrational behaviour diminishes substantially with investor trading experience (Nicolasi et al. 2004). Peress (2004) shows very risk-averse investors benefit little from information because they would invest little in stocks even if they had very precise information.

We start by documenting, using the OLS method, how individual investor's frequency of investment in information is positively related with the frequency with which they trade, controlling for a set of investor characteristics and profiles. We then investigate whether the sources of information used by investors as the basis for their financial choices, combined with the level of overconfidence exhibited by investors, have an impact on trading behaviour. In the second part of our paper we confirm our key findings with a set of robustness tests. There we test whether portfolio size and risk, the way investors transmit their orders and financial knowledge, among other characteristics, influence our estimates and conclude that results are robust.

Our data comes from a survey conducted by CMVM (the Portuguese securities commission). Our database has information on more than fifteen thousand individuals who were responsible or co-responsible for family investment decisions: 1559 investors in securities were identified.

Our results confirm that the sources of information are most relevant to explain trading activity, and indeed influence the relationship between frequency of trading and frequency of information. The more frequently individual investors invest in information, the more they trade in financial products. Our results also confirm previous findings that overconfident investors, who show a better than average bias, trade more frequently. Our finding that the strong and positive relationship between investment in information and intensity of trading in financial assets is sensitive to the sources of information used by investors, and that this influence is different for overconfident and non-overconfident investors, is novel. Overconfident investors trade more frequently when they collect information directly using specialized sources than when they use word of mouth communication or information provided by financial advisors.

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IS SENTIMENT RISK PRICED BY STOCK MARKET?

Francisca Beer
California State University, San Bernardino

Mohamad Watfa
ITIC Paris, France

Mohamed Zouaoui
Université of Franche-Comté, France

May 12, 2011

Abstract
This study tests if the financial markets price the investor's sentiment risk. We construct portfolios based upon the stock returns' exposure to sentiment. Our results show that the portfolio returns are positively correlated with the exposure of stocks to sentiment. The strategy that consists of buying stocks with the highest exposure to sentiment and selling stocks with the lowest exposure to sentiment generates a significant raw profit. Exploring the sources of profit, we find that neither the traditional risk factors nor the momentum factor can account for the profit. However, we find that the addition of the sentiment risk premium contributes to explain the profit.

JEL Classification: G11, G12, G14

Keywords: Investor sentiment, Stock returns, Noise trader risk

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PREDICTING STOCK PRICE VOLATILITY BY SEMANTIC CONTENT IN MEDIA

Hossein Asgharian[+]

Sverker Sikström[*]

[+] **Deptartment of Economics, Lund Univserity, Hossein.Asgharian@nek.lu.se,**

[*] **Deptartment of Psychology, Lund Univsersity, Sverker.Sikstrom@psychology.lu.se**

Volatility is a commonly used estimate of risk in financial assets. The expected future volatility is a key parameter for portfolio selection, risk-management and for pricing equity related derivative instruments. Current models for predicting future volatility are based on information available on the historical price variations and try to fit statistical models on data to give a forecast of the future volatility. Thus, these models do not directly rely on the information per se, but on the market's interpretation of the available information. Cognitive biases in information processing (Gärling et al, 2009), suggests that it is important to make a distinction between information available on the market and the interpretation of this information. Empirical psychological research has identified a number of such biases. Examples are investors' overconfidence in accuracy of their information and their abilities in making right decisions.

We suggest that a more direct measure of available information would be less sensitive to cognitive biased processing of available information. We propose a method for analysing the underlying semantic content of company related text in media. This is accomplished by a computational method that quantifies the semantic content into a semantic space. This semantic representation of words can be computationally generated from information of co-occurrence in large text corpora. The purpose of this paper is to use the semantic content in media to develop an automatic method for predicting stock price volatility. We also analyze the functional role of news either as a *passive* documentation of past information flow, or as an *active* generator of new information influencing future volatility.

This semantic method is based on the following steps: building a semantic representation of words in a language, collecting contextual news data related to stocks, quantify the contextual information in the semantic representation, using machine learning methods to predict volatility based on the contextual semantic information.

We use Latent Semantic Analysis (LSA, Landauer and Dumais (1997)) approach to create semantic representations. LSA takes a text corpus as input and from this data builds a word by a context frequency table. The semantic space can be generated by a data compression algorithm called Singular Value Decomposition (SVD), which compresses the information in the large number of contexts (columns) into a smaller number of semantic dimensions.

We use 100000 news articles published in 100 different Swedish newspapers and magazine during the period 2000-2009. These data are made accessible through the courtesy of Affärsdata, a company that provides access to Swedish news media. We select the five stocks with the highest market value in the Swedish stock market. The volatility of the selected stocks was estimated for each week, as the standard deviation of the daily returns on the closing prices. The

contextual information of each stock was matched with the stocks volatility with a delay of one week relative to the publication date of the news context. This training was made by multiple-linear regression separately for each stock, based on articles published prior to a certain week in order to forecast the volatility in that week. This procedure is repeated for all the weeks in the dataset.

We compare our semantic method to a number of currently used models for predicting volatility, which rely on historical return data.

- A simple moving average of all the past volatilities.
- A random walk model in volatility, according to which the best prediction of the future volatility is the current volatility
- A GARCH model (see Engle, 1982 and Bollerslev, 1986), which is by far the most popular specification for modeling financial time series.
- An EGARCH model, which is an exponential form of the GARCH model.

We use a number of evaluation strategies to assess the prediction power of our model relative to the alternative volatility models. A regression analysis of the realized volatility on the semantic prediction shows a strong ability to give an unbiased forecast of the future volatility and in general outperforms all other models. The strong forecast ability of the semantic forecast is supported by findings from two alternative loss functions, i.e. the root mean square error (RMSE) and the mean absolute error (MAE). The semantic forecast outperforms the GARCH and the EGARCH specifications for all the firms and samples. It is also significantly better than moving average for almost all of the cases. Furthermore, semantic model seems to have a relative better prediction compared to the non-semantic models during time periods when there is a lot of semantic data available. This provides additional validity to that the semantic model actually is basing the prediction in semantic information, rather than some other unknown artifact. It also shows that the predictability of the semantic models depends on availability of semantic data.

An analysis of the relation between the semantic forecasted volatility and the realized volatility at different leads and lags gives a maximum correlation at lag zero, indicating that the text in media reflects mostly information about the very near future. However, this relation is stronger than that given by alternative models both in past and the in the future, suggesting that the media both reflects previous events on the stock market and influences volatility in the future.

All in all, our findings show that quantifying the information flow in media can considerably enhance the prediction of future volatility in comparison with the volatility models relying solely on the past return data. This might indicate that the market participants' cognitive biases in interpreting the available information lead to an inefficient pricing of financial assets, in the sense that the market prices do not incorporate all available information.

This paper contributes to the literature in volatility prediction by presenting an automatic method which quantifies the information flow in media in order to improve prediction of future volatility. We also study whether the information flow in media acts as a passive summary of the previous empirical volatility, or actively influences future volatility. This is a meaningful

analysis since the predictions from the semantic method are made on content in media, and not merely on historical volatilities.

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PORTFOLIO DIVERSIFICATION AND INVESTOR PROFILE

Ana-Maria Fuertes

Cass Business School, Faculty of Finance, City University London, UK. a.fuertes@city.ac.uk

Gulnur Muradoglu

Cass Business School, Faculty of Finance, City University London, UK. g.muradoglu@city.ac.uk

Belma Ozturkkal

School of Economics and Administrative Sciences, Department of International Finance, Kadir Has University, Istanbul, Turkey. belma.ozturkkal@khas.edu.tr

This paper studies the relation between the diversification aspect of individual investors' portfolios and their demographic and trading characteristics on the basis of a comprehensive sample consisting of 59,951 individual accounts and 3,248,654 million transactions by Turkish investors over the period 2008-2010. We found that individual investors who have larger financial asset portfolios and who engage in more trading have better portfolio diversification. In terms of demographics, better educated, older individuals who have jobs in the financial sector are better diversified, indicating their relative risk aversion; in contrast, finance professionals are less diversified, indicating their relative risk-loving behaviour.

Diversification benefit results from the correlation structures of the assets held in a portfolio (Markowitz, 1952). To maximize diversification benefits, investors should hold somewhere between ten (Evens and Archer, 1968) to thirty or forty (Statman, 1987) stocks, and the typical US individual investor's portfolio contains a much smaller fraction of the optimal portfolio size (Blume and Friend, 1975). In Finland the average size of individual investors' portfolios is two (Grinblatt and Keloharju, 2009), in Germany average portfolio size is between four and five (Dorn and Huberman, 2005 and Dorn and Sengmuller, 2009), and seven in the Netherlands (Hoffman and Sheffrin, 2011).

These studies investigate trading performance and its relation to trading choices and individual characteristics. We studied the relation between portfolio diversification of individual investors and their demographic and trading characteristics. This paper is one of the first to directly examine the determinants of the apparent failure to hold a well-diversified portfolio although it costs almost nothing to do so. The existing empirical literature uses a number of objective individual attributes such as age, education, employment, income and gender in explaining several aspects of investment behaviour including frequency of trading (Barber and Odean, 2001), trading activity (Grinblatt and Koleharju, 2009), portfolio turnover (Dorn and

Sengmueller, 2009), stock market participation (Grinblatt, Kolleharju and Linmainnaa, 2011), objective strategies and performance (Hoffmann and Shefrin, 2011), and self-reported risk aversion (Dorn and Huberman, 2005). None of them directly assess which individual attributes relate to better portfolio diversification. We depart from the previous literature in two aspects. First we study how individual attributes affect portfolio diversification. We use information theory to show that better informed investors diversify in better ways, and we use a traditional theory of investor behaviour to demonstrate how overconfident investors reveal poor portfolio diversification. Second, we show that the relation between better information processing capacity and the overconfidence of investors is influential in their portfolio diversification decisions.

Individuals who are more able to obtain and process information are more likely to invest in stocks and hold better diversified portfolios. For example, Goetzman and Kumar (2002) suggest investor sophistication as an explanation for poor diversification. We first test the hypothesis that individuals who are more able to obtain and process information are more likely to have better diversified portfolios. Our results show that this is indeed the case. The second hypothesis relies on the traditional theory of investor behaviour. Risk aversion and overconfidence is the most frequently cited psychological attribute in trading behaviour (Dorn and Huberman, 2005). Overconfidence is related to risk taking behaviour since those investors can take higher risks. Next we test the hypothesis that poor portfolio diversification is related to overconfidence and show that this is indeed the case. Third, we would expect that the interaction between information processing capacity and overconfidence of an investor have an impact on portfolio diversification. Overconfidence is expected to reduce the portfolio diversification capacity of investors who are more able to obtain and process information. Finally we show that more diversified investors earn better returns on their investments.

Goetzman and Kumar (2002) use age and income as the key variables to measure investor sophistication. They report that younger and lower income individuals hold less diversified portfolios. We would expect younger investors to have low information processing abilities due to a lack of experience. Low income investors do not usually have the means to pay to obtain and process financial information. In this way, we considered education levels as being relevant for determining information processing ability. Less educated investors are expected to be less sophisticated in processing financial information, and so we also use financial wealth as a measure of information processing ability. Individuals with higher levels of investments in financial assets would be in a better position to follow and assess financial information, and wealthier investors hold better diversified portfolios (Dhar and Zhu, 2002; Vissing-Jorgensen, 2003). The effects of area of jobs investor works is less clear cut. People who work in the finance industry and who have jobs in finance, even if they work in other sectors, are in a better position to obtain and evaluate information for their investment decisions. If an investor's information processing capacity leads to better portfolio decisions, then individuals who are working in the finance sector and investors with finance-related jobs should have better diversified portfolios.

However, we would also expect that if an investor has a job that is financial in nature she will be overconfident which leads to reduced diversification. So the relation between portfolio diversification and an investor's information processing ability depends on her overconfidence. If investors become overconfident because they work in the finance sector or because their jobs are financial in nature, then they will have poor portfolio diversification. If they use their jobs for better processing of the information available to them, they will have better portfolio diversification.

Both Benos (1998) and Odean (1998) argue that overconfidence causes excessive trading. Overconfident traders trade more because they overestimate the precision of their own signals compared to the precision of other traders' signals. We would expect married people to be less overconfident and diversify better. However, we do not expect to find any differences between men and women once we check for the ability to gather and process information and overconfidence, as revealed through trading behaviour.

The volume of trades that an investor places could then indicate the overconfidence that the investor places on her bets. We would therefore expect individual investors with a higher volume of trades to diversify poorly. Contrary to previous research, once we examine trading volume, we would expect investors with higher trading frequency to have better portfolio diversification.

The previous literature does not take into account the interaction between these variables. The information processing capacity of an individual and her overconfidence could interact. Overconfidence could be more pronounced for people who have a high capacity for information processing. For example an investor with a post-graduate degree could be able to process financial information better than others. However, she could also be more overconfident due to her job, which is related to finance. In this case, she could have a better diversified portfolio because she can process information better, but at the same time could have poor diversification because she is overconfident. We would expect that overconfidence which is based on the fact that the investor holds a job in finance would reduce the positive effect of the ability to gather and process information acquired as the result of a post-graduate degree. We observe that most attributes of an investors' profile are not related directly to the diversification of their portfolios. Rather, overconfidence revealed through various means interacts with personal attributes that increase the ability to gather and process information, which is useful in determining portfolio diversification decisions.

The final strength of our paper is based on the fact that we utilize objective investor attributes as proxies for psychological traits (Barber and Odean, 2001). All of the variables that we use, which constitute investor profiles, are of this nature and also from brokerage house records.

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DOES BEHAVIORAL PORTFOLIO THEORY SUPPORT MARKOWITZ THEORY? EVIDENCE FROME FRENCH DATA

Marie Pfiffelmann, EM Strasbourg Business School, University of Strasbourg, LaRGE Research Center, m.pfiffelmann@unistra.fr

For many years Markowitz Portfolio Model (1952) has been the standard framework of modern portfolio theory. The fundamental concept of that model is diversification. The assets should not be selected individually but as a while to collectively present a smaller risk than any individual stock. According to this model, investing is a tradeoff between risk and expecting return. Actually investors only consider the two first moments of the distribution. They seek to minimize the risk of the portfolio for a given amount of expected return. The useful applications of that model are well recognized in the practical and academicals sphere and it is widely used by practitioners on the market. However it lies on numerous assumptions on the utility function, distribution of return or wealth holding. In fact, the mean variance model is consistent with expected utility theory only if stock returns are normally distributed or if the utility function can be approximated closely enough by a second order Taylor expansion. The latter hypothesis can be obtained if we assume the utility function to be quadratic. In the last decades these assumptions have been widely challenged. For example, the assumption of strict risk-aversion implied by the use of a quadratic utility function has been seriously questioned by Friedman and Savage (1948). They observe that individuals who buy insurance policies (risk-averse behavior) often buy lottery tickets (risk seeking behavior) as well. The Markowitz mean variance theory is thus not consistent with this puzzle. Moreover, many experimental studies show the overweighting of low probability events with extreme outcomes (Edwards, 1953; Kahneman and Tversky, 1979). This observation is inconsistent with the linear treatment of probabilities assumed under Markowitz portfolio theory. To accommodate these anomalies some behavioral studies propose an alternative to the traditional portfolio theory[8].

The behavioral Portfolio Theory (BPT) developed by Shefrin and Statman (2000) is an alternative model to the one proposed by Markowitz. This theory is drawn on the Roy's safety first approach (1952) and the Lopes (1987) and Kahneman and Tversky (1979, 1992) behavioral studies. The model suggests that an investor chooses a portfolio that maximizes his behavioral expected wealth and that meets a safety first criteria. The expected wealth is called behavioral because it is computed with decision weights instead of objective probabilities. Satisfy the security constraint means that the wealth of the investor might not fall below an aspiration level in an acceptable number of states of nature. The transformation of probabilities into decision weights permits to account for optimistic and pessimistic behavior that coexists in each individual. The main result of this behavioral portfolio model is that the optimal portfolio of a BPT investor is generally not mean variance efficient.

[8] Some other portfolio theories does exist (Roy, 1952; Telser 1955; Arzac and Bawa; 1977) but none of them are consistent with all these puzzles.

In this paper we aim at testing empirically this conclusion. We use French stocks price from the SBF 120 over the period June 2001 to June 2007 to realize our study. We use the bootstrap simulation method to generate 1000 matrix of annual expected return and select the BPT optimal portfolio. In 99% cases the Shefrin and Statman's portfolio is mean variance efficient. In a second step we modify the BPT optimization program and allow investors to transform the monetary outcomes via a utility function as suggested by Tversky and Kahneman (1992). We obtain the same result: the BPT optimal portfolio is mean variance efficient. In both cases, the BPT optimal portfolio belongs to a particular part of the Markowitz efficient frontier: the extreme upper right part. That means that it is associated to a significant expected return and is in return extremely risky.

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COMPETENCE EFFECT AND INSTITUTIONAL INVESTORS' TRADING FREQUENCY

Hilla Skiba
University of Wyoming

Eli Beracha
East Carolina University

Abstract

We examine the effect of institutional investors' competence on their trading frequency in investors' home and non-home markets. We find that institutions trade at much higher frequency in their home market and in markets that are culturally and geographically closer to their home market compared with more distant markets. The finding is consistent with a recent study on individual investor competence effect on trading frequency. We show support for the competence effect on larger scale and apply it to international environment. We also show that competence affects trading behavior within investors' portfolio, so that investors trade stocks in which they have more competencies at significantly higher frequencies. The study also links trading behavior on institutional investors' performance.

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THE DISPOSITION EFFECT AND ITS BEHAVIORAL MOTIVATIONS: A STUDY BASED ON THE TRANSACTIONS OF EQUITY INVESTMENT FUND MANAGERS

Francisco de Castro
Universidade de São Paulo, Brazil

Eduardo Pozzi
Universidade Católica de São Paulo, Brazil

Claudia Emiko Yoshinaga
Fundação Getulio Vargas, Brazil

Abstract

The disposition effect, originally proposed by Shefrin & Statman (1985), predicts that investors tend to sell winning stocks too soon and ride losing stocks too long. Despite the wide range of research evidence about this issue, the reasons that lead investors to act this way is still subject to much controversy between rational and behavioral explanations. In this article, the main goal was to test two competing behavioral motivations to justify the disposition effect: prospect theory and mean reversion bias. To achieve this goal, an analysis of monthly transactions for a sample of 51 Brazilian stock funds from 2002 to 2008 was conducted. The analysis involved the estimation of a regression models with qualitative dependent variable (ordered logit model) whose purpose was to set the probability of a manager to realize a capital gain or loss as a function of the stock return. The results of the estimated models brought evidence that prospect theory seems to guide the decision making process of the managers of the analyzed funds. The hypothesis that the disposition effect is due to mean reversion bias could not be confirmed based on the results reported here.

Keywords: Disposition Effect, Prospect Theory, Logistic Regression.

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SEASONAL ASSET ALLOCATION: EVIDENCE FROM MUTUAL FUND FLOWS

Mark J. Kamstra, Lisa A. Kramer, Maurice D. Levi, and Russ Wermers*

August 2011

JEL Classification: G11
Keywords: time-varying risk aversion; mutual fund flow seasonality; net exchanges; net flows; risk tolerance

Abstract

This paper explores U.S. mutual fund flows, finding strong evidence of seasonal reallocation across funds based on fund exposure to risk. We show that substantial money moves from U.S. equity to U.S. money market and government bond mutual funds in the fall, then back to equity funds in the spring, controlling for the influence of past performance, advertising, liquidity needs, capital gains overhang, and year-end influences on fund flows. We find a strong correlation between mutual fund net flows (and within-fund-family exchanges) and the onset of and recovery from seasonal depression, consistent with the hypothesis that investor risk aversion varies with the seasons. Further, we find stronger seasonality in Canadian fund flows (a more northerly location relative to the U.S., where seasonal depression is more severe), and a reverse seasonality in fund flows for Australia (where the seasons are reversed). While prior evidence regarding the influence of seasonal depression on financial markets relies on seasonal patterns in asset returns, we provide the first direct trade-related evidence.

*Kamstra (Corresponding Author): Schulich School of Business, York University, 4700 Keele St, Toronto, Ont., Canada, M3J 1P3. Tel: 416-736-2100, ext. 33302; Fax: 416-736-5687; Email: mkamstra@schulich.yorku.ca. Kramer: Rotman School of Management, University of Toronto. Levi: Sauder School of Business, University of British Columbia. Wermers: Smith School of Business, University of Maryland. We have benefited from valuable con- versations with Hank Bessembinder, Michael Brennan, Raymond da Silva Rosa (discussant), Kent Daniel, Ramon DeGennaro, Roger Edelen, Zekeriya Eser, Henry Fenig, Mark Fisher, Kenneth Froot, Rob Heinkel, Alan Kraus, Josef Lakonishok, Vasant Naik, Sergei Polevikov, Rudi Schadt, Neal Stoughton, Rodney Sullivan, Ellis Tallman (discussant), Geoffrey Tate (discussant), Robin Thurston (discussant), Paula Tkac, and seminar and conference par- ticipants at Arizona State University, the Federal Reserve Bank of Atlanta, Queen's University, the University of British Columbia, the University of Utah, the CIRANO Fund Management Conference, the Financial Intermediation Research Society, the Household Heterogeneity and Household Finance Conference at the Federal Reserve Bank of Cleveland, IIEP/IMF Advances in Behavioral Finance Conference, and the Wharton Mutual Funds Conference. We thank the Investment Company Institute, the Investment Funds Institute of Canada, and Morningstar for generously providing much of the data used in this study and Sean Collins and Sukanya Srichandra for help in interpreting the U.S. and Canadian data respectively. Kamstra, Kramer, and Levi gratefully acknowledge financial support of the Social Sciences and Humanities Research Council of Canada. Kramer additionally thanks the Canadian Securities Institute Research Foundation for generous financial support. Any remaining errors are our own.

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DO STOCK MARKET CRASHES CAUSE FEAR IN ASSET ALLOCATION? *AN EXPERIMENT IN BEHAVIORAL FINANCE*

Federico Guerrero, Greg Stone, Jim Sundali
University of Nevada, Reno

Abstract

In this paper, we develop an empirical framework to test for the presence of fear in portfolio allocation during crashes (i.e., episodes of large declines in stock returns). Our strategy is to infer fear as a residual from subjects' behavior. We first exploit the design of the experiment to try to isolate the presence of fear reasoning that all else being equal the timing of returns faced by subjects should not affect their allocations, after controlling for plausible variables that affect subjects' behavior. But we find that, all else being equal, subjects that start the experiment with declining stock returns do allocate 8% less in stocks than subjects that start the experiment with increasing stocks' returns. We find that the previous result cannot be explained by risk averse behavior, as embedded in the standard C-CAPM model. The hedging motive stressed in the C-CAPM model is present, but cannot account for a significant part of the variance in stock allocations during crashes. We also find that fear during crashes is purely associated with the behavior of male participants.

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EMOTIONAL INVESTING AND PERFORMANCE

Todd Feldman
San Francisco State University

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Abstract

Research indicates that individual investors trade excessively and underperform the market indices, Barber and Odean (2000). The purpose of this paper is to help explain which behavioral biases, if any, can explain this result using a simulation approach. Results indicate that putting too much weight on the current environment, anchoring, is the largest factor in explaining individual investor underperformance. In addition, loss aversion is the largest factor to explain excessive trading. When these two biases are combined trading activity and underperformance are heightened.

Keywords: Behavioral finance, agent-based models, financial markets. **JEL codes:** C63, G01, G10

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SCORES, BETS AND ABNORMAL RETURNS EVIDENCE FROM THE EUROPEAN SOCCER TEAMS

Massimiliano Castellani, Enrico Maria Cervellati, Pierpaolo Pattitoni
University of Bologna, Italy

Abstract

Given the relevance of the soccer industry in the economies of several European countries, we analyze the links between soccer match scores, bets and stock returns of all listed European soccer teams. Through an event study methodology, we measure abnormal returns following wins, ties and losses. Using a Seemingly Unrelated Regression (SUR) model to setup our event study, we find positive abnormal returns following wins and negative abnormal returns following both ties and losses. Furthermore, using the information of pre-match betting odds, we show that abnormal returns are magnified by unexpected scores.

JEL Classification: G14 - L83 - C23

Keywords: Information and Market Efficiency; Event Studies; Sports; Gambling; Models with Panel Data

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CAN PROSPECT THEORY BE USED TO PREDICT AN INVESTOR'S WILLINGNESS TO PAY?

Carsten Erner
University of Münster
carsten.erner@wiwi.uni-muenster.de

Alexander Klos
Institute for Quantitative Business and Economics Research (QBER),
alexander.klos@qber.uni-kiel.de

Thomas Langer
University of Münster
thomas.langer@wiwi.uni-muenster.de

Cumulative prospect theory (CPT) is widely considered to be the most successful descriptive theory for decision making under risk and uncertainty. Sophisticated methods have been developed to reliably elicit CPT parameters on an individual basis. The aim of this paper is to analyze whether such methods are suited to be applied in real world situations, in particular, in the context of investment counseling. Specifically, we examine whether CPT parameters elicited via standardized computer tools are successful in predicting the individual's willingness to pay (WTP) for different investment products. In a two-stage computerized experiment, we first determine the CPT parameters of the participants. We then elicit WTPs for various investment products and compare them to the WTPs that the participants should have stated based on their individual CPT parameters. Surprisingly, we find hardly any predictive power of the elicited CPT parameters on the willingness to pay. Using a second set of experiments, we examine possible explanations for the low prediction quality. Our main findings are: (1) more personal forms of interactions (i.e. personal interviews) enhance the internal consistency but not the prediction quality, (2) competence effects seem to play a role but only a minor one, (3) an explanation solely based on the propagation of decision errors can be ruled out, (4) the prediction quality increases substantially, when we look at the WTP for simple prospects instead. It thus seems to be too large a leap to draw conclusion about the attractiveness of complex financial products by use of CPT parameter elicitation methods that are based on simple lotteries.

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WHAT DRIVES THE HERDING BEHAVIOR OF INDIVIDUAL INVESTORS?

Maxime Merli
University of Strasbourg
maxime.merli@em-strasbourg.eu

Tristan Roger
University of Grenoble
tristan.roger@eurofidai.org

This article intends to provide answers concerning what drives individual investor herding behavior. Our empirical study uses transaction records of 87,373 French individual investors for the period 1999-2006. In a first part, we show - using both the traditional Lakonishok *et al.* (1992) and the more recent Frey *et al.* (2007) measures - that herding is prevalent and strong among French individual investors. We then show that herding is persistent: stocks on which investors concentrate their trades at time *t* are more likely to be the stocks on which investors herd at time *t+1*. In a second part, we focus on the motivations of individual herding behavior. We introduce an investor specific measure of herding which allows us to track the persistence in herding of individual investors. Our results highlight that this behavior is influenced by investor-specific characteristics. We also reveal the fact that individual herding behavior is strongly and negatively linked with investors' own past performance.

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THOU SHALT NOT COVET THY (SUBURBAN) NEIGHBOR'S CAR*

Joshua Shemesh
Marshall School of Business
University of Southern California
Los Angeles, CA 90089
shemesh@usc.edu

Fernando Zapatero
Marshall School of Business
University of Southern California
Los Angeles, CA 90089
fzapatero@marshall.usc.edu

March 24, 2011

Abstract

This paper studies the effect of population density on the intensity of "keeping up with the Joneses" behavior. Using a unique dataset of car registrations from 2004 to 2006 in three counties of Southern California, we show that neighbor effects are stronger in areas with lower population density. The decision to buy a car is strongly influenced by previous car purchases of neighbors, and the effect is substantially stronger in ar- eas with lower population density. Such areas represent small communities in which neighbors are likely to know each other, and can therefore manifest their income or wealth through the public display of their consumption. The evidence is consistent with two possible channels of influence: information and status concerns. We find evidence supporting both channels, as our results cannot be fully explained by information exchange, or word of mouth. We argue that the stronger effect that we find in areas with lower population density is driven by status signaling reasons.

*We would like to thank seminar participants at USC for helpful comments. Existing errors are our sole responsibility.

BEHAVIORAL TRADING STRATEGIES

Richard Peterson, Marketpsych, LLC

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A SWEETHEART OF A DEAL: HOW PEOPLE GET HOOKED AND REELED IN BY FINANCIAL SCAMS

Deborah W. Gregory (University of New England, dgregory@une.edu)
Bistra Nikiforova (University of New England, bnikiforova@une.edu)

Abstract

History is replete with unscrupulous dealings involving money. Today is no exception – the tools at the disposal of the financial scam artist have expanded to include electronic means. Financial scam artists now enter the privacy of an individual's home or office via the Internet using either websites or emails. The number of complaints reported to agencies as well as the dollar amount lost by victims has increased annually. Direct emails, phishing, and social networks have widened the net cast by scam specialists. People receive unsolicited emails seducing them with the promise of receiving money with very little work on their part. Other approaches appeal to the good nature of the recipient, asking for help in a difficult financial situation. Yet others do away with any of the niceties, instead simply posing as a reputable company needing verification of personal financial information. What these types of scams have in common is the personal connection instigated at the very beginning of the scam. Scammers rely on direct communication with the unknown target to enhance the possibility of extracting money from them. The result of all these approaches is the same: innocent individuals unwittingly giving money to an unknown requestor and being financially injured in the process.

One of the most lucrative and longest running scams, known nowadays as the Nigerian Letter scam has existed in one form or another since the 1800's. This scam continues to make the list of top Internet scams reported by the National Fraud Center (NFC) and the Internet Crime Complaint Center (ICCC). On-line auctions such as E-Bay, account for the majority of complaints. However, less money per person has been lost through these websites than for the unsolicited, emailed Nigerian Letter scam, for which the average reported amount extorted from individual victims each year is around $5,000. Defined as a confidence scam, the Nigerian Letter scam is designed to gain the trust of the individual who receives the email. Once there is a basis of trust, the scammer attempts to extract money from the individual over an extended period of time, which leads to the larger amounts lost.

The newest successful electronic scam that is also designed to extract money from the target over an extended period of time, again by forming a trust-based relationship with the victim, is known as the Sweetheart Swindle or Romance Fraud. 2007 marked the first year that the ICCC reported Sweetheart Swindles as being among the highest activity Internet scams. Neither the ICCC nor the NCF provide data for the amounts taken by this scam, but websites that have sprung up to assist people caught by this swindle indicate that the amounts are substantial. Social media networks and the greater acceptance of online dating services have helped to move this type of scam on to the top ten list. One major subset, known as the Nigerian Romance scam, focuses on offering women who are looking for love the opportunity to reinvent themselves through a new, more meaningful and exciting life with their new man. The other major subset, referred to as the Russian Romance scam, focuses on hooking men with beautiful women. These scams appeal to a man's role as protector and provider in return for endless devotion and unquestioning love. As

with the Nigerian Letter scam, victims pay out thousands of dollars on average before reporting their situation, if they ever report. Both the Nigerian letter scam and the Sweetheart Swindle are classified by the ICCC as confidence scams, as the trust of the victim is breached and they sustain a financial loss as a result.

The Nigerian Letter scam and the Sweetheart Swindles have several distinguishing features in common: (1) both are relationally dependent financial scams, (2) requiring that the scammer develop and maintain a correspondence based on perceived trust, and (3) are designed to provide the scammer with a steady cash flow over an extended period of time. With the demonstrated success of the Nigerian Letter scams over a long period of time, this paper seeks to ascertain whether the Sweetheart Swindles can be as successful. In particular, we (1) examine how the approach varies depending on the type of confidence scam used to contact the potential victim using content and contextual analysis; (2) define psychological types that would be hooked by the scam letters, drawing on behavioral finance and economic theories, the complex theory of C.G. Jung, and neuropsychological research; (3) determine how lucrative the two types of scams are over time; and (4) investigate how the type of scam increases/decreases over time and how scammers adapt. The results of this work will contribute to aiding individuals, businesses, and governments in identifying how different individuals may be susceptible to approaches used by scammers. This knowledge can help protect against electronic evasion that seeks to not only extort money directly from individuals, but also infiltrates computer systems of businesses containing sensitive data if scam emails are responded to or opened.

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IMPACT OF ANTICIPATED EMOTIONS AND SENSUAL FACTORS ON PONZI SCHEMES' INVESTORS

Philip Cheng
Australian Catholic University, Australia

Abstract

Charles Ponzi started the first fraudulent investment scheme in 1920s in the U.S., with estimated loss of USD 21 billion. It seemed investors have never learnt. In the past 80 years or so, there have been continuous cases of Ponzi schemes (named after Charles Ponzi) worldwide, the more recent ones being Bernard Madoff in U.S. in the late 2000s, (with estimated actual losses of USD 18 billion to investors) and Graham Hoy in Australia, also in the late 2000s, with a relatively humble estimated losses (in form of debt) of AUD 82 million. An amazing feature of Hoy's case is that he was able to secure a loan of AUD 5.8 million and an overdraft of AUD 2.15 million from Commonwealth Bank of Australia (of which the Government is the major shareholder) just months before the business collapsed.

One might ask why investors keeping falling prey into these fraudulent and yet highly publicized investment schemes – are they just naive? Are they greedy? Or something else?

Human beings have over 30 emotions identified. In this article, it is explained how some of these emotions play their part in the decisions of Ponzi schemes' investors (Ponzi investors). However, it is proposed the primary scholarly contribution of this article is that it introduces the concept of "anticipated emotions" and the impact of sensual factors in investment decision making, which are particularly relevant to explain the behaviour of Ponzi investors. The article explains that it is not so much the Ponzi investors are naive or greedy, or they simply invest out of hope or fear, but it is their "anticipated emotions" in various forms and sensual factors, and their interactions, that have lead to their decisions, even though they might even aware of past Ponzi schemes and the consequences.

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ORGANIZATIONAL ENVIRONMENTAL ANTECEDENTS TO ILLEGAL CORPORATE BEHAVIOR IN THE SARBANES-OXLEY ACT ERA

Brian K. Harte
Trident University International

Abstract

This research examined the effects of organizational environmental factors on firm illegal corporate behavior. Alternately, this research examined the ability of the Sarbanes-Oxley Act of 2002 to moderate the relationship between prior violation committed and future illegal corporate behavior. Corporate Socially Responsible (CSR) behavior within business organizations was also examined to determine its relevance in predicting illegal corporate behavior. Moreover, this research proved an organizational level, five year pre and post historical analysis of legal behavior across Fortune 500 firms. Additionally, this research aimed to determine if antecedents to illegal corporate behavior can be identified and if a corporate governance mechanism such as the Sarbanes-Oxley Act of 2002 can be an effective legislative tool impacting firm behaviors. The Sarbanes-Oxley Act itself will be analyzed as an event to determine its appropriateness in promoting ethical and legal behavior and effective corporate governance.

This research examined Baucus and Near's (1991) model of the illegal and corporate behavior process to test its ability to predict illegal behavior within historically corrupt industries. Moreover, CSR as an embedded theme within specific firms and its implications towards both ethical and legal firm practices were examined.

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STOCK SPAM E-MAILS AND PSYCHOLOGICAL FACTORS

Bill Hu
Arkansas State University
xhu@astate.edu

Thomas McInish
The University of Memphis
tmcinish@memphis.edu

We investigate the link between psychological factors and investors' trading decisions. Using a sample of 580 Spam Campaigns (SCs), defined as a period of spamming activity with no more than 5 consecutive days without a spam e-mail, we test three behavioral theories. First, we examine investor attention theory. We find that both the dollar volume and return on the peak day of the spam campaigns (SCs) are significantly higher compared to those on randomly selected non-spam dates. In addition, SCs reduce the number of zero trading days while the campaign is underway. Then we test ambiguity theory. We find that SCs providing an unambiguous target price generate higher trading volume and return on the peak day of the SCs compared to those without a target price. Finally, we document a nonlinear relationship between abnormal return on the peak day of the SCs and the premium implied in the spam e-mails. When the target price indicated in spam e-mails is about 53 times the current price, the abnormal return of the SC peaked at 31%. Although investors overweight low probability events, the overweighting decreases when the probability becomes out of reach. Our findings concerning target price are consistent with cumulative prospect theory.

JEL Classification: C33; G11; G18; K22
Keywords: Stock spam; Market manipulation; Investor attention; Prospect theory

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CONTRACT FRAMING AND "PERCEIVED LOSS" AVERSION: AN EXPERIMENT ON CREDIT SCREENING

Irene Comeig [a], Benoit Bediou [b], Ainhoa Jaramillo-Gutiérrez[c] and David Sander [b]

[a] University of Geneva (Swiss Center for Affective Sciences), and University of Valencia (Department of Business Finance), 7 rue des Battoirs, 1205 Geneva, Switzerland; E-mail: Irene.Comeig@uv.es

[b] University of Geneva (Swiss Center for Affective Sciences), 7 rue des Battoirs, 1205 Geneva, Switzerland

[c] University of Valencia (Department of Applied Economics), Av. Los naranjos, s/n, 46022 Valencia, Spain

ABSTRACT

A major characteristic of credit markets is information asymmetry. To combat its problems, as credit rationing, principals can use a menu of contracts to screen clients with different risk-level. We conduct a laboratory experiment to address an important question for such settings—does the framing of the offered menu of contracts interfere with the screening mechanism? We find subjects' choices shift when the same (positive) outcomes of the same menu of contracts are presented in two different frames. Subjects exhibit loss aversion in their perception and assessment of the positive outcomes below the reference point, and screening fails to occur.

KEYWORDS: Behavioral finance, Framing, Loss aversion, Reference point, Self-selection, Screening

JEL CLASSIFICATION*:* C91, D03, D82, G32

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ECONOMIC AND FINANCIAL INSIGHTS FROM A CROSS-CULTURAL PAY-WHAT-YOU-WISH STUDY

Paul Mills, Cleveland State University

Though various forms of pay-what-you-wish pricing have existed for some time, a recent flurry of field activity (perhaps prompted by firms experimenting in a difficult consumer economy), has attracted a number of academic inquiries into this novel pricing scheme.

Pay-what-you-wish (PWYW) pricing has attracted recent academic attention [Regner and Barria (2009), Zwiek (2010), Gneezy (2010), and Kim (2010)] since a buyer's decision to voluntarily offer more than they are required to pay challenges neoclassical notions of utility maximization. Unfortunately the number of PWYW empirical studies is small and frequently characterized by limited availability of data. This paper analyzes a rich and unique data set from a large pay-as-you-wish empirical study to address several interesting economic and financial questions. In particular, this is the first study to model and test the effect of uncertainty on consumer behavior in a PWYW mechanism and to explore the financial impact of participative pricing on free-riding and piracy in the internet software distribution market.

In October 2009, to celebrate the first anniversary of their award-winning PC game "World of Goo", the independent game developer 2D Boy, offered the game via Internet download to buyers at any price they wished to pay, including for free. Thirteen days later 83,250 customers from over 100 countries had purchased the game. While a substantial number chose to pay nothing, nearly 75% of all buyers paid some price greater than zero.

The result that customers pay any positive amount is at odds with the canonical model's utility-maximizing assumptions, but is consistent with results of previous pay-what-you-wish field studies [Elberse and Bergsman (2008), Regner and Barria (2009), Kim (2010), Gneezy (2010)] and the well-reported behavior in numerous ultimatum and dictator game experiments reviewed in Roth (1995), and Camerer (2003).

Our data set differs from previous empirical studies in several notable ways; first, the data represents a comparatively large number of transactions conducted over an extended period of time. Second, the setting is an impersonal, online, setting with buyer anonymity. Third, the product in this study is an experience good whose quality is uncertain to those who have not tried it previously. Since the PWYW scheme requires buyers to pay for the game prior to downloading it, there is asymmetric risk across buyers depending upon their prior experience with the product. Finally, the good is one which is readily obtained for free in an industry where software piracy is commonplace.

First, we observe that not only does a substantial proportion of customers pay significantly more than zero, but there is large price dispersion; ranging from purchases of a few cents to more than $50. We next observe that there is considerable heterogeneity of price offers both within and between countries, with buyers from some countries offering as much as twenty times more on average than buyers from others. These findings are consistent with previous PWYW results and field experiments with cross-cultural ultimatum and dictator games [cf. Regner and Barria (2009)]; we offer an econometric model that incorporates various measures of income, economic well being, reference pricing, altruism and fairness to estimate country differences in PWYW pricing behavior. Consistent with previous studies on repeated cross-cultural bargaining we find that the differences in offers cannot be fully explained by these variables alone.

Second, a distinguishing characteristic of our data is that the mean PWYW price offers rise over time. This result is robust across countries. This finding differs from the results reported by Elberse and Bergman (2008) in the now famous "Radiohead" PWYW setting where the mean price offered declined over time. We propose a model that incorporates customer's prior product experience to explain this intertemporal behavior. We find a positive and statistically significant relationship between the level of buyer experience and PWYW price offers. We also find empirical evidence for a decline in uncertainty related to product quality over the duration of the study. This decline is associated with an observed increase in mean price offers.

We conclude by testing whether the PWYW pricing model may reduce free-riding, a problem common to products prone to file sharing, and which poses a significant cost to firms. We find evidence that PWYW pricing may discourage piracy and posit that under certain conditions PWYW pricing may provide an alternative, profitable pricing mechanism for industries where marginal product costs are low and the proportion of free-riders under traditional "pay-as-asked" pricing is high. These results are consistent and expand upon a model proposed by Chen (2009) and the relationship between piracy and pricing developed by Sinha (2010).

This study extends the recent and small body of research into PWYW pricing schemes in some important ways; first, it observes transactions in a large-scale impersonal setting where buyers act anonymously, unlike several prior studies which observe transactions involving significant personal interaction between the buyer and seller. Second, unlike other studies with buyer anonymity, the limited duration of this pricing scheme differs from studies where repeated interaction and concerns over either supplier survival, or the threat of the supplier returning to pay-as-asked is removed. Third, we believe this is the first PWYW study to analyze the effects quality uncertainty on the PWYW pricing. Finally this study provides insights into the financial question of whether participative pricing mitigates the effects of free-riding.

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THE POWER OF POPULARITY: FAN COUNTS PREDICT TRADING RANGES OF CONSUMER BRAND STOCK PRICES

ARTHUR J. O'CONNOR, IT/MGT CONSULTANT, EXECUTIVE DOCTORAL PROGRAM, PACE UNIVERSITY ao19153n@pace.edu

If celebrity-like popularity increases economic opportunities for businesses (Rindova, Pollock and Hayward, 2006); if consumers engage in on-line relationships with brands much as they form relationships with other people (Esch et al., 2006), and if the digital revolution is transforming and strengthening consumer-brand relationships as well as creating powerful new ways to mobilize public opinion (Rheingold, 2002), does social media popularity or following of brands (i.e. fan counts) signal changes in brand performance and/or valuations of brand company stocks?

THEORY AND MODEL

Brand fan counts represent the number of consumers who join brand sites created by consumers themselves, or more often, are sponsored by consumer brand companies on social media networks. Consumers become "fans" to read and post comments on the site, join loyalty programs, browse product information and/or make purchases on-line.

This pioneering cross-disciplinary study introduces a theory that, given the intimate nature, pervasiveness, and opinion-influencing power of social media, the number of Facebook users following brands – as an indicator consumer loyalty or affinity that drives sales and profitability, and/or barometer of social acceptance or popularity, and/or brand image or reputation that influences stock price valuation by investors – is associated with consumer brand company stock price performance. Unlike previous research – which tend to analyze user-generated content for discerning investor mood/sentiment (Bollen, Mao and Zeng, 2010) and/or measure user activity – this study uniquely explores what popularity itself, or simple fan counts, reveal about consumer and/or investor behavior.

The research study tests a model by which brand fan counts loosely but reliably predict stock price trading ranges, hypothesizing that, given the more static nature of brand fan counts (relative to stock prices), the running daily total of fan counts either outpace or lag intrinsic values of stocks, creating timing differences by which their relationship or regression coefficient to prices may be positive or negative, but within a defined range, given the statistical significance or strength of popularity-price correlations.

RESULTS

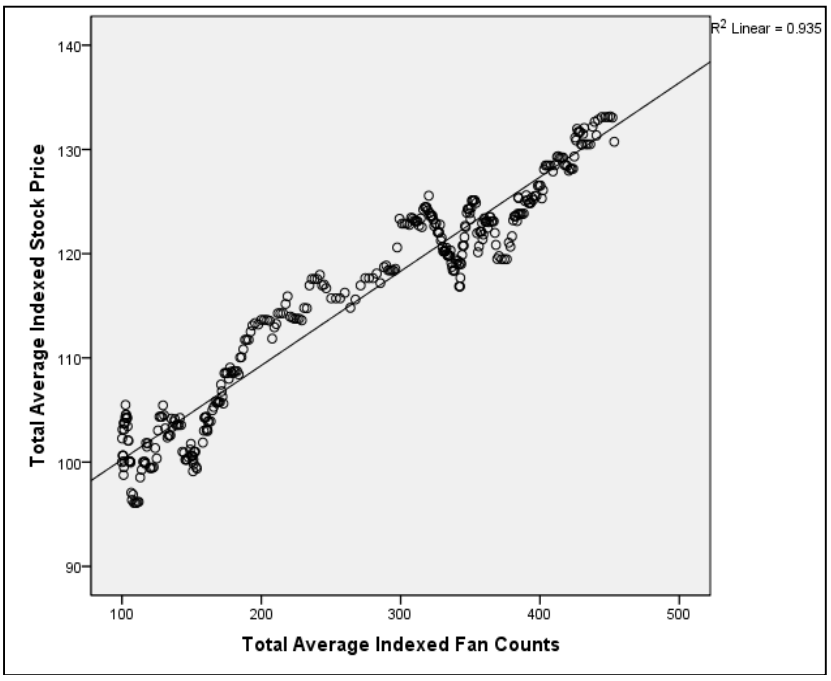
In Pearson product movement correlations of fan counts of 30 consumer brands and their respective brand company stock prices from June 1, 2010 to June 1, 2011, 26 were found to be statistically significant in two-tailed tests at the .01 level. In 24 of the 30 regressions of brand fan counts and stock prices – along with a market index to capture exogenous stock market volatility to better isolate the effects of popularity on non-market return (alpha) – both predictor variables

were found to be statistically significant, despite radically different price performances over the 12-month period, with Krispy Kreme Doughtnuts and Abercrombie and Fitch soaring 133.43% and 114.34% respectively, while Aeropostal and Nokia fell 33.25% and 33.23% respectively. By comparison, the overall market (Dow Jones Average) increased 22.61% during this period.

As predicted, coefficients for both predictor/independent variables were both positive and negative in the 30 regressions, with fan count coefficients ranging as much as plus or minus 8 (absolute average = 3.63 with $\sigma = 4.28$); coefficients of the market index variables also had mixed but very minor variances (absolute average = 0.01 with $\sigma = 0.03$), presumably due to tracking error.

In an examination of moderating effect, correlation was found to be stronger for the collective total average indexed values of 19 brands (Group 1) within the 30-brand sample associated with small ticket and impulse purchases (Pearson correlation coefficient of 0.967; R^2 value of .935 - see Table 1) than those for the remaining 11 brands (Group 2) that are associated with larger-ticket items and more complex buying or decision-making processes (Pearson correlation coefficient of .597; R^2 value of .356).

Table 1: Regression of Total Average Indexed Fan Counts and Stock Prices (Group 1)



DISCUSSION AND CONCLUSION

The results suggests that – just as arithmetically-derived ranges such as Bollinger Bands (moving average of stock prices and their standard deviations) are used by technical equity analysts to outline the parameters of the random variation of stock prices around their intrinsic values, consistent with general efficient market theory (Fama,1995) – fan counts of consumer brands

may be used to reliably predict trading ranges of consumer brand company stock prices, as social media popularity either outpaces or lags intrinsic value. For any of the 30 consumer brands tested, an equity analyst could use the regression results for the summary table in the study to predict or estimate the trading range of a given consumer brand stock price by multiplying the associated fan count number with the fan count coefficient, adjusting the market index variable, and adding the constant error value or y-intercept. The R-squared value associated with the brand could be used to assess the reliability or strength of the forecast; the coefficients of determination for the 30 brands in the 12-month study ranged from a high of 94.6% (Abercrombie & Fitch) to a low of 3.5% (Target).

Primary limitations of the study are the classic conditional assumptions for correlation and regression analyses, especially the independence of time series stock price data, (i.e., the study assumes a weak form of the efficient market hypothesis and random walk theory). Results of Durbin-Watson statistics from the individual regressions as well as Box-Ljung statistic tests of the total average indexed values indicated autocorrelation of all three sets (stock prices, fan counts, and market index) of the time-series data.

As the purpose of the research was to explore potential of fan counts as an added element in the technical and fundamental analysis of consumer brand companies – not create a trading strategy or algorithm or de-compose stock returns via multi-factor analysis (Fama and French, 1996) – the study did not measure total return (price change plus dividends), merely net change in stock price, as the average annual current yield of the 30 consumer brand stock sample (as of June 1, 2011) was 1.826%, below the average yield on the Dow Jones Industrial Average of 2.4959%. While the results were inconclusive – given the study's many limitations, and that it focused on exploring the relationship of social media popularity to stock prices, not the underlying mechanisms that drive them – it is hoped that this pioneering study will inspire further investigation into the predictive or indicative value of fan counts with economic behaviors or outcomes.

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Proceedings of the 2011 Annual Meeting of the Academy of Behavioral Finance and Economics, September 21-23, 2011, Los Angeles, California

REGRET FROM TRADEOFFS AND INFORMATION: A MODEL OF CHOICE-BASED REGRET

Mark Schneider

University of Connecticut

William P. Neace

University of Hartford

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Abstract

There are essentially two approaches to modeling decision making – the preference-based approach and the choice-based approach. The preference-based approach takes individual preferences as the primitive unit of analysis and imposes rationality axioms over these preferences. In contrast, the choice-based approach focuses on individual choices as the basic unit of analysis. While the preference-based approach is the more traditional one, the choice-based approach has some appealing properties. Most theories of decision making (e.g. the variants of utility theory) are based on the preference-based approach. However, much psychology research has shown that preferences are often constructed on the spot, casting some doubt over the standard economic assumption that preferences are inherent and stable. The preference-based approach is also more restrictive than the choice-based approach. For instance, it is possible to observe consistency over choices without having consistency over preferences (e.g. the Allais paradox is consistently observed in choice behavior although it violates the preference axioms in utility theory).

We develop a mathematical model of choice-based regret in which the decision maker minimizes the source of regret. We consider two sources of regret – regret from tradeoffs (a pre-decision source) and regret from information about the outcome of forgone alternatives (a post-decision source). Specifically, we develop a set of tradeoff measures to explicitly model the role of tradeoffs in the decision process. We find that the assumption that agents minimize regret from tradeoffs, when coupled with an appropriate tradeoff metric, is sufficient to systematically predict the compromise and asymmetric dominance effects, as well as extremeness seeking and variety seeking behavior. In addition, we show that the principle that agents minimize regret due to information about forgone alternatives can systematically predict risk-averse and risk-seeking behavior as well as provide a novel explanation for the Ellsberg paradox. This second assumption (minimizing regret from information) in turn derives from the more basic assumption that there is a regret-rejoicing asymmetry.

Our class of tradeoff metrics is based on two distinctions - the dichotomy between alignable and non-alignable choice assortments, and the distinction between dominated and undominated choice assortments. Items in alignable choice assortments differ along one or more

compensatory attributes such as price or quality (e.g. apartments which vary in quality and distance from campus). In contrast, items in non-alignable assortments vary along one or more discrete, non-compensatory attributes such as style or flavor (e.g. different models of the Ford Explorer). Dominated choice assortments have alternatives where at least one option is weakly dominated on all attributes by another alternative in a binary comparison. Undominated choice assortments are any choice assortments which are not dominated.

We find that agents who minimize regret from tradeoffs will systematically exhibit extremeness seeking behavior and variety seeking in simultaneous but not sequential choices when given a non-alignable assortment. We also show that if agents evaluate their options locally under dominated assortments, and evaluate alternatives holistically in undominated assortments, they will systematically exhibit compromise and asymmetric dominance effects.

Considering post-decision sources of regret, we argue that a regret-rejoicing asymmetry is sufficient to generate a bad news-good news asymmetry in which agents minimize regret from information about forgone alternatives. This principle can be directly applied to predict risk-averse behavior when a safe gamble will always be resolved, but the risky gamble will only be resolved if chosen, and risk-seeking behavior, when the converse is true. We also show that the regret-rejoicing asymmetry implies the ambiguity aversion predicted in Ellsberg's paradox.

Overall, we develop a simple framework based on the idea that agents minimize the source of regret. Considering just two sources of regret, we are able to parsimoniously explain several key decision anomalies, and provide insight into how these anomalies are related. Novel predictions of the model are also discussed.

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TO WHOM AND WHERE THE HILL BECOMES DIFFICULT TO CLIMB: EFFECTS OF PERSONALITY AND COGNITIVE CAPACITY IN EXPERIMENTAL DA MARKETS.

Shu-Heng Chen, Umberto Gostoli, Chung-Ching Tai, Kuo-Chuan Shih

In this paper we present an analysis of the data gathered during eight double auction (DA) experimental sessions. The aim of this analysis is first, to gain a deeper understanding of the learning process through which the subjects develop their bidding strategy and, in second place, to assess the effect of the subjects' working memory skills and personality traits on their performances. In the DA experiments, the subjects had to face sequentially four markets with different structures. In each market, the DA was composed by 30 trading days, each of them composed in turn by 25 rounds, during which the subjects had the chance to buy up to four tokens. The subjects had to face three other buyers and four sellers adopting the 'True Telling' strategy (bids and asks equal to their reservation prices). We defined the strategies as the combinations of rounds at which the various tokens are bought. In this way, we could define each market's fitness landscape, and we could locate the subjects' strategies on this landscape. We found that at the end of the 30 trading days, the subjects separated into few classes occupying different local optima in each market's fitness landscape. Moreover, we found that, in general, the group that reached the best strategy is associated to a higher working memory tests scores than the other groups. However, we also found that the relationship between working memory and performance depends on the market structure as in some markets both high and low working memory subjects could reach the best strategy. The relative weight the subjects' working memory and the market's structure have on the subjects' performances is an issue open for further investigation. Finally, we found weak evidence that, at least within some market structures, personality traits such as the hard-working attitude and the outgoing personality are associated with better performances.

Keywords: Experimental Double Auction Markets, Personality Traits, Working Memory, Decision Making.

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"WE HAVE CURTAILED THE POWER OF BEHAVIORAL ECONOMISTS"

Elior Kinarthy

Rio Hondo College

Drelk@shaw.ca

Abstract

This article is an overview of the resistance by 20th century economic thinking to accept psychology as an equal partner in explaining economic behavior (with dire consequence to the economy in 2008). If anyone deserves the title of founding father of behavioral economics, Dr. D. Kahneman does for trying to break the "ice" between the two disciplines and formulating *behavioral economics* as a respected branch of economics that applies psychological principles to business and the economy. My behavioral investing theory applies psychological variables (e.g., CEO personality, psychology of banking, new statistical ratios, psychological estimate of share price, reading body language, psychological meaning of central tendencies, consumer confidence, etc.) to successful investing in the stock market. Converting a mutual fund portfolio to an individual stocks portfolio has quadrupled my capital gains.

Key words are: Turf Wars, Global Economy, Adam Smith, Ethics, John Keynes, Daniel Kahneman, Stock Market, Investing, Behaviorism, Behavioral Economics, CEO, Sigmund Freud, Yankee Ingenuity.

May 2011

Turf wars are as American as apple pie, a cultural phenomenon; an early historical development when industries were carving territories for their markets and roles were being delineated. Marking industrial boundaries and responsibilities were necessary for economic development. Today, the threat to my behavioral investing theory is the persistent chasm between psychology and economics. The turf wars that have delineated economic discipline boundaries should have ended when the American culture matured enough and the two disciplines were set up secure and

functioning. *Understanding the modern necessity of ending turf wars and reversing the trend by integrating psychology, economics, and politics in the market place is essential to prosperity.* On the global scale, integrating culture, religion, national skills, natural resources and weather can determine the wealth and stability of any national economy and the ups and downs of specific markets. We have brushed off that truth.

America will become a third world country by the end of the twenty-first century if we don't heed the warning from a changing world. In the old days Afghanistan made inexpensive quality Afghans, Brussels sprouts came from Belgium, Jaffa oranges from Israel, French fries from France and potatoes from Idaho. Then came political and military restrictions on continental trade that resulted in multiple specializations, regional manufacturing, and local distribution. Yankee ingenuity excelled in everything for a long time, so isolationism became economically affordable and nationally desirable in a troubled world.

The 21st century saw the trend reversing itself. The world (especially China and India) is producing many quality goods and services cheaper than we do. The clincher was when the Japanese who depend on exports for their survival decided in 1958 to learn from the Americans how to build cars, and beat Detroit at its own game by 1975!

The writing is on the wall.

The Chinese, who must feed a billion mouths, are importing our technology on a larger scale than the Japanese ever did. They are learning from the Americans how to do *everything*. Our traditional economy will be doomed in thirty years unless we change to a behavioral economy. No more turf wars between economics and psychology. The world has become a *global village*, to borrow the phrase from Hillary Clinton, and we are losing the competition. The United State's "Yankee ingenuity" still reigns supreme in the world, but brushing off the *psychological insights of behavioral economics* when it comes to doing business in the world will lead to much more than just an intercultural nightmare. We have to overcome our proverbial shortsightedness ingrained in our smug culture.

Even in the nineteenth century when economists Adam Smith and John Keynes clashed over whether capitalism or socialism would prevail in the world, most of their psychological insights were limited to morality and ethics, not the context of psychology and markets. Pavlovian conditioning, Skinnerian behavioral economics, or Freudian psychoanalysis of Market

Relationships are still shunned upon by politicians and economists. Self-esteem, drive, self-assurance, values, expectations, confidence, intention, and motivation were never put to optimal use in any economic, political, social or military equation in America. It wasn't (and still isn't) in our culture. We were too big to worry about our "psychology." We were too selfish to consider or try to understand others. America lacked empathy. When we lost markets because we underestimated the motivation of poor Indians or Chinese to get a life by working hard for pennies a day, we were surprised. Our Harvard economists didn't understand that human stuff. There was no economic formula to explain why people would work 12 hour per day for a buck. We couldn't learn how to prevent exporting our job. When we lost wars because we didn't understand the motivation of poor insurgents to topple corrupt governments in South America, Middle East or Asia, we still didn't learn. We are losing our edge in everything because we don't realize the weak motivation of American students to take their education as seriously as Korean students do!

Some psychologists believed that we are only as good as our culture let us be, limiting us to a life in a **box**. We Americans are not using enough psychology to advance our economy. Our culture discourage us from using psychology no matter how popular Dale Carnegie's book still is in this country. Although economic indicators were never more important than psychological insights, they have always been preferred. The media turned everything into TV channels competing to sell commercials. Skillful *persuasive communication* turned economic behavior and forecast upside down.

The complexity of competing forces over your wallet became staggering—a 'do or die' phenomenon. The focus on accumulating the mighty dollar when trading goods and services blurred the psychological motivation behind each trade. As long as success reigned, market psychology was only a sideshow with politically correct overtones. The truth is that *behavioral economics is still* a *persona non grata as far as investing in the stock market is concerned.* I chose this forum to come out of the woodworks to hammer home that issue.

I write about behavioral investing not because it is the most awesome discovery since the *big bang*, but because foreign governments, foreign students, foreign businessmen, and foreign investors are finally learning and using it and we Americans can't be successful any longer without using it ourselves. When, in the nineteenth century, Adam Smith (capitalism) and John

Maynard Keynes (socialism) introduced the role of morality and ethics

Into economic behavior, economists were not threatened by a fledgling psychology invading their turf. The attempt to "kill" the psychological "monster" by economic professors in universities occurred only in the twentieth century after Dr. Sigmund Freud empowered man's behavior with drives, motives and sexuality in the factory and the workplace. The threat to pure economics was born. Economists stared in disbelief at the behavioral "virus" invading almost every scholarly economic article written between 1910 and 1979! "*Of course,* "*behaviorism" works. So does torture,"* wrote Wystan Hugh Auden, the popular Anglo-American poet and ethicist in *Behaviorism in a Certain World, 1970.*

I found it difficult, amidst such twentieth-century vituperative language against *behaviorism,* to clearly identify the genius peace-loving founding father of behavioral economics. It had to be someone who could reconcile and integrate bitter enemies. I had to wait until the twenty-first century to identify him. My designation of Tversky and Kahneman as the co-fathers

Of the movement will draw criticism—and I admit it is subjective—but someone had to notice their great contribution. A lot of writers wrote about money and the mind, but these two giants formalized the science with solid research in the last twenty years of the twentieth century!

Dr. Amos Tversky taught cognitive psychology and mathematics at Stanford University and at the Hebrew University of Jerusalem. He worked on behavioral economics theory with Dr. Daniel Kahneman who was the only psychologist who ever received a Nobel Prize in Economics. If anyone deserves the title of founding father of behavioral economics, Kahneman does!

Behavioral economics is the branch of economics that applies psychological principles to business and the economy. It may seem more soft or complicated to apply than economic indicators, but it isn't. Studying CEO behavior in the market place may smell like a soft science, less predictive of company success, less mathematical, less controlling, less involving balance sheets and accounting practices, but analyzing leadership is powerful, simple to apply and is less amenable to cheating! It is the cornerstone of my successful behavioral investing theory.

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BP'S FAILURE TO DEBIAS: UNDERSCORING THE IMPORTANCE OF BEHAVIORAL CORPORATE FINANCE*

Enrico Maria Cervellati, University of Bologna, Italy
Hersh Shefrin, Santa Clara University

First Draft: July 23, 2010 This version: December 12, 2010

Abstract

This paper provides a behavioral analysis of BP, whose capital budgeting decisions in the last decade have resulted in a series of high profile accidents, including the worst environmental disaster in U.S. history. The analysis uses BP as a vehicle to discuss the application of business processes and psychological pitfalls to analyze corporate culture. The paper identifies weaknesses and vulnerabilities in BP's culture, makes comparisons with the corporate financial practices at other firms, and offers suggestions about how BP can engage in debiasing. Notably, the paper also suggests that insufficient knowledge of behavioral decision making resulted in analysts, investors, and regulators attaching insufficient emphasis to the risks in BP's operations. The paper calls for more attention to the psychological aspects of corporate behavior by analysts, regulators, corporate managers, and academics.

Keywords: behavioral corporate finance, debiasing, ending the management illusion, analysts, financial regulation.

* We thank Ellen Jones from UBS for helping us to gain access to UBS analyst reports.

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MANAGERIAL ATTRIBUTES, INCENTIVES, AND PERFORMANCE

Jeffrey L. Coles, Zhichuan Frank Li*

W.P. Carey School of Business, Arizona State University, P.O.Box 873906, Tempe, AZ 85287-3906, USA

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This Draft: April 9, 2011**

Abstract

This paper examines the relative importance of observed and unobserved firm- and manager-specific heterogeneities in determining the primary aspects of contract design and the implications of the associated incentives for firm policy, risk, and performance. We focus on the sensitivity of managerial wealth to stock price (delta) and the sensitivity of expected managerial wealth to stock volatility (vega) for named executive officers. First, following the econometric approach of Abowd, Karmarz, and Margolis (1999), we decompose the variation in executive *incentives* into time variant and invariant firm and manager components. We find that manager fixed effects and observable firm attributes combined supply 80-90% of explained variation in managerial delta and vega. Second, accommodating unobserved firm and manager heterogeneity and controlling for matching of executives to firms alter parameter estimates and corresponding inference on observed firm and manager characteristics, most notably board independence, firm risk, and market-to-book. Third, we explore the behavioral content of the estimated executive delta and vega fixed effects. There is a strong empirical association between the executive delta and vega fixed effects and attributes of managers and firms that are seen to proxy for manager human capital and risk preference and firm marginal revenue product in application of manager skill. Moreover, larger CEO delta fixed effects are associated with higher Tobin's Q and ROA, while residual delta degrades firm performance. Larger CEO vega fixed effects are associated with riskier corporate policies, including higher R&D, lower capital expenditures, and lower fixed assets, as well as higher aggregate firm risk, while residual vega generally is not relevant. These results strongly support that managerial fixed effects capture the unobservable behavioral characteristics of the managers.

JEL Classifications: D03, G32, G34, J24, J31
Keywords: Behavioral finance; Executive compensation; Managerial incentives; Managerial ability; Risk aversion; Corporate policy; Manager fixed effects; Delta; Vega

*Corresponding author. Tel.: +1480 251 6886; fax: +1480 965 8539. E-mail address: zhichuan@asu.edu.
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DON'T LEAVE ME THAT WAY.
THE INSOLVENCY OF ESCADA AG AND BEHAVIORAL FINANCE

Steffen Meinshausen, meinshausen@bwl.tu-darmstadt.de

Dirk Schiereck, schiereck@bwl.tu-darmstadt.de

Darmstadt University of Technology

Abstract

Over the course of the first two decades since its foundation in 1976, Munich-based haute couture and prêt-à-porter fashion company Escada AG became one of the most renowned brands in the luxury fashion industry and generated almost €1bn in sales at its peak. During this period, the company also participated repeatedly in the takeover market to support its growth strategy, creating a diversified portfolio of ladies' fashion brands and product lines. While revenues grew steadily, the company's profitability eroded. Due to a series of operating and strategic deficits as well as macroeconomic crises at the beginning of the 21st century such as the SARS epidemic and the 9/11 US terrorist attacks, management agreed upon a corporate refocusing on Escada's core competencies in the luxury fashion market.

While most of the company's non-core segments were in fact subsequently divested, management for some reason adhered to its subsidiary Primera AG, the company's single most important mid-price ladies' fashion business line. Upon the decision for the refocusing strategy in fiscal year 2000/2001, Primera AG which included the four brands apriori, BiBA, cavita and Laurèl accounted for roughly one quarter of Escada's total sales. In spite of management's continuous assurance of its divesture plans for Primera, Escada invested heavily in the non-core segment and kept hold of it for almost an entire decade.

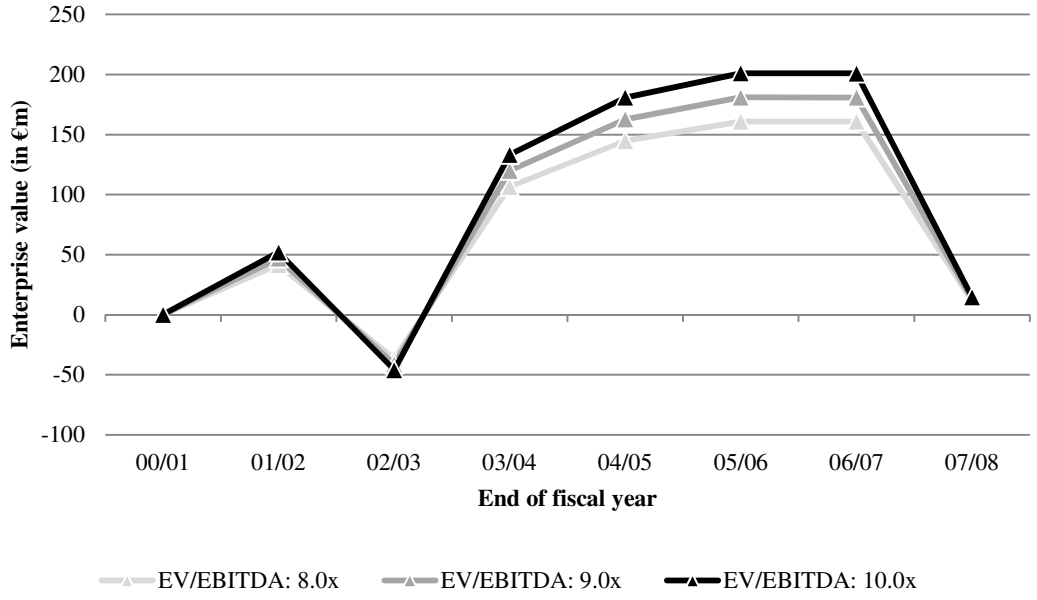

Figure 1: EV/EBITDA multiple valuation of Primera AG

The final divesture process was not initiated until the company finally faced serious financial distress at the end of 2008. The proceedings from the 2009 divestiture were estimated to be in the range of €10m. Since management realized the positive implications of a potential disposal at an early stage and broker reports consented on a lucrative value range of between €150m and €200m for the Primera segment, it is difficult to view management's behavior as an unbiased rational financial decision process. Figure 1 shows the development of Primera AG's EV/EBITDA multiple valuations that were also confirmed by broker reports from several investment banks such as UniCredit, Berenberg, Deutsche Bank and Sal. Oppenheim

To describe and understand management non-actions we refer to some insights from the behavioral finance literature. Starting with Allais (1953), various authors have pointed out the extent to which irrational behavioral patterns can influence human decision-making processes. One of these key concepts is prospect theory as depicted by Kahneman & Tversky (1979). According to their theory, individuals perceive possible outcomes of a decision problem rather as gains and losses relative to a specified reference point rather than final states of wealth.

Thaler (1980) further introduced the phenomenon of loss aversion that describes a basic human inadequacy to deal with experienced losses and the difficulty of admitting personal failures. As an important factor in decision problems, Thaler also points out the influence of sunk costs. Although sunk costs should be irrelevant in the NPV evaluation of an investment opportunity, individuals tend to value goods and services higher if there are sunk costs involved. In some cases, this pattern can lead to escalating commitment to a chosen course of action, as Brockner (1992) illustrated. This can also manifest itself in the decision not to terminate loss-bringing projects and to rather preserve the status quo (Samuelson & Zeckhauser, 1988).

All these behavioral patterns can also be observed in the context of Escada AG's belated disposal policy for their Primera subsidiary. First, we get an indication for the presence of a sunk costs effect by looking at Escada's capital expenditures. From fiscal year 2000/2001 to the first half of fiscal year 2008/2009, Escada invested a total amount of €53.6m in the Primera business, most of which was used for operating improvements and store refurbishments while the company had already decided to divest the subsidiary. Even in the six months before the Primera brands were finally divested in May and June of 2009, Escada spent another €8.7m on the subsidiary. Considering proceeds from the divestment in the amount of roughly €10m, there were basically no monetary gains from the transaction at all.

Having spent this considerable amount on the non-core segment, management continuously claimed it would sell the Primera business at an appropriate purchase price only. A statement from Escada's annual report of fiscal year 2007/2008 confirms that management adhered to its obviously overstated valuation of Primera even when first signs of the impending financial distress were already surfacing:

"If it proves to be impossible to obtain an adequate sales price in line with market conditions, the earnings situation of ESCADA Group and ESCADA AG could be further adversely affected. Alternatively, it cannot be ruled out that the Board of Management should decide not to sell the subsidiary or not at the present time." [9]

[9] ESCADA Group annual report for fiscal year 2007/2008, p. 82

In light of the high capital expenditures spent on Primera, management falsely tried to retrieve some of these sunk costs that can also be interpreted as foregone gains by charging a considerable takeover premium to a potential bidder for Primera.

Nevertheless, the amount of investments for operating improvements of the Primera business also clearly indicate that Escada management and especially founder Wolfgang Ley who had built Primera starting with acquisitions in the late 1980s were trying to achieve a successful turnaround of the non-core segment on their own. We believe that loss aversion as defined as the inadequacy to deal with personal failures as well as escalating commitment may well be two of the driving forces behind management's obviously irrational behavior in this scenario.

A quotation from Escada's annual report of fiscal year 2006/2007 further supports our hypothesis that management was still secretly hoping to be able to return the subsidiary to profitability on their own while publicly insisting on the continuance of the divestiture process:

"The PRIMERA Group will also continue its course and gradually position itself as vertical provider in the premium and mid-price segment with a strong international focus." [10]

Around the time of this announcement, broker reports consented on a valuation of between €150m to €200m for the Primera segment on a stand-alone basis. Proceeds from a divestiture in this amount would have exceeded Escada's net debt position at the time and therefore significantly helped to restructure the company's balance sheet and to refinance its outstanding long-term debt at attractive conditions. Management, however, refused to sell the subsidiary, missing what in retrospect would have been the optimal point in time for a divestment.

Given its lack of synergies with Escada's main business in the luxury fashion industry as well as its implied value range, a disposal of Primera would have been an important and rational decision to focus on its core business. Furthermore, it would have given the company sufficient financial headroom for important restructuring measures such as the implementation of new sales and distribution strategies as well as an improvement of its accessories business line. Despite the undeniable advantages of a disposal, management apparently suffered from a strong case of loss aversion and status quo bias and deferred the long-anticipated divesture of PRIMERA for almost an entire decade.

This case study represents an astonishing exemplification of the importance of psychological effects on corporate finance decisions. It shows that a company's management can get seriously entrapped with losing projects that hold a high degree of personal involvement and responsibility. In the absence of an efficient market for corporate control, these effects can lead to the deferral of project termination decisions up until the point where they seriously endanger a company's survival. With new owners and only its core brand left after emerging from bankruptcy, Escada now has the opportunity to alter its approach and to regain its position among the world's leading brands in the luxury fashion market.

[10] ESCADA Group annual report for fiscal year 2005/2006, p. 10

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CEO OVERCONFIDENCE, CORPORATE INVESTMENT ACTIVITY, AND PERFORMANCE: EVIDENCE FROM REITS

Piet Eichholtz,
Maastricht University, Netherlands

Erkan Yonder
Maastricht University, Netherlands

Preliminary draft
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Abstract
This paper investigates the effects of overconfidence on the day-to-day investment decisions of corporate professionals. The paper looks at REITs, since their investments and divestments can be identified with precision: REITs mainly purchase and sell buildings, the values of which are relatively transparent. We separately investigate property purchases and sales and relate these to overconfidence, measured by the company stock purchasing behavior of the CEO.

We find that REITs with overconfident CEOs are more likely to purchase and less likely to sell assets than their counterparts. Moreover, they have worse operating and stock performance. An extended measure of overconfidence using an interaction dummy of being a net buyer and having bad corporate performance has an even stronger association with trading activity, suggesting that REIT investments are not driven by CEOs' access to private information.

Interestingly, REITs who's CEO's do appear to have valuable private information, as suggested by the interaction between being a net buyer and having good corporate performance, are less inclined to buy properties, while they are more likely to sell.

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INFORMATION ACQUISITION, NETWORK TRANSMISSION AND ASSET PRICES

Bing Han
University of Texas at Austin

Liyan Yang
University of Toronto

Abstract

We analyze a rational expectations equilibrium model to explore the implications of information communications via social networks for financial market outcomes. When the fraction of informed traders is exogenous, increasing the connectedness of networks (more social communication) improves market efficiency. However, when information acquisition is endogenous, higher network connectedness can lead to fewer informed traders and lower market efficiency. These different implications for market efficiency in turn cause social communications to influence cost of capital, liquidity and volume in opposite ways in economies with exogenous versus endogenous information. Our model makes new testable empirical predictions.

Keywords: Social Communications, Price Informativeness, Information Acquisition, Asset Prices, Liquidity, Volume

JEL Classifications: G14, G12, G11, D82

WHO WRITES THE NEWS? CORPORATE PRESS RELEASES DURING MERGER NEGOTIATIONS

Kenneth Ahern, Denis Sosyura
University of Michigan

Abstract

Firms have an incentive to manage media coverage to influence the outcome of important corporate events. We investigate this hypothesis by studying corporate press releases during mergers. Using comprehensive data on media coverage and novel data on merger negotiations, we find that bidders in stock mergers originate substantially more news stories after the start of merger negotiations, but before the public announcement. This strategy generates a short-lived run-up in bidders' stock prices during the period when the stock exchange ratio is determined. The run-up and reversal in media coverage and stock prices cannot be explained by merger rumors, passive media management, or opportunistic merger timing. Overall, we present the first evidence on active media management in M&A.

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THE ROLE OF MEDIA IN THE CREDIT CRUNCH: THE CASE OF THE BANKING SECTOR[1]

Tomasz Piotr Wisniewski[2]
University of Leicester
School of Management
Ken Edwards Building
University Road
Leicester LE1 7RH, UK
Tel: +44 (0) 116 252 3958
E-mail: t.wisniewski@le.ac.uk

Brendan Lambe
University of Leicester
School of Management
Ken Edwards Building
University Road
Leicester LE1 7RH, UK
Tel: ++44 (0) 116 229 7420
E-mail: bjl7@le.ac.uk

Abstract

Using a Vector Autoregression framework, this paper investigates the dynamic relationship between the intensity of negative media speculation and the market performance of financial institutions. Evidence is provided that over the sub-prime crisis period pessimistic coverage Granger-caused the returns on banking indices, while causality in the opposite direction proved weaker. These findings may imply that journalists not only report on the state of economic reality, but also play an active role in creating it. Investors acting upon sentiment implicit in media reports would have been able to improve their investment performance, as measured by Sharpe ratios and Jensen's alphas.

JEL Classifications: G01, G11, G21

Keywords: *Media, Stock Market, Financial Crisis, Self-fulfilling Prophecies*

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[2] Corresponding author.

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THE LURE OF THE SLANT: ANALYST OPTIMISM AND ASSET PRICES

August 27, 2011

Craig O. Brown*

NUS Business School
National University of Singapore

Abstract

This paper studies the effect of analyst optimism on asset prices. A common measure used to study analyst influence is ex-post earnings-forecast bias, which is endogenous in a traditional pricing model. Bias not only reflects optimism, which should not affect prices if investors are rational, but conveys future information which affects prices. To identify the optimism effect, I use two instrumental variables: forecast staleness and size-adjusted analyst tenure. Analyst optimism increases with tenure because of career concerns; analyst optimism increases with forecast staleness because of the "walk-down" hypothesis. However, there should be no systematic relation between fundamental information and tenure or between fundamental information and forecast staleness. Using these instruments, I identify a conditional price response to analyst optimism. If an optimistic analyst makes an upward revision, then investors respond by paying higher prices for stocks because the analyst is optimistic (in addition to the response to favorable information). However, if an analyst makes a downward revision, then analyst optimism has no effect on prices. Investors respond to the downward revision by paying lower prices for stocks because of unfavorable information only. In addition to the short-term price impact, analyst optimism affects asset prices over a longer term. Robust to trading costs, a zero-investment analyst tenure portfolio is significantly correlated with investor sentiment and earns an average abnormal return of 69 basis points per month for stocks that are likely influenced by good news only.

Key words: Analyst Optimism, Asset Prices, Earnings-Forecast Bias, Investor Sentiment.

JEL Classification: G12 (Asset Prices), G17 (Forecasting), G29 (Financial Analysts)

* Craig O Brown, Department of Finance, NUS Business School, 15 Kent Ridge Drive, BIZ 1, #07-61 Mochtar Riady Building, Singapore 119245, Phone: +65 6516-6815, Fax: +65 6779-2083, U.S. Phone: (213) 221-3582, Email: bizcb@nus.edu.sg. I am grateful to Ivan Brick, Archishman Chakraborty, Steve Dimmock, Wei Jiang, Alexander Ljungqvist, Jeffrey Wurgler, and group participants at Baruch College, Rutgers Business School, National University of Singapore, Australian National University, George Washington University, the European Financial Management Association Conference, and the CRSP Forum for helpful comments.

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MUSIC AND THE MARKET: SONG AND STOCK VOLATILITY

Philip Z. Maymin
NYU-Polytechnic Institute
phil@maymin.com

Abstract: Popular music may presage market conditions because people contemplating complex future economic behavior prefer simpler music, and vice versa. In comparing the annual average beat variance of the songs in the US Billboard Top 100 since its inception in 1958 through 2007 to the standard deviation of returns of the S&P 500 for the same or the subsequent year, a significant negative correlation is observed. Furthermore, the beat variance appears able to predict future market volatility, producing 2.5 volatility points of profit per year on average.

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REAL OPTIONS IN THE LABORATORY: AN EXPERIMENTAL STUDY OF SEQUENTIAL INVESTMENT DECISIONS*

Ryan O. Murphy† and Simon D. Knaus‡

July 15, 2011

Abstract

We report the results from two laboratory experiments that investigate a particular class of dynamic decision problems called real options. Decision makers must often choose whether to invest valuable resources in evolving and risky environments. This class of problems are widely encountered in venture cap- ital investing, mineral and oil exploration, and corporate strategy, to highlight a few examples. In situations like these, decision makers have to choose over multiple discrete periods if it is sensible to invest resources in ongoing and dynamic prospects, and if so, how much to invest; or whether it would be better to abandon the prospect in total. Normative predictions are contrasted against behavioral results, and our findings demonstrate the negative cumulative effect of naive diversification. Individuals' choices are modeled using prospect theory and the results show the independent effects of both risk aversion and probability distortion, which each persistently undermine decision makers' performance.

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†ETH Zürich, Switzerland
‡University of St. Gallen, Switzerland

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HOW CAN BEHAVIORAL FINANCE CONTRIBUTE TO THE DEVELOPMENT OF THE SMALL BUSINESS SECTOR?

Przemysław Kulawczuk, University of Gdansk, pkl@post.pl,
Andrzej Poszewiecki, University of Gdansk, andrzej.poszewiecki@gmail.com

Abstract

Small and medium-sized enterprises (SME) in Central Eastern Europe are considered as the important development vehicle fostering the growth of national economies. Policy makers in this region emphasize on the financial support for the SME sector what results in improvement on the labor market. The problem lays in diversified effectiveness of financial aids for SME. Some financial aid offers are not utilized by SME while some are exhausted immediately, only when they are available.

An objective of the research project was to verify a set of key hypotheses that develop the present current of research and conduct it towards practical applications. The following hypotheses were verified within the research procedures:

H1. The higher awareness of benefits and costs involved in applying a financial instrument increases the propensity to use it.

H2. The trust to a provider of a proposed solution is more important than the volume of potential benefits offered by the instrument.

H3. SME have limited capacities of assessing the rationality of applying proposed solutions; therefore, they avoid taking decisions to apply an instrument.

H4. As the capacity to assess the rationality of proposed solutions by SME is limited, they tend to copy the behavior of group leaders and follow opinions of recognized authorities.

H5. The practical behavior of the SME group leaders is more important than opinions of recognized authorities.

H6. SME tend to cooperate more with other SME with regard to restrictive instruments (creating dangers) rather than stimulating ones (creating opportunities).

H7. The high financial liquidity of a business suppresses the sense of caution in the application of risky financial instruments.

To verify those hypotheses behavioral experiment was designed. The research was based on experimental simulation for 16 financial instruments, both public and commercial, among 240 businesses from the SME sector or financial officers of such enterprises from the North of Poland (Pomorskie Region). The studied group was to be divided into two sub-groups of 120 respondents each that were to be presented with about a dozen decision situations concerning the application of financial instruments offered to SME. The similarity of both groups was confirmed by passing statistical tests (Smirnov-Kolgomorov) The decision situations faced by the respondents involved: 1) accepting a proposed incentive, 2) a refusal to accept an incentive, 3) a postponement of a decision for 3 months, 4) a postponement of a decision for 6 months or 5) a postponement of a decision for one year. The study took account of the time factor, as Polish small and medium enterprises often avoid taking a decision and postpone it. For several instruments, decision situations were formulated as a trade-off issue or as the assessment of preferences (for the assessment of the tendency to cooperate in risk conditions and for positive measures).

Each of the sub-groups, although they were usually offered the same instruments, had different framing of their use. Framing means that despite the basically identical content (with several explicitly marked exceptions), the method of communicating or offering an instrument varied. The authors assumed based on conclusions of Kahneman and Tversky [1981] that the framing of the public assistance incentives or the framing of commercial financial instruments offered to SME may have a material impact on the propensity to use such financial incentives.

On the example of Poland, the paper presents the application of experimental behavioral simulations targeted at improvement of the efficiency of the financial aids, understood as the increase of propensity to apply financial developmental instruments. The solution which was adopted was changing framing design from typical unfriendly and bureaucratic approach to more positive, including for example additional training, better coaching, mentoring and alike. In the same time the size and construction of financial aid instruments remained unchanged. The experimental simulations show significant impact of framing on potential decisions of beneficiaries of the financial aid programs. This impact was not observed in all cases and its strength varied. The conducted research creates the broad perspectives for behavioral finance applications in public policy, including developmental aid.

Conclusions confirming or rejecting the hypotheses

1. The first hypothesis, namely that "the higher awareness of benefits and costs of applying a financial instrument increases the propensity to use it" has been confirmed in the studied groups with regard to most well-known financial instruments. If an instrument is not known or very little propagated (IPO) or fully accepted (subsidies for joint R&D projects with universities), the broader scope of information did not increase the tendency to use the instrument. This phenomenon may suggest that for unknown instruments a larger number of specific cases have to be financed first and only when they achieve a certain critical mass (in terms of number); the propagation of information should be focused on. Disseminating information without case studies may be ineffective.
2. The hypothesis that the trust to a provider of a proposed solution is more important than the volume of potential benefits offered by the instrument has been confirmed generally for investment credits and credit guarantees (long-term instruments). The respondents were ready to accept higher interest rates and margins provided the instrument offered them more security. This hypothesis has not been confirmed with regard to venture capitals, probably due to the low popularity of this instrument in Poland.
3. The verification of the third hypothesis proved more difficult than it seemed at first. In general, it is true that some SME cannot assess the rationality of some of the decisions and postpone taking them. However, if there are doubts concerning the rationality, the higher number of SME take negative decisions, usually immediately. If framing changes to more friendly, the number of positive decisions grows and the number of negative decisions decreases. At the same time, the ratio of persons postponing decisions in both options may be similar and in the friendly option the number of such persons may decrease slightly. Therefore, some persons always put off their decisions. The verification of this hypothesis shows a very important issue in economics, simulations and theory of games: life shows us that one may take a positive or negative decision or postpone it to never take it at all. This situation concerns up to half of respondents, depending on the question. The ones who were reluctant to take a decision are also active in business, sometimes very successfully.

4. The 4th hypothesis, namely that the capacity to assess the rationality of proposed solutions by SME is limited, therefore they tend to copy the behavior of group leaders and follow opinions of recognized authorities, has been proven in part. The authors intended to test this hypothesis on an example of an instrument of share options for personnel, which is not popular among SME. In fact, the ratio of SME ready to use this instrument increased after learning the experiences of leaders and authorities, however not to the extent that would make it a decisive factor.
5. Within the 5th hypothesis it was assumed that the practical behavior of the SME group leaders is more important than opinions of recognized authorities. This hypothesis was not confirmed with regard to public seed capital. Differences in the structure of decisions taken by respondents encouraged by known authorities and business leaders were so insignificant that this hypothesis may be rejected with regard to the studied groups.
6. Very interesting results were obtained as regards the sixth hypothesis, namely that SME tend to cooperate more with other SME in case of restrictive instruments rather than stimulating ones. This hypothesis was formulated based on observations and notions that SME are not inclined to act positively, while they are very effective in opposing bad legal regulations that violate their interests. To the contrary, the collected responses in the conditions of the experimental simulation indicate that SME declare cooperation in the conditions of fighting for positive objectives in a similar way as in counteracting bad law.
7. The seventh hypothesis was not proven. The results of the research do not give any grounds for concluding that the value of funds affected significantly the selection within investment projects in venture instruments. However, as regards enterprises with higher financial capacities, decisions on investing were taken by 7 per cent more persons in general that in the group of enterprises with lower financial capacities.

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MULTIPLAYER COORDINATION AND COMPETITION IN A VERTICALLY DIFFERENTIATED MARKET

Klaus Burgmeier
WHU – Otto Beisheim School of Management, Germany

Introduction and Fighter Brand Model by Jost (2010)

Fighter brands have become a widespread marketing strategy. Even though there is no standard definition of fighter brands, I will follow that of Ritson: "A Fighter Brand is designed to combat, and ideally eliminate, low-price competitors while protecting an organization's premium price offerings." (Ritson, 2009, 87)
Jost (2010) builds a model for analyzing fighter brands that is based on the vertical differentiation approach first established by Shaked and Sutton (1982) and creates a scenario that resembles that of Choi and Shin (1992), in which a second firm enters the market and chooses its quality while an incumbent is already offering a product in the market, but allows the incumbent to launch a fighter brand before the new competitor enters the market. The fighter brand's properties are that it has a quality and price below the original premium product. Furthermore, the newcomer has full and free access to the monopolist's technology and offers a product that has at most the same quality as the premium brand. The basic game comprises four stages and is solved using backwards induction. In stage 1 the incumbent sets the quality of the fighter brand; in stage 2 the entrant chooses his quality; in stage 3 the incumbent and entrant simultaneously set their prices. Finally, in stage 4 the consumers make their purchase decisions. Variations from the basic game are such that the decision stages are reversed and the entrant selects before the incumbent.
For the three-player-experiment, I developed a model that is similar to that of Jost (2010), but extended in that there is a second entrant in the market who acts simultaneously with the other entrant. There are several more possible scenarios, depending on where the both entrants locate. The profit-maximizing equilibrium, however, is the same as in the two-player game, yet necessitating collusion of the two entrant players.
Even though it does not play a role in the theoretical model, it is important to note that if the fighter brand has the same quality as an entrant good, severe price competition emerges. This drives the prices for both products down to the production cost, which are 0. Such an outcome is especially harmful for the entrant as his only product will not generate any profits. The incumbent, in contrast still makes profits with his premium product.

Experimental Design and Hypotheses

I developed two experiments to test whether its predictions will turn out in a laboratory setting. One experiment closely resembled the theoretical model in that each market comprised two players, one incumbent and one entrant, the other was altered so that there were three players in each market, whereby two of them were entrants. I computerized the experiment using zTree by Fischbacher (2007) and conducted them in the MaXLab at the University of Magdeburg, Germany, in December and January 2011 with 100 students of various fields.
Basically, the formulas of the models by Jost (2010) as well as Choi and Shin (1992) are the underlying theoretical foundation of the experiment. As there are two kinds of players in each

market, namely incumbents and entrants, the role of each subject was randomly assigned and remained unchanged throughout the experiment. The groups were randomly put together and were fixed throughout the experiment. I handed out a printed payoff-matrix along with the instructions to the subjects, as well as qualitative instructions.

Both experiments focused on the quality decisions, so that subjects only had to decide over this variable. The price-setting which occurs in the third stage of the game is automated and thus performed by the computer. Consequently, the consumers were as well simulated by the computer. For the final payoffs to the subjects, profits were summed up throughout the experiment and transferred from the experimental currency *Taler* to Euro.

The setting is the same for both kinds of experiments: the incumbent is on the market with a premium brand and is faced with entry from one (or two) new competitor(s) in the next period. In order to reduce the harm done by the entrant(s), he launches a new brand with a quality and price below the premium product. The decision-making is simplified such that each player only chooses the quality of his new product; the premium product's quality cannot be altered.

Each experiment was performed under two treatments, one where the incumbent chooses before the entrant(s), *IncFirst*, and one where the entrant(s) choose(s) before the incumbent, *EntFirst*. In the experiment with three players, the two entrants choose simultaneously, so that none has an advantage. As the second mover(s) gets information on the first mover(s)'s quality choice, he can base his decision on this information and optimize his payoff. After all players have made their choices, the computer calculates the profit-maximizing prices as well as the resulting demands and profits. Finally, the players receive feedback on the chosen qualities and profits within their market. At the end of each session, a post-experimental questionnaire with an open question asked the subjects for the reasons behind their choices.

Specifically, the decision situation was such that the player who decided first was only given the information that the quality of the premium product is 100%. Since the premium product's quality cannot be altered in the game, the incumbent players had only to focus on the quality of the fighter brand, which was always launched. The player whose turn followed was informed about the preceding quality choice and the information about the premium product, so that he could form his decision based on this information. For both player roles, the decision choice set was {5%, 10%,…, 90%, 95%}. In order to obtain profits larger than 1, I set $\bar{\theta}$ equal to 100, which does not change the optimal strategy choice. Since the entrant also always has significantly lower profits than the incumbent, I used two different exchange rates for translating the profits .

Following the theoretical models, hypotheses to be tested were:

Hypothesis 1: In the IncFirst treatments, the Incumbent selects a fighter brand quality of 55% while the Entrant(s) choose(s) 30%.

Hypothesis 2: In the EntFirst treatment, the Incumbent chooses the minimal fighter brand quality of 5%, while the Entrant (s) choose(s) 60%.

Hypothesis 3: Spite against entrants does not differ since subjects are concerned about fairness and inequity aversion.

Experimental Findings

Inquiring the subjects for the reasons behind their decisions in a post-experimental questionnaire, I found that while both types of subjects preferred playing a best-response strategy three out of

four treatments, the ratio decreases severely in the 3-player *EntFirst* treatment. In addition, there is a harsh drop in answers referring to fairness concerns and inequity aversion, and more incumbents state to have been pressuring the entrant with their decisions. It emerges that the two-player situation is characterized by stronger other-regarding preferences, whereas with three players, each ties to maximize the combined payoffs instead of their own.

Analyzing the experimental data, the same findings emerge. While punishment occurs very infrequently in both 2-player treatments and the 3-player *IncFirst* treatment, there is severe punishment in 3-player *EntFirst*. The incumbents exercise a *Divide-and-Conquer* strategy to keep the entrants from colluding. Such a strategy occurs when "(1) a unitary actor bargains with or competes against a set of multiple actors. (2) The unitary actor follows an intentional strategy of exploiting problems of coordination or collective action among the multiple actors."(Posner, Spier. and Vermeule, 2009, 2) The entrants react to the punishment by not colluding such that the incumbent can only set one player's profits to 0. The analysis further shows that entrants do not collude in who will take the punishment but rather pursue a strategy of underbidding the other, expecting not to offer the higher quality and be punished by the incumbent. Entrants thereby sacrifice their joint power and succumb to the incumbent, leaving them with suboptimal profits.

A reason that can explain this behavior is that with three players subjects are less certain to have fair behavior reciprocated by the adversary. With two entrants, reciprocal behavior can occur between the two entrants as well as between entrants and incumbents. As the data shows, breakdown of collusion in *EntFirst* occurs for both.

In contrast to the two-player experiment, fairness concerns are completely eradicated as no player regardless of his role talks about fairness. Also, subjects are less concerned about profit maximization, and spiteful feelings or strategies of how to avoid being punished overwhelm.

Relating to the hypotheses I found that H1 and H2 can be rejected at a significant levels between 0.005 and 0.086 (Mann-Whitney-U). For H3 it can be stated that divergent spite between the experiments is strongly significant for *EntFirst* at 0.005 (Mann-Whitney-U), for an *IncFirst*, where the incumbent does not know the entrants quality before making his choice, at 0.739.

Conclusion

In conclusion, the experiment illustrates that in a vertically differentiated market with one incumbent and one or more newly entering competitors, the competitive situation has an enormous impact on the behavior of the incumbent player. While with only one competitor, incumbents avoid cut-throat competition and include fairness concerns in their decision-making process; these feelings are overcome if there are two entrants coming into the market. In such a situation, incumbents pursue a *Divide-and-Conquer* strategy, in which fairness and collusion break down. The reason for this break-down may be that with three players subjects are less sure about the other players' behavior and thus are uncertain whether fair behavior will be reciprocated by the opponents.

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SOCIAL INTERACTION EFFECTS AND INDIVIDUAL PORTFOLIO CHOICE: EVIDENCE FROM 401(K) PENSION PLAN INVESTORS

Timothy (Jun) Lu
The Wharton School, University of Pennsylvania
junlu@wharton.upenn.edu

This paper explores whether social interactions influence investors' decisions to hold equity and allocate their portfolios, in the context of defined contribution retirement savings accounts. Using a rich dataset of 401(k) plans, we provide empirical evidence that participants are influenced by their coworkers when they make equity investment decisions. Specifically, we show that individuals are likely to increase their risky share if their peers earned higher equity returns in the past period relative to average returns; they are also likely to decrease their risky share when past peer equity returns are strongly negative. These results are consistent with the limited attention hypothesis that people are more likely to pay attention to significant outcomes.

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INFORMATION FRAMING AND RETIREMENT MANAGEMENT DECISIONS: EVIDENCE FROM A FIELD STUDY IN MEXICO*

Gabriel Lara-Ibarra†

Abstract

I analyze whether information framing related to the performance of Pension Funds Administrators affects the retirement management decisions of Mexican workers. I con- duct a survey to collect information on recommendations for Fund Administrator made by Mexican workers when faced with randomly framed scenarios. The scenarios feature framing based on choice avoidance and framing exploiting loss aversion. I find evidence that reducing the number of possible choices increases the probability that individuals choose a Fund Administrator with a higher net return or with lower fees. A "loss aver- sion" framing increases the probability that individuals choose a Fund Administrator with a higher net return. Finally, I find evidence that higher levels of financial literacy decrease the effects of framing on Fund Administrator choice.

JEL: J26, C93

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†Email: glaraibarra@impaqint.com

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STOCK MARKET RETURNS AND ANNUITIZATION: A CASE OF MYOPIC EXTRAPOLATION

Alessandro Previtero
University of Western Ontario

May, 2011

Abstract

Managing retirement wealth is one of the major financial decisions that individuals face. In this setting, I document a strong negative relationship between stock market returns and annuitization. Using a novel dataset with more than 103,000 actual payout decisions, I find that positive stock market returns decrease the likelihood of employees choosing an annuity over a lump sum, and vice versa. More precisely, only recent market performance drives annuitization with almost no weight assigned to returns two years before the decision date. Several explanations can account for these findings: wealth effects generated by movements of the stock market; endogenous timing of retirement; volatility of stock market returns and time varying risk aversion; and expectations about labor income or inflationary periods. After addressing these explanations, I present evidence consistent with employees extrapolating from recent stock market returns. I conclude showing that this myopic extrapolation - based on very recent stock market performance - can bear serious welfare consequence and significantly reduce retirement wealth if, for example, individuals annuitize too early because of a market drop.

Keywords: Household Finance, Annuities, Myopic Extrapolation, Wealth Effects

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