

# “Phenomenological research and its potential for understanding financial models”

## AUTHORS

Michael S. Wilson

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Michael S. Wilson (USA)

## Phenomenological research and its potential for understanding financial models

### Abstract

Phenomenological research while relatively unused in finance research has much to offer. When we want to seek “how” and “why” questions, we often are unfulfilled with quantitative financial models that rely on positivistic assumptions. How people understand is context bound, and this factor needs to be explored more in finance research. The financial meltdown in the United States demonstrated the need to better understand how financial managers made sense of their world. This may have provided useful information for many stakeholders, especially those who relied too heavily on “black boxes” that sought to identify law-like relationships in capital markets without recognizing the unpredictable human behavior. This paper provides a description of why the meltdown occurred, and calls for the use of increased interpretive research in understanding how finance is practiced in the area of executive compensation.

**Keywords:** phenomenological research, executive compensation, financial crisis inquiry commission, validity, modern portfolio theory, capital asset pricing model, arbitrage theory, rational choice theory.

**JEL Classification:** B10, B53.

### Introduction

Qualitative research methodologies have been marginalized in many disciplines because more traditional approaches grounded in quantitative have held center stage. A plausible explanation of qualitative methods is the commonly held perception that qualitative methods are second-rate, and lack rigor and the objectivity of the quantitative approach (Enrich, 2005). Perhaps no other academic discipline subscribes to this approach more so than finance where the milestones in the field of valuation are shaped by quantitative judgmental heuristic models that feature techniques for measuring risk and return. Esteemed economists like Robert F. Engle, a 2003 Nobel Prize winner in economics, advocate for more quantitative tracks in MBA programs that feature more statistical models as the solution (Engle & Granger, 2004).

However, the economic turmoil of 2008 is certain to spur research inquiries as to why many high risk securities were presumed to be safe. A number of popular columns have attempted to explain the failure of markets to properly price risk. Early evidence suggests financial models failed to keep pace with the explosive growth in complex securities. Other failures were recognized as human failures in the way that risk models were applied understood, and managed (Gerardi et al., 2008).

### 1. An avoidable crisis

The Financial Crisis Inquiry Commission was asked by the United States government to examine the financial and economic crisis that affected the United States and explain its causes to the American people. The conclusions of the commission included:

- ◆ The financial crisis was avoidable. The financial system and those in charge ignored warnings and failed to question, understand, and manage evolving risks.
- ◆ Widespread failures in financial regulation and supervision devastated stability in the nation’s financial markets.
- ◆ Dramatic failures of corporate governance and risk management at important financial institutions were key factors.
- ◆ A combination of excessive borrowing, risky investments, and lack of transparency put the financial system on a collision course.
- ◆ Key government policy makers including the Treasury Department, the Federal Reserve Board, and the Federal Reserve Bank of New York were ill prepared for the crisis.
- ◆ There was a systematic breakdown in accountability and ethics.
- ◆ Collapsed mortgage lending standards spread the crisis.
- ◆ Over-the-counter derivatives contributed significantly to the crisis.
- ◆ The failures of credit rating agencies were enablers of the financial meltdown.

The failures of how financial models were applied are extensive. The market for credit default swaps has been at the center of recent Wall Street banking failures. Many cite the failure of human factors in understanding the underlying financial models to accurately assess the innovation associated with credit default swaps. These instruments, originally created to insure blue-chip investors against the risk of default, were rolled out to insure all types of financial instruments, including pools of subprime mortgage securities. These unregulated obscure investments included an inherent counterparty risk that seized up during the crisis (Lohr, 2008).

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The Commission described the interpretation of computer models that contributed to 45000 mortgage related securities receiving AAA ratings. In 2006 alone, Moody's approved 30 mortgage-related securities every working day. Later over 8% were downgraded (Financial Crisis Inquiry Commission, 2011).

The users of automated computer modeling also failed to assess the lending risk on individual mortgage loans. In recent years the securitization of the mortgage market with loans sold off and mixed into large pools of mortgage securities prompted lenders to move increasingly to automated underwriting systems without regard to human judgment of scrutinizing the creditworthiness of individuals. A simplistic view of quantitative models underestimated defaults of subprime borrowers as securitization became more prevalent, and lenders had less incentive to collect important soft information. A systematic failure occurred as the creditworthiness of borrowers declined (Rajo, Seru & Vig, 2008). Other failures were noted by a recent paper by Federal Reserve economists (Gerardi et al., 2008) who found that analyst models could predict that a subprime meltdown would follow a 10-20% drop in real estate prices; however the analysts failed to recognize the probability of a drop in real estate prices. The analysts responsible for the models assumed that nominal housing prices would not decline because overall declines had not occurred in decades, yet there have been many regional declines.

Some of the practices bordered on fraud, or were outright fraud. Lots of firms were lending money to people who shouldn't have been borrowing it. A simple measure of sanity in housing prices is the ratio of median home prices to income, historically the measure is around 3 to 1. In Los Angeles, it was 10-1 and Miami it was 8.5 to 1. In Bakersfield, CA a Mexican strawberry picker with an income of \$14,000 was lent every penny to buy a house for \$720,000 (Lewis, 2008).

The heavy reliance on financial models is rooted in the physical sciences. Physics, for example, has had astonishing success at predicting the future behavior of material objects and inspired most financial modeling (Derman & Wilmott, 2009). In academia the focus is often on problems that can be solved, proved, and published. In science the models derive from particle flows which conform to the neat, crisp laws of physics (Lohr, 2008). However in the real world of finance, there are no fundamental laws, and if there were, there is no way to run repeatable experiments to verify them, suggesting a false sense of precision (Derman & Wilmott, 2009). As one quant star put it, to confuse the model with the world is to embrace a future disaster driven by the belief that humans obey mathematical rules (Lohr, 2008).

## 2. Executive compensation

The factors contributing to the financial meltdown included unresolved principle-agent problems. Compensation systems were based on beliefs that goal congruence is promoted between managers and stakeholders with incentive compensation. However, managers' ability to conceal implicit losses creates a conflict between maximizing cash flow for the firm and managers' own reputations and future job prospects, creating an incentive to conceal implicit losses (Kane, 1989).

By recognizing the inherent conflict, there has been a change in the way that executive compensation committees have been constructed recently. Legislation, regulation, and public scrutiny have created a more critical environment for these committees. The result has been a call for compensation committees to:

1. Move towards hiring independent consultants and giving the committees authority to retain, monitor, and fire consultants independent of management.
2. Mitigate risks to create incentives for employees to avoid excessive risks.
3. Promote transparency and accountability by advocating for "Say on Pay" which includes a nonbinding shareholder vote on executive compensation.
4. Benchmark pay through audits of compensation strategies on an annual basis to keep abreast of trends laws, and regulations.
5. Strike a balance between management's expectations and shareholder value to reflect recruitment and retention and to communicate company values.

The compensation committee's role has increased in complexity, and will likely increase in coming years. Compensation committees should focus on the tools they need to design and monitor effective compensation programs to fairly compensate management and protect shareholder value (Randolf-Williams, 2010)

## 3. A case for phenomenology

In the midst of these challenges, executive compensation committees could benefit by recognizing that finance is often the practice of universal laws of economics, and the Austrian School of Economics has much to offer. The central claim of Austrian Economics is the logic of human action is an immutable feature of the world, and this approach help to understand the relationship between action and results, or cause and effect relationships. The goal of this approach is to understand the world as it is.

Interpretive research has potential to become a more attractive research methodology for use in management related research. An interpretive study can be extended in different directions to meet the desire to develop deeper understanding of experiences. An interpretive design is focused on the meaning of human interactions and exploring individuals' interpretations and beliefs (Denzin & Lincoln, 1994). Phenomenological research aims to understand phenomena in their pure, pre-reflective form, and gain an in-depth understanding of the participants' experience (Courtenay, Merriam & Reeves, 1998) yielding a deeper understanding of complex phenomena within an organizational context.

Compensation committees could benefit from developing a deeper understanding of how financial models are being used by managers to enhance shareholder value and promote goal congruence. Phenomenological studies start with a question about the meaning of a phenomenon like, what is it like to use data from your model to make transactions? Typically, the experiences of a few people constitute a phenomenological inquiry (McClelland, 1995). Texts are found in diaries, journals, or other sources, or they are created from interviews, discussions, or other interactions that represent lived experiences. A dialog is created between the research and a text with the researcher seeking an authentic telling of the experiences and what they mean from the perspective of the participant. Themes are developed from the texts to express the essence of the experience being studied. Lived experiences of the research participants and research literature are woven together to express a theme. Because theme development is a subjective endeavor, bias as we understand it in empirical studies is not a concern. The strength of the argument is the basis for validity (McClelland, 1995). The first assumption related to phenomenology is that it entails turning to experience as we live it rather than as we represent it with theories. It attempts to find voices and expressions that reveal meaning that goes beyond logic, prediction, control, and cognition.

The power of this type of study would be to demonstrate how important financial theories are being adhered to, or not.

Imagine if phenomenological studies were used to investigate the lived experiences of financial analysts. An interpretive researcher with a finance background could tailor questions to inquire about probability assumptions and illusions of validity that were inherent in the models relied on during a period of irrational exuberance. The result could have been a deeper understanding of the lived experiences and answers to how these practices coincided with important financial theories.

#### 4. Theoretical financial milestones

A brief review of the major financial theories is organized into two categories to identify areas where theory and practice diverged. Important Seminal theories that attempted to explain how the overall markets operate are the foundation of finance models.

These valuation models are organized in the way in which they evolved to recognize arbitrage opportunities. Arbitrage is one of the most important fundamentals of financial models. It typically defines the process of taking advantage of a price difference between two or more markets. These seminal works are often referenced in explaining how investments are valued. The following models were summarized from the wellknown theories from the web, and are common to most introductory finance textbooks (Finance Maps of the World, 2008).

**4.1. Modern portfolio theory.** Modern portfolio theory (MPT) proposes how rational investors will use diversification to optimize their portfolios, and how a risky asset should be priced. The basic concepts of the theory are Markowitz diversification, the efficient frontier, capital asset pricing model, the alpha and beta coefficients, the capital market line and the securities market line. MPT models an asset's return as a random variable, and models a portfolio as a weighted combination of assets so that the return of a portfolio is the weighted combination of the assets' returns. Moreover, a portfolio's return is a random variable, and has an expected value and a variance. Risk, in this model, is the standard deviation of return.

**4.2. Capital asset pricing model.** The model was developed upon the earlier theory founded by Harry Markowitz known as the mean-variance portfolio theory. The capital asset pricing model (CAPM) is concerned with finding out the suitable return rate of an asset when the asset is about to become a part of an existing diversified portfolio. The capital asset pricing model is also concerned with the market risk and sensitivity of an asset's return regarding these risks. At the same time, CAPM also considers return from a particular asset that is theoretically denoted as risk free. CAPM categorizes the risk related to the portfolio in two different types, systematic risk and specific risk. The systematic risk denotes the risk factor related with holding the market portfolio because the fluctuations in the market influence the individual assets also. Unsystematic risks, or specific risk, represent the failure to diversify a portfolio. CAPM holds that all those investors who are taking systematic risks are compensated by the marketplace. On the other hand, the marketplace never

compensates those investors for taking specific risk. The prime reason behind this is that there is a certain process through which the specific risks can be minimized. A portfolio consists of different individual assets and each one of these assets implicates specific risk. By proper use of diversification the specific risks can be reduced.

**4.3. Arbitrage pricing theory.** The arbitrage pricing theory offers a testable alternative to the well-known capital asset pricing model because empirical research cast doubts on the single factor explaining returns. An important figure in this theory was Stephen A. Ross who offered a testable alternative to the well-known capital asset pricing model (CAPM) which is the basis for modern portfolio theory. Ross found at least three and probably four factors in explaining returns (Roll & Ross, 1990). The arbitrage pricing theory addresses the general theory of asset pricing. Proper asset pricing is necessary for the proper pricing of shares. The arbitrage pricing theory states that the return that is expected from a financial asset can be presented as a linear function of various theoretical market indices and macro-economic factors. An asset's return is sensitive to changes in the factors, and the sensitivity to a particular factor is represented by a coefficient.

**4.4. Rational choice theory.** Rational choice theory is used to understand the social and economic behaviors of the individuals. It is used in a number of academic subjects like Microeconomics, Political Science, Sociology and many more. The application of the term rationality varies with the subject. Many other economic theories are concerned about the mechanism of the market that enables the production and distribution of goods. But the rational choice theory is extensively used in applying the same principles that are used by other economic theories to understand interactions that include resources like prestige, time and many more. According to the rational choice theory, human beings are prompted by their own goals and preferences. Human actions are regulated primarily by the information regarding the conditions under which a particular individual is going to work and would try to achieve his or her goal. It is almost impossible for the human beings to get whatever they desire. Choice of goals along with the selection of a proper method to reach the previously set target is very important in the domain of rational choice theory. According to rational choice theory, each and every kind of social contact or social interaction is treated as a method of social exchange. If the action is economic, the term "exchange" is used to denote the exchange of certain goods and various services, but if the exchange is social, interchange of behaviors and approvals takes place. Again, to keep the social and economic

action parallel to each other, the rational choice theory considers reward and punishment as benefit and cost respectively and the theory holds that the human action is dominated by their desires of getting good rewards.

## 5. The illusion of validity

Many financial models exude confidence with little or no regard for factors that limit predictive accuracy (Behavioral Revolution, 2008). This unwarranted confidence, that is produced by a good fit between the predicted outcome and the input, information may be called the illusion of validity. There is a tendency to predict the outcome that best represents the data without regard for prior probability. The internal consistency of a pattern of inputs is a major determinant of one's confidence in predictions based on these inputs. People are more likely to express confidence in predicting stock price of a company that has consistent earnings than in predicting the stock price of a company with earnings volatility. Highly consistent patterns are most often observed when the input variables are highly redundant or correlated. Hence, people tend to have great confidence in predictions based on redundant input variables (Tversky & Kahneman, 1982). However, an elementary result in the statistics of correlation asserts that, given input variables of stated validity, a prediction based on several inputs can achieve higher accuracy when they are independent of each other than when they are redundant or correlated. Thus redundancy among inputs decreases accuracy even as it increases confidence, and people are often confident in predictions that are quite likely to be of the mark (Tversky & Kahneman, 1982). Many analysts fail to recognize the regression toward the mean that naturally occurs. Some may fail to recognize the regression to the mean where it is bound to occur. Or in some cases, they may recognize the regression but invent spurious casual explanations for it (Tversky & Kahneman, 1982).

## 6. Behavioral finance

One response to these weaknesses is to promote the concept of behavioral economics and finance, which apply scientific research on human and social, cognitive and emotional factors to better understand economic decisions and how they affect market prices, returns and the allocation of resources. The fields are primarily concerned with the bounds of rationality of economic agents. Behavioral models typically integrate insights from psychology with neo-classical economic theory. Behavioral models integrate insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty (Behavioral Revolution, 2008).

Behavior of Finance recognizes that we are influenced by others in almost every activity perhaps due to a herd instinct, or from a contagious emotional response to stressful events. The basis of this research explores whether irrational investor errors cause market mis-evaluation of assets (Hirschleifer & Teoh, 2003).

The purely rational approach to executive compensation was likely influenced by the psychology of other compensation plans. Underlying the theory of behavioral finance is the recognition that it is harder to actually make money than ivory tower theorists claim (Hirschleifer, 2001). Phenomenological research may help to recognize that there are patterns of convergent behavior and fluctuations in capital markets that do not make immediate sense in terms of traditional economic models. It appears

that rational decisions tended to converge quickly but were idiosyncratic and fragile like the theorists such as Hirschleifer and Teoh (2003) suggested, but these weaknesses in financial models were not recognized by practitioners and compensation committees.

### Conclusion

There is an important place for phenomenological and other interpretive methods of research in finance. Interpretive research in the field of finance has much to offer stakeholders interested in understanding how financial theory is practiced. A researcher with a solid understanding of key financial theories could use interpretive methods to illuminate compensation practices that are inconsistent with theory, or more importantly identify those practices that encourage inherently risky behavior.

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