

“... the theoretical firm is *entrepreneurless*...”,
William J. Baumol

Chapter 1¹

Introduction

I ran across Baumol’s famous statement as brought in above for the very first time almost 25 years ago. That thought not only stayed with me over the years, but it probably, and possibly subconsciously, might have even helped trigger the launching of the Academy of Entrepreneurial Finance three years later and the publication of the *Advances in Small Business Finance*² around the same time. So Baumol’s point was a natural opener for this section; except for the fact that given the subtitle of the book – *behavioral finance* – it needed some added element. For this, I visited NASA’s Knowledge Management site to see if I could improve upon the quotation; and there I saw Alan Kay’s “It’s the people, stupid”. But that was telling the same thing except for saying it more emphatically. Then I remembered Herbert A. Simon’s characterization of the version of economic rationality that he refers to as the Olympian model and then goes on to define it as a model that “... serves, perhaps, as a model of the mind of ..., but certainly not as a model of the mind of man”³. And that is exactly what I was looking for: economic rationality does not serve as a model of the mind of man!

Given above, there was no need to change anything; and now that we know about the theme behind the present book, let us continue with the rest of the introduction as follows.

A quick review of the literature on entrepreneurship and small and medium-sized enterprises (SMEs) reveals the existence of a relatively substantial body of knowledge on the subject matter. But a closer examination of the said literature demonstrates that a great majority of such work addresses issues that fall under the general classifications of management, strategy, and marketing; or what is collectively referred to as general entrepreneurship in the business administration discipline. Additionally, energized by Baumol’s statement just mentioned in above, attempts have been made by some economists and entrepreneurship scholars, especially over the past 20 years or so, to develop “a theory of entrepreneurship”. If and when developed, such theories should be able to explain the decision processes that are used in startup entry and exist judgments, venture investment decisions, firm growth and expansion evaluations; and at a macro level, economic development, growth, and job creation. However, “there continues to be a lack of consensus about what constitutes entrepreneurship theory and no generally accepted theory of entrepreneurship has emerged.”⁴

¹ This is chapter 1 in Yazdipour, Rassoul. ed. 2010 Forthcoming. *Advances in Entrepreneurial Finance: With Application from Behavioral Finance and Economics*. New York. Springer.

² Yazdipour. R. 1991. *Advances in Small Business Finance*. Kluwer Academic Publishers. The Netherlands.

³ Simon, Herbert A. 1983. *Reason in Human Affairs*. Stanford University Press, Stanford, CA, p. 34.

⁴ Alvarez, Sharon A. 2005. “Two Theories of Entrepreneurship: Alternative Assumptions and the Study of Entrepreneurial Action”. Max Planck Institute Discussion Papers on Entrepreneurship, Growth and Public Policy, 19, Jena, Germany. P. 2

A similar review of the literature in the field of finance depicts even a less moving picture for both academics and practitioners. This especially is not encouraging for entrepreneurs and investors because the financial side of entrepreneurship – entrepreneurial finance – deals with the “life line of a business”. Additionally, even if we consider one of the most elegant and most applied models that the standard finance theory has ever produced – the Agency Theory, and its main by-product, Financial Contracting – according to a very recent and comprehensive study, “...evidence supporting theory’s predictions is mixed and weak.”⁵

In sum, both the financial economics and the general entrepreneurship disciplines have little to say regarding the dynamics of decision making and risk taking by entrepreneurs and venture capitalists (VCs). For example, and by design, the Principal-Agent or Agency Theory can not address the venture entry/exit decisions. And as we just saw in above, entrepreneurship researchers are still discussing “what constitutes entrepreneurship theory”.

However, by building upon the new developments from the fields of cognitive psychology and neuroscience, we may be closer than ever to developing real-life risk/uncertainty models that could explain the decision processes that are used as road maps in key entrepreneurial actions. Entrepreneurial actions that require decision making under conditions of extreme risk and uncertainty; including entry/exist judgments, venture capital investment decisions, growth and expansion evaluations, economic development and job creation measures, etc. And this is exactly where the present book comes in. The volume presents the latest research and findings from the fields of finance, psychology, entrepreneurship, and neuroscience; and illustrates how such disciplines can shed new lights on the central questions in entrepreneurial finance and the related decision processes. What then follows is a brief overview of what is ahead in this volume.

Part I: The Theoretical Foundation of Entrepreneurial Finance

The chapters in the present volume are organized into three main sections. Part I contains contributions that address the theoretical foundation of entrepreneurship and entrepreneurial finance. The common thread in all five chapters in Part I is the risk and uncertainty phenomenon; as pricing of risk lies at the heart of the finance discipline, and naturally its offspring, entrepreneurial finance. Pricing of risk becomes even more of a challenge in entrepreneurial finance because the opaque nature of entrepreneurial and venture capital markets make the search for objective “information” extremely difficult, if not impossible. However, as you will see especially in chapters 2 and 4, and this may sound counter-intuitive to traditional financial economists, that type of “information” that is normally discussed and used in conjunction with Agency and Information Asymmetry models may not even be the major problem in the first place.

Chapter 2, written by this author, starts with discussing how some of the behavioral finance theories like the Prospect Theory and the Affect heuristic can be applied to the three central decision problems identified in entrepreneurial finance. In this respect, the author focuses his attention on one of the three key decision problems that has received very little to no attention at

⁵ See Bitler, M. P., Moskowitz, T. J., & Vissing-Jorgensen, A. (2009). “Why do entrepreneurs hold large ownership shares? Testing agency theory using entrepreneur effort and wealth”. Working Paper. Graduate School of Business, University of Chicago, p. 1

all in both the finance and economics literature- the actual launching of a new venture that requires two sets of decisions by both an entrepreneur and a VC. Chapter 2 then attempts to provide a risk model, though a rather preliminary one, to help better understand the elusive nature of risk and uncertainty in an entrepreneurial environment. The rationale for the work throughout chapter 2, Part I, and the whole book can be summarized in the form of the following question: If we cannot define risk and uncertainty, and consequently cannot measure it in a meaningful way, then how can we ever price it?⁶

Chapter 3 addresses the shortcomings of the Agency Theory relative to the key issues in entrepreneurial finance. By adding a cognitive perspective (a cognitive conflict) to the theory, Wirtz further extends such a theory. Specifically, he argues that Principal-Agent's incentive and monitoring solutions fall short of explaining and predicting success for the involved ventures. He introduces a new agency-related cost that is incurred as a result of the theorized cognitive conflict, the "cognitive cost", and argues that such a cost should also be factored in along with the other traditional principal-agent costs. "Such conflicts are not rooted in mutually inconsistent interests and thus cannot be tackled by the means of interest aligning alone, as the traditional agency theory would have it." Like all other contributions in this book, Wirtz's approach to making the Agency Theory and other traditional finance theories more relevant to common entrepreneurial finance problems is the type of research that our field needs more of.

Olsen's chapter 4 is truly a "game changer" especially when it comes to the analysis of risk and uncertainty - the central concern in any type of decision making and regardless of whether the underlying assets under consideration are publicly traded or privately managed. Olsen states that risk is not an evidence-based phenomenon like standard deviation, beta, or other variations thereof that can be measured and used in financial decision making⁷. Put differently, risk does not exist "out there" so that we a) observe it, b) measure and analyze it, and c) use it as an input in our calculations. Olsen specifically states that, "all risk that is acted upon must be perceived risk because perception is based upon sensory data. We can only sense the 'real world' because we have no other way of being informed."⁸ This effectively means risk is a phenomenon that is created in our psyche- the "in here" risk versus the "out there risk" phrase that at times we use in this book. Regarding entrepreneurial risk taking, Olsen states: "In entrepreneurial environments we see the full influence of the dual decision process and how it can lead to biased risk perceptions. Entrepreneurs don't appear to have significantly higher risk tolerance, they just judge the perceived risks to be less threatening."

⁶ Needless to say that we may never be able to completely measure risk especially in entrepreneurial environments. However, with our newly found knowledge from the fields of psychology and neuroscience, we should be able to increase our understanding of the risk phenomenon and consequently improve our decision making processes. This follows the line of reasoning that "understanding the problem is half of the solution."! And as you will further see especially in 4 by Olsen, although we now have identified the two main sources of risk/uncertainty – the "real world" where actual transactions take place, and our psyche which defines our "real world" where different people have different pictures of their "real world" – we still are at the start of the road in making risk operational. And by the way, this is where the real opportunity is for all types of future research and experimentation.

⁷ Needless to say that the standard finance theory definitions of risk have no relevance at all to a great majority of entrepreneurial finance problems where there is little or no historical data "out there" to be measured in the first place! For example, in case of startups almost all the data are projected data and are contained in a highly guarded business plan, if such a business plan exists at all. In places like Silicon Valley it is not unusual to hear that the back of a napkin being used as the initial business plan for an actual launch.

⁸ See chapter 4, Olsen.

Although the truth about risk most probably lies somewhere between “in here” (our psyche) and ‘other there’ (“the real world”), but Olsen’s well documented and precedence-setting contribution has not only catapulted discussions on risk to a new level, but it has also created a fresh research environment in which more realistic risk models can be conceived, developed, and tested. My rather preliminary attempt in chapter 2 represents one such example.

Contributions of neuroscience to financial decision making, with direct implications for new research in entrepreneurial finance, is the subject of chapter 5 by Konopka and Ackley. In this chapter, authors address key questions like: What is the nature of decision-making? How does the brain generate choice outputs? What are the inputs? What are the throughputs? How are decisions rendered? Moreover, the significance of chapter 5 lies in the fact that it directly examines the two related issues of decision making and information processing in the brain. As the authors show, the brain operates at two different levels- the unconscious level and the conscious level. Although each brain pays attention to different types of information, but they both work in tandem to attend to different decision problems.

More importantly, “Applied neuroscience studies have identified a more elemental process which identifies the affective process where intuition is dominant.” This finding validates the important role that heuristics (mental short cuts) play in complex decision environments. A key conclusion of the chapter is that “due to the existence of the dopaminergic system and the working of the dopamine neurons that give rise to reward prediction errors, different individuals like entrepreneurs and venture capitalists may perceive risk and uncertainty differently.” Findings like these are certainly critical to our better understanding of the *real sources of risk* and consequently, our ability to better manage them.

Chapter 6 by Neace discusses decision making under conditions of uncertainty from a rather new perspective. By building upon the extant literature on risk, probability judgment, and choice, the chapter first identifies three main sources of uncertainty. They are, a) incomplete information, b) Inadequate understanding of the situation under consideration, and c) undifferentiated (or undifferentiable) alternatives due to the complexity surrounding a given decision problem. Needless to say that all these three sources are present in almost all entrepreneurial endeavors.

The author then continues with proposing a “psychological discomfort” model to study risk and uncertainty. Neace hypothesizes that “uncertainty under any conceptualization has the potential to create a state of ‘psychological discomfort’, and it is the need to reduce such discomfort that motivates the decision maker to move forward in the decision making process.” Interestingly enough and from a neuroscientific perspective, Konopka and Ackley arrive at a similar hypothesis in chapter 5.

Part II: Issues in Financing Startups and SMEs

The first paper in this section is written by Dunkelberg and Scott and it focuses on the extent to which the landscape of SME financing has changed over the past 20 years. The chapter also offers a summary of the current state of knowledge about small firm financing. More importantly, by analyzing data from some of the key data sets in the US – including National

Federation of Business' Small Business Economic Trends Survey, the Kauffman Firm Survey and Panel Study of Entrepreneurial Dynamics, and the Board of Governor's Survey of Small Firm Finances – the authors examine some of the most important concerns in small firm financing. Such concerns include a) small firm credit availability, b) the effect of bank consolidation and changes in market structure on small firm access to credit, c) the role of market structure on availability and pricing of small firm loans, and d) the unique role of community banks in facilitating small firm finance. Of particular importance are the results of two 2008/2009 surveys that contradict the conventional wisdom that a pervasive small business credit access problem exists in the U.S.

As we saw in our brief discussion earlier in this introduction, pricing risk lies at the heart of every financial decision; including those by entrepreneurs and venture capitalists. Also as we alluded to in above, and will see in much detail in part I of this volume, individuals use a set of heuristics (simple rules, mental short cuts) to make judgment in complex and uncertain situations. However, although heuristics can simplify decision problems and speed up decision making processes, but they can also lead to biases and errors in judgment. Consequently, knowledge about such biases, along with the ability to minimize their negative effects, becomes very valuable to every decision maker. By studying real-life decision making by a group of CME traders who specialize in agricultural contracts and risk their own capital, Mattos and Garcia provide a rather unique test of the Prospect Theory and its application to individual decision making. The experiment is unique because through their test they are able to measure the degree to which behavior can change in the presence of probability weighting- a process of Prospect Theory's evaluation mechanism. This is important because probability weighting is a decision point where all types of biases can enter the evaluation and judgment process.

Mattos and Garcia's contribution in chapter 8 results in three findings. First, the decision makers, in this case entrepreneurs/traders, exhibit probability weighting in their judgments. This is important because it support's Prospect Theory's premises regarding individual decision making. Second, probability weighting has substantial effect on behavior; another support for the theory. Third, and this is a major characteristic of entrepreneurs, risk-averse and risk-seeking behavior is more intense under conditions of uncertainty.

The last chapter in this section, chapter 9, an empirical contribution by Shefrin, provides new insights into the psychological profiles of entrepreneurs. The motivation behind Shefrin's work can be summarized in the form of the following question. If entrepreneurs earn suboptimal risk-adjusted returns – working more and earning less than non-entrepreneurs as documented by prior research – then why people chose to become entrepreneurs? This question is an important one for at least two main reasons. First, if a VC knows the true motivation(s) behind a given entrepreneur's business plan, then the decision making process for the VC becomes much simpler as a careful screening of funding applicants will eliminate the less serious (life style) entrepreneurs.⁹ Second and by the same token, if an entrepreneur knows about her own true motivation(s) behind the launching of a given venture, then she might be able to become more cognizant of the choices and resources available to her and consequently make more effective decisions.

⁹ This may sound like the traditional finance's Signaling Theory, but the root causes in the present work are psychological.

By analyzing the data obtained from responses to four sets of carefully selected psychological surveys, Shefrin concludes that “Taken together, these findings suggest that the non-pecuniary benefits that entrepreneurs experience are substantial.” Achieving greater control over their working environments is one such benefit for entrepreneurs that Shefrin discusses in the chapter.

Part III: Issues in Growth and Beyond

Chapter 10 by Constand and Yazdipour on firm failure has three distinct parts. First, the authors make a convincing argument that the literature on financial distress and failure prediction has totally ignored the *cause* of failure, the managers and owner-managers, and instead has almost exclusively focused on the *effect* of failure, the financial data. This is true for both large and small firms. Second, the authors conduct a comprehensive review of the literature on the topic, as well as the statistical tools that range from MDA and LOGIT and PROBIT models to even more sophisticated Artificial Intelligence (AI) and Expert Systems (ES) approaches. Not surprisingly, such review reveals that very little work has been done with SMEs in mind. Furthermore, the authors conclude that “it should be noted that despite all the sophisticated models and methodologies used in studies of the effects of firm failure, it is not surprising that a comprehensive review of the related literature concludes that after 35 years of academic research into bankruptcy prediction, there is ‘no academic consensus as to the most useful method for predicting corporate bankruptcy’”. Third, chapter 10 argues that especially in the case of entrepreneurial companies and SMEs, failure researchers need to focus their attention on the decision maker, the entrepreneur and/or the manager, in addition to the financial data. “Zeroing in on the commerce (effect) side of failure, as has been the case for almost all the research up to this point, only reveals to us a half-image of the foundation of the firm under consideration. To see the whole foundation we must also consider information about the decision maker and especially her/his predisposition toward the known heuristics.”

After briefly reviewing the foundation of risk and uncertainty and discussing the evolutionary aspects of psychology, Sewell in chapter 10 details five key psychological phenomena that can lead to cognitive biases and error in judgment. They are: Overconfidence and Optimism, Representativeness, Availability, Under- and Over-Reaction, and Herding. He then discusses the effect of cognitive biases on both entrepreneurs and venture capitalists. Almost all of the five sets of biases listed and discussed play key roles in success or failure of especially entrepreneurs. Sewell concludes that “success of both entrepreneurs and VCs will likely depend on the degree to which their probabilistic reasoning is calibrated and the degree to which their decision making is consistent with the normative expected utility theory.”

Finally, statistical databases for research on the financing of SMEs is the subject of Ou’s contribution in chapter 12. Availability of dependable data continues to be a major problem in entrepreneurial finance research; and here lies the importance of chapter 12. Ou discusses all the major U.S. databases that can be used for entrepreneurial finance research. He also provides additional comments on the strengths and/or weaknesses of each of the six major databases detailed in the chapter.

Included in chapter 12 are, The Kauffman Firm Survey (KFS), Panel Study of Entrepreneurial Dynamics (PSED II), and Survey of Business Owners (SBO) 2002. Moreover, detailed information is provided in the chapter on the Survey of Small Business Finances (NSSBF, 1987 and 1993 and SSBF, 1998), Loans to small businesses by depository institutions, Consumer Finance Survey (by the Board of Governors of the Federal Reserve System), Tax return data from the Statistics of Income (SOI) division of the Internal Revenue Service (IRS), and The National Federation of Independent Business (NFIB) studies of Credit, Banks, and Small Business, a survey of a special group of small firms—the members of the NFIB.

At the end, and before we proceed to the rest of the book, I have to say that although the focus of the present volume is on the financial aspects of the entrepreneurial companies, but one can easily extend the discussions presented especially in Part I to larger business entities and even the publicly traded companies. This should come natural because regardless of the size of a given firm, the decision makers are *individuals* with “... *a bunch of emotions, prejudices, and twitches... (who) do not necessarily have a complete portrait of themselves, warts and all, in their own mind, but they do have the ability to stop abruptly when their intuition and what is happening Out There are suddenly out of kilter.*”¹⁰

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¹⁰ Adam Smith, *The Money Game*- as quoted in “Psychological Study of Human Judgment”, Journal of Finance, Paul Slovic, Vol. 27, No. 4, (Sep 1972), pp. 779-799.