Exploratory Note 3
Risk Preferences, Rational Economic Man, and the Behavioral Alternative

INTRODUCTION

In this second exploratory note of the evening, we shift our focus away from thinking about the sources and discovery of entrepreneurial opportunities towards trying to understand the mindset(s) of those who pursue them. Beginning with an overview of risk tolerance, the note proceeds to discuss the assumption of rationality, and its implications, in the context of financial markets before laying out a behavioral alternative rooted in the findings of psychology and sociology.

RISK PREFERENCES

The history of rates of return on various asset classes, as well as numerous empirical studies, leaves no doubt that risky investments command a risk premium in the marketplace. But, do all participants view risk the same way? Probably not. Consider three possibilities:

Risk Averse

Risk averse market participants reject investment portfolios which are fair games or worse—they are only willing to consider risk-free or speculative prospects with positive risk premia.

What is a fair game (in a mathematical sense)?

Risk Neutral

Risk neutral market participants judge risky prospects solely by their expected rates of return—the level of risk is irrelevant meaning that there is no penalty for risk.

Does this match the mindset of anyone in this room? In all likelihood, it does—though you may not realize it right now.

Risk Loving

Risk loving market participants are happy to engage in both fair games and gambles—they adjust expected returns *upwards* to take into account the "fun" of confronting the prospect's risk.

Risk lovers may be described as reckless and rash, but they certainly exist in the world. Does this match anyone's mindset in this classroom?

Since entrepreneurs overwhelmingly fail in their endeavors (which more often than not represent their primary, ill-diversified investment), are they necessarily more risk loving? Paradoxically, the answer to this question seems to be no. Studies have shown that entrepreneurs are no more tolerant of risk than other market participants.

HOMO ECONOMICUS – RATIONAL ECONOMIC MAN AND THE IMPLICATIONS (IN FINANCE)

Interestingly enough, the core of mainstream economic theory has very little to say about different risk tolerances. Why? Participants are assumed to be rational, self-interested, utility-maximizers—as such, all are assumed to be risk-averse. In finance, this assumption, along with several others to be discussed below, leads us to the efficient markets hypothesis (EMH)—an equilibrium condition which serves as a major foundation for financial thought.

The Efficient Markets Hypothesis

Now, in order to understand the EMH, it is imperative that you understand what constitutes a perfectly efficient financial market. What is a general definition?

What does this mean, on average, for market participants?

Does this hypothesis make intuitive sense? Which elements of the capital markets provide causal mechanisms?

What role, if any, does competition play in the EMH?

Cherry-Picking the Empirical Record – Speculative Events (Or Bubbles)

The empirical record when it comes to the EMH is extensive and much of it is quite supportive; however, there are some glaring issues—speculative events or bubbles chief among them. *Theoretically* speaking, what is a speculative event (or bubble)? Why do I include the word *theoretically* in my previous question?

In an efficient market, is it possible for speculative bubbles to appear?

What are some examples of historical (or current) market systems which could potentially be labeled speculative bubbles?

Roaring Twenties Stock Market of 1926-9

What can you tell me about the supposed speculative bubble of the mid- to late-1920s in the US equity markets?

Consider the following table:

Security	*High Price September 3 1929**	*Low Price November 13 1929*	*Low Price for Year 1932*
American Telephone & Telegraph	304	197¾	70¾
Bethlehem Steel	140⅜	78¼	7¼
General Electric	396¼	168⅛	8½
Montgomery Ward	137⅞	49¼	3½
National Cash Register	127½	59	6¼
Radio Corporation of America	101	28	2½

*Adjusted for stock splits and the value of rights received subsequent to September 3, 1929.

Describe the macroeconomic conditions over the summer leading up to the stock market crash in October of 1929. What was going on outside of the equity markets?

Did the equity markets lead the economic collapse or did they follow? Is this normal?

In October and November of 1929, stocks in the US bottomed out and slowly recovered over the course of the next decade. Is this statement true or false?

Is there a rational explanation for the behavior of stock prices during this period?

The Conglomerate Boom of the 1960s

What can you tell me about the conglomerate era of the 1960s?

Consider the chart on the following page to understand the mathematics underlying conglomerate earnings growth:

	Company	Earnings Level	Number of Shares Outstanding	Earnings per Share	Price-Earnings Multiple	Price
Before merger 1965	Able	$1,000,000	200,000	$ 5.00	20	$100
	Baker	1,000,000	200,000	5.00	10	50
After first merger 1966	Synergon (Able and Baker combined)	2,000,000	333,333*	6.00	20	120
	Charlie	1,000,000	100,000	10.00	10	100
After second merger 1967	Synergon (Able, Baker, and Charlie combined)	3,000,000	433,333†	6.92	20	138.4

*The 200,000 original shares of Able plus an extra 133,333, which get printed up to be exchanged for Baker's 200,000 shares according to the terms of the merger.

†The 333,333 shares of Synergon plus the extra 100,000 shares printed up to exchange for Charlie's shares.

In 1968, the conglomerates rapidly lost about 40% of their value across-the-board when Litton Industries failed to achieve expected levels of earnings growth. There was a feeble recovery over the coming years; however, conglomerates never again returned to such levels. Further, beginning in the 1980s, deconglomeration became the norm. Can anyone tell me about this?

The Nifty Fifty of the 1970s

Can anyone describe the nifty fifty to me? Why would investments in such stocks make sense to money managers?

Consider the following figure:

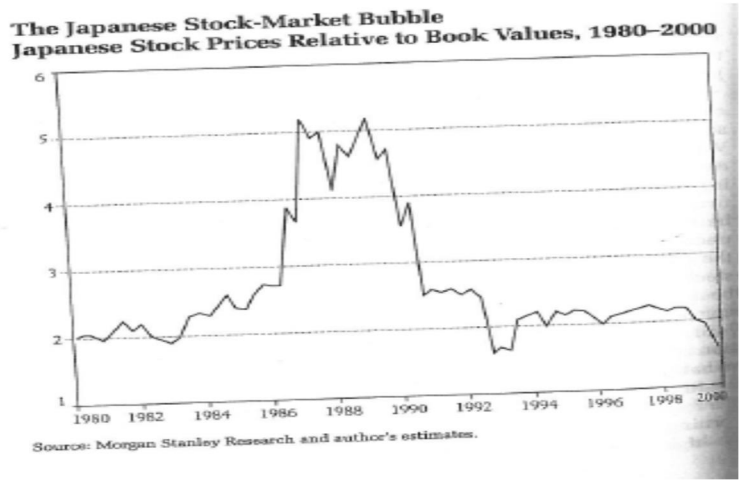
curity	Price-Earnings Multiple 1972	Price-Earnings Multiple 1980
ny	92	17
laroid	90	16
:Donald's	83	9
l. Flavors	81	12
lt Disney	76	11
wlett-Packard	65	18

Any rational explanation for this?

The Japanese Asset Bubble

What can you tell me about this?

Consider the following chart:

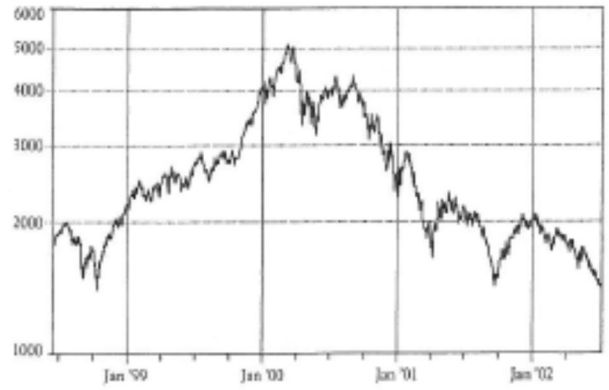


Any rational explanation for this?

The US Dotcom Bubble of 1995-2000

We have chatted about this before, but the dotcom bubble is always worth another look. Consider the chart on the following page:

DAQ Composite Stock Index
1999–July 2002



Further:

How Even the Leading New Economy Stocks Ruined Investors

Stock	*High 2000*	*Low 2001–2002*	*Percentage Decline*
Amazon.com	75.25	5.51	92.7
Cisco Systems	82.00	8.12	90.1
Corning	113.33	1.10	99.0
JDS Uniphase	297.34	1.58	99.5
Lucent Technologies	74.93	.55	99.3
Nortel Networks	143.62	.43	99.7
Priceline.com	165.00	1.05	99.4
Yahoo.com	238.50	8.45	96.4

Any rational explanation for what happened?

THE BEHAVIORAL ALTERNATIVE

It seems fair to say that, at the very least, market participants sometimes act irrationally. This creates an opening for an alternative framework such as behavioral finance. Leveraging the tools and insights of psychology and sociology, behavioralist researchers have been making material contributions to our understanding of finance for more than thirty years.

Biases

Excessive optimism –

Overconfidence –

Confirmation Bias –

Illusion of Control –

Heuristics

Representativeness –

Availability –

Anchoring and Adjustment –

Affect Heuristic –

Framing Effects

Attitudes toward Risk and Loss –

Aversion to a Sure Loss –

Narrow Framing Bias –

Impact on Corporate-Level Financial Decision-Making

So, how can these behavioral issues affect financial decision-making at the firm level? Let us consider two particular areas: capital budgeting and mergers and acquisitions (M&A).

Capital Budgeting

What is capital budgeting? Traditionally, how are we supposed to go about handling capital budget decision-making? Should emotions play a role? Do emotions play a role?

In reality, decision-makers frequently make capital budgeting decisions which "feel right"—oftentimes in the absence of information of the presence of concerning information. An interesting example comes from the experiences of Motorola and their multi-billion dollar flop, Iridium. Can anyone tell me about Iridium?

Many capital budgeting mistakes come from excessive optimism. A study produced many decades ago found that the military had historically made the following errors: missiles (4.9x in terms of actual costs relative to forecasted costs), bombers (3.0), and fighter planes (1.7). This shouldn't be too much of a surprise given that governments seem to thrive on wasting money, but similar findings exist for the private-sector. Studies have found, for instance, that nearly 50% of projects come in over budget. How might decision-makers overcome these issues?

Decision-makers also have a heck of a time killing a project that is clearly dead to a rational mind. Sunk costs are supposed to be ignored. Why is this?

What causes people to dig in and continue to plow money (called "escalation of commitment") into projects that just don't make any sense at all? Does visibility matter? Regret?

Mergers and Acquisitions (M&A)

The mergers and acquisitions literature has yielded some very interesting findings. Among them, the finding that decision-makers have a tendency to overpay when other firms are acquired is most striking. It is referred to as the winner's curse. Why might it happen?

An interesting case is the acquisition of Cerent Corp. by Cisco. Cisco ($225 billion market cap) offered $6.9 billion in stock for Cerent. At the time, Cerent was pondering a modest $100 million IPO, had 300 employees, and had never turned a profit. In other words, it was essentially a start-up. A more recent example would be Facebook's $1 billion acquisition of Instagram (a year-and-a-half old firm with thirteen employees) in 2012. Or its $3 billion *rejected* offer for Snapchat not too long ago (at the time, Snapchat was about a year old, had only a handful of employees, and had no revenue streams). Then again, as time has gone on, this latter offer has appeared to be more reasonable as Snapchat's successes have begun to pile up.

Drawing Conclusions for the Entrepreneur

What can entrepreneurs learn from all of this?

CONCLUSION

People are clearly different. We do not perceive all of the same opportunities. We certainly do not all view risk the same way. It seems fair to suggest that we all, at least to some extent, suffer from biases, have a penchant for relying on heuristics, and frame things in ways that are counterproductive. Understanding our limitations allows for better decision-making—and this is critical for entrepreneurs.

NEXT WEEK

When we meet next Tuesday, we will shift focus—though many of the issues raised tonight are likely to come up again—to founders' dilemmas, agency theory, and the matter of shareholder primacy.