FALL 2016 SEMINAR PROGRAM

Fairmont Scottsdale Princess, Scottsdale Arizona
Sunday, October 9, 2016 – Wednesday, October 12, 2016

50 YEARS OF Q:

BUT NOW, LOOKING FORWARD, PART II

"The Q-Group" ®

THE INSTITUTE FOR QUANTITATIVE RESEARCH IN FINANCE®

www.q-group.org

Dear Q-Group members and friends;

Included in this **Participants' Perspective** are tributes to Jack Treynor and Dale Berman for their years of contribution to the Q-Group

The objective **Participants' Perspective** is to put forward an impression of what the speaker said that has relevance to the average participant in the audience. The focus is on [1] practical significance to practitioners; [2] appropriateness and rigor of quantitative methods; and [3] novelty of results.

Participants' Perspective is not a formal academic review, and serves several objectives:

- Please note that these are audience-level impressions, based on discussions and notes made during the presentation. This is not written from the author's perspective, but from that of the practitioner: how can this help to deepen my appreciation for the subtleties of my profession?

- The reviews are fit into a framework, which encompasses the perspectives of Q-Group members: Importance, Investigation, Innovation, and Insights. This framework focuses on what the audience should expect from an interesting and well-delivered presentation.

- Brevity rules: one page max. In today's busy world, we all need to zero in on important information and go past that which is less relevant.

- One key goal is rapid distribution: for these Perspectives to be available within days of the end of the session, and to provide a quick view accessible to busy readers.

- Q needs to reach out beyond the seminar attendees, particularly to:
    - The organizations that generously fund the Q-Group through their participation.
    - Those who might like to attend but can't for various reasons, especially those who might wish to become Q-Group members.

- Please differentiate between these impressions and the fine work of David Modest and Russ Wermers with the program summaries. If what you read here intrigues you, go first to their finely crafted synopses, and then go on to the slides and papers which are readily available on Q-Group.org. In fact, the whole goal here is to encourage the reader to delve deeper into subjects they find interesting.

A THANK YOU TO DALE BERMAN FOR 50 YEARS OF SERVICE TO THE Q-GROUP

If it weren't for Dale, there would be no Q-Group. Dale has shepherded the Q-Group for five decades. He has organized the seminar facilities, negotiated venues, maintained and safeguarded the vital information, and taken care of the accounting, budgeting, legal and copyright issues.

Here's an example of Dale's attention to detail. As the seminar room was being set up yesterday, I chatted with the Fairmont Events Coordinator. I asked how it was to work with Dale. She replied "Oh, he's easy to work with; he knows exactly what he wants." That is a very good description of Dale's attention to detail. He even adjusts the table locations so that everyone has the best view of the speaker.

Have you ever been to a play where everything, the lighting, the sound, the placement, the performers, etc. was perfectly coordinated? Behind the scene there was a busted chair, a torn costume and a burned out spotlight. That's the role Dale has played for Q; in the background, making everything work well.

50 years is a long time; it is possible, and probably likely, that a grandchild of an early member could soon join the group! Here are some special times I remember:

- In the early '70's I introduced the index fund to the Q-Group. There were 14 in the audience. Compare that to now.
- Somewhere around the late '80's, in New Orleans, participation was declining and a vote was taken to disband. Fortunately for us today, it was voted down.
- One of the greatest moments was the day Bill Sharpe won the Nobel prize. I've never heard a longer applause. Dale wanted champagne, but the hotel only had four bottles. Dale went around to all the early-morning liquor stores in Tuscon to gather enough!

And at his side was his wonderful wife Allison, helping the setup, organizing the spouses group, and making everyone feel they belonged.

So thank you Dale, from all of us. Without you there would never have been a Q-Group. Today it is vibrant and growing, fulfilling its goals of joining practitioners and academics, as well as job seekers and talent seekers, to forge better solutions for the investing public.

W. Wagner

JACK TREYNOR: A RETROSPECTIVE AND REMEMBERANCE

Speakers: **Steve Brown, Brett Hammond, Larry Harris, Mark Kritzman, Marty Leibowitz, Krishna Ramaswami, Joanne Hill**

All of the speakers presented personal "Jack" stories, and described Jack's contributions to the theory and practice of investing. Importantly, they also described his many contributions to Q.

Contributions to Practice

- Presented 25 papers at Q-Group seminars
- As long-time editor of the Financial Analysts Journal, Jack provided a bridge between the academic and applied worlds. He set the direction of the Journal, moving it from traditional security analysis to the institution is it today.
- Jack was able to articulate practical implementation of ideas. He occupied the space where the academic and practical worlds overlap.

Descriptions of Jack

- A gentleman in every sense of the world: responsible, modest, and open minded
- Seeker of deeper truths
- Synthesized ideas
- Curious
- Independent

Jack's charge to the Q-Group:

"Too much erudition rather than discovery minimizes risk of accepting false ideas

- Adopt problem solving culture
- Pick up pace of innovation
- Practitioners are closest to the problem.

Title: **RETIREMENT INCOME PRODUCTS & SERVICES - A WISH LIST**

Speaker: **WILLIAM F. SHARPE**
Professor Emeritis, Stanford University

Importance: Why this matters:

Many pressing needs of present and future retirees are poorly served by the available choices. In addition they are poorly equipped to make rational choices. His wish list includes:

1. Real return, zero coupon TIPS;
2. More TIPS maturities, especially on the long end;
3. A world Bond/Stock portfolio, run at low expense ratio;
4. Sustainable Social Security;
5. "M-shares" with properties of zero default and counterparty risk, low cost, that can be used to provide any desired market-based strategies and annuity payments;
6. "Lockbox " annuities: that pay off with a single payment at a pre-specified time;
7. "Tontine" annuities that allow (surviving) policy share holders to be rewarded for bearing actuarial table risk (by living longer!)

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

Sharpe is working on a scenario-based analysis involving a very large number of scenarios embodying different clients personal states, market scenarios and effects of retirement income sources from Social Security, annuities and spending from investments.

Innovation: Are there new techniques of interest in the data or approach to the problem?

Animated scenario videos are something that Sharpe has used successfully before. Here he expands the scope with goal of valuing anything, including multitudinous combinations, constrained only within a state of equilibrium conditions.

Insights: 1-2-3, what are the three most important things the speaker offered?

1. For every horizon, a market portfolio of tradable bonds and stocks is efficient
2. Rather than solving a one period Markowitz problem, Sharpe applies a multi period Arrow Debreu multi period state preference formulation.
3. See Sharpe's wish list above.

Audience rating: 3.97

Title: **DOES HIKING DAMAGE YOUR WEALTH?**

Speaker: **ELROY DIMSON**
London Business School, Emeritus

Importance: Why this matters:

There are investment professionals today with eight years of experience who have never encountered the problems associated with an interest rate "hike." Dimson uses his extensive database to trace what what has happened when rates have been hiked from 1900 to the present.

He furthers his analysis to study what happens to asset values through "cycles" of tightening and easing interest cycles by the US Federal Reserve Bank and the Bank of England

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

Dimson analyzes return patterns for major asset classes (equities, bonds, and currencies) for the USA and the UK, and 21 other countries.

Innovation: Are there new techniques of interest in the data or approach to the problem?

A fairly straightforward analysis of business cycles, although defining a "cycle" suffers from the usual vagueries of classification. The value-added comes from the long history of economic data.

Insights: 1-2-3, what are the three most important things the speaker offered?

1. On average, investors correctly anticipate interest rate changes.
2. Low returns are, of course, a global challenge. To raise expected returns, investors typically have to take more risk.
3. Long term investors should stress diversification and plan for lower returns in the future. Consideration of *time* in the market is more important than *timing* the market.

Audience rating: 3.92

Title: **UNDERSTANDING VOLATILITY RISK**

Speaker: **JOHN CAMPBELL**
Harvard University

Importance: Why this matters:

Campbell views volatility risk from the perspective of the long term investor, one who values adequate consumption over final wealth. This is particularly pertinent in today's world of near-zero yields and high, unstable volatility. Long term investors must plan for the inevitable fluctuation of investment opportunities.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

Author uses CRISP data from 1931 to 2011, and estimates his three betas (long term sensitivities) using Expected Market Return Variance, Normalized Earnings Data, Treasury Term Yield Spreads, Small Stock Value Spreads and Bond Default Spreads

Innovation: Are there new techniques of interest in the data or approach to the problem?

Campbell determines long-term sensitivity risks to three betas:

1. Beta with respect to discount-rate shocks
2. Beta with respect to cash-flow shocks
3. Beta with respect to variance shocks

Insights: 1-2-3, what are the three most important things the speaker offered?

- Many anomalies in the equity market look smaller from the point of view of a conservative long-term investor who wants to hedge volatility.
- Volatility hedging also helps explain the high returns to the carry trade. Not very helpful in explaining high returns of short term option writing.

Audience rating: 4.13

Title: **A PROTOCOL FOR FACTOR IDENTIFICATION**

Speaker: **RICHARD ROLL**
California Institute of Technology

Importance: Why this matters:
There has been tremendous growth of factor-based investing, but there is little agreement on the identify of priced factors. Roll outlines how to identify "true" factors from the list of 300+ discussed in academic literature, and differentiates priced risk factors from anomalies.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."
Roll's process for factor identification incorporate higher level econometrics, but the process can be shown as having four steps. He focused on U.S. equities, but the approach can be applied to other countries and asset classes.

1. Identify largest eigenvectors from covariance matrix using 1100 equities with minimal leverage
2. Select a list of potential factors and develop related return series
3. Compute canconical correlations between eigenvectors and factor candidates
4. Examine candidate factors to see if they are statistically related to eigenvectors.

Innovations: Are there new techniques of interest in the data or approach to the problem?

1. Roll developed a procedure using Principle Components Analysis (PCA) to identify priced risk factors, and differentiate them from anomalies.
2. He also developed an approach splitting the data into three subsets to produce unbiased estimates of risk and risk-premia.

Insights: 1-2-3, what are the three most important things the speaker offered?

4. Stock characteristics are not the same as risk factors. Factor returns should not be easily predictable. Characteristics may be related to mean returns because they align with factor loadings or arbitrage opportunities (anomalies)
5. Risk factors must be related to the principle components of the covariance matrix.
6. Rejected factors with non-zero mean returns suggest an anomaly, because the related risk can be diversified away.

Audience rating: 4.19

Title: **SHARPENING YOUR FORECASTING SKILLS**

Dinner Speaker: **MICHAEL J. MAUBOUSSIN**
Credit Suisse, Global Financial Strategies

Importance: Why this matters:
All of our investment processes and decisions are based on forecasts. Maubossin and others have demonstrated that most individuals are poor forecasts, yet they are overconfident in their forecasting ability. He discussed ways to improve and debias our forecasts.

"many pundits were hard pressed to do better than chance, were overconfident, and were reluctant to change their minds in response to new evidence."

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."
Mauboussin discussed the characteristics of superforecasters, and how to develop better forecasters. The dimensions include:

3. Personality: actively open minded, probabilistic, thoughtful updaters
4. Teams: Psychological safety, dependability, structure and clarity, meaning, and impact.

Innovations: Are there new techniques of interest in the data or approach to the problem?

1. De-biasing training
2. Superior forecasts require proper calibration and incorporating level of conviction.

Insights: 1-2-3, what are the three most important things the speaker offered?

1. "Beliefs are hypotheses to be tested, not treasures to be protected."
2. Foresight is a real and measurable skill.
3. Superforecasters are actively-open minded, intellectually humble, numerate, thoughtful updaters, and hard working.
4. Teams can be better than individuals, but only under the right conditions. Smaller teams outperform larger teams. The best approach is to give everyone an opportunity to speak once before anyone has a second turn.
5. Integrating base rates can sharpen forecasts.
6. Getting good answers is different than asking good questions.

Audience rating: 4.67

Title: **THE STATE OF BEHAVIORAL FINANCE**

Speaker: **NICHOLAS BARBERIS**
Yale University

Importance: Why this matters:
The classic economic model of rational utility maximization fails to explain many types of investor and market behavior. Behavioral finance has linked better descriptions of investor decision making to those "anomalous" findings. The survey summarized many of those models and findings.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."
Barberis provided a survey of the history of Behavioral Finance, and the current "state of the art".
He used three behaviors: over-extrapolation, overconfidence and gain-loss utility with prospect theory to illustrate behavioral finance's ability to explain many asset pricing issues. They include: average returns, time series predictability, momentum and reversals, bubbles and trading volume.

Innovation: Are there new techniques of interest in the data or approach to the problem?
The survey covered many of the behavioral finance innovations. They include using surveys and games to better understand investor behavior.

Insights: 1-2-3, what are the three most important things the speaker offered?

7. Behavioral Finance tries to make sense and create models where market participants do not fit the "classic model" (e.g. their behavior is not "fully rational"). The models are psychologically more realistic.
8. Behavioral finance has been successful by developing new models, making predictions, and conducting empirical tests.
   Behavioral finance has been successful in explaining observed facts.
   - Over-extrapolation explains momentum and reversals, time series predictability, and bubbles.
   - Overconfidence explains overplacement (rosy views of their relative ability) and overprecision (over confidence in the accuracy of their forecasts).
   - Gain-loss utility with prospect theory (reference dependence and loss aversion) provides a better description of investors' decision making that classic utility maximization.

Audience rating: 4.47

Title: **CHALLENGES OF AN AGING WORLD FOR THE FINANCIAL INDUSTRY**

Speaker: **OLIVIA MITCHELL**
Wharton School

Importance: Why this matters:

Rising longevity, falling fertility rates and low return environments have made pay-as-you-go non-viable.

Problems exist in both the savings/investing phase and in the retirement spending phase.

SAVINGS PHASE:

- Widespread financial illiteracy.
- Savings is difficult for the poor and not much fun for anyone.
- And it gets worse: literacy declines with age, perhaps due to declining acuity or differing life experience.
- Financially literate are more likely to plan, more aware of costs, more aware of risk/return payoffs, and more amenable to annuity advantages.
- We need products that help the poor save more effectively, such as:
    1. Lottery-linked saving, where each contribution gives you a lottery ticket
    2. "Saving buddies" akin to "gym buddies."
    3. Opt-out rather than opt-in plans.
    4. Fun is easier to sell than guilt.

INVESTMENT PHASE

- Target date plans: a glide path of gradual risk reduction.
- Understanding fee structure and effects on performance.
- Streamlining the investment choices to reduce confusion.
- Increasing tendency of fiscally strapped countries, states, and cities to raid the plan assets to cover budget deficits.

DECUMULATION PHASE

- Avoid outliving your resources: advantages of annuities, poverty insurance
- Cognition declines with aging: ability declines faster than confidence
- Too many regulators with overlapping domains

Audience rating: 4.50

Title: **PROGRESS TOWARDS A GAME-OF-LIFE DECISION SUPPORT SYSTEM**

Speaker: **HARRY MARKOWITZ**
Harry Markowitz Company

Importance: Why this matters:

Another approach to informing investors about planning for retirement through an elaborate simulation.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

1. Make forward looking estimates of asset class expected returns, variances and covariances;
2. Generate an efficient frontier at the asset class level;
3. Elicit from a new client (401k plan sponsor), plan specifics such as investible securities and matching policy
4. Assign a portfolio of plan-permitted investments to each MV efficient asset class portfolio;
5. Elicit from a participant, and/or the plan's record keeper, information needed by the simulator;
6. Inform participant of results of Monte Carlo analysis:
   - probabilities of possible post retirement consumption levels,
   - for current portfolio versus recommended portfolio,
   - taking into account savings rate, matching policy, selected portfolio,
   - include Social Security and spouse's income if participant elects,
   - allow participant to vary the above.
7. Instruct the plan's record keeper to execute the selected advice; and
8. Report account status to the participant and the plan sponsor.

Innovation: Are there new techniques of interest in the data or approach to the problem?

Markowitz frames the problem in terms of a "family unit" which includes accumulation of assets, decumulation, costs of implementing and taxes, plus a residual passed on to descendants.

Insights: 1-2-3, what are the three most important things the speaker offered?

9. This is the broadest view of life cycle investing anyone has investigated.
10. The results describe for varying asset selections the division of assets between consumption, endowment, expenses and taxes.
11. For more information, visit www.informedchoice.com

Audience rating: 2.98

Title: **LOOKING TO THE FUTURE, PART II**

Speaker: **HARRY MARKOWITZ, BILL SHARPE**
Marty Liebowitz, Moderator

Marty Liebowitz conducted an open chat with our two favorite Nobel Laureates.

Here are some of the major points that were discussed:

- On the top of everyone's list was the worldwide dilemma of how to solve the problem of funding retirement for now and into the future. It was agreed that the problem will ultimately resolve itself in a few decades, but until then, it is a major problem. Harry suggested that there were two ways to solve the problem: change the allocation or increase the size of the pie.

- Sharpe suggested that whatever solution we undertook, there will be sets of people who bear a greater share of the burden. Following the concept of Pareto optimality, it may require the winners to compensate the losers. (Sharpe pointed out that these nuances are lost in political discourse.)
- Reverse mortgages could monetize an otherwise illiquid asset, but design of the system still needs adjustment.

- In answer to the question "what is the interesting unsolved problem in finance, Markowitz suggested "liquidity." Sharpe suggested that we haven't focused much on the problems of decumulation of assets by retirees.

- Health costs were raised as another problem, especially in the design of insurance to cover catastrophic loss. Sharpe suggested that better health statistics and diagnostics could lead to a better understanding and cost control.

- In answer to the question "what surprises you the most?" Markowitz replied "Moore's Law still works, and looks like it has a lot of years left."

- The final, and probably the most interesting, thought came from Markowitz: 50 years ago it was a set of largely undefined rules of thumb; since then it has become a process that is well understood in its objectives, discipline, and outcomes that satisfy the objectives.

- Sharpe added "Index funds."

Title: **WHO IS ON THE OTHER SIDE?**

Speaker: **ANTTI ILMANEN**
AQR Capital Management

Importance: Why this matters:
Investors that expect to profit from a given strategy should consider who is going to "pay", i.e. suffer long-run underperformance. Stated another way, why don't other smart investors arbitrage away the perceived opportunity? Understanding who is on the other side of some of the most factor trades will help investors decide if the factor is likely to continue to generate positive excess returns.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

The main question is: Do historically rewarded factors have a sustainable other side? Sub-questions include:

- Is the empirical return edge persistent, pervasive, and robust?
- Why does the opportunity exist, and why is it not arbitraged way?
- Can flows or holdings identify a well-defined group on the other side?
- Has the opportunity been arbitraged away?
- Was the performance due to a run-up in prices that is likely to reverse?

He then used the framework to investigate four style premia strategies: value, momentum, defensive (quality & low risk) and size.

Innovation: Are there new techniques of interest in the data or approach to the problem?

Ilmanen used 13F data from Thomson Reuters to infer who is on the opposite side of the various strategies in order to model how various investor types were positioned relative to each of the factors. He used the data to produce the average tilt for each group, as well as charts showing time series behavior. He also use the data to understand how factor exposures can explain returns of each of the investor types.

Insights: 1-2-3, what are the three most important things the speaker offered?

12. Small non-13f investors are one other side for 1 year momentum. Mutual funds may be the other side for multi-year reversals. Hedge funds are one other side for quality / low-risk investing.
13. Hedge fund 4.3% excess return was attributed: 1.7% market risk premia, 1.8% alternative risk premia, and .8% alpha.
14. While there were cycles of valuation, currently the trades do not look crowded.
15. Defensive is only style that currently appears clearly expensive versus its history.
16. Differences between time weighted returns and investors' dollar weighted returns may be due to high returns in 1990s, rather than poor timing decisions. (unrelated to the factor research)

Audience rating: 4.38

Title: **STOCK RETURNS OVER THE FOMC CYCLE**

Speaker: **ANNA CIESLAK**
Duke University

Importance: Why this matters:

Research indicates that news about monetary policy comes out in a bi-weekly cycle, anchored to Fed FOMC meetings. This suggests that information is coming from sources other than the Fed's public announcements and open market operations.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

Cieslak investigated whether stock market returns are related to weekly cycles timed to align with the Fed's FMOC meetings. She demonstrated that returns had positive returns in weeks 0, 2, 4 and 6, and the results were robust.

Innovation: Are there new techniques of interest in the data or approach to the problem?

There have been numerous studies investigating seasonality of stock market returns. Rather than using the calendar, this study aligns the data with Fed meetings, and the two week cycles of the Board of Governors discount rate meetings.

Insights: 1-2-3, what are the three most important things the speaker offered?

1. Since 1994, the equity risk premium followed an alternating weekly pattern measured relative to the last FOMC meeting.
2. Returns were positive in weeks 0, 2, 4 and 6, and zero in other weeks.
3. Indication that news about monetary policy tends to come out between Fed meetings, rather than in the post-meeting announcement.
4. The behavior was much stronger for stocks than bonds.

Audience rating: 4.05