

Dr. Harry Markowitz
The Father of Modern Portfolio Theory
and the Insight of Behavioral Finance



FIRST CAPITAL
INVESTMENT PARTNERS



A Special Interview with SkyView's Advisory Board Member Dr. Harry Markowitz
Nobel Laureate in Economics
Part 1: The Humble Beginning



Dr. Harry M. Markowitz

Nobel Laureate

In this special interview, Steve Turi and Andy Melnick sat down with SkyView's esteemed advisor Dr. Harry Markowitz to discuss his journey through providing the foundation for both modern portfolio theory and behavioral finance.

- Attended University of Chicago as an undergrad, studying philosophy and physics, then continued on to the Ph.D. program in Economics
- Published his seminal theory of portfolio allocation under uncertainty in 1952 in the *Journal of Finance*
- Received his Ph.D. from the University of Chicago with a thesis on portfolio theory in 1955
- Published the critical line algorithm in a 1956 paper, with a subsequent 1959 book on portfolio allocation
- Won the Nobel Prize in Economics in 1990, while a professor of finance at Baruch College of the City University of New York
- Currently serves as Adjunct Professor of Finance at UC San Diego's Rady School of Management, while working on volume two of his four volume series titled *Risk-Return Analysis: The Theory and Practice of Rational Investing*, which builds on his 1959 work

“I think therefore I am: cogito ergo sum. I am therefore I think. If I stopped working, *I wouldn't be me.*”

- Harry Markowitz



Harry Receives the Nobel Prize - Image courtesy of Baruch College Alumni Magazine

In 1990, Harry M. Markowitz won the Nobel Prize for his seminal theory of portfolio selection, which was developed during his early work as a graduate student at the University of Chicago. To find out more about the transition from Chicago Schoolboy to Nobel Laureate, Chief Investment Officer of SkyView Investment Advisors and longtime friend, Steve Turi, sat down with Harry to discuss his early academic interests, the ah-ha moment that led to a successful dissertation meeting with Milton Friedman, and the big schools of thought that he influenced over the years.

Steven Turi: What inspired you to focus on the area of research that became the foundation for all the work you have done?

Harry Markowitz:

As a teenager, I read, but I didn't read finance. I read philosophy. I read science at a non-technical level, like *The ABCs of Relativity*, and I read philosophers. I read Hume, so I was interested in what do we know and how do we know it. I went to the University of Chicago like my Uncle Willy had. They had a two-year program that gave you a bachelor of philosophy, and it consisted of survey courses. There were survey courses in physical sciences, biological sciences, social sciences and so on.

I should say that when I applied to the University of Chicago, my grades weren't terribly good, because I didn't do lots of homework. That was nonsense. Like algebra would consist of 20 problems, 19 of which were the same thing, again, and very boring. The only problem with my work was the A students would come over to me, to work the hard problem, the 20th problem.

I wrote a little essay regarding philosophers and so on, so [The University of Chicago] said, "We usually don't take people with your standing, but we will let you take the placement exam, the entrance exam."

It turned out that the entrance exam not only determined whether you got in or not, but if you did sufficiently well in any particular area, you got out of the survey course in that area. They excused me from the survey courses in the physical sciences.

Since I did not have to take the survey courses in the physical sciences, I chose those in the social sciences. When it came time to choose an upper division, I had just had a course in economics as part of the survey, and I found economics very interesting, sort of a combination of empirical and theoretical, so I went into what was arguably the world's best economics department, certainly one of the most famous economics departments.

When it came time to pick a dissertation topic, I went over to my advisor, Professor Jacob Marschak, who was busy, and asked me to wait in the ante room. Another person was also waiting for him, a [stock] broker, so we started talking. I was there to pick a dissertation topic. The broker said, "Why don't you do a dissertation on the stock market? Use your mathematics and statistics on the stock market." Later, a biographer of mine said, "That's the best advice a broker has ever given."



The University of Chicago—Image Courtesy of The University of Chicago

Harry Markowitz:

Anyway, when I went into Dr. Marschak’s office, I said, “The guy out there thinks I ought to do a dissertation on the stock market.” I was a student member of the Cowles Commission. He said that Alfred Cowles, who had endowed the Cowles Commission, was very interested in the stock market. He was one of the first people who figured out that, present company excepted, of course, stock market forecasters typically did not forecast the stock market.

I said, “Yes, I will give it a try.” Marschak didn’t know the finance literature. He sent me over to Marshall Ketchum, who I believe was the dean of the business school at that time. He gave me a reading list. His reading list included Wiesenberger’s *Investment Companies and Their Portfolios*. Graham and Dodd was [also] on my reading list.

Then I was in the library of the business school, reading John Burr Williams’ *Theory of Investment Value*, and Williams said that the value of a stock is the present value of its future dividends. I figured dividends are uncertain so he must mean the expected value. Later, he does confirm, when things are uncertain, use the mean expected value. I figured, if you only are interested in the expected value of a stock, you must be only interested in the expected value of the portfolio. Most people at the time assumed the way to maximize the expected value of the portfolio is by putting all your money into whatever stock has maximum expected value. That is not right. Everybody knows you are not supposed to put all your eggs in one basket.

Steven Turi: Maybe back then they didn't realize the importance of diversification?

Harry Markowitz:

No, if you look at Wiesenberger, Investment Companies and Their Portfolios, or you look at Shakespeare, [in the] Merchant of Venice, somebody says, "Antonio, why do you look sad, is your business going bad?" He says, "Believe me, no: I thank my fortune for it, my ventures are not in one bottom trusted, nor to one place; nor is my whole estate upon the fortune of this present year, therefore my business makes me not sad."

I had also gone back and seen where people have an article called "The Early History of Portfolio Theory, 1600 to 1960," so 1600 is Shakespeare, and 1960 is when I had already written my '59 book.

Anyway, the notion of diversification was not new, but a formal theory, including covariance ... In other words, let's go back to John Burr Williams. Later, he says that you should invest according to the mean value, the expected value, and he says that it would seem like there is riskiness, but if you diversify sufficiently, you can eliminate all risk, and you will, in fact, get the expected value. That is true if there is zero correlation. However, according to chapter 5 of my 1959 book, if you diversify more and more and more, in correlated risks, the variance of your portfolio doesn't approach zero. It approaches the average covariance. Therefore, my contribution was not just diversification. It was a theory which took into account correlation and its impact on portfolio risk.



Harry Markowitz with SkyView's Andy Melnick and Steve Turi.

Andy Melnick: Correlation. We are looking at risk instead of just return, including the correlation component of risk along with all...

Harry Markowitz: John Burr Williams thought that you could eliminate risk. You only needed to invest according to expected return and then diversify enough, and risk would go away. It will not. That depends on covariance and correlation.

Steve Turi: That's fascinating, amazing progress.

Harry Markowitz: Somebody asked did I know I was going to get a Nobel Prize at that moment. That was the ah-ha moment, right? I thought of the returns on securities, like random variables. Therefore, the portfolio is a sum, a weighted sum, of random variables here you choose the weights. I knew off-hand what the expected value of a weighted sum was, but I didn't know what the variance or the standard deviation of a weighted sum was. I was in the library of the business school and I took a book off the shelf, Uspensky's Introduction to Mathematical Probability, something like that, and found the formula for the expected variance of a weighted sum, and there it is, all these covariances or correlations. I think, ah-ha, that's it.

Steve Turi: That was the ah-ha?

Harry Markowitz: That's the ah-ha moment. Somebody asked me did I realize that I was going to get a Nobel Prize for that, and I said, no, but I knew I was going to get a dissertation, I would get a Ph.D. That was the ah-ha moment.

Interview with Dr. Harry Markowitz



Harry Markowitz with SkyView's Andy Melnick and Steve Turi

Sources

Markowitz, Harry M. Personal interview with Steven Turi and Andy Melnick.

“Harry Markowitz.” UC San Diego. Web. September 10, 2015. <http://rady.ucsd.edu/faculty/directory/markowitz/>“Harry M. Markowitz - Facts”. Nobelprize.org. Nobel Media AB 2014.

Web. September 10, 2015. http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1990/markowitz-facts.html

“The Prize in Economics 1990 - Press Release”. Nobelprize.org. Nobel Media AB 2014. Web. 10 Sep 2015. http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1990/press.html

This interview is not intended to be investment advice and the questions and comments are solely the opinions of those involved