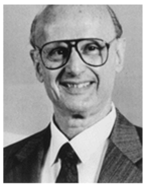
Some basic investment theory.
By Bruce Baker for clients of Puzzle Financial Advice
1/7/13

In never hurts to review some basic investment theory from time to time.

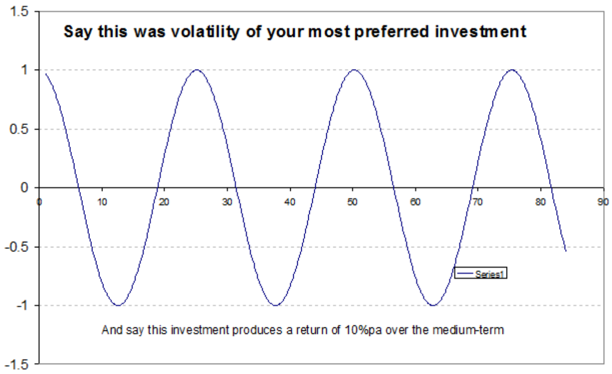
In the 1960s, Professor Harry Markowitz introduced the basic theory about diversification.

Professor Harry Markowitz

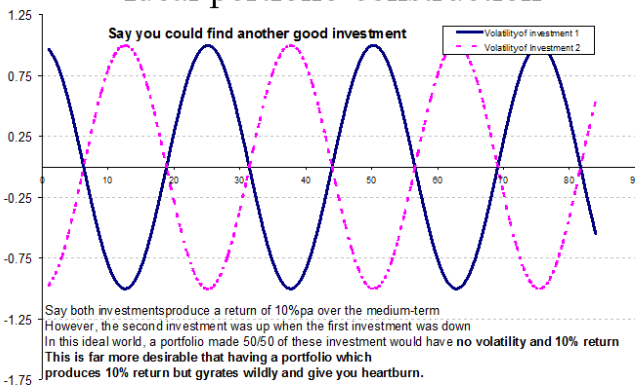


- Nobel Prize 1990
  - for contributions to Portfolio Theory.
- When building an optimal portfolio
  - "Risk means facing the possibility of losing rather than winning." P43
  - "I was struck with the notion that you should be interested in risk as well as return". P47
  - "It is necessary to avoid investing in securities with high covariances among themselves." P50.
  - "The riskiness of a portfolio depends on the covariances of its holdings, not on the average riskiness of the separate investments." P54
  - Investors should create an efficient frontier of efficient portfolios, then choose an acceptable level of risk. P58

Markowitz's ideas in practice

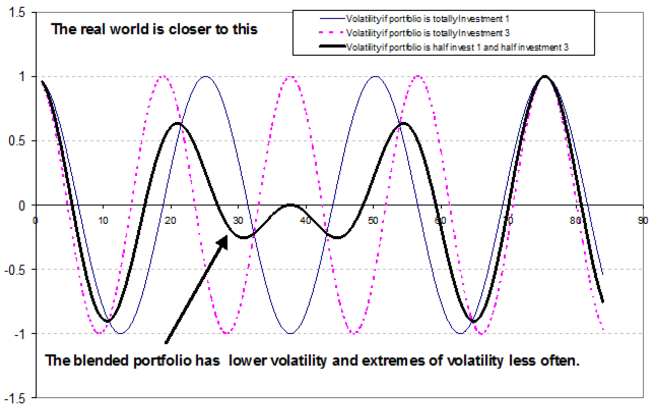


Ideal portfolio construction



- **Blending investments to reduce portfolio volatility**
- **making your portfolio bearable**

The real world is more like this



Combining investments

- **Ideally combine investments**
  - whose volatility is negatively correlated
  - I.e. investment A is UP when investment B is down.
  - However, it is hard to find useful investments 100% negatively correlated.
- **Therefore, we seek investments with low correlation.**
  - I.e. we combine investments which go up and down
    - **INDEPENDENTLY**
      - like with investments 1 & 3
    - to reduce overall portfolio volatility &
    - to reduce the frequency in extremes
      - in your portfolio overall

Note 1: Diversification is about reducing specific risk – the risk that any one investment may fail.

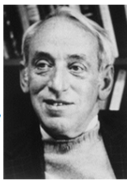
Note 2: We can also reduce portfolio volatility by choosing investments that are likely to be less volatile. Sometimes, it is a matter of judgement about which the best way is to go. Sometimes, lower volatility investments can help a client sleep at night. Often some more volatile investments can deliver higher returns – but not always.

Two points to remember:-

- It never makes sense to diversify into an investment that is likely to generate a negative return – that is, it never make sense to diversify just for the sake of it. Given current high valuations in many markets at this time, getting diversity while avoiding investments which overly-expensive can be a bit of a challenge.
    - Ideally, you thoughtfully diversify between investments (or sectors) that you think have a significant probability of generating a good return.
- Over the last 10 years or so, a lot of the time, markets and segments have been highly correlated – more so than normal in history. This meant for example, that during the Global Financial Crisis in 2008, investors generally found that diversification did not reduce the portfolio risk as expected. A possible reason for this higher sector correlation was that central bank monetary policies had been "lifting all boats", and when the money supply started shrinking in 2008, this lowered all boats. Hedge fund activity (and high frequency traders) have I believe, contributed over the last 10 years to the comparative lack of negative correlation of volatility (compared with what had been "normal".)

I believe that the next most important contributor to portfolio theory was James Tobin.

James Tobin - Nobel Prize 1981



- **The Separation Theorem** "argues that *the Markowitz process of selecting securities for the most efficient risky portfolio is completely separate from the decision of how to divide the total portfolio between risky and risk-free assets*." P72.

Stable vs Shares/property - guidance from Tobin

James Tobin

- **The Separation Theorem**
    - Markowitz assumes that investors select securities for their portfolio from a universe consisting totally of risky assets. P71.
    - **The Separation Theorem** "The convenient fact that has been proved is that the proportionate composition of the non-cash [I.e. risky] assets is independent of their aggregate share of the investment balance." P72
    - **Conclusion:** The risk-averse retiree should use the same stocks as the "aggressive" young executive - just different amounts cash.

The key point issue of James Tobin's Separation Theorem, if that if you wish to reduce risk and volatility from a portfolio, you need to hold a greater proportion of the portfolio in "cash".

Note: When you contemplate the volatility of your portfolio, you need to be considering the volatility of the entire portfolio as a whole (Cash + risky assets), and not just the risky part (shares and property) of the portfolio in isolation.