

Past, Present and Future in Investment Management

Markowitz, MPT & Diversification
Doug McTaggart

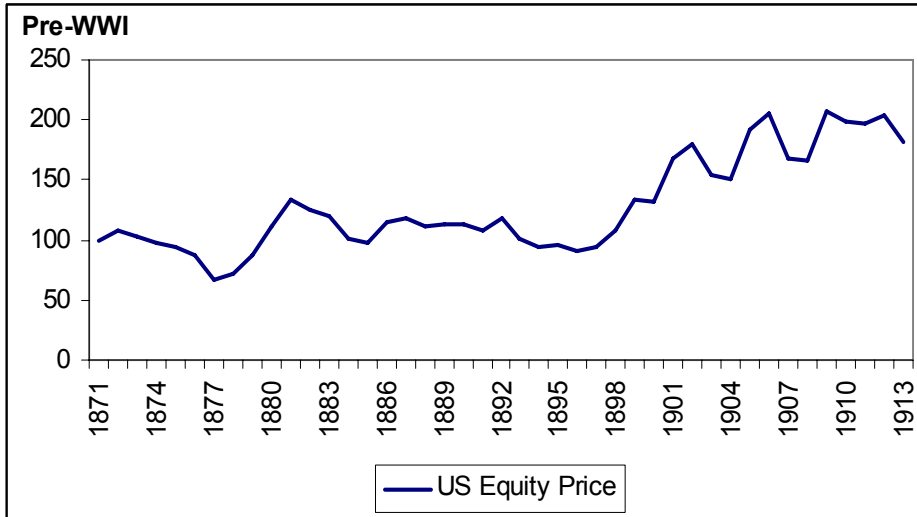
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Agenda

- A view from the past
- Operation by rules of thumb
- Markowitz and diversification
- Impact on dividend and bond yields
- Failures in the early 2000s
- What will be the next breakthrough?

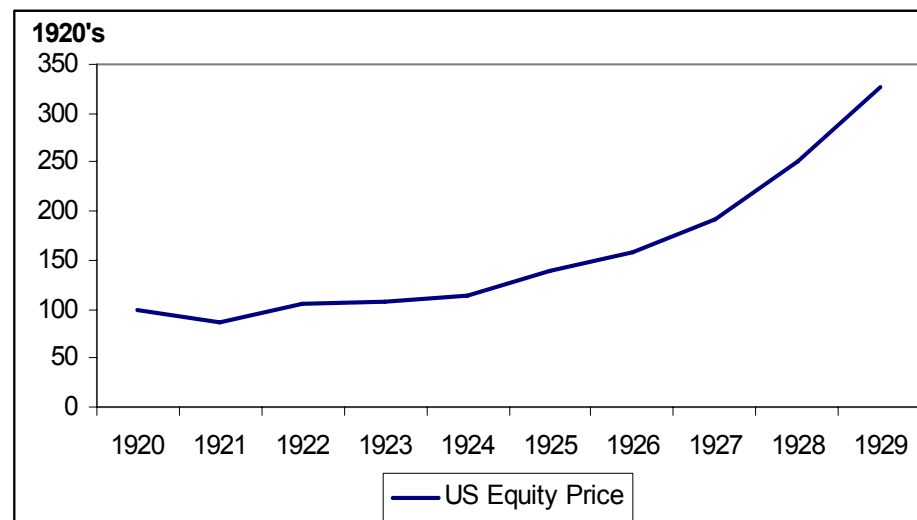
A brief history of investment analysis



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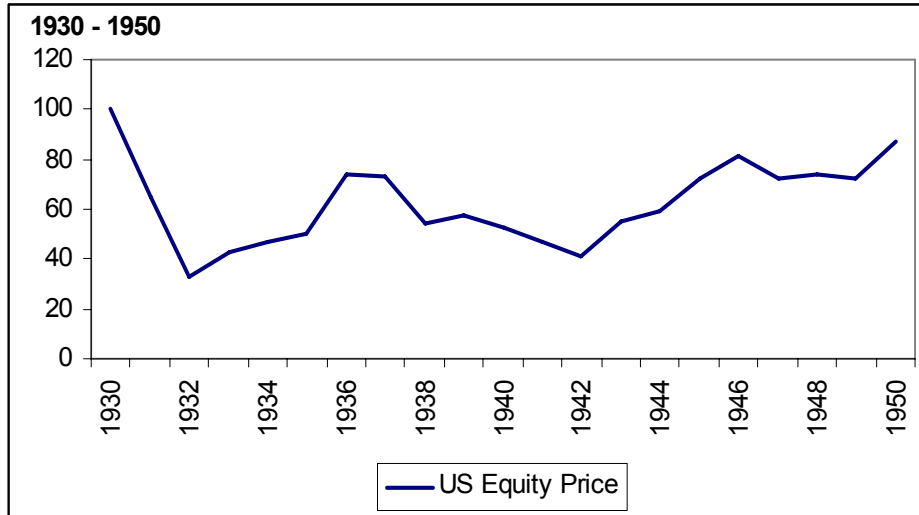
A brief history of investment analysis



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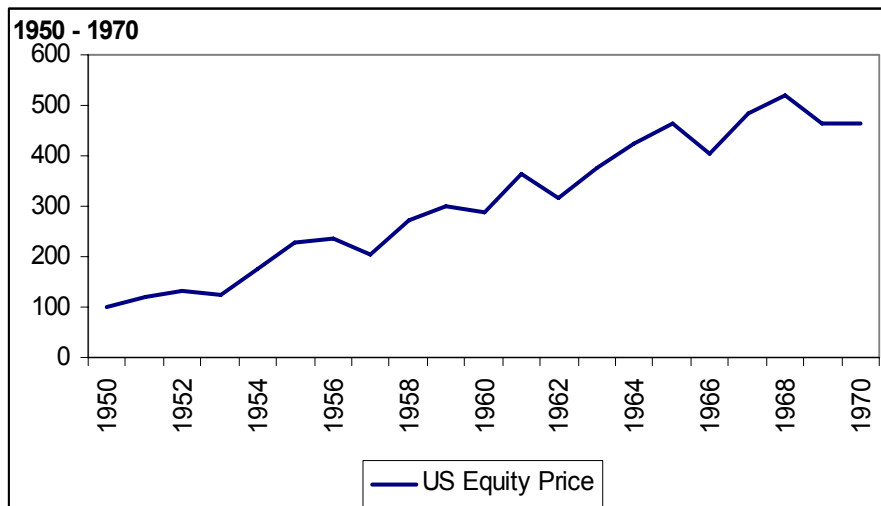
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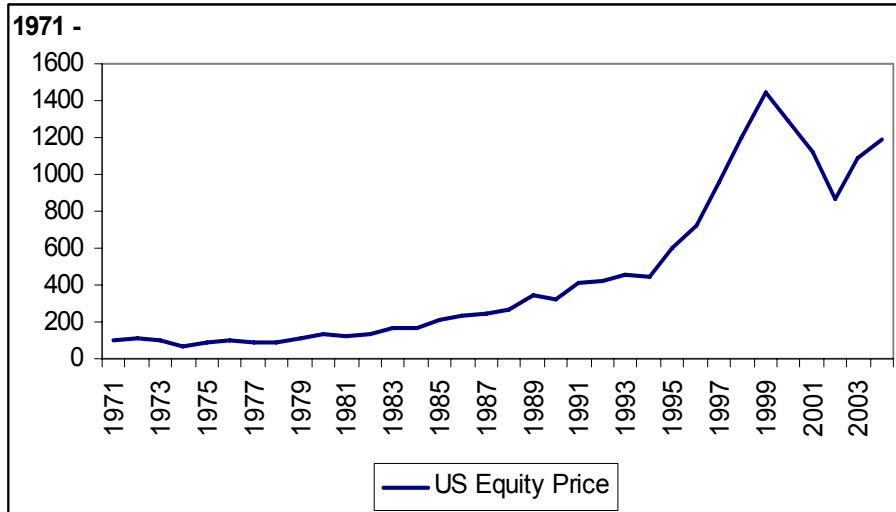
A brief history of investment analysis



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Now back to where we were in the 1920's?



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Operation by “rules of thumb”

- Institutional investors knew (pre 1970s) that stocks were risky on their own
- Risks were reduced by
 - Demanding a higher yield than for fixed interest
 - Unscientific diversification – “overusing” available stocks

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Diversification was well known

- Shakespeare on diversification (quoted by Markowitz)
 - “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 merchandise makes me not sad”
- John Burr Williams (1938):
 - “Given adequate diversification, gains on such purchases will offset losses, and a return at the pure interest rate will be obtained. Thus the *net risk* turns out to be nil”

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Markowitz recognised investors used rules of thumb

- Chapter 5: Investment in Large Numbers of Securities
 - “The present section derives from these formulae rules of thumb concerning portfolios containing large numbers of securities. These rules of thumb provide insight in *dos* and *don'ts* of large portfolios”

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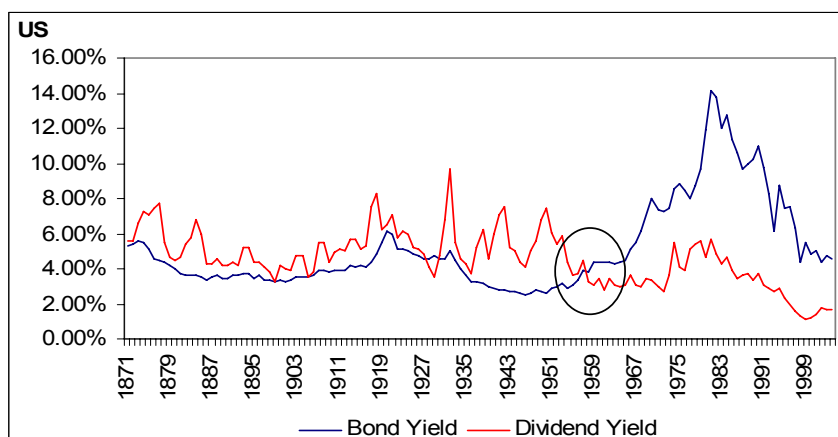


...and became the father of portfolio *concentration*

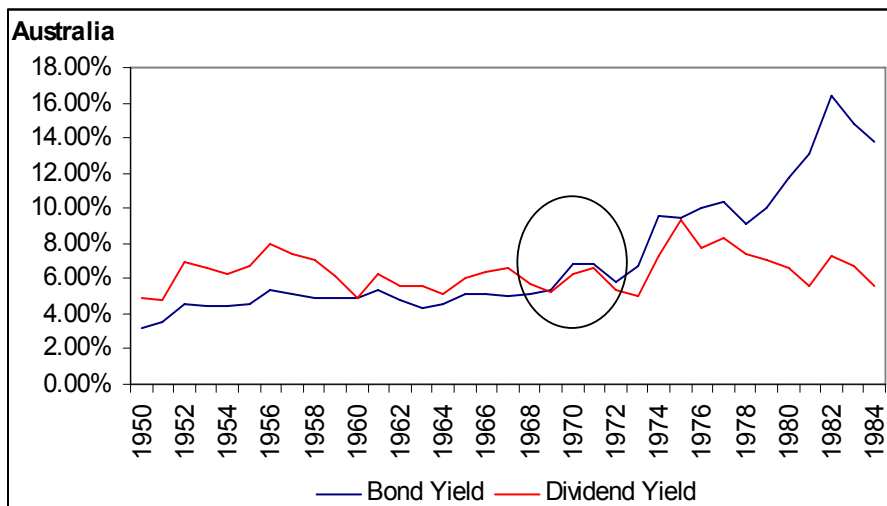
- “This monograph is concerned with the analysis of portfolios containing large numbers of securities... a good portfolio is more than a long list of good stocks and bonds”
- “...diversification is extremely powerful when outcomes are uncorrelated... (but) to understand the general properties of large portfolios we must consider the averaging together of large numbers of highly correlated outcomes. We find that diversification is much less powerful in this case”.
- “What was lacking prior to 1952 was an adequate *theory* of investment that covered the effects of diversification when risks are correlated...”

The impact of Markowitz

- “Only a limited reduction in variability can be achieved by increasing the number of securities in a portfolio”



Australia lagged the US



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Our understanding of risk changed, with effort

- “Its frequent use in other fields does not prove that the standard deviation is a good measure for evaluating portfolios. In fact, the reasons for its use in statistics differ from those which justify its use in the evaluation of portfolios. Its use in statistics is frequently due to its connection with a particular “bell-shaped” curve...

... Its justification in the evaluation of portfolios is connected with the fact that, for conservative investors, a loss of 2L dollars is more than twice as bad as a loss of L dollars; while a gain of 2G dollars is not quite twice as good as a gain of G dollars.”

- “In the choice of criteria, as well in other respects, the form of analysis must be expected to evolve.”

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But confusion still exists today!

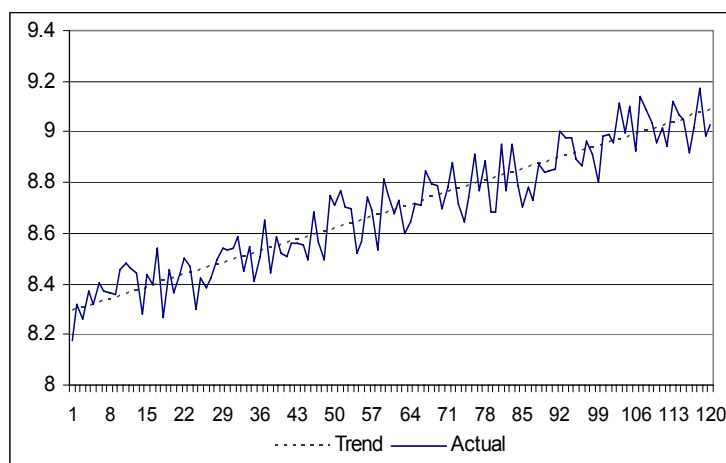
- Total volatility
- Downside risk
- Tracking error
- Market risk
- VAR
- Expected tail loss
- Failing to meet “objectives”

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Is standard deviation a good measure

- Following series has a σ of 11.7%

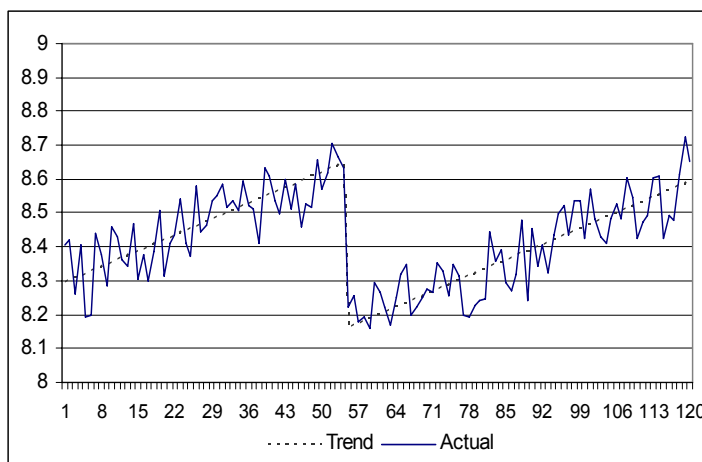


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This is less 'risky'??

- Following series has a σ of 10.4%



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The outcome of MPT

- The main prediction of CAPM is that investors should not price (expect reward) for non-systematic (idiosyncratic) risk.
- And this is what has happened...
 - “Firm-level variance is about 30 times higher in 1997 than in 1962 for a typical firm selected at random”.
Campbell et al (1991)
- Naturally leads to beta/alpha separation, but with diversification, beta should be cheap

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Modern dilemmas

- Should the average investor really own the market?
- Beta and alpha separation
 - Are we paying too much for beta, the market portfolio?
 - Is alpha too hard to find?
- Are there enough sources of alpha to go around?

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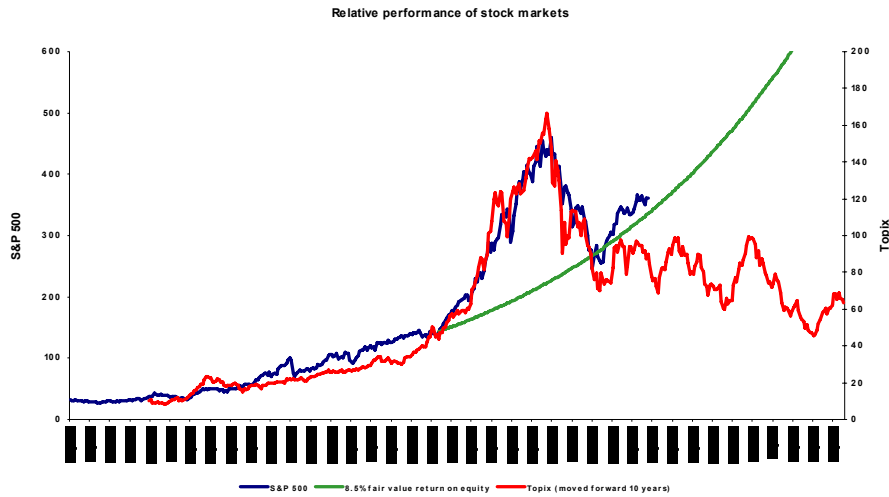
Modern dilemmas

- Are absolute returns funds (benchmark insensitive products)
 - An each-way bet by investors (the demand side)?
 - Facilitated by an avoidance of peer comparison and the ability to charge higher fees by fund managers (the supply side)?

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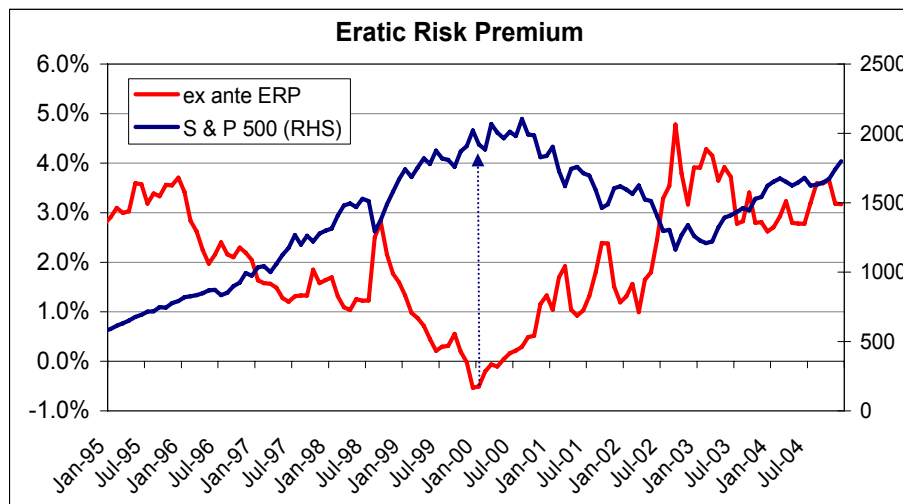
History: Does it repeat itself?



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Time: does it lead to dynamic asset allocation?



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Should we revert to fundamentals?

- Recognise that Markowitz optimisation does not work for betas. So what's the alternative:
 - Use economic fundamentals rather than statistics (eg CAPM)
 - Recognise that there are many betas rather than one. Why? Because there are many risks.
- Should we optimise over alphas and fill in the beta gaps?

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Conclusion

- This stuff is hard in practice.... and we don't often see precise application

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