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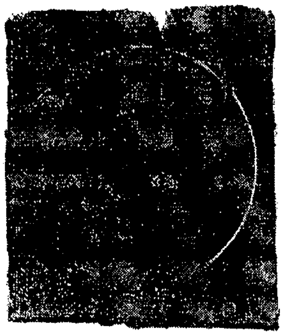
Investment Consulting



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Benchmarking for Pension Fund Assets

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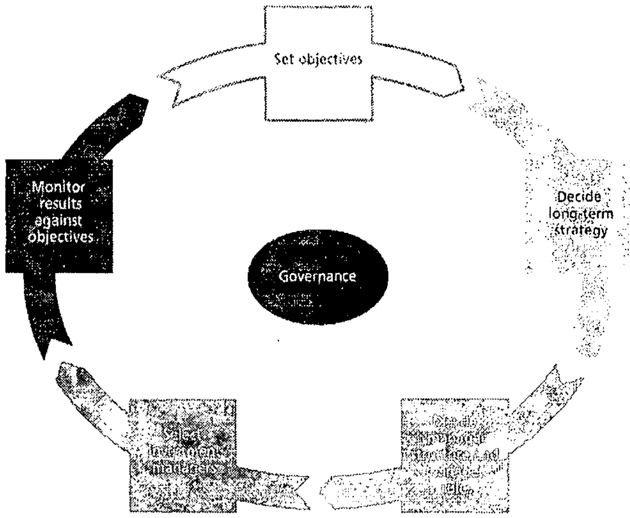
Structure of the Presentation

- Investment Objectives and Their Importance for Pension Plans
- Developing Performance Benchmarks
- Performance Measurement for Pension Plans
- Monitoring to Assess Success

The investment planning cycle



Achieving Absolute Returns

- Absolute Return = Policy Return
  +/- *Active* Asset Allocation Return
  +/- Security Selection Return
- Policy Return: return due to strategic, long-term policy (or average) asset allocation decision
- Active Allocation Return: excess return due to deviations from the long-term policy (or average) asset allocation
- Security Selection Return: excess return due to country, currency, sector or industry, and security selection

Focus of presentation will be on Policy Return, which studies have shown dominates actual returns that are achieved

Importance of Asset Allocation
Summary of Empirical Research

- 90% is percentage of variability of a fund's returns across time explained by asset allocation policy
- 40% is percentage of variation between funds explained by differences in asset allocation policy
- 100% is percentage of return amount explained by asset allocation policy
- Impact of asset allocation policy on returns depends on investing style:
  - for long-term passive investor, asset allocation policy decision by far most important
  - for short-term investor who trades frequently, invests in individual securities and practices market timing, asset allocation policy has less impact on returns, BUT more difficult to get right

Investment Objectives

- Objectives aim to specify how the pension fund determines:
  - "success" – return related objectives
  - "failure" – risk related objectives
- Specify time horizon over which "success" and "failure" are to be assessed
- Objectives must be quantifiable to enable progress to be monitored
- Common for pension funds to use risk measure based on minimising volatility in relationship between assets and liabilities
- Objectives will be key influence on investment policy adopted
  - Similar pension funds with different objectives can expect to have different asset allocations
  - Key difference will be influence of risk related objectives

Investment Objectives

- Important to have clarity between:
  - *Policy* objectives: what the pension fund overall is trying to achieve
  - *Performance* objectives: what individual managers employed by the pension fund are trying to achieve
- While there needs to be overall consistency, the distinction is important

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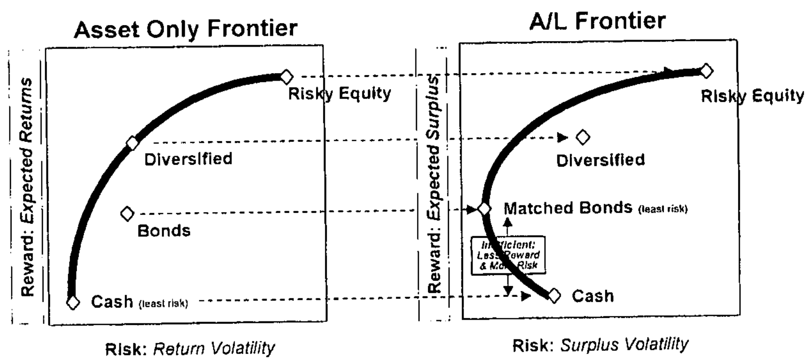
Portfolio Efficiency When Liabilities Are Considered



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Governance
Investment policy statement

Foundation
- Statement of purpose
- Investment policy objectives

Policy
- Asset allocation policy targets and tactical ranges
- Rebalancing rules
- Manager performance standards

Investment Policy Statement

Guidelines
- Diversification
- Quality
- Prohibited transactions

Monitoring
- Procedures for ongoing evaluation
- Delegation of responsibilities
- Reporting and administrative requirements

Choice of Benchmarks

- Market indices are effectively proxies for various asset classes in which investor has chosen to invest
- We tend to recommend use of market index that has greatest acceptance unless there are mitigating circumstances:
  - market index should be representative of client's preferences
  - market index should reflect investible universe available to managers
- Market indices should be total return ones, not just a price index like STI in Singapore or KLCI in Malaysia
  - use of price index can lead to apparent outperformance for index fund
- In appointing active managers, expectation will be that such managers will outperform these market indices:
  - hence, these serve as performance benchmarks
- Availability for certain asset classes may be issue:
  - eg what is a good benchmark for a fund's property exposure?

Benchmarks

- Typical portfolios :
  - Equity Funds
  - Discretionary or Balanced Funds (asset allocation left to manager's discretion perhaps within specified limits)
  - Bond Funds
- Choice of benchmarks include
  - Equities
    - Reasonably straightforward as most stock markets will have indices, although be careful of price indices
  - Bonds
    - More problematic, although most government bond markets will have indices, but again these need to be total return
  - Balanced or Discretionary
    - Notional Benchmark (e.g. 30% Equity Index + 50% Bond Index + 20% Cash Index)
    - Weightings would reflect fund's Strategic Asset Allocation

Absolute Return Benchmarking

- How should performance objectives be structured on an absolute return basis?
- Avoid fixed nominal returns
  - i.e., don't appoint equity manager and ask them to achieve return of, say, 6% pa
  - What would happen if cash rates were to rise to 6%?
- Suggestion: Structure objective as:
  - Return on "least risk" portfolio + allowance for risk premium you expect from the asset class + allowance for "alpha"
  - eg Bond return + 3 - 4% pa (for risk premium) + 2 - 5% pa (for alpha)

Peer Group Benchmarking

- From an investor's perspective, peer group benchmarking has limitations:
  - Who are your peers?
  - Can you get necessary data to construct peer group universe?
  - Are the objectives the same?
- From managers' perspective, forces managers to attempt to control risk versus benchmark that is neither observable nor investible
- Managers that benchmark to the median tend to follow the leader:
  - buy in rising markets / sell in falling markets
  - invariably overshoot market turning points (eg average Hong Kong balanced managers had highest equity allocations at time of Asian crisis and lowest allocations at the time the markets recovered)

Performance Measurement and Monitoring

The purpose of Performance Monitoring is:

- To assess whether the Fund and/or its appointed managers are achieving their investment objectives
- To understand the sources of good or bad performance to ensure effectiveness of decision-making process
- To assess whether risk profile adopted for the Fund is being experienced in practice
- To detect any problems before they seriously impact on performance
- To determine performance fees

How Are Investment Returns Measured?

- Money Weighted Return
- Time Weighted Return
- Geometric or Arithmetic

Measurement of Returns – An Example

- Let us suppose there are two funds, A and B. The market value of both funds falls from $100 mil to $50 mil in the middle of the year and then B receives a cash injection of $40 mil. Fund A now has assets of $50 million and Fund B of $90 mil. During the second half of the year both funds double the value of their assets so that at the year end Fund A has assets of $100 mil and Fund B of $180 mil

Money-Weighted Returns

Fund A:

$100\,(1 + i) = 100$

$i = 0\%$

Fund B:

$100\,(1 + i) + 40\,(1 + i)^{½} = 180$

$i = 33.74\%$

Time-Weighted Returns

Fund A:

$(1 + i) = 50/100 \times 100/50$

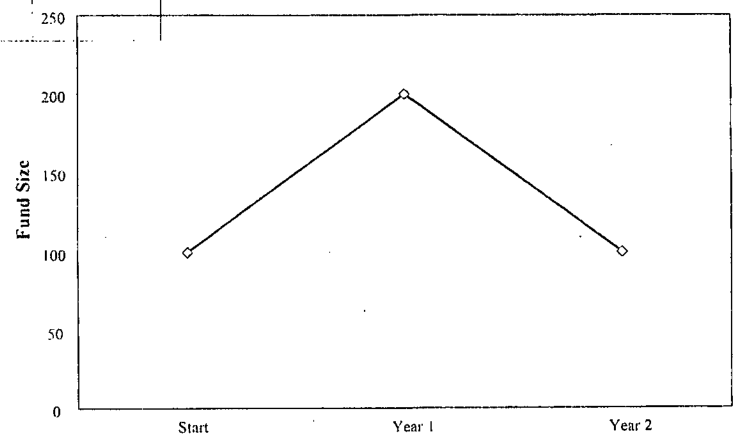
$i = 0\%$

Fund B:

$(1 + i) = 50/100 \times 180/90$

$i = 0\%$

Geometric vs Arithmetic Average Returns



What's the total return for the two years?

Arithmetic: +100% - 50% = 50%

Geometric: (1+1) * (1-0.5) - 1 = 0%

Geometric and Arithmetic Average Returns

- The average annual return is simply the arithmetic average of each of the individual asset classes
- The geometric return is the return that must be earned each and every year to equal the return of a series of differing annual returns
  - This will be the more relevant return
- The geometric average return is always less than the arithmetic annual return
  - The extent of the difference is a function of the volatility of the asset class concerned
  - In particular, the higher the volatility, the greater will be the extent to which the arithmetic average return exceeds the geometric average return

When to Use Different Measures

- Money-Weighted Rates of Return
  - To compare how a fund is performing against its policy objectives
  - These should also be geometric
- Time-Weighted Rates of Return
  - To compare how a fund manager is performing against its performance objective
  - To compare how one fund is performing against another
  - Again, these should be geometric

Performance Evaluation: Key Activities for Institutional Investors

- Evaluate investment program over time to determine if program is achieving policy objectives
- Determine if managers are meeting performance objectives
- Identify changes in investment managers' organizations or investment styles
- Analyze whether managers' investment activities conformed to investment policy
- Respond to changes in environment/plan structure
- Recommend changes if appropriate

Good monitoring approaches are concerned with what is happening **not** solely in finding out what has happened

Monitoring Investment Policy:
An Example

- Assume Singapore investor established investment program in June 1997
- Investment objective was to achieve real rate of return of 3% pa over rolling three-year periods
- Strategic asset allocation adopted was:

	Equities %	Bonds %
Singapore	10	25
Global	25	40

- Specialist managers appointed for each asset class, with investor choosing to make active asset allocation calls

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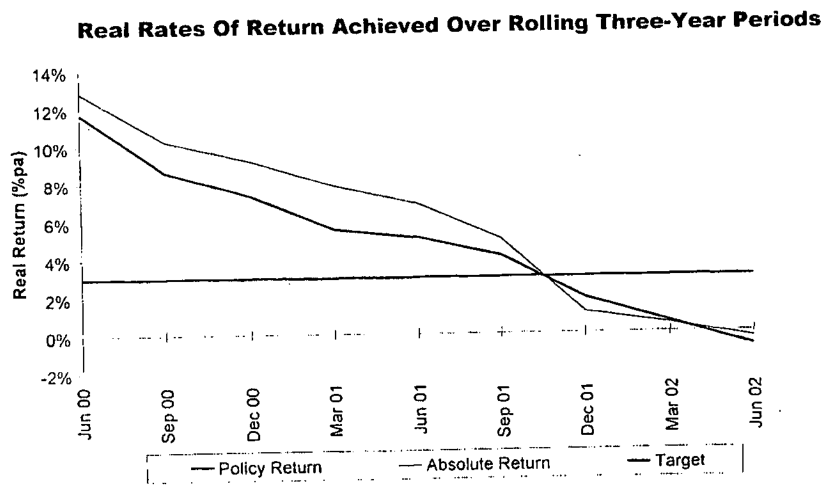
Monitoring Investment Policy:
An Example



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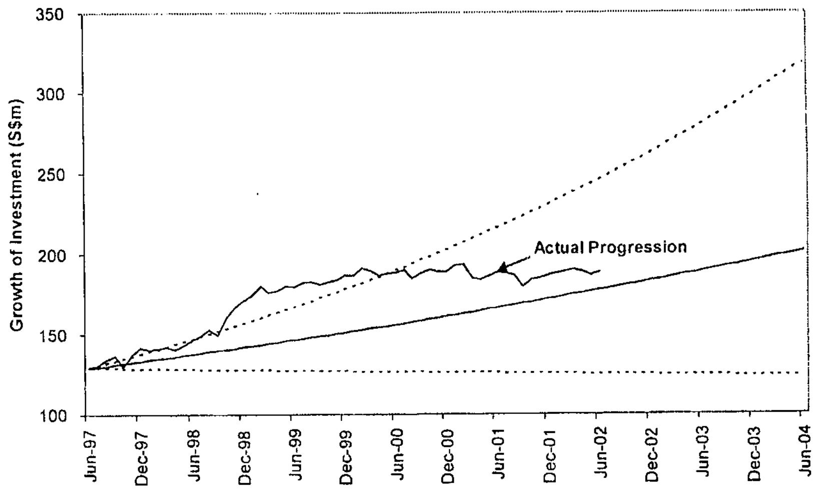
Monitoring Investment Policy:
An Example



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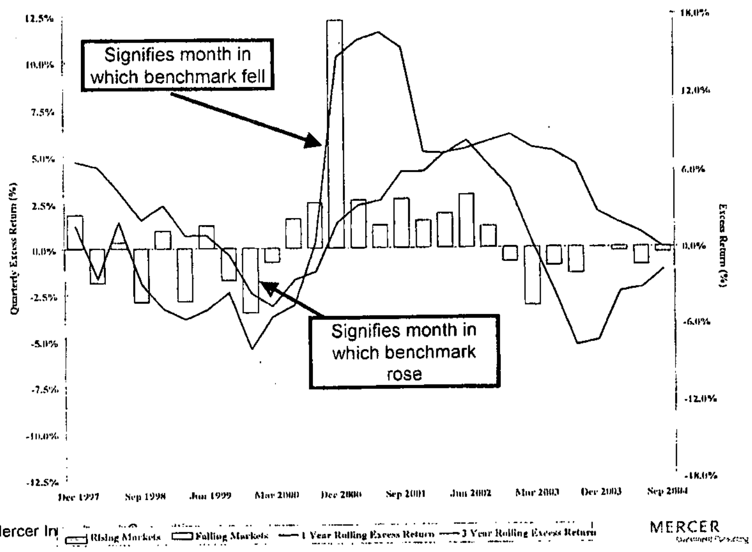
Performance Monitoring
How is Performance Tracking against Benchmark



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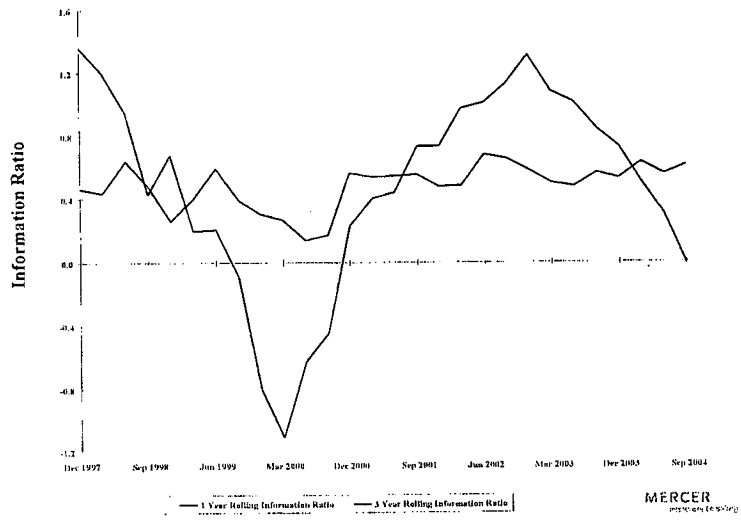
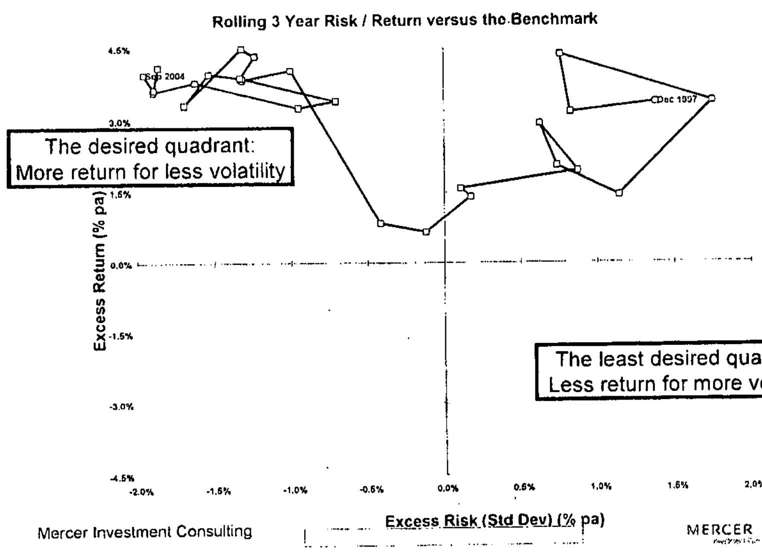
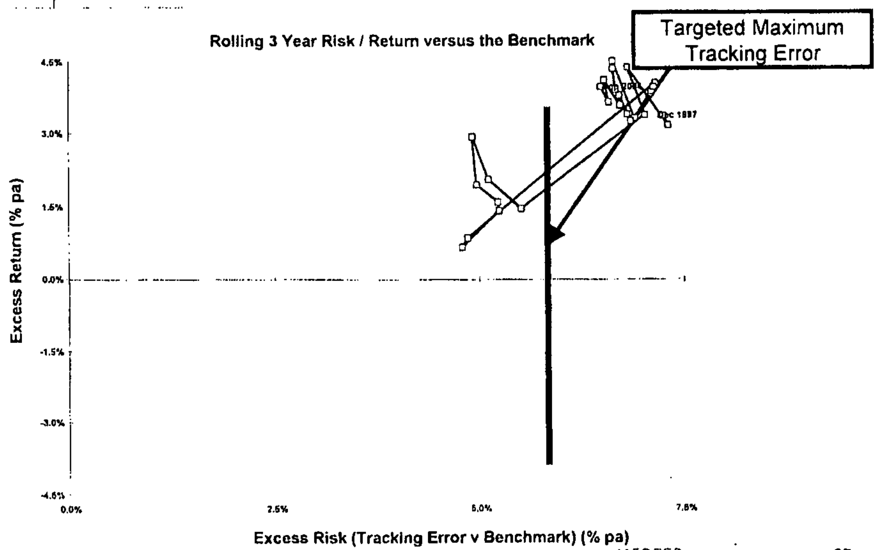
Performance Monitoring
Is the portfolio being rewarded for the risk being taken?



Risk Monitoring
How is absolute risk tracking relative to market?



Risk Monitoring
How is relative risk tracking against the risk budget?



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