Forecast long-term trends in the financial markets

Presentation by
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2. Preliminary factors to consider
3. Forecast long-term trends in the financial markets

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SOURCES OF TOTAL RETURN

TOTAL RETURN =

POLICY PERFORMANCE (85%-90%) = **MAIN PORTFOLIO** x **PERFORMANCE OF MARKET INDEXES**

FUNCTION OF:
- PLAN'S CAPITALIZATION AND FINANCING POLICY
- RISK TOLERANCE
- EXPECTED LONG-TERM FINANCIAL MARKET RETURNS

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VALUE ADDED BY IMPLEMENTATION

(TOTAL RETURN - POLICY RETURN)

(10%-15%) =

VALUE ADDED BY MANAGERS (5%-15%) = **PORTFOLIO'S REAL RETURN less PERFORMANCE OF INDEXES IN EACH ASSET CLASS X BY THEIR WEIGHT IN THE MAIN PORTFOLIO**

FUNCTION OF:
- SELECTION AND "MARKET TIMING" ABILITY
- MANAGEMENT STYLE

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VALUE ADDED BY ASSET ALLOCATION (0%-5%) = **VALUE ADDED BY IMPLEMENTATION less VALUE ADDED BY MANAGERS**

FUNCTION OF:
- "MARKET TIMING"
- REBALANCING POLICY
- PLANNED CONTROL MEASURES

Source: Cost Effectiveness Management (CEM)
Reynald N. Harpin

Forecast long-term trends in financial markets

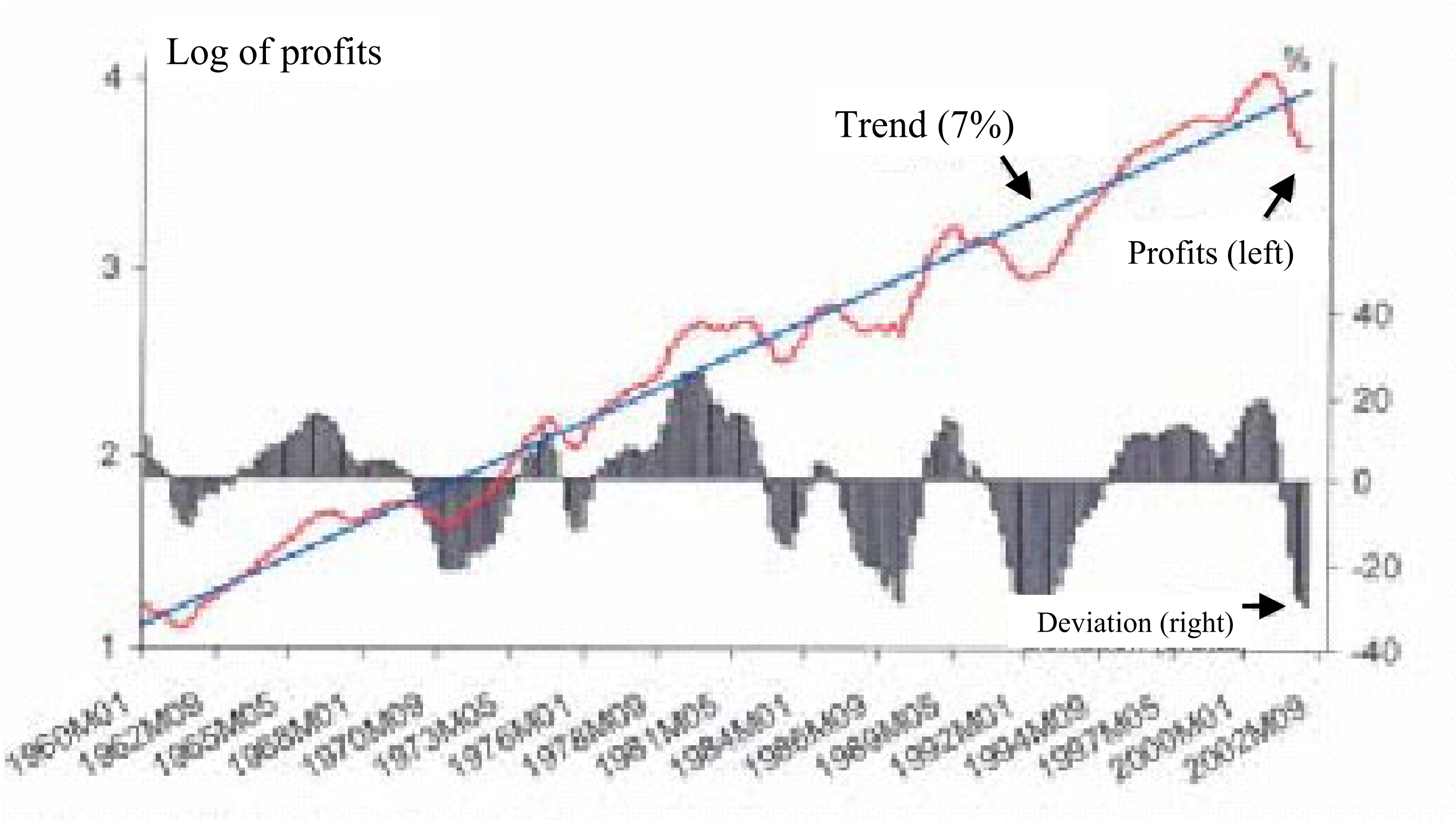
- **<u>Some preliminary factors to consider</u>**:
  - Recent fundamental changes in financial markets:
    - End of secular ‘bull market’ for bonds (1981-2003) (?)
    - End of secular ‘bull market’ for stocks (1982-2000)
    - Re-evaluation period is over

Forecast long-term trends in financial markets

- Over the long term, profit growth is the main factor determining stock market performance.
- The level of stock market P/E ratios is inversely correlated with the level of long-term interest rates.
- Over the long term, bond returns are closely correlated with CPI growth.
- Over the long term, the real rate of return on bonds is approximately 3% (2½% in U.S., 3¾% in Canada).
- Over the long term, the average risk premium on stocks relative to bonds is 2½% to 3%.

Historical perspective on profits

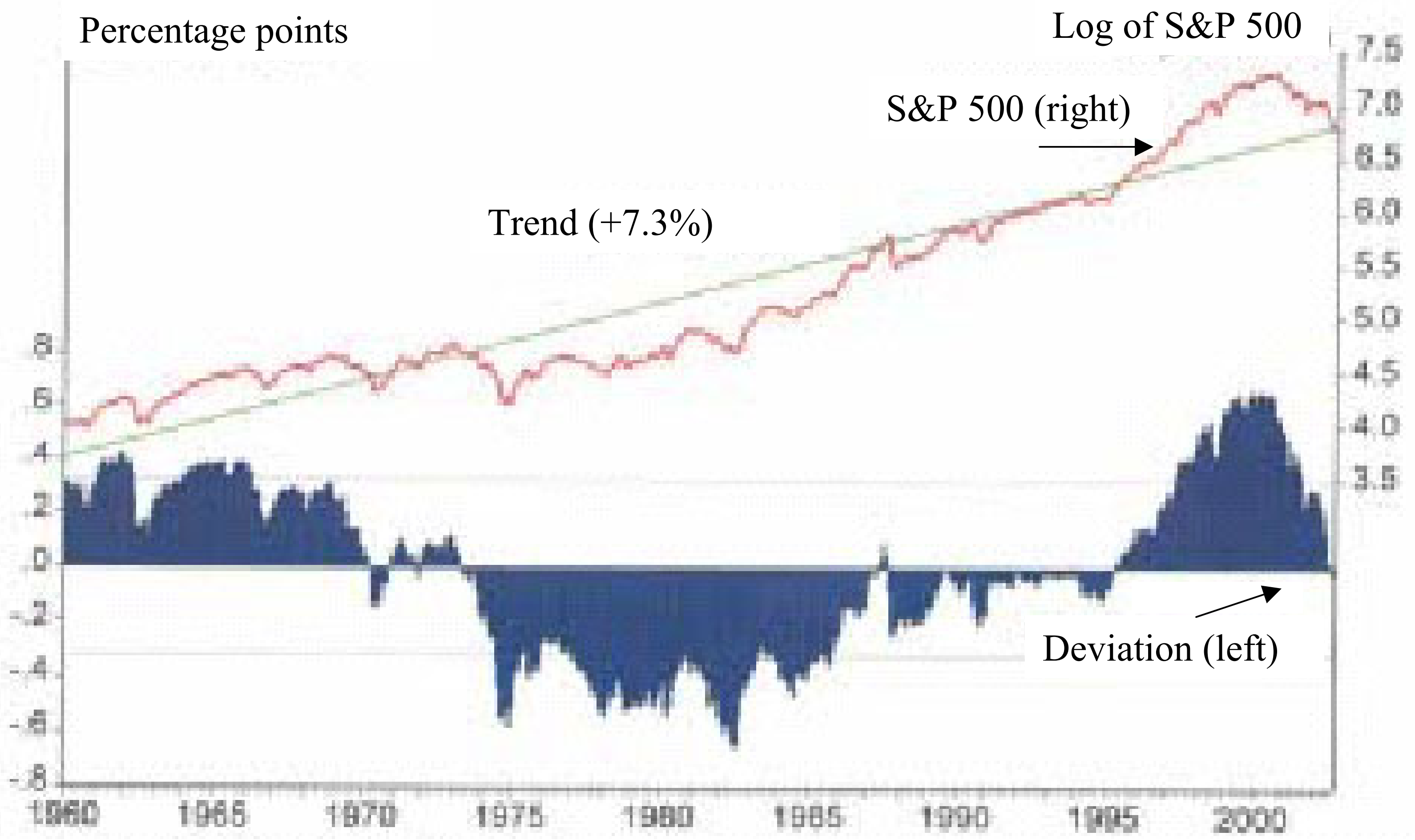
S&P 500 operating profits: observed vs. trend



Source: FNB Economic Research

Historical perspective on the stock market

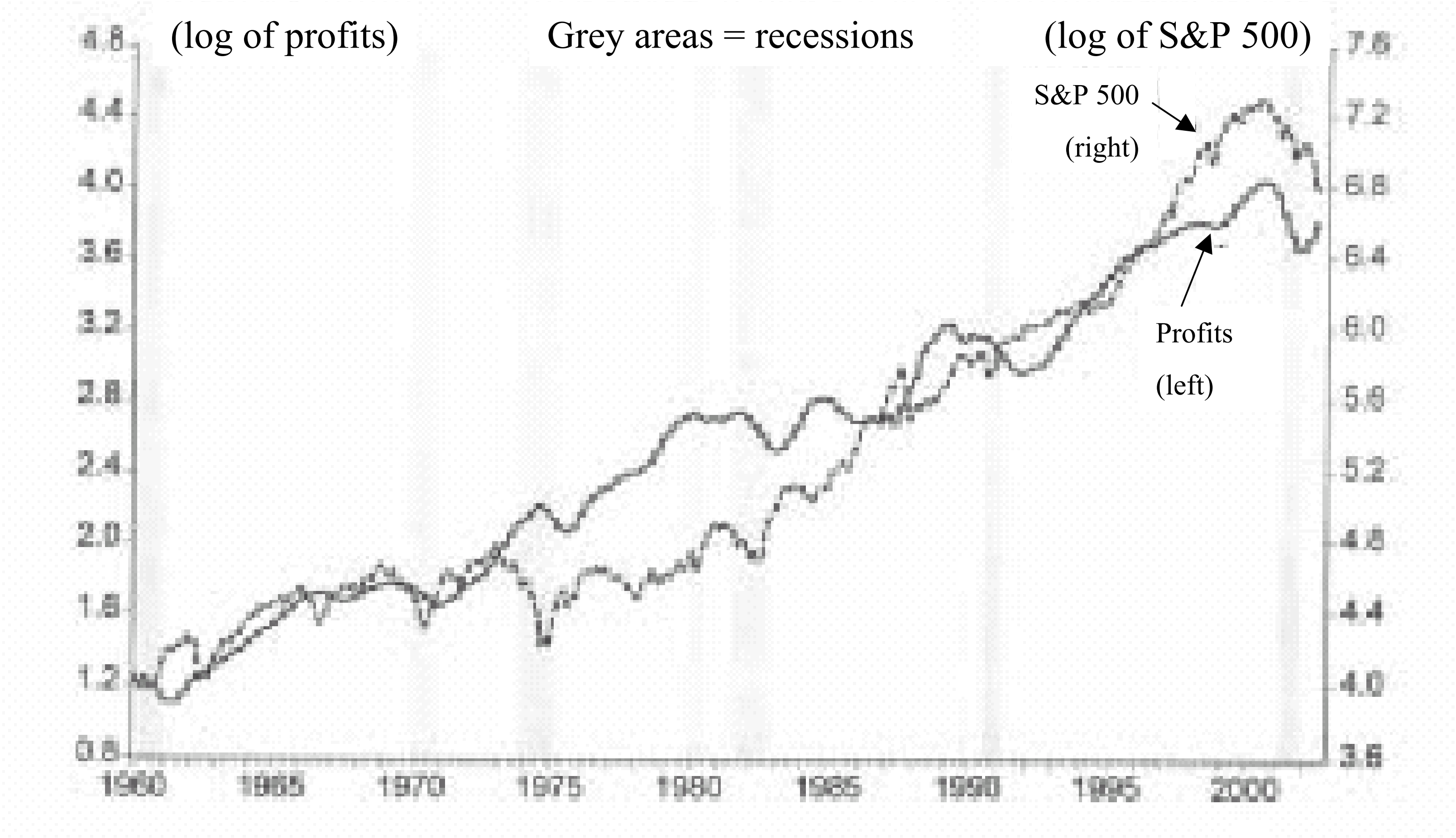
S&P 500: observed vs. trend



Source: FNB Economic Research

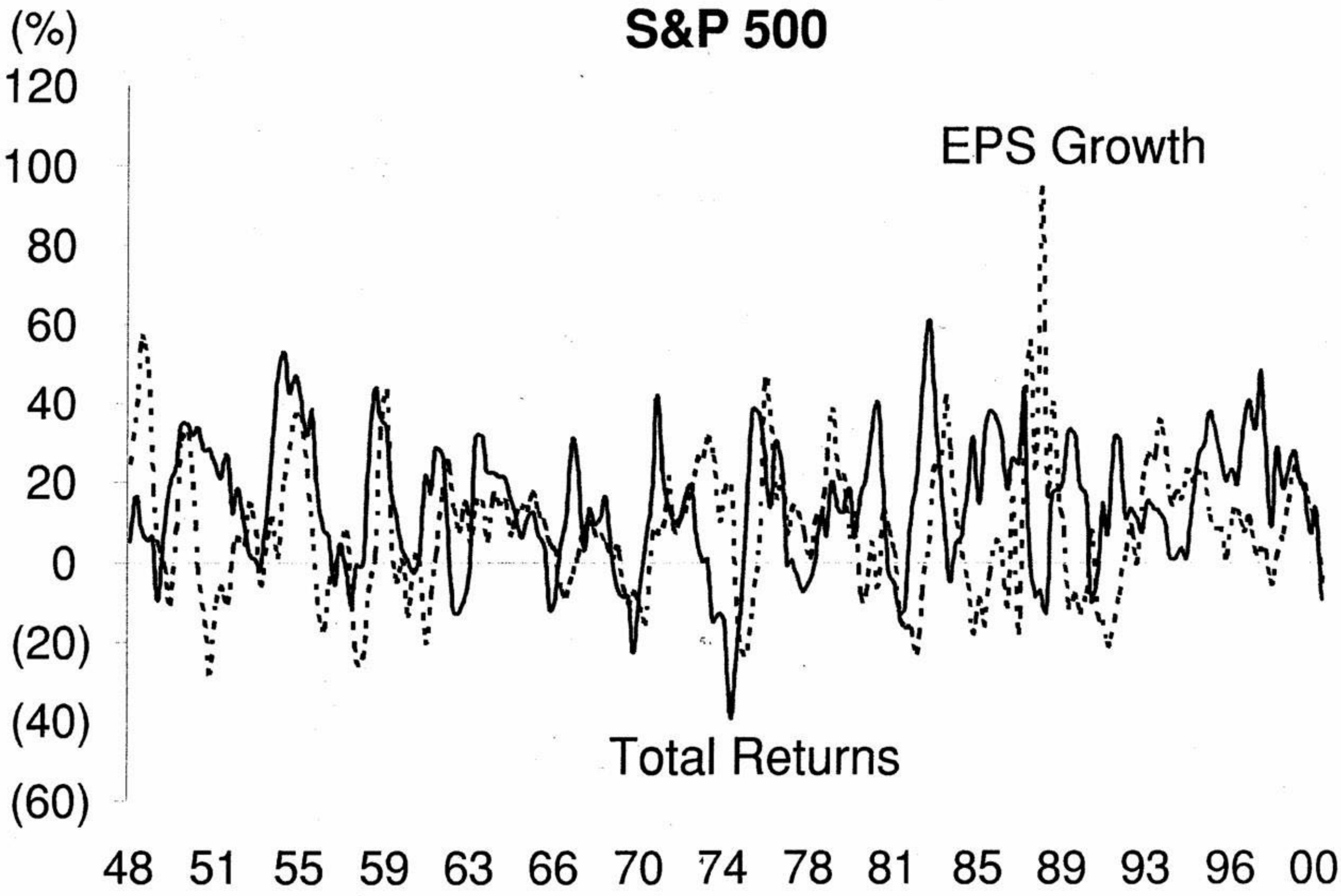
Relationship between profits and stock market

Operating profits vs. S&P 500



Source: FNB Economic Research

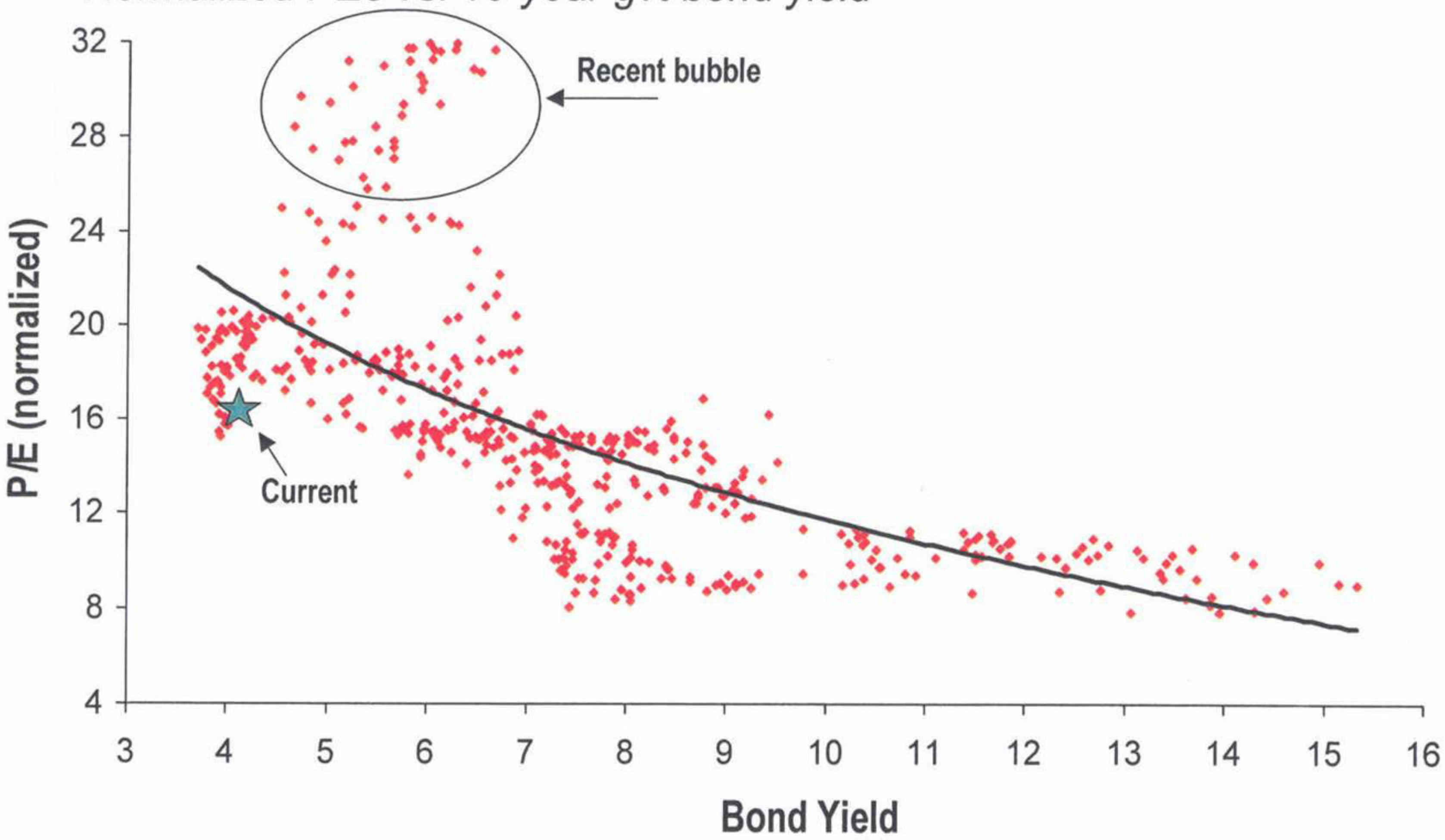
Stock Prices Usually Follow Earnings



Rolling four quarters through December 2000
Source: Standard & Poor's and Alliance Capital

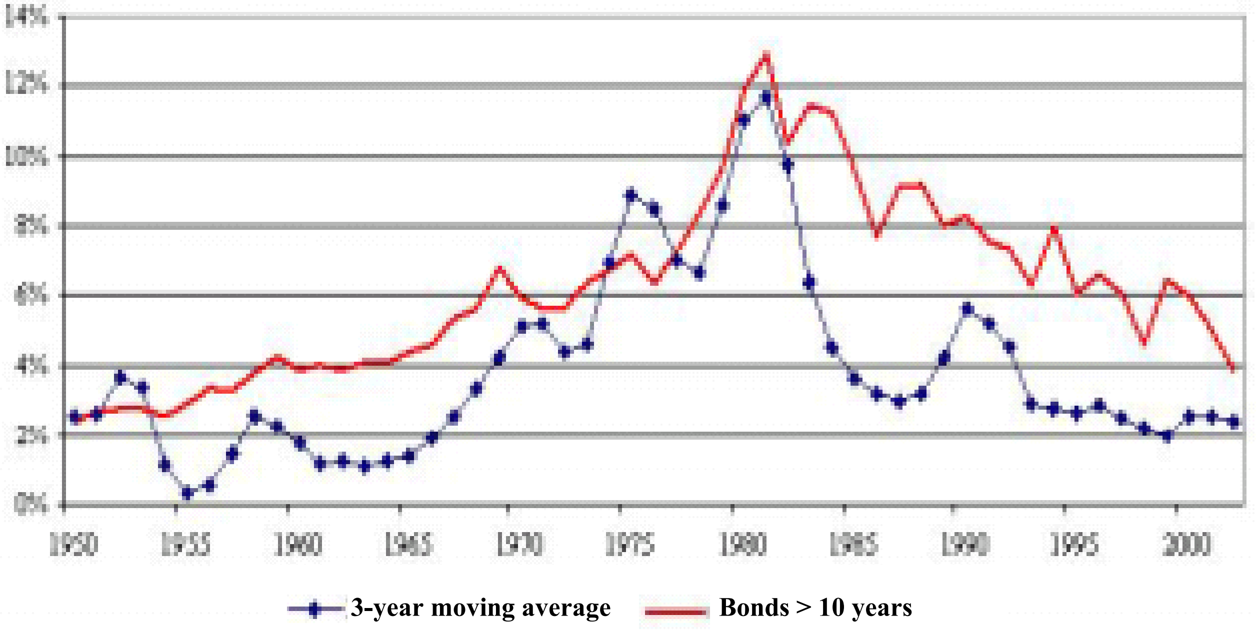
PEs vs. 10-year government bond yield since 1960

Normalized PEs vs. 10-year gvt bond yield



Source: NBF Economic Research

Inflation and long-term rates, United States



Forecast long-term trends in financial markets

Expected returns

- **American stock market**

Total historical returns:	
1872 – 2001	9.1%
1926 – 2001	10.7%
1960 – 2001	11.0%
Recent bull market (1981 – 2000)	16.5%
Expected (2003 – 2010)	
(30%) optimistic:	11.5% -12.5%
(50%) most likely:	8.0% - 9.0%
(20%) pessimistic:	4.5% - 5.5%
Weighted average:	8.90%

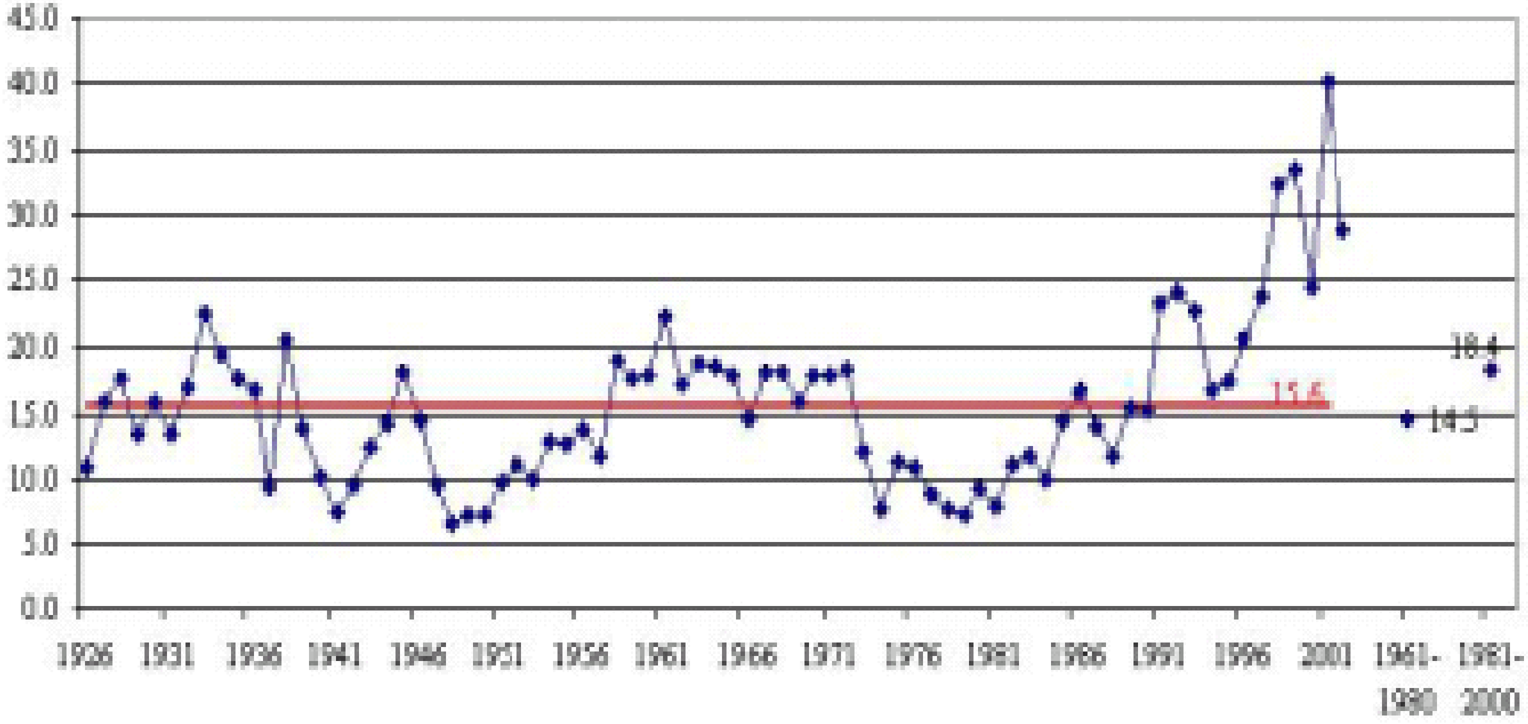
Expected long-term returns from stock market

S&P 500
Case study

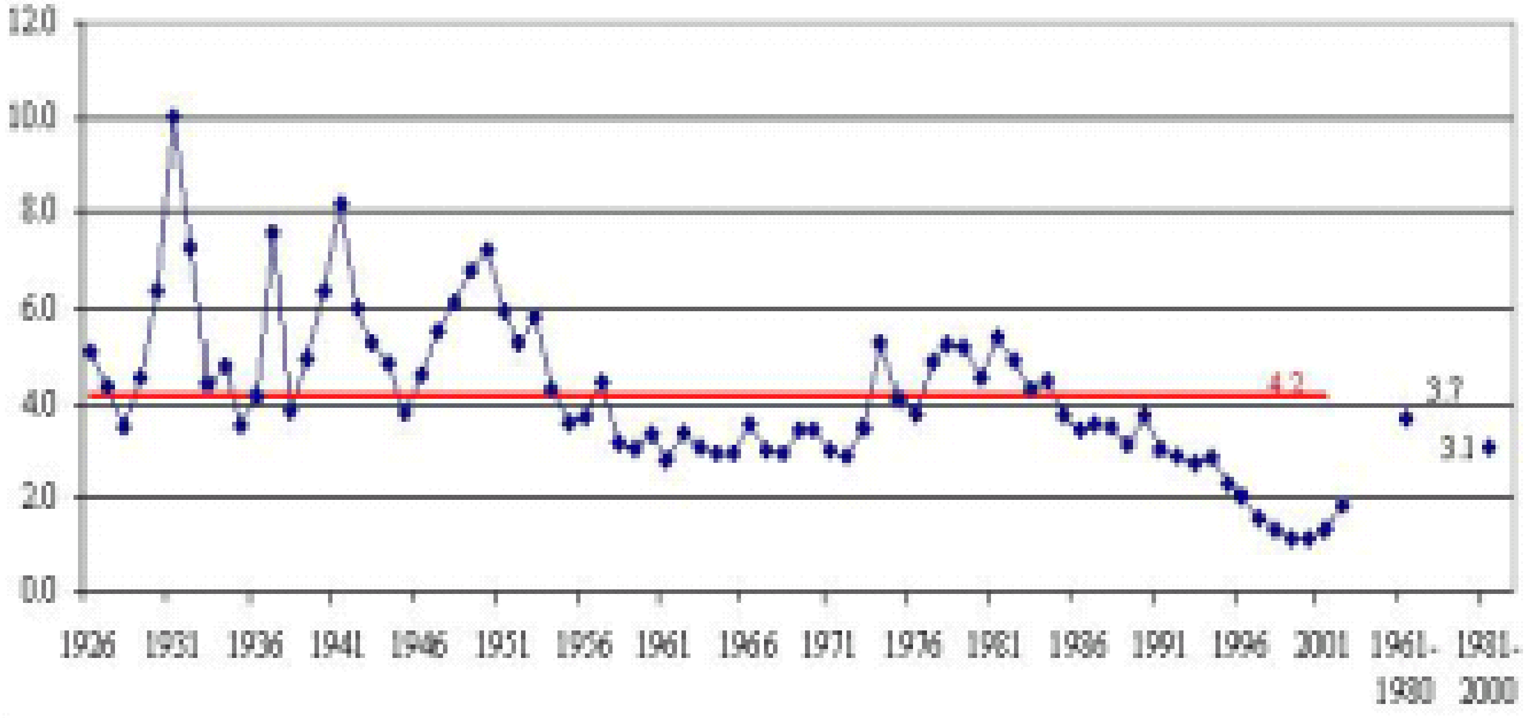
1. Breakdown of total return

	Long-term return		Dividend yield		Profit growth		Revision of P/E
Recent bull market (1981-2000)	16.5%	=	3.0%	+	6.5%	+	7.0% (7.5 to 30)
Expected (2003-2010)							
(30%) optimistic:	11.5%-12.5%	=	2.5%-3.0%	+	8.0%-8.5%	+	1.0%
(50%) most likely:	8.0%-9.0%	=	2.0%-2.5%	+	6.0%-6.5%	+	0.0%
(20%) pessimistic:	4.5%-5.5%	=	1.5%-2.0%	+	4.0%-4.5%	-	1.0%
Weighted average:	8.90%	=	2.30%	+	6.1%	-	0.5%

S&P 500 price / earnings ratio



S&P 500 dividend yield

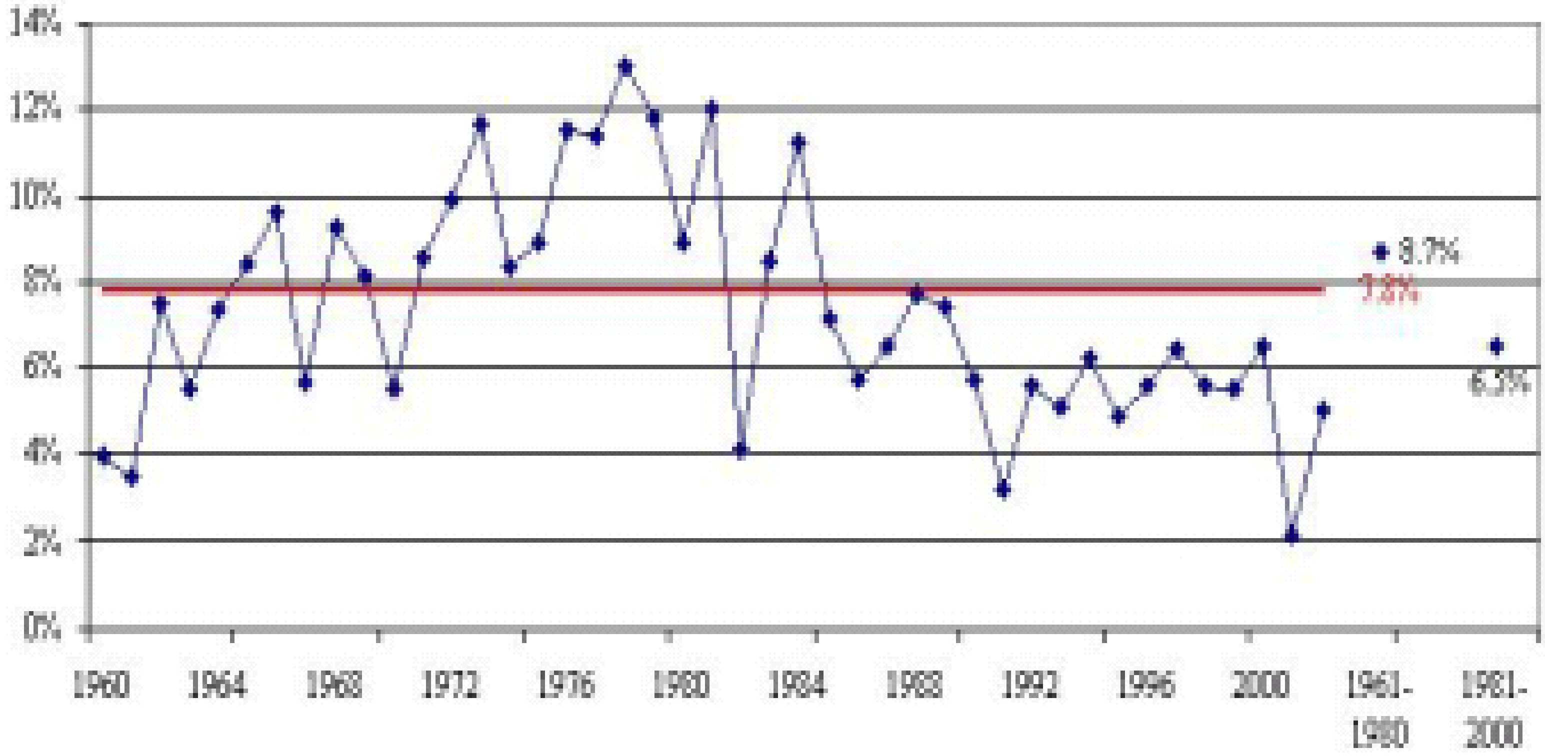


Expected long-term stock market returns

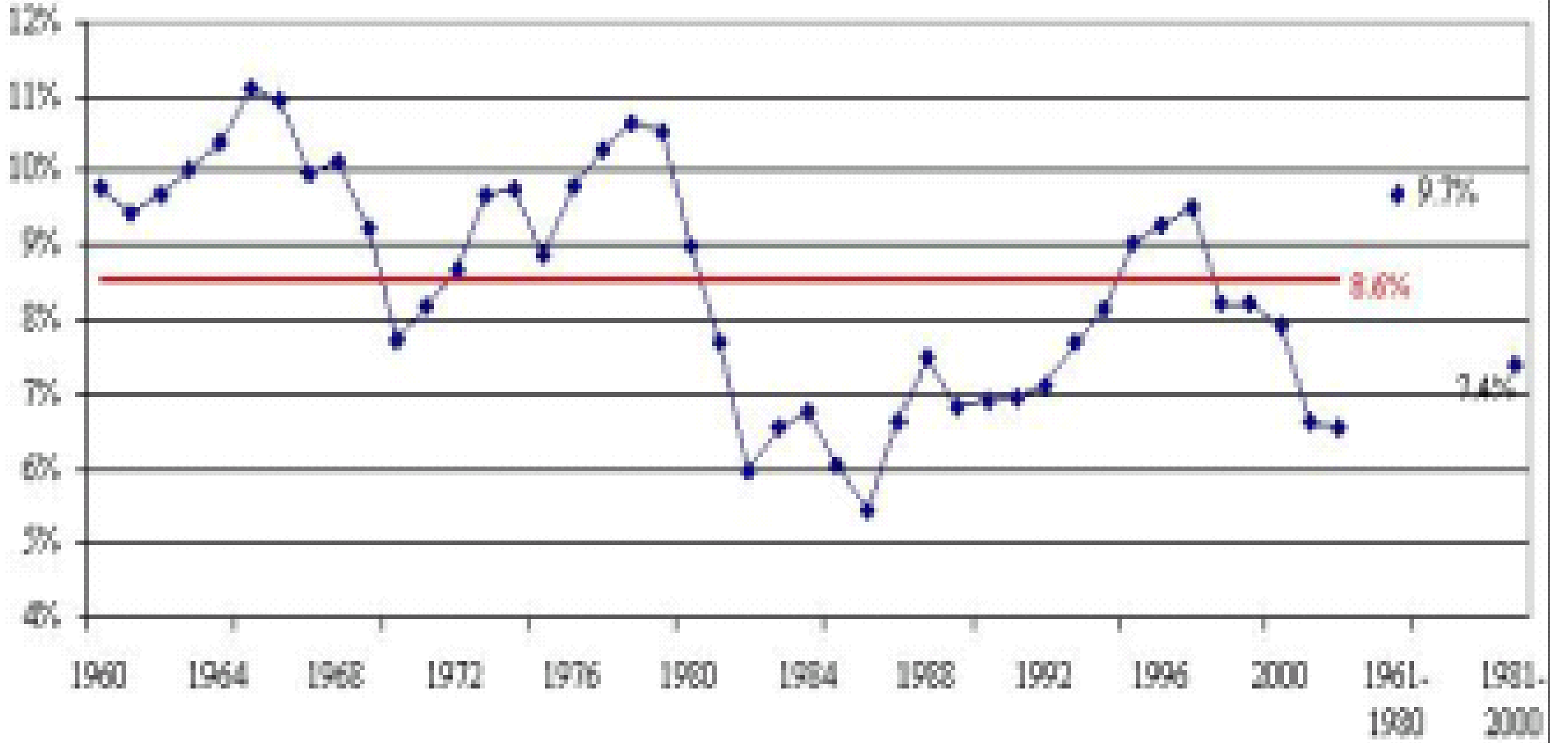
2. Breakdown of profit growth

	Profit growth	=	Nominal GNP growth	+	Change in profits as a percentage of GNP
Recent bull market (1981-2000)	6.5%	=	7.5%	-	1.0%
Expected (2003-2010)					
(30%) optimistic:	8.0%-8.5%	=	7.0%-7.5%	+	1.0%
(50%) most likely:	6.0%-6.5%	=	6.0%-6.5%	+	Ø
(20%) pessimistic:	4.0%-4.5%	=	5.0%-5.5%	-	1.0%
Weighted average:	6.1%	=	6.00%	+	0.10%

U.S. GDP growth rate



Corporate profits as % of GDP

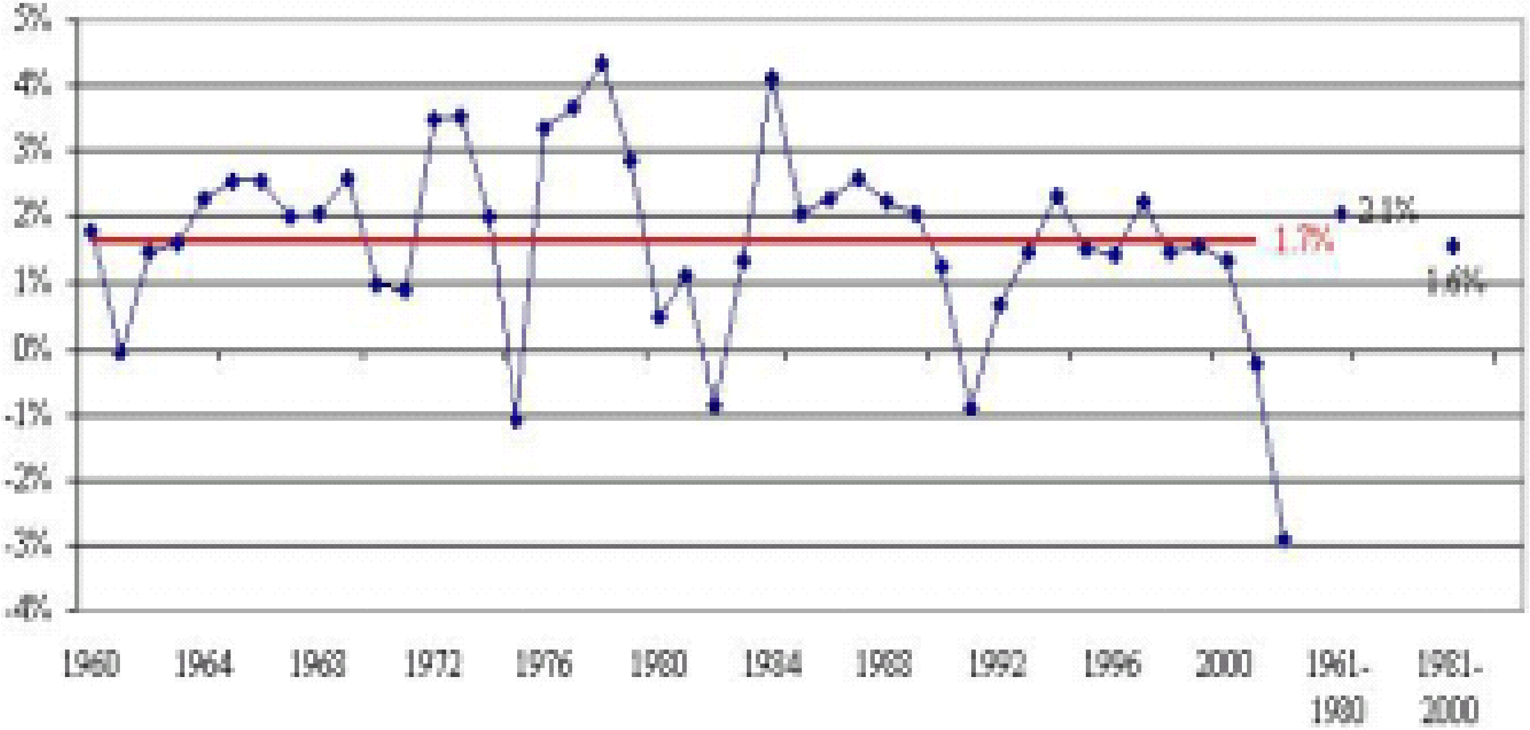


Expected long-term stock market returns

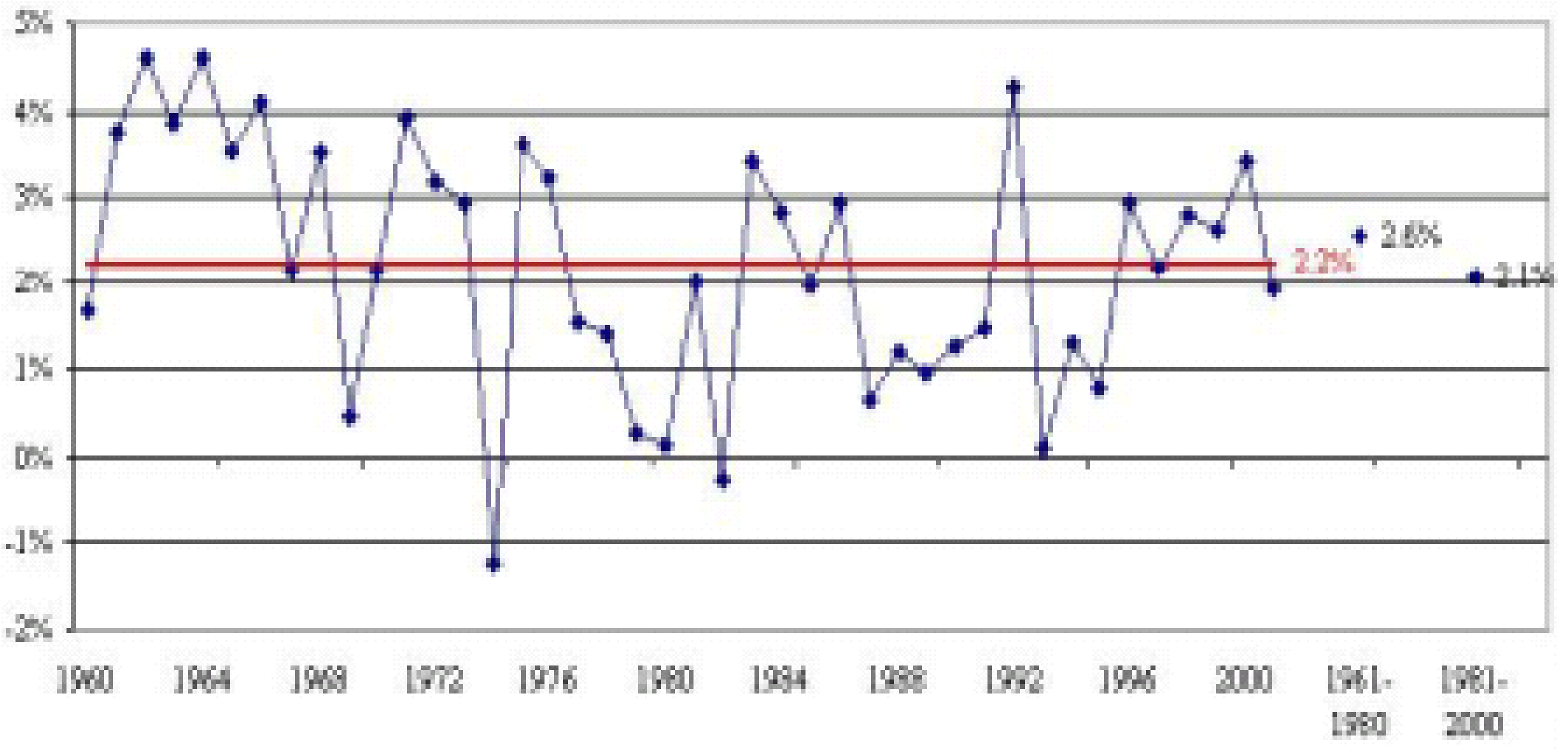
3. Sources of nominal GNP growth

	Nominal GNP growth	=	Labour growth	+	Productivity gains	+	Inflation
Recent bull market (1981-2000)	7.5%	=	1.5%	+	2.0%	+	4.0%
Expected (2003-2010)							
(30%) optimistic:	7.0%-7.5%	=	1.5%	+	2.5%-3.0%	+	3.0%
(50%) most likely:	6.0%-6.5%	=	1.5%	+	2.0%-2.5%	+	2.5%
(20%) pessimistic:	5.0%-5.5%	=	1.5%	+	1.5%-2.0%	+	2.0%
Weighted average:	6.00%	=	1.5%	+	1.95%	+	2.55%

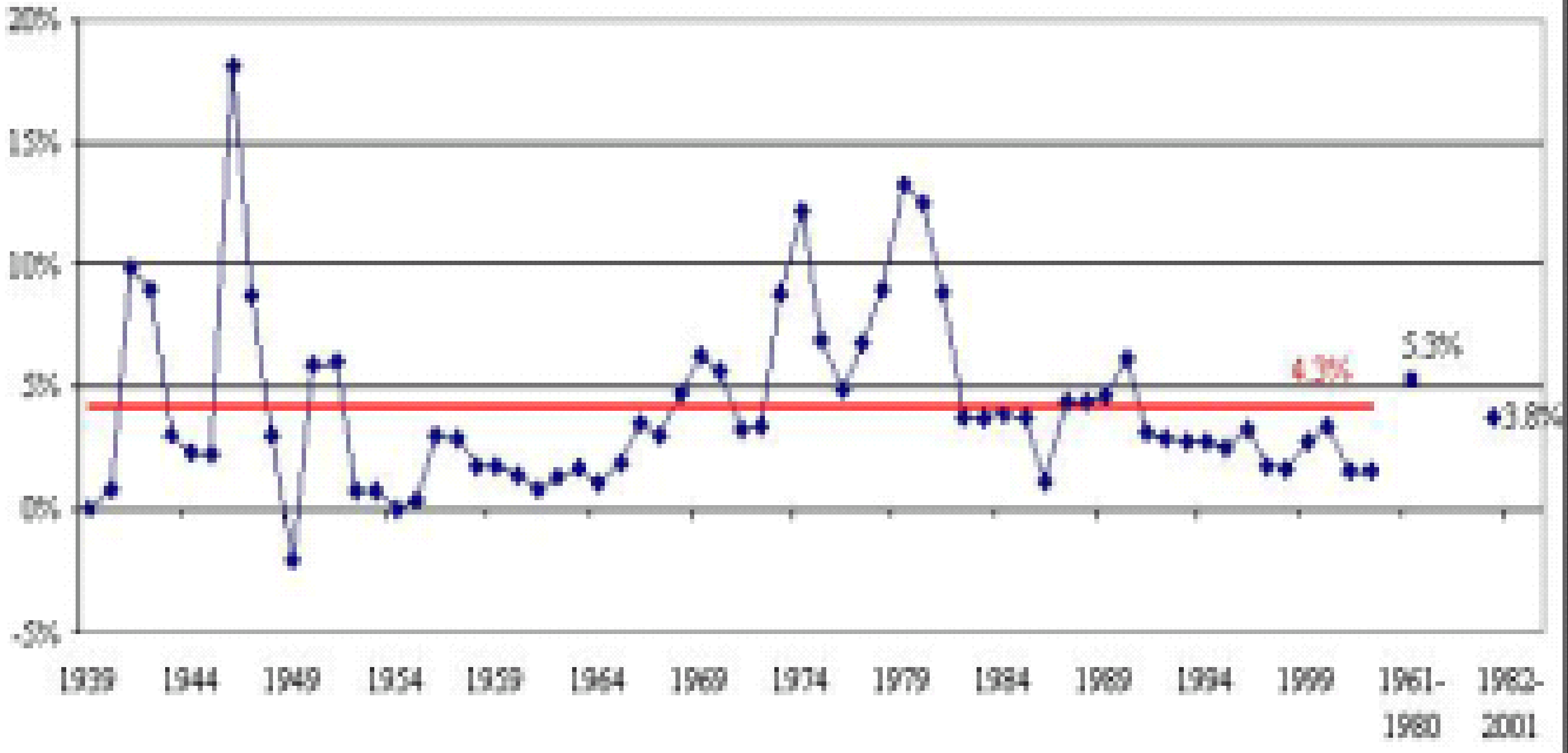
Employment growth, United States



Private sector productivity, United States



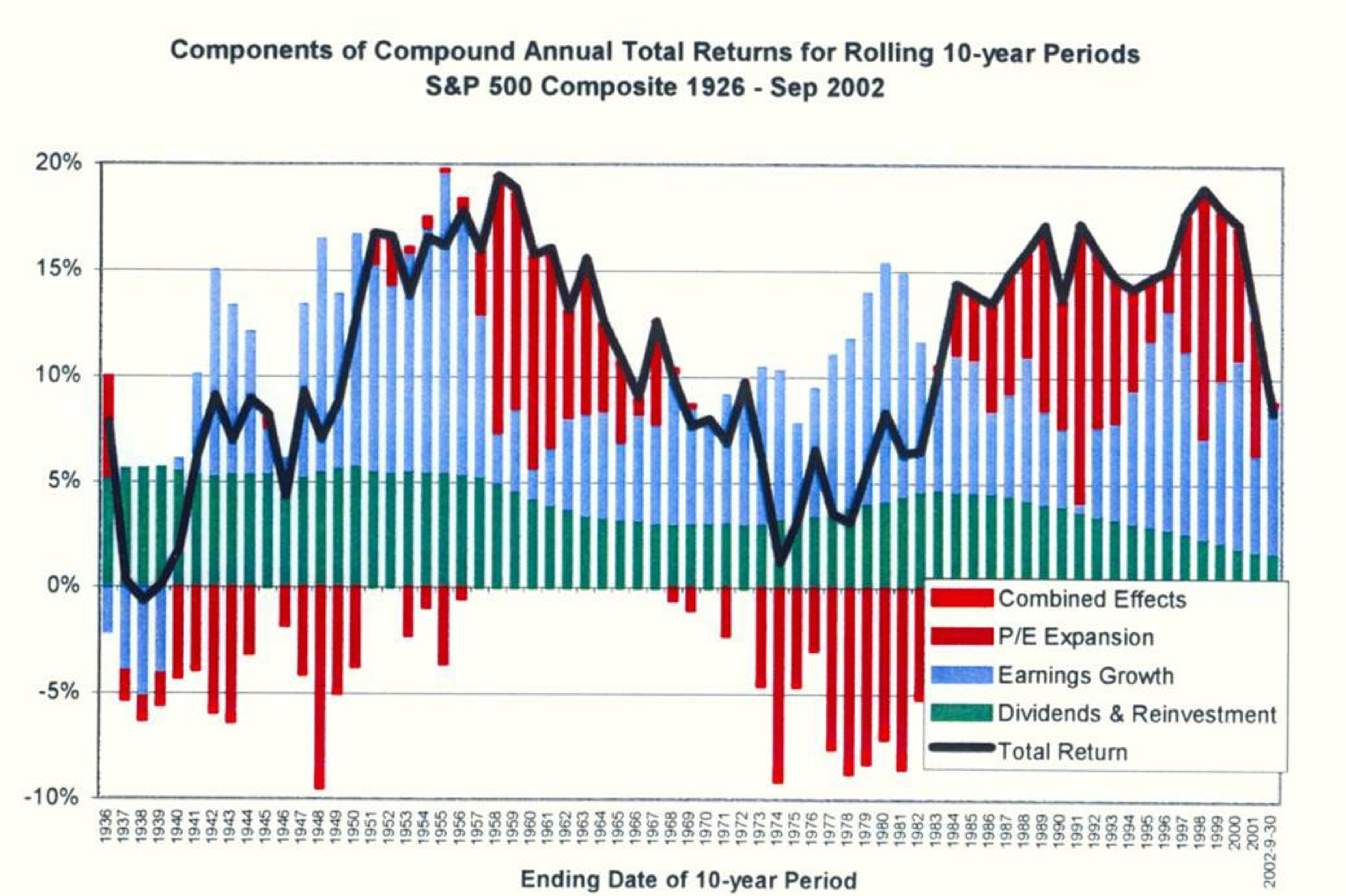
Inflation rate, United States



Breakdown of S&P 500 returns

	Total returns	**Dividend yield**	**Profit growth***	**Change in evaluation**
1872-2001	9.1%	4.8%	3.5%	0.8%
1960-2001	11.0	3.7	5.1	2.2
Decade				
1872-1879	6.5%	6.0%	-1.1%	1.7%
1880	5.6	4.8	-1.1	1.9
1890	5.5	4.2	5.0	-3.7
1900	9.9	4.3	5.6	0.0
1910	4.5	5.7	2.0	-3.2
1920	**14.6**	**5.3**	**5.7**	**3.6**
1930	-0.1	5.3	-5.7	0.3
1940	9.2	6.2	9.9	-7.0
1950	**19.5**	**5.8**	**3.9**	**9.7**
1960	7.8	3.4	5.5	-1.1
1970	5.7	4.3	9.9	-8.5
1980	**17.5**	**4.9**	**4.5**	**8.1**
1990	**18.5**	**2.7**	**7.8**	**7.7**

*Based on reported profits.


Components of Compound Annual Total Returns for Rolling 10-year Periods
S&P 500 Composite 1926 - Sep 2002
20%
15%
10%
5%
0%
-5%
-10%
Combined Effects
P/E Expansion
Earnings Growth
Dividends & Reinvestment
Total Return
1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002-9-30
Ending Date of 10-year Period

Forecast long-term trends in financial markets

Expected return

- **Bond market**

Last 20 years:	13%	(Canada)
	12%	(U.S.)

Expected (2003-2010):

(30%) optimistic:	6.0% - 7.0%
(50%) most likely:	4.0% - 5.0%
(20%) pessimistic:	2.0% - 3.0%
Weighted average:	4.5%

Expected return

- **Real property**

Last 20 years:	8.0%
Expected (2003-2010):	
(30%) optimistic:	10.0% - 11.0%
(50%) most likely:	8.0% - 9.0%
(20%) pessimistic:	6.0% - 7.0%
Weighted average:	8.7%

(Note: Expected cash flow return is approximately 8%.)

Expected return

- **Private share placements**

Last 20 years: *	15%	(Europe)
	20%	(U.S.A.)

(* risk premium of 5% above stock market return)

Expected (2003-2010):

(30%) optimistic:	12% - 13%
(50%) most likely:	9% - 10%
(20%) pessimistic:	6% - 7%
Weighted average:	9.8%

Forecast long-term trends in financial markets

Expected return

- **Hedge funds**

Last 20 years:*	18%

(* risk premium of 3% above stock market return)

Expected (2003-2010) *

(30%) optimistic:	11% - 12%
(50%) most likely:	8% - 9%*
(20%) pessimistic:	5% - 6%
Weighted average:	8.8%

* In line with stock market returns.

Traditional and Alternative Investments

Historical Return, Volatility and Correlation Characteristics *

		Return %	Volatility %	1	2	3	4	5	6	7	8
1	U.S. Equity	14.8	12.8	1.00	0.55	0.35	0.24	-0.46	-0.01	0.33	0.71
2	Ex-U.S. Equity	13.2	16.7	0.55	1.00	0.14	0.29	0.00	0.39	0.25	0.52
3	U.S. Fixed Income	10.5	7.0	0.35	0.14	1.00	0.73	-0.47	-0.05	0.17	0.31
4	Ex-U.S. Fixed Inc.	10.7	6.0	0.24	0.29	0.73	1.00	-0.10	0.23	-0.08	0.14
5	Private Equity	20.7	10.5	-0.46	0.00	-0.47	-0.10	1.00	0.47	-0.53	-0.30
6	Real Estate	7.8	5.9	-0.01	0.39	-0.05	0.23	0.47	1.00	-0.51	-0.18
7	Natural Resources	18.3	8.8	0.33	0.25	0.17	-0.08	-0.53	-0.51	1.00	0.23
8	Hedge Funds	18.2	9.4	0.71	0.52	0.31	0.14	-0.30	-0.18	0.23	1.00

* Based on annual logarithmic excess returns from 1981-2000 (Natural Resources from 1987-2000). Sources : Wilshire, MSCI, Salomon, NCREIF, Venture Economics, Ibbotson Associates, Adams Street Partners, Brinson Partners. Hedge fund data are available from www.hedgefund.net

Source: UBS Asset Management

Expected returns for a pension plan based on various types of asset allocation (2003-2010)

(based on expected returns in the most likely scenario)

Asset class	Expected return	Asset allocation					
Bonds	4.5%	60%	40%	40%	35%	30%	25%
Canadian and U.S. stocks	8.5	40	60	50	50	40	35
Private share placements	9.5			10	10	10	15
Real property	8.5				5	10	15
Hedge funds	8.5					10	10
Expected return		6.1	6.9	7.0	7.2	7.4	7.7

Expected returns for a pension plan based on various types of asset allocation (2003-2010)

(based on expected returns in the optimistic scenario for all asset classes except bonds under the pessimistic scenario)

Asset class	Expected return	Asset allocation					
Bonds	2.5%	60%	40%	40%	35%	30%	25%
Canadian and U.S. stocks	12.0	40	60	50	50	40	35
Private share placements	12.5			10	10	10	15
Real property	10.5				5	10	15
Hedge funds	11.5					10	10
Expected return		6.3	8.2	8.3	8.7	9.0	9.4

Forecast long-term trends in financial markets

- **Some preliminary conclusions**:

  - In future, long-term bond returns will stay in line with the expected CPI growth rate.

  - In future, stock returns will come mainly from profit growth.

  - In future, returns on traditional asset classes (stocks and bonds) should be unit yields.

Forecast long-term trends in financial markets

- **<u>Some preliminary conclusions</u>: (cont'd)**

  - As a result of expected low returns, investors will favour securities offering good steady income.

  - Passive asset allocation strategies should offer lower returns than active strategies.

  - Asset selection will become a dominant factor in value added.

Forecast long-term trends in financial markets

- **<u>Some preliminary conclusions</u>: (cont'd)**
  - Alternative investments should play an important role in maximizing the risk-return profile of a portfolio (i.e., superior return with lower volatity).

Forecast long-term trends in financial markets

- **<u>Potential impact on pension plans</u>**

  - Any growth in future surpluses should be limited.

  - The risk that deficits will continue for a number of years is not negligible.

  - Capitalization and profit policies may have to be revised.

Forecast long-term trends in financial markets

- **Potential impact on pension plans: (cont'd)**
  - Greater need for value-added investment strategies and products.
  - The choice of managers with superior ability to add value will become more important.
  - Preference will be given to managers skilled at selecting securities relying on basic research.