What is the Best Forecaster?

Economic statistics	*Market-price data*
After the fact	Before the fact
Always provisional	Always final
Subjective	Objective
Hampered by measurement error	Perfectly known
Often highly seasonal	Not seasonal
Present a mixed picture	Definitive
Require an expert for interpretation	Can be interpreted by anyone prepared to do the homework
Watched and interpreted by many	Watched and interpreted by few

The Challenges of Market-based Forecasting

- Which prices to watch?

- Which markets lead and which follow?

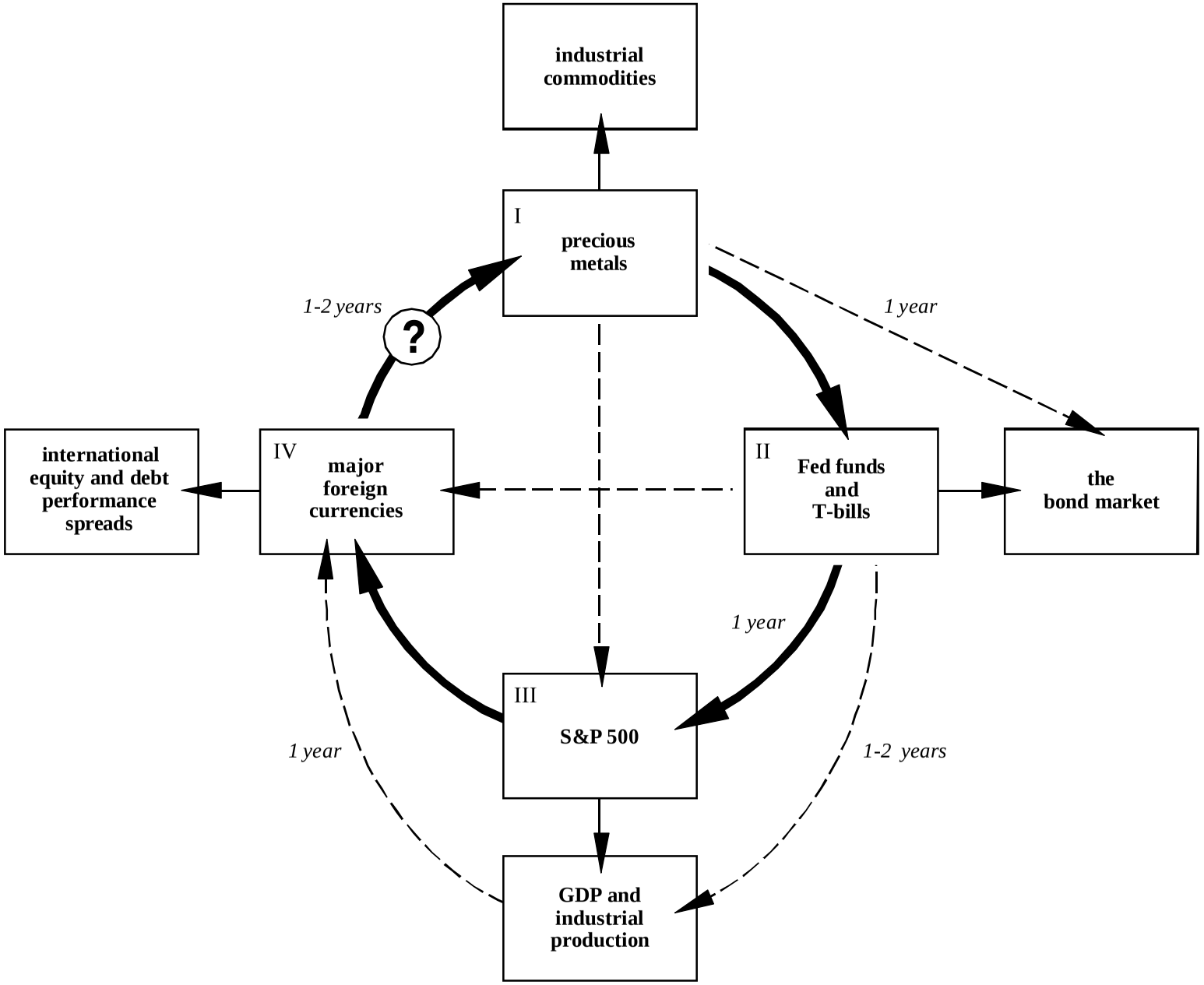
- How to draw reliable interpretations?

- How to work without an established theory?

Needed: not just a market approach, but an empirical approach driven by market information.

The "Main Sequence"

in which markets systematically lead and follow one another



Source: "Using markets to forecast interest rates—and interest rates to forecast markets," *The Interest-Rate Outlook*, Wainwright, April 30, 2001.

I. Forecasting the Fixed-income Markets

How Commodities Contribute to Forecasting the Bond Market

	correlation between commodity-price change and following year change in the 10-year T-bond yield:	
	simple correlation	*partial correlation*
precious metals (equal weighted)	.79	.00
platinum	.74	.09
gold	.73	–.01
silver	.71	–.06
Journal of Commerce industrial index	.48	–.01
rubber	.47	.06
lead/lead scrap	.46	.00
Bridge/CRB index of raw industrial materials	.43	–.06
Bridge/CRB index of spot commodities	.40	–.11
copper scrap	.38	–.03
cotton	.37	.07
foreign exchange (G-10 trade weighted)*	.36	.04
burlap	.33	–.13
tin	.29	–.17
rosin	.27	–.14
print cloth	.27	.04
steel scrap	.24	–.08
hides	.23	.24
wool tops	.20	–.04
crude oil (Brent)	.20	–.28
tallow	.19	–.09

Data: Calendar-year averages. Commodity prices from Bridge/Commodity Research Bureau and other sources; Interest rates from Office of Market Finance, U.S. Treasury.

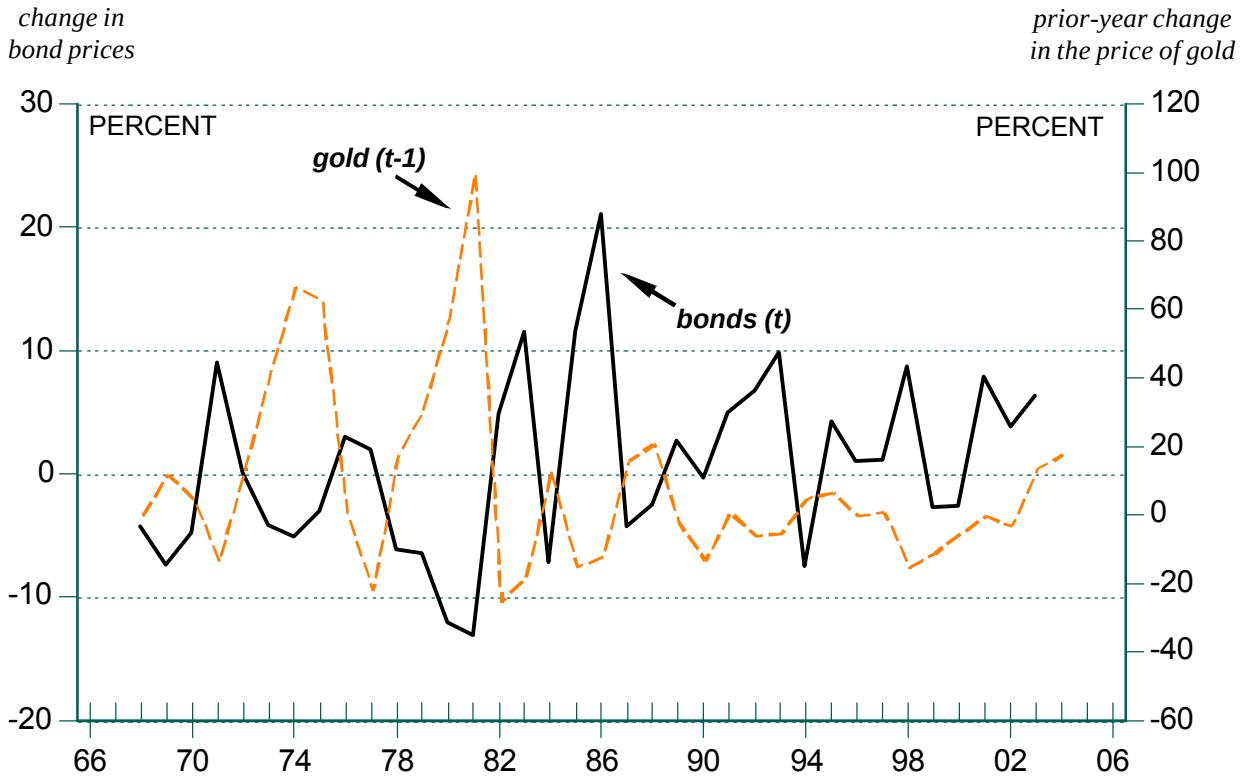
∗ Index begins 1971.

Source: "Industrial commodities are not signalling another increase in interest rates," *The Interest-Rate Outlook,* H.C. Wainwright & Co. Economics, Inc., September 15, 1999.

When Gold Zigs, Bonds Zag

1968 to date

With a delay of one year, bond-market performance is closely (and inversely) correlated with changes in the price of gold.

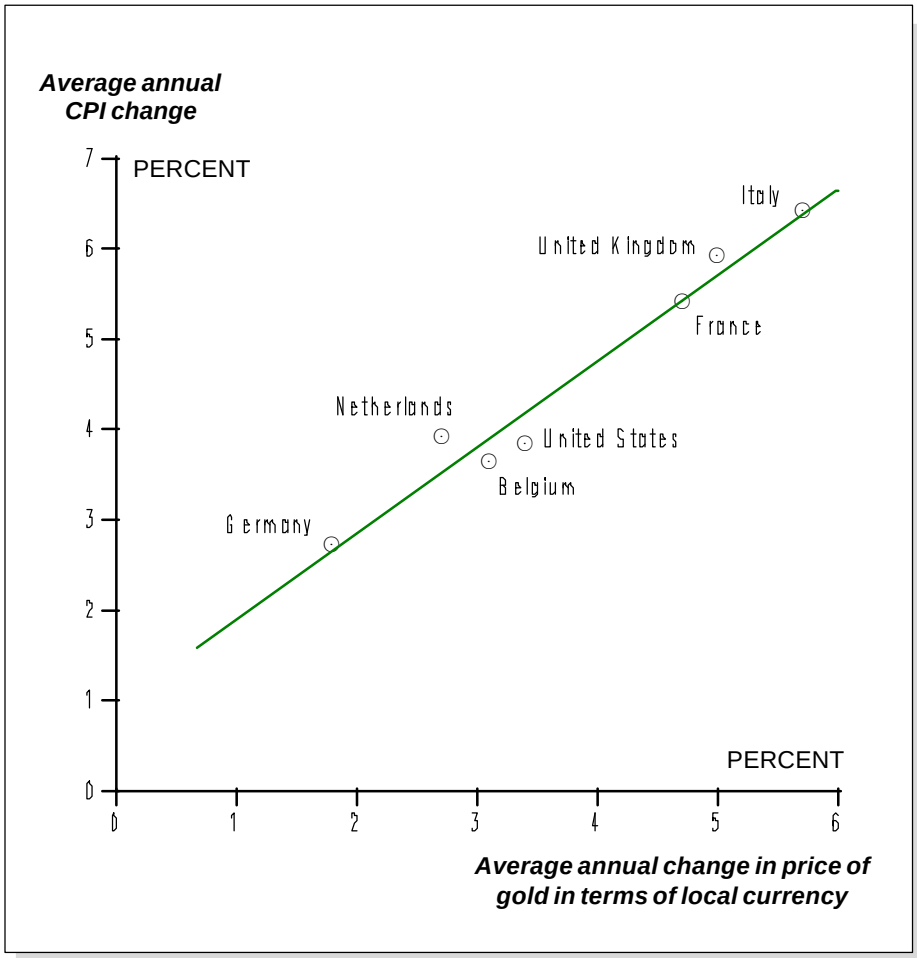


Data: Calendar-year averages of daily gold prices (London and New York) and 10-year Treasury bond prices (computed from yields supplied by U.S. Treasury Office of Market Finance). Price changes are calculated using continuous compounding.

Source: "How much gold it takes to immunize a bond portfolio against inflation," *Interest-Rate Outlook*, H.C. Wainwright & Co. Economics, Inc., December 24, 2003.

Currency Performance and Absolute Inflation

Seven Developed Countries, *1949-99*



Data: Calendar-year averages of daily U.S. gold prices (*Metals Week*) converted to local currency at current exchange rates (Federal Reserve Board) and of monthly consumer-price indices (International Monetary Fund).

Source: "Why the euro is not undervalued," *International Forecaster,* H.C. Wainwright & Co. Economics, Inc., May 31, 2000.

The Yield-Curve Slope as a Predictor of Bond Market Performance

1972 to date

AVERAGES for years that the yield spread between 10-year and 3-month Treasuries:	*subsequent one-year change in:* 10-year T-bond yields [1]	Baa corporate yields [2]	Municipal yields [3]	Mortgage yields [4]
exceeded 250 b.p. (four years averaging 295 b.p.)	–85 b.p.	–66 b.p.	–57 b.p.	–61 b.p.
was between 150 and 250 b.p. (ten years averaging 208 b.p.)	–23	–52	–42	–28
was between 50 and 150 b.p. (seven years averaging 104 b.p.)	2	–3	–2	–3
was between 0 and 50 b.p. (two years averaging 17 b.p.)	22	44	19	16
was inverted. (six years averaging –68 b.p.)	62	122	108	73

Note: All data are calendar-year averages of interest rates expressed as bond-equivalent yields.

1. *Source:* Federal Reserve
2. *Source:* Moody's
3. *Source: Bond Buyer* index
4. *Source:* Lehman Brothers

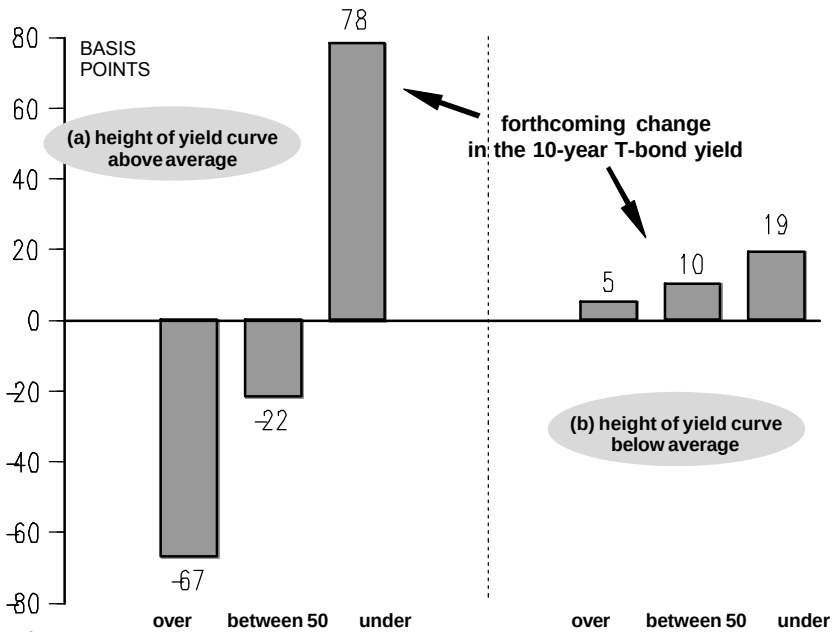
Investment interpretation:

An inverted yield curve is bearish for bonds—even though it is sometimes seen as a recession signal. A steep yield curve is bullish for bonds. The relation between the slope of the curve and following-year bond market performance is roughly linear.

Source: Updated from "What does a steep yield curve imply for the future of interest rates?" *The Interest-Rate Outlook,* Wainwright, April 18, 2002.

The Slope and Height of the Yield Curve

as predictors of the bond market, *1954 to date*

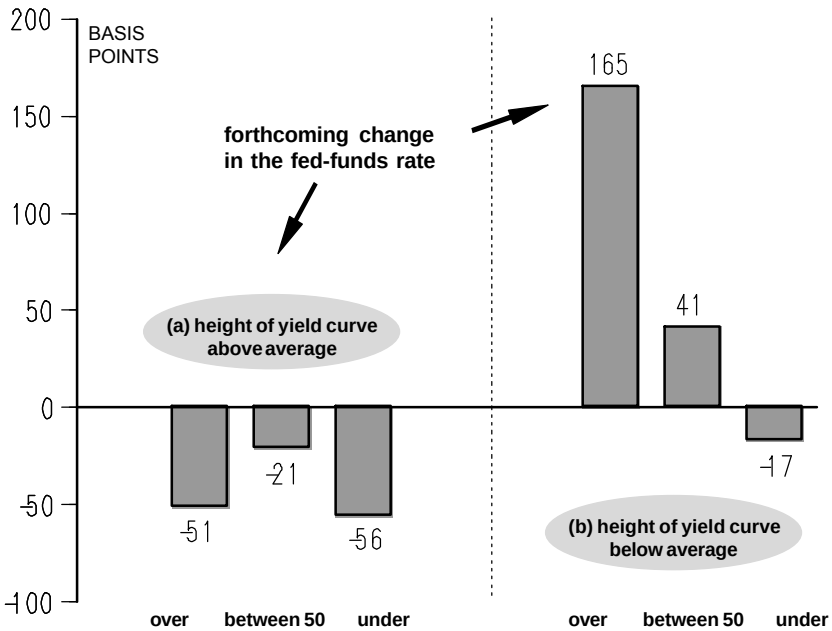


AVERAGES for years that the slope of the curve was:	over 200 b.p. (averaging 241 b.p.)	between 50 and 200 b.p. (averaging 144 b.p.)	under 50 b.p. (averaging –62 b.p.)	over 200 b.p. (averaging 275 b.p.)	between 50 and 200 b.p. (averaging 110 b.p.)	under 50 b.p. (averaging 20 b.p.)

Data: Calendar-year averages of daily interest rates on 10-year and 3-month Treasury bills (bond-equivalent yield), together with calendar-year averages of daily overnight rates on fed funds (bond-equivalent yield).

The Slope and Height of the Yield Curve

as predictors of the fed-funds rate, *1954 to date*

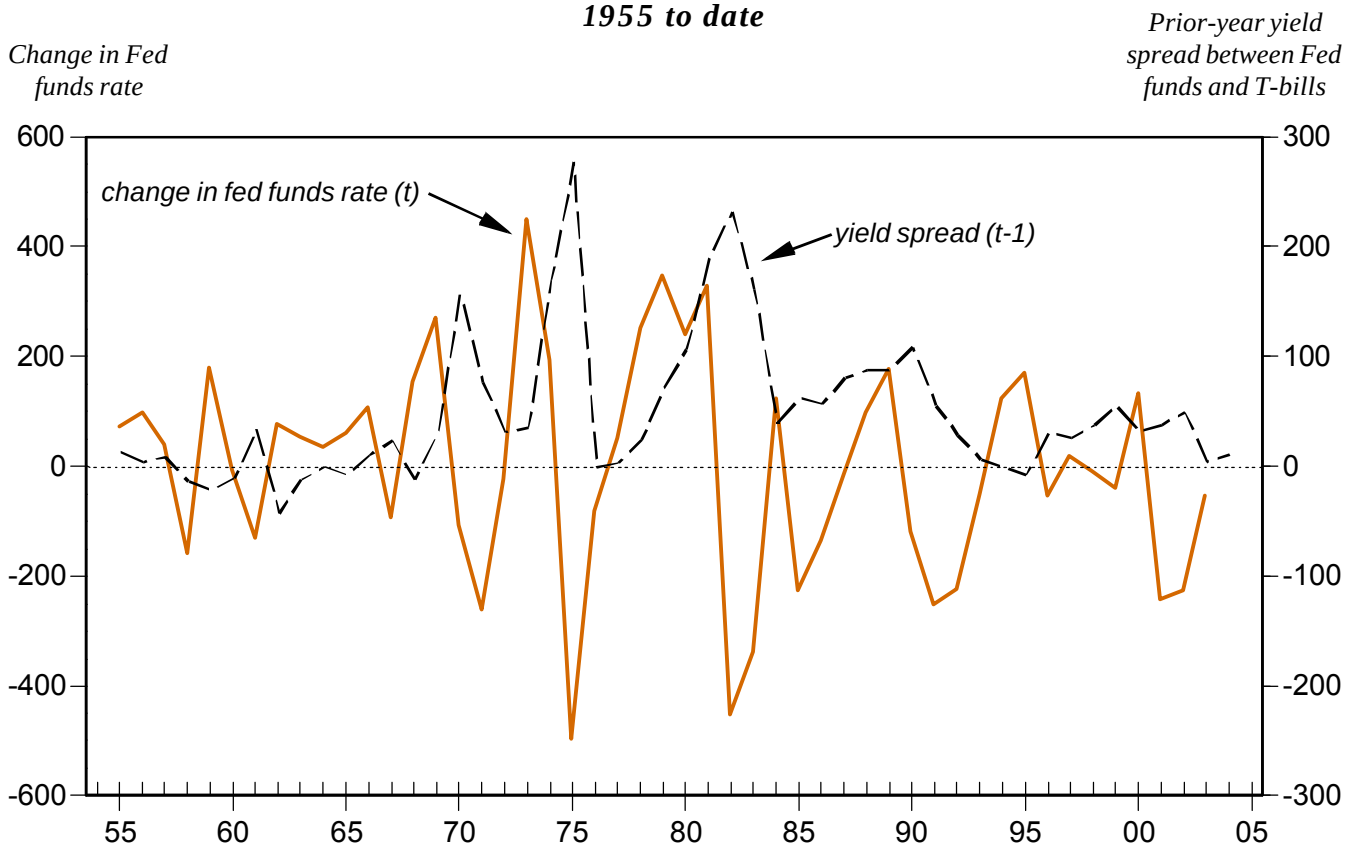


AVERAGES for years that the slope of the curve was:	over 200 b.p. (averaging 241 b.p.)	between 50 and 200 b.p. (averaging 144 b.p.)	under 50 b.p. (averaging –62 b.p.)	over 200 b.p. (averaging 275 b.p.)	between 50 and 200 b.p. (averaging 110 b.p.)	under 50 b.p. (averaging 20 b.p.)

Source: "Using the height of the yield curve to help forecast the bond market," *The Interest-Rate Outlook,* Wainwright, July 30, 2002.

How Rate Spreads Forecast the Fed

1955 to date



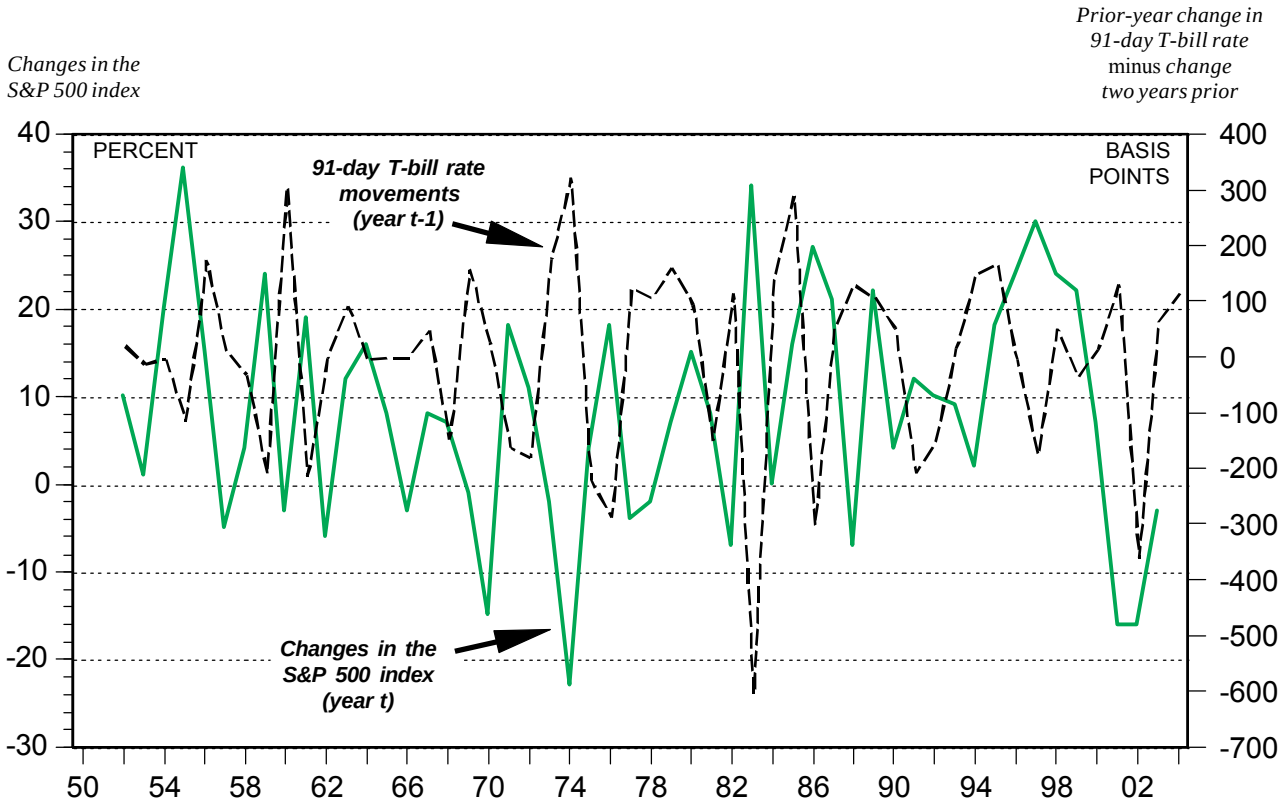
Interpretation:
Movements in the fed-funds rate are closely and inversely associated with pre-existing rate spreads between fed funds and T-bills.

Data: Calendar-year averages of daily yields on federal funds and three-month Treasury bills. Before calculating the spread, both rates are expressed as bond-equivalent yields. *Source:* Federal Reserve Board.

Source: Updated from "Interest-rate spreads are *not* signaling an imminent decline in short rates," *The Interest-Rate Outlook,* Wainwright, February 27, 1998.

S&P 500 Price Index Changes and Prior-Year Short-Term Interest-Rate Movements

1952 to date



Interpretation:

There is a strong cyclical component in the performance of the stock market. This component can be anticipated a year in advance from movements in short-term interest rates. The most bullish signal is a switch from rising to falling rates.

Source: Updated from *Research Summary:* "What we've learned about about the Fed and equity performance," *The Asset Selector,* Wainwright, December 29, 2000.

The Best Valuation Measure ?

Four valuation measures and subsequent market performance
S&P 500, ***1954 to date***

AVERAGE following-year S&P total return relative to cash:	16 highest yield years	15 intermediate yield years	16 lowest yield years
earnings yield	8.1 %	6.4 %	7.5 %
dividend yield	10.7	5.6	5.6
dividend yield minus CPI inflation	11.2	12.4	–1.3
dividend yield adjusted for the change in precious-metal prices	15.2	8.0	–1.1

Data: Calendar-year averages and totals of daily or month-end data.

Interpretation:

Different valuation measures for the equity market have different predictive ability. Earnings yield is inferior to dividend yield. The best found so far is dividend yield adjusted for inflation using past movements in commodity prices.

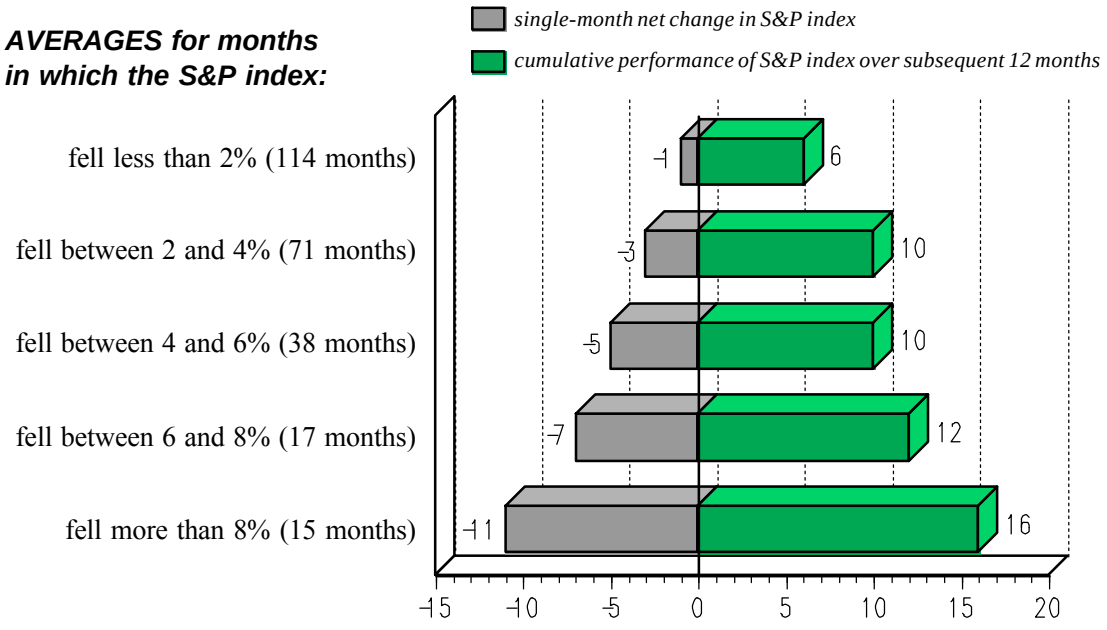
Source: "Enron's collapse and its impact on the stock market," *The Capitalist Perspective,* H.C. Wainwright & Co. Economics, Inc., February 19, 2002.

Market Plunges

The Harder They Fall, the Higher They Bounce

Sudden Equity-Market Declines
How Lasting are the Effects?

A half century, 1949 to date



Regardless of the magnitude of a sudden decline, on average the market twelve months later is about five percent ahead of where it was before the decline.

Source: "When equity-market plunges are not reversed," *The Asset Selector,* H.C. Wainwright & Co. Economics, Inc., August 20, 2002.

III. International Markets

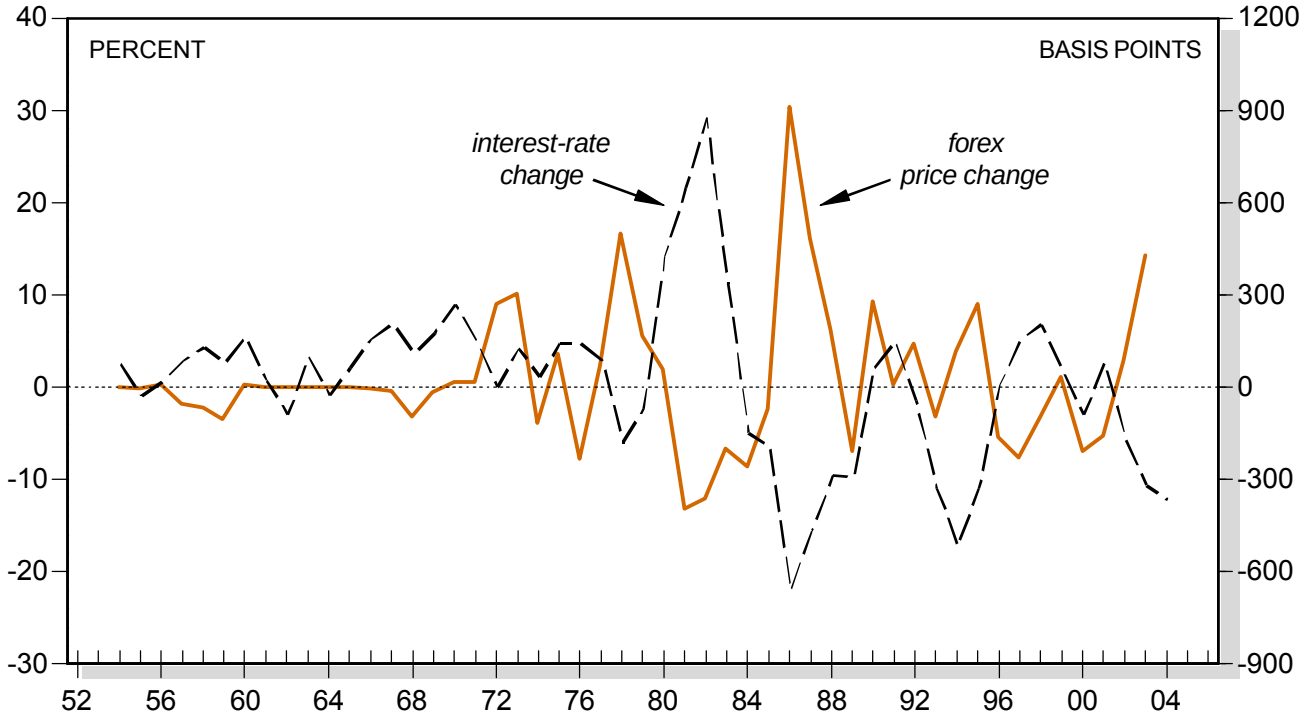
Monetary Policy Drives the Forex Market

U.S. interest rates and the average dollar price of four key currencies

1954 to date

Change in the price of foreign exchange

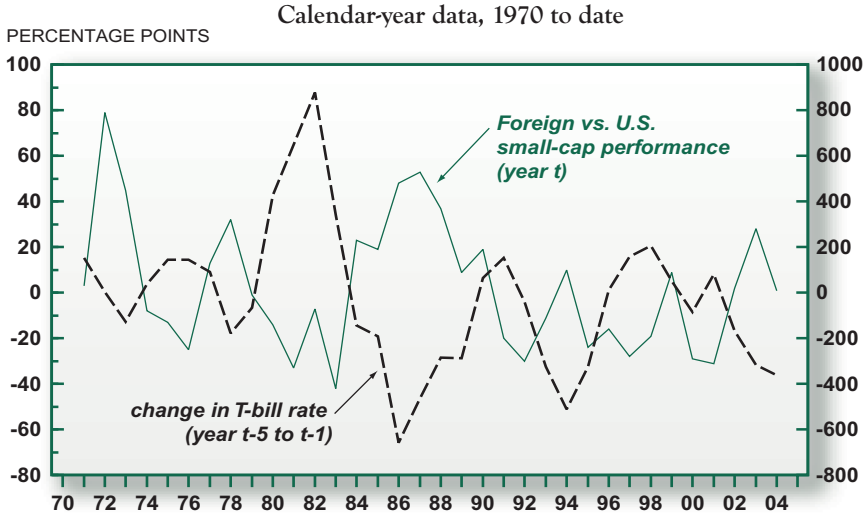
Net change in T-bill rates over the prior four years



Data: Calendar-year averages of daily exchange rates and 91-day T-bill rates (Federal Reserve Board). The French, German, Japanese and U.K. currencies are given equal weight.

Fed Policy and the Relative Performance of International Small-cap Stocks

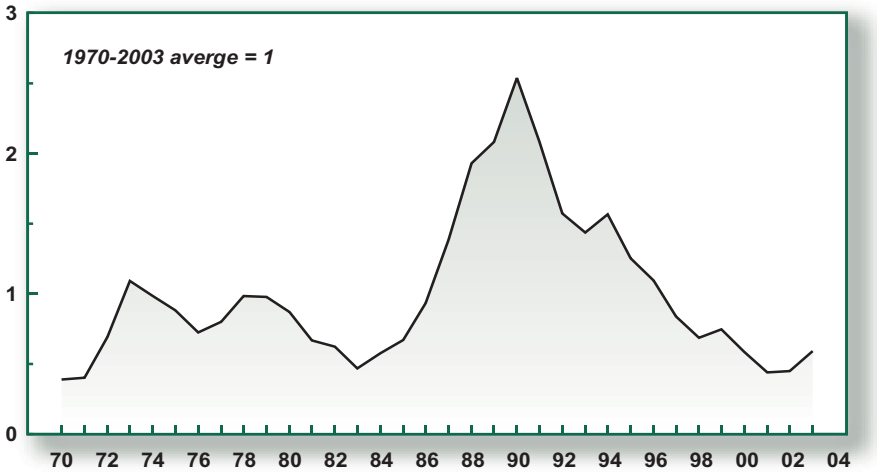
Calendar-year data, 1970 to date



Data: Calendar-year averages of month-end total-return indices for foreign and U.S. small-cap stocks (Dimensional Fund Advisors) and of month-average Treasury-bill rates (Federal Reserve Board). The U.S. index used covers the 9th and 10th deciles of the U.S. stock market.

Relative Strength of Foreign and U.S. Small-cap Stocks

1970 to date



Source: "A bright future for foreign small-cap stocks," International Forecaster, Wainwright, February 13, 2004.

What market data are telling us about the next 12 months

- good growth but slowing
- inflation on the rise again
- Fed rate hikes
- flat equity market now that turbulence has ended
- rising bond yields
- neutral on credit spreads
- dollar continuing to decline
- small-cap international stocks to outperform

Notes