Beating the Business Cycle: Can Turning Points in the Economy be Predicted?

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Accuracy of Consensus Forecasts

"The record of failure to predict recessions is virtually unblemished."

- Prakash Loungani
*International Journal of Forecasting (2001)*

Different From the Consensus

"In a survey in March 2001 95% of American economists said there would not be a recession …
ECRI is perhaps the only organisation to give advance warning of each of the past three recessions; just as impressive, it has never issued a false alarm."
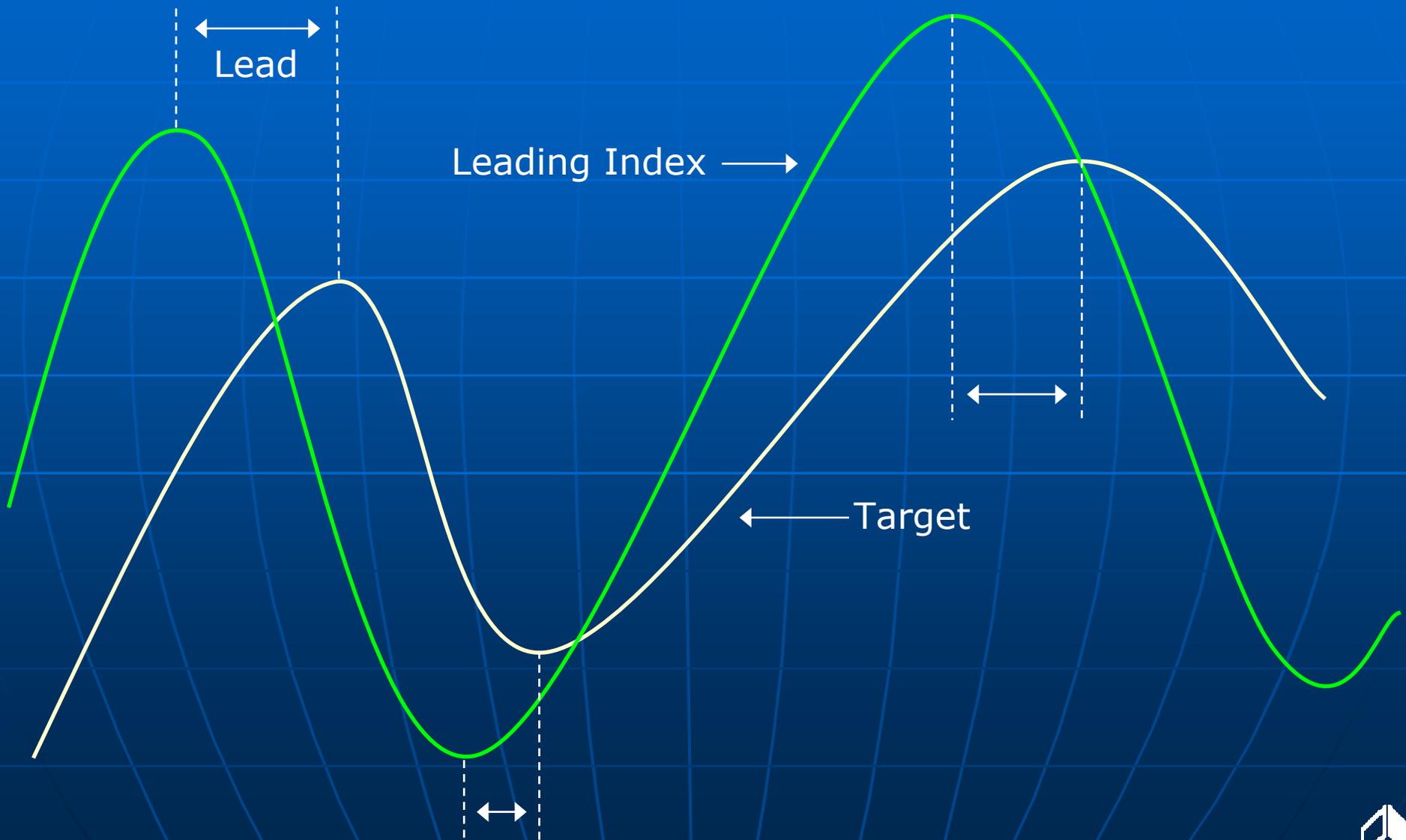
- *The Economist (Jan. 2005)*

Turning Points are Hard to Predict

Forecast Error

Target

Consensus Forecast
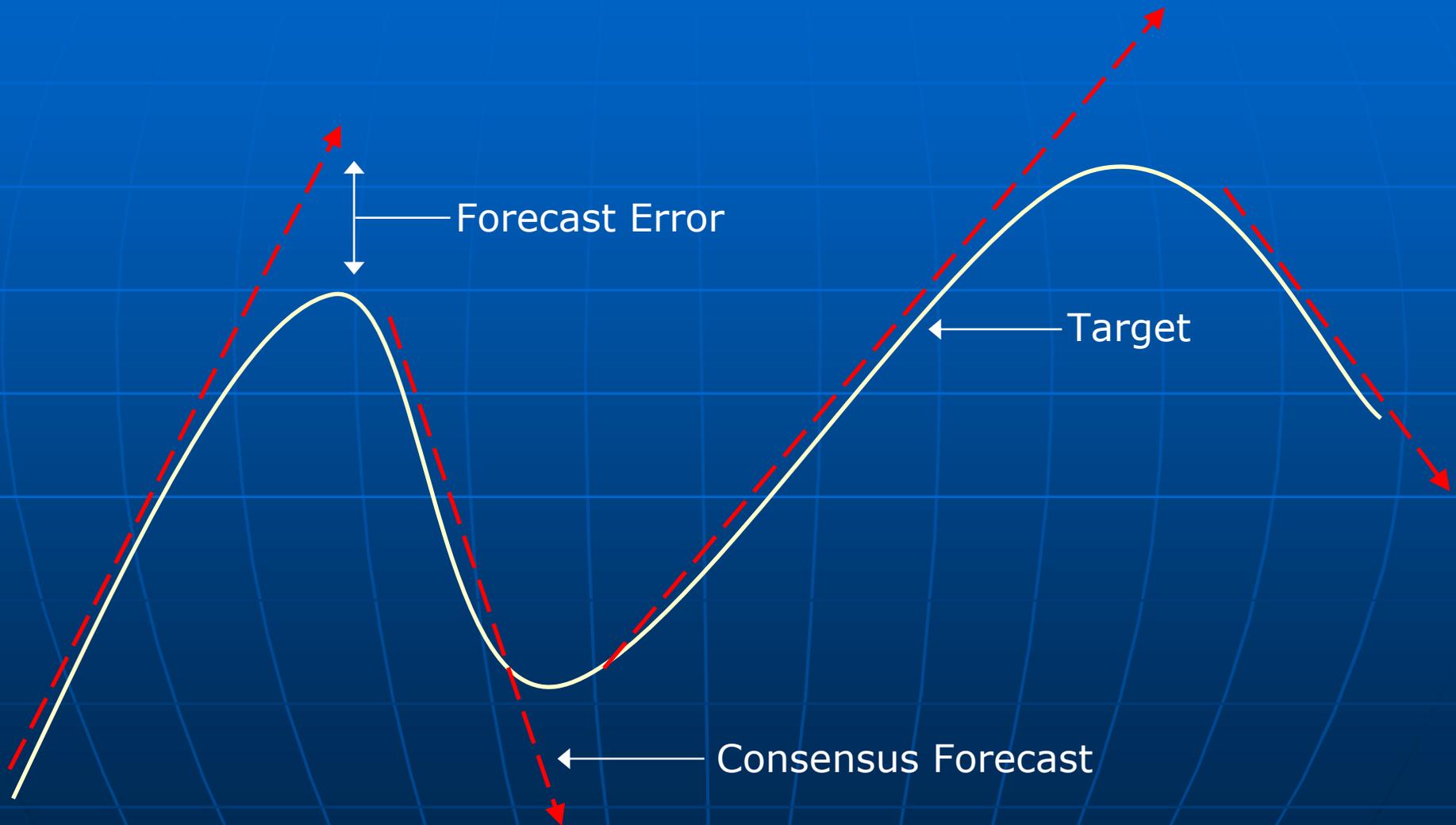
Leading Indexes can Time Turns

Lead

Leading Index

Target

Evolution of Cyclical Approach

1. Classical definition of business cycles (Mitchell, 1927)

2. First leading indicators of revival (Burns & Mitchell, 1938)

3. First leading indicators of revival *and* recession (Moore, 1950).

4. Composite index of leading indicators (Moore, 1958; Shiskin, 1961; Moore & Shiskin, 1967).

5. Leading indexes for international economies (Moore et al, 1970s, 1980s), and separate leading indexes for inflation and employment (Moore, early 1980s).

6. ECRI's forecasting approach builds on Moore's work, not just Burns & Mitchell.

Points of Departure

- **Optimization vs. Robustness**

- **Multidimensional Framework**

- **Breadth of International Coverage**

- **Model Specification**

- **Independence**

Optimization vs. Robustness

The Original Empirical Evidence

Indicator	At Peaks				At Troughs			
	U.S. before 1938				U.S. before 1938			
1. Sensitive Commodity Prices	-2				-1			
2. Ave. Workweek, Manufacturing	-3				-3			
3. Comm. & Ind. Bldg. Contracts	-3				-1			
4. New Incorporations	-3				-4			
5. New Orders	-4				-2			
6. Housing Starts	-6				-4			
7. Stock Prices	-6				-6			
8. Business Failure Liabilities	-9				-8			
Ave. 7 Indicators	**-4**				**-3**			
Ave. 8 Indicators	**-4**				**-4**			

The Sherlock Holmes Maxim

"It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts."

- Sherlock Holmes, *A Scandal in Bohemia*

"An Answer to 'Measurement without Theory'"

Indicator	At Peaks				At Troughs			
	U.S. before 1938	U.S 1948-91			U.S. before 1938	U.S 1948-91		
1. Sensitive Commodity Prices	-2	-4			-1	+2		
2. Ave. Workweek, Manufacturing	-3	-6			-3	-1		
3. Comm. & Ind. Bldg. Contracts	-3	-6			-1	+2		
4. New Incorporations	-3	-7			-4	-4		
5. New Orders	-4	-6			-2	-1		
6. Housing Starts	-6	-12			-4	-5		
7. Stock Prices	-6	-6			-6	-5		
8. Business Failure Liabilities	-9	-10			-8	-1		
Ave. 7 Indicators	**-4**	**-7**			**-3**	**-2**		
Ave. 8 Indicators	**-4**	**-7**			**-4**	**-2**		

How About in Other Economies?

Indicator	At Peaks				At Troughs			
	U.S. before 1938	U.S 1948-91	10 Countries 1948-1987	11 Countries 1948-1987	U.S. before 1938	U.S 1948-91	10 Countries 1948-1987	11 Countries 1948-1987
1. Sensitive Commodity Prices	-2	-4	-2	-1	-1	+2	+1	-1
2. Ave. Workweek, Manufacturing	-3	-6	-4	-3	-3	-1	-4	-3
3. Comm. & Ind. Bldg. Contracts	-3	-6	-1	-1	-1	+2	0	0
4. New Incorporations	-3	-7	-8	-8	-4	-4	-8	-8
5. New Orders	-4	-6	-6	-4	-2	-1	-9	-6
6. Housing Starts	-6	-12	-6	-6	-4	-5	-7	-7
7. Stock Prices	-6	-6	-6	-6	-6	-5	-7	-6
8. Business Failure Liabilities	-9	-10	n.a.	n.a.	-8	-1	n.a.	n.a.
Ave. 7 Indicators	**-4**	**-7**	**-5**	**-4**	**-3**	**-2**	**-5**	**-4**
Ave. 8 Indicators	**-4**	**-7**	**n.a.**	**n.a.**	**-4**	**-2**	**n.a.**	**n.a.**

Multidimensional Framework

Three Key Aspects of the Economy
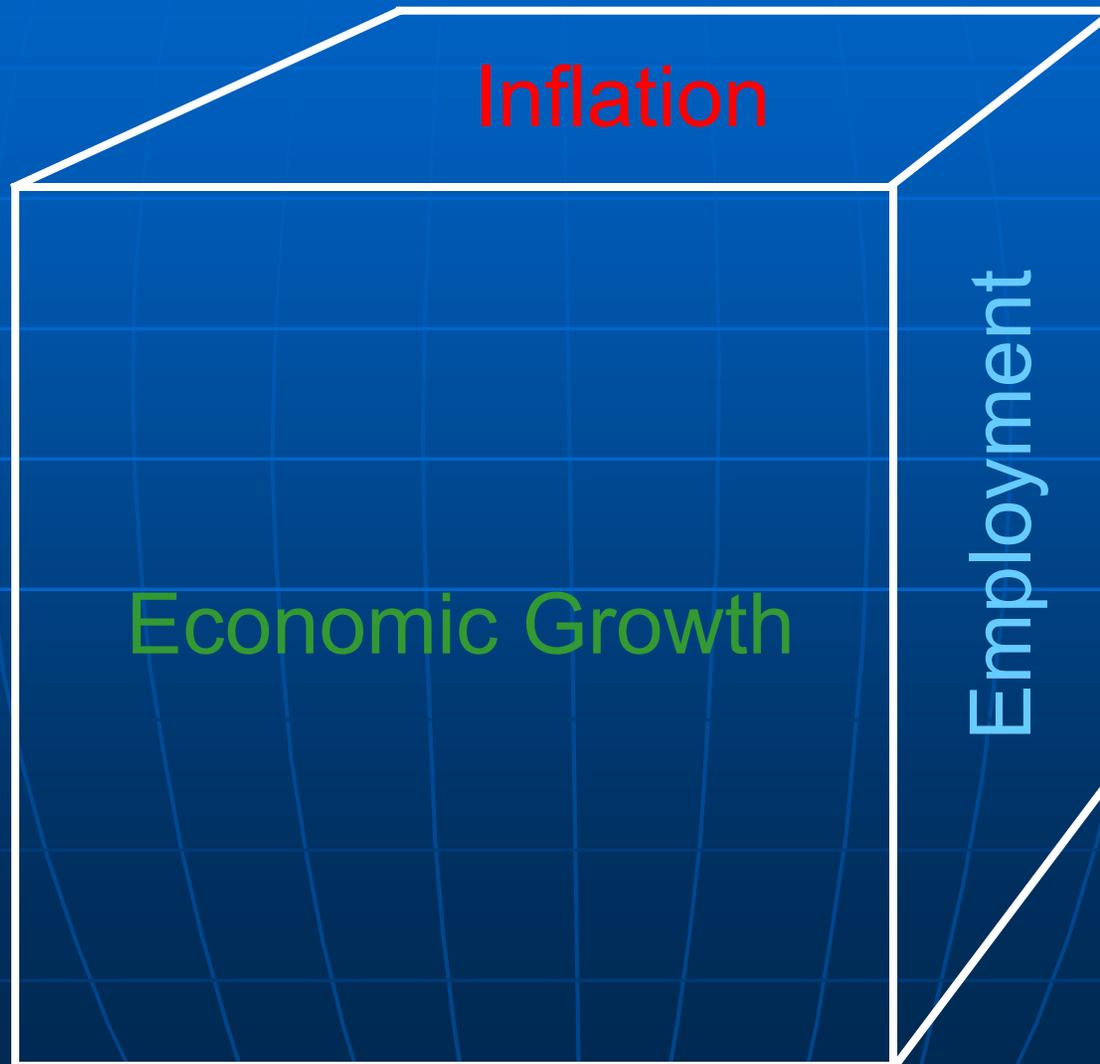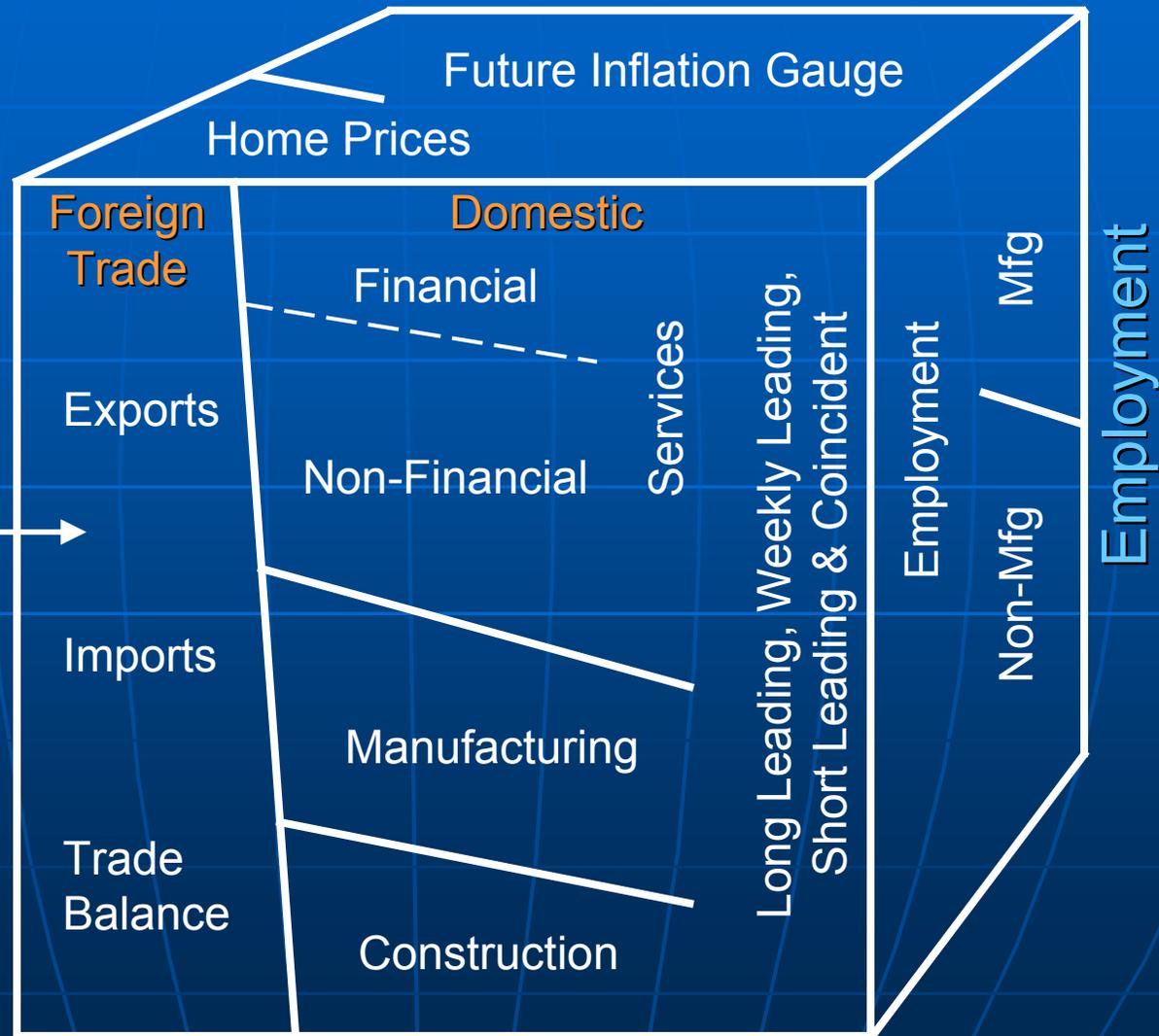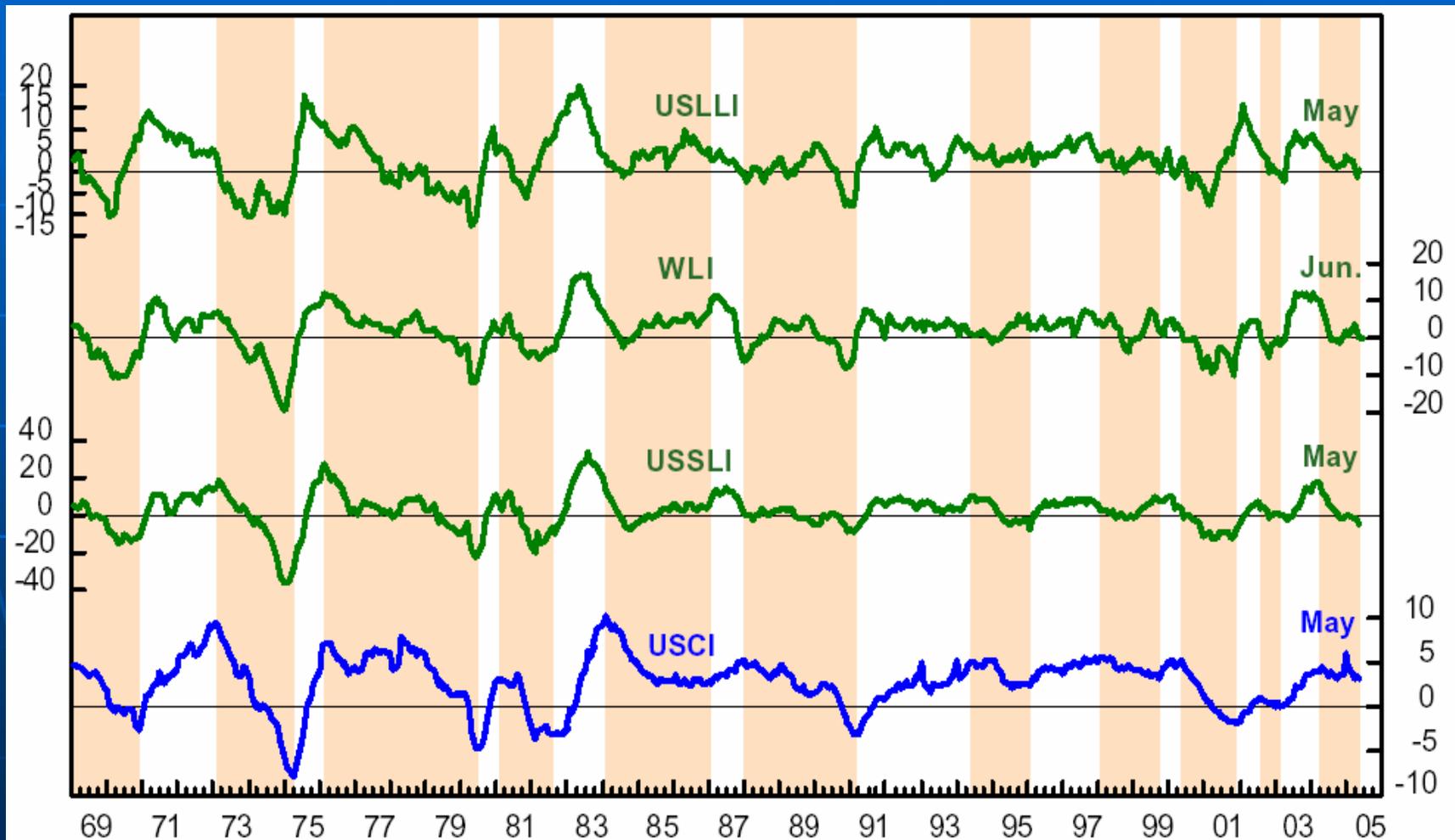
U.S. Composite Indexes, Growth Rates

Shaded areas represent U.S. growth rate cycle downturns.

International Breadth of Coverage

Countries/Regions Covered

- North America, Unites States, Canada and Mexico

- Europe, Eurozone, United Kingdom, Germany, France, Italy, Spain, Sweden, Switzerland and Austria

- Asia-Pacific, Japan, China, India, Korea, Taiwan, Australia, New Zealand and South Africa

Model Specification

Evaluating Indicators

"The (LEI) is intended only to forecast the timing of turning points and not the size of the forthcoming downswing or upswing nor to be a general indicator of the economy at times other than near turning points. Because of this, evaluation of the (LEI) by standard statistical techniques is not easy."

 - Granger and Newbold (1986)

Lead Profiles:
Leads at US Business Cycle Peaks
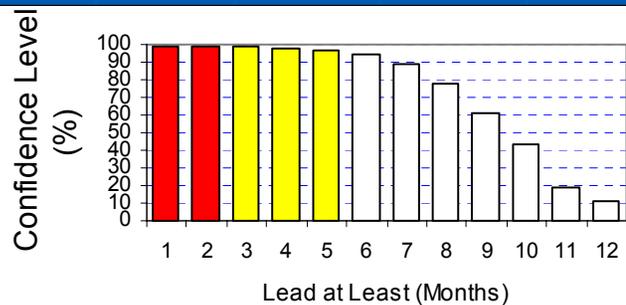
CLI
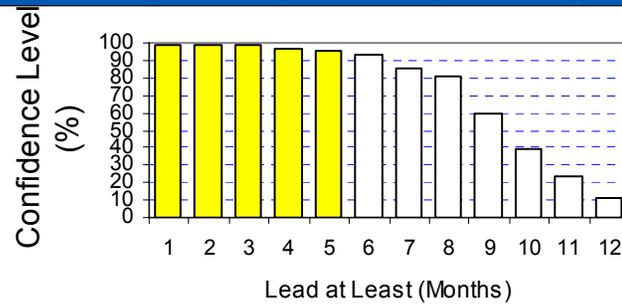
LEI
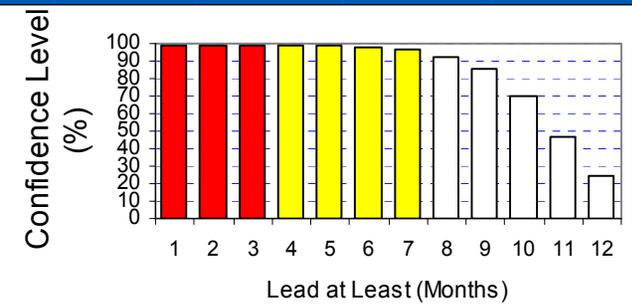
WLI

Varieties of Model Misspecification

- Focus on sequences of events around cyclical highs and lows rather than at other times

- Variable leads, asymmetric behavior of indicators at peaks and troughs

- Allow for loose linkages of cycles within and across economies

You Can't Get There From Here

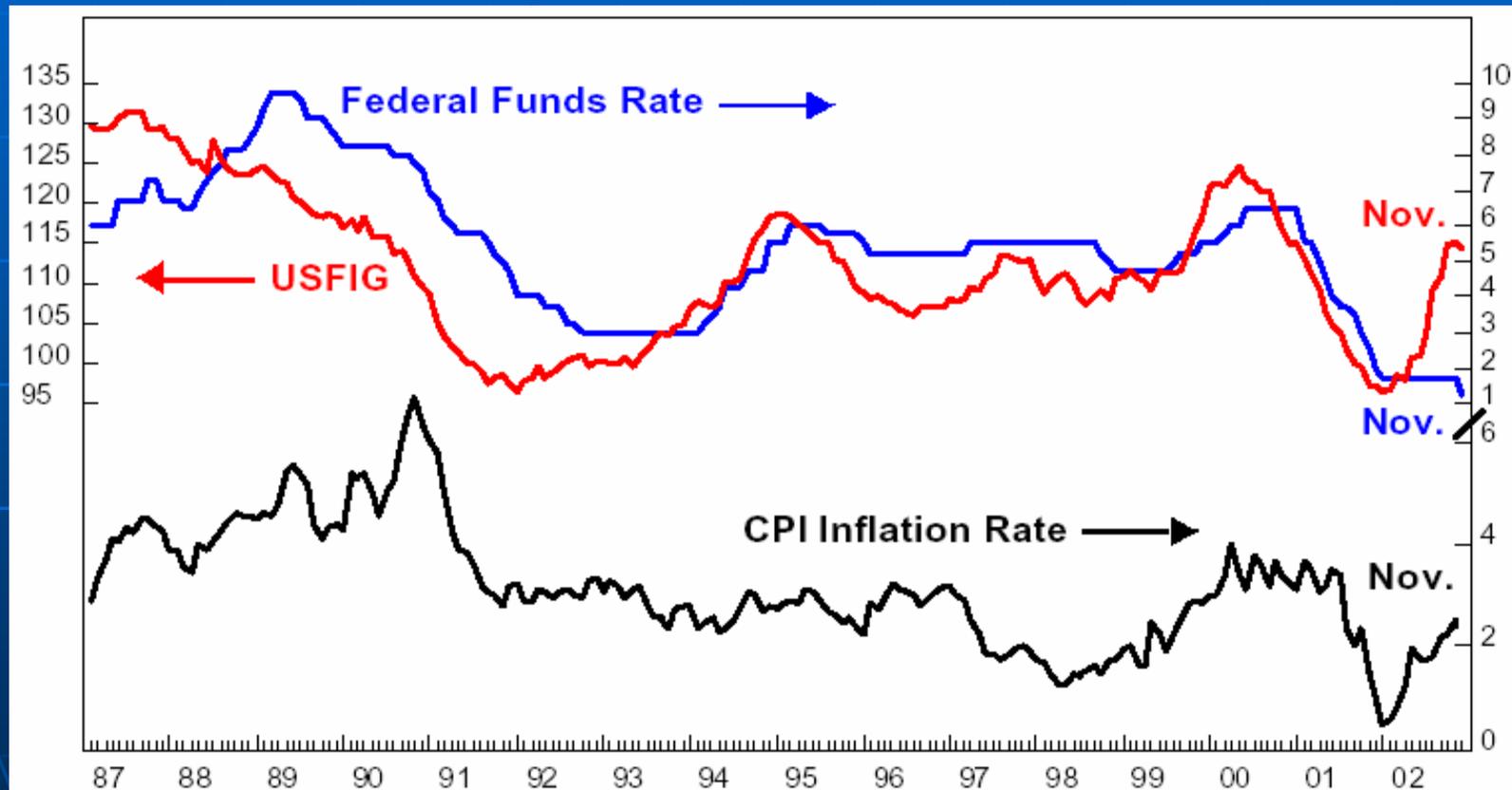"The growth rate of potential GDP is the starting point for all business cycle forecasts."

 - Investment bank research report, Mar. 2005

The Output Gap,
Federal Funds Rate & Inflation
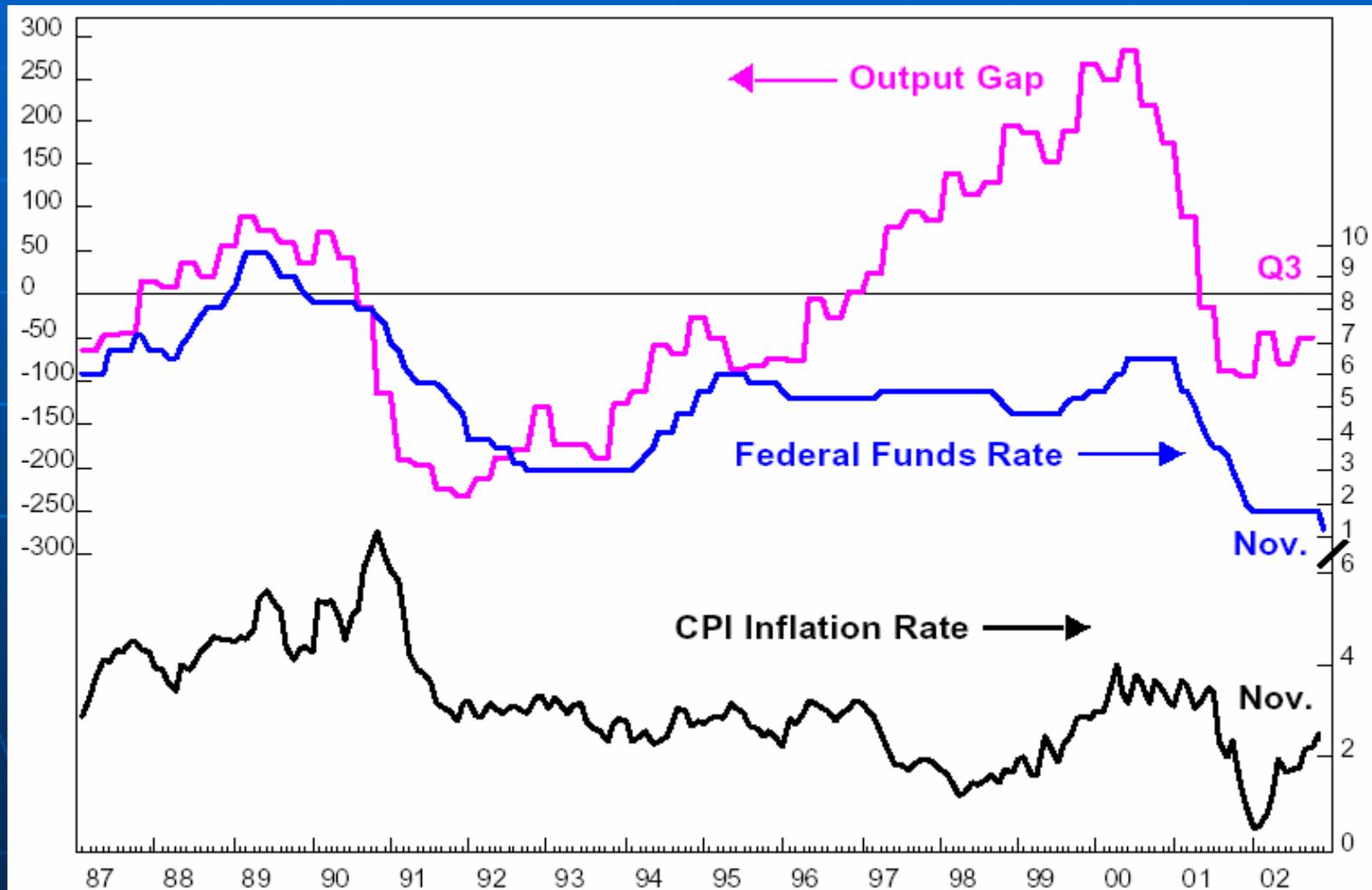
The Future Inflation Gauge, Federal Funds Rate & Inflation

U.S. Future Inflation Gauge & CPI
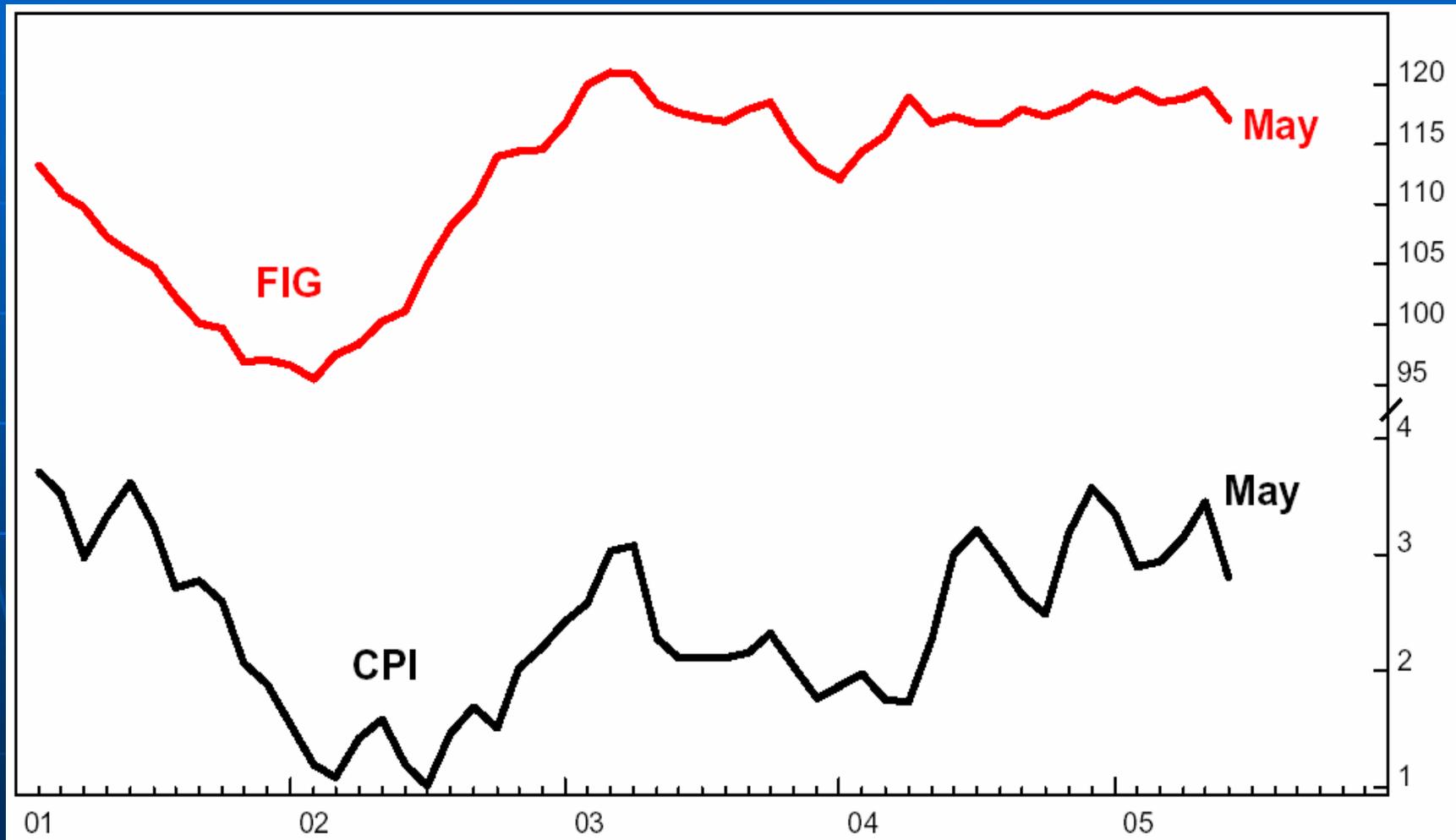
Independence

The "Monitorist" Approach

- Monitorist approach addresses key deficiencies in standard econometric models, i.e., ability to predict turning points

- Provides useful insights during periods when economy shows unusual behavior, e.g., non-inflationary growth, job-loss recovery

- High-capacity, low-demand

- Complements standard forecasting approaches

The Road Ahead

"The impressive insights of Geoffrey Moore into the theory and construction of the leading index will continue to shape our understanding of business cycles well into the future."
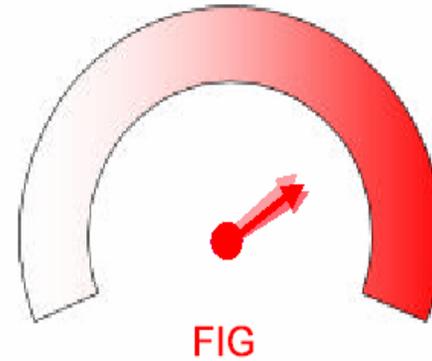
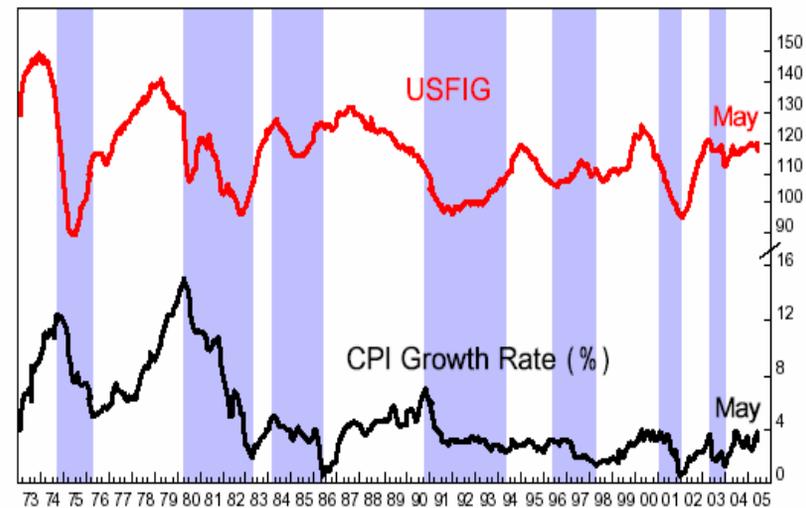- Andrew Filardo (BIS), Mar. 2004
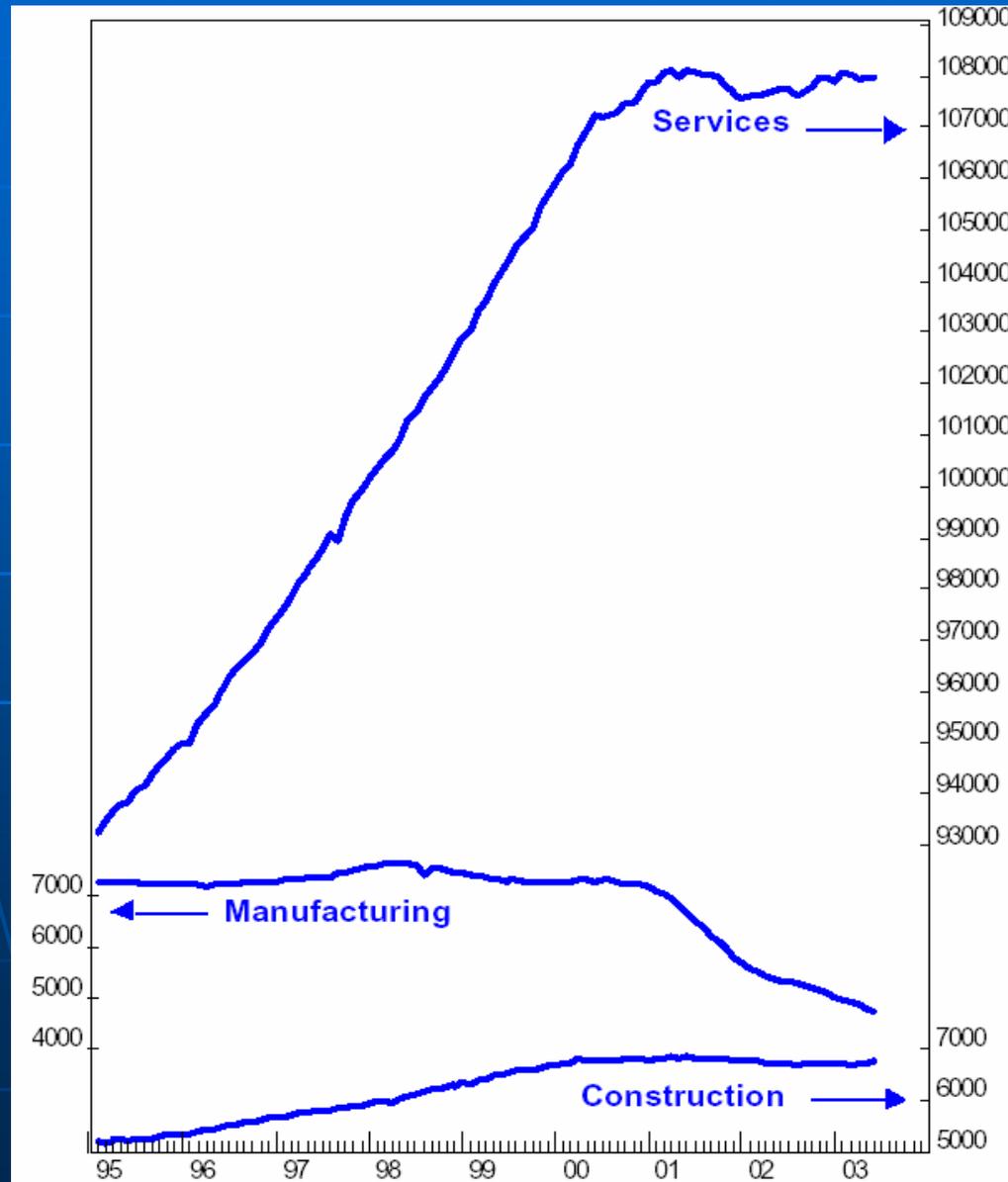
Appendix

The Economic Dashboard
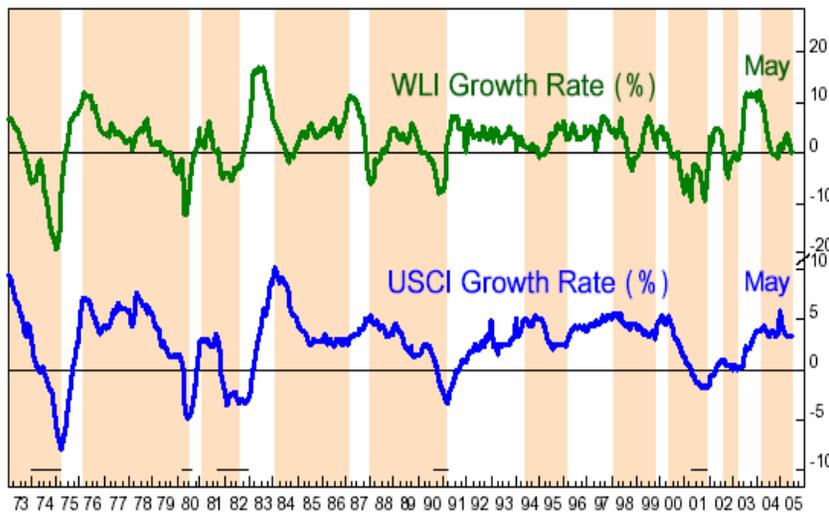
Shift to Jobs

- Our Leading Employment Index relatively weak during recovery and we wondered why.

- Some said employment always lags upturns in growth, but this still stood out as an anomaly.

- Prompted us to dig deeper and look for answers outside of cyclical forces.

Nonfarm Jobs

Mfg. Job Growth in Recoveries Following Mild Recessions