US Business Cycles, Theory & Practice

Lecture 17

THE PARTHENON GROUP
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US Business Cycles

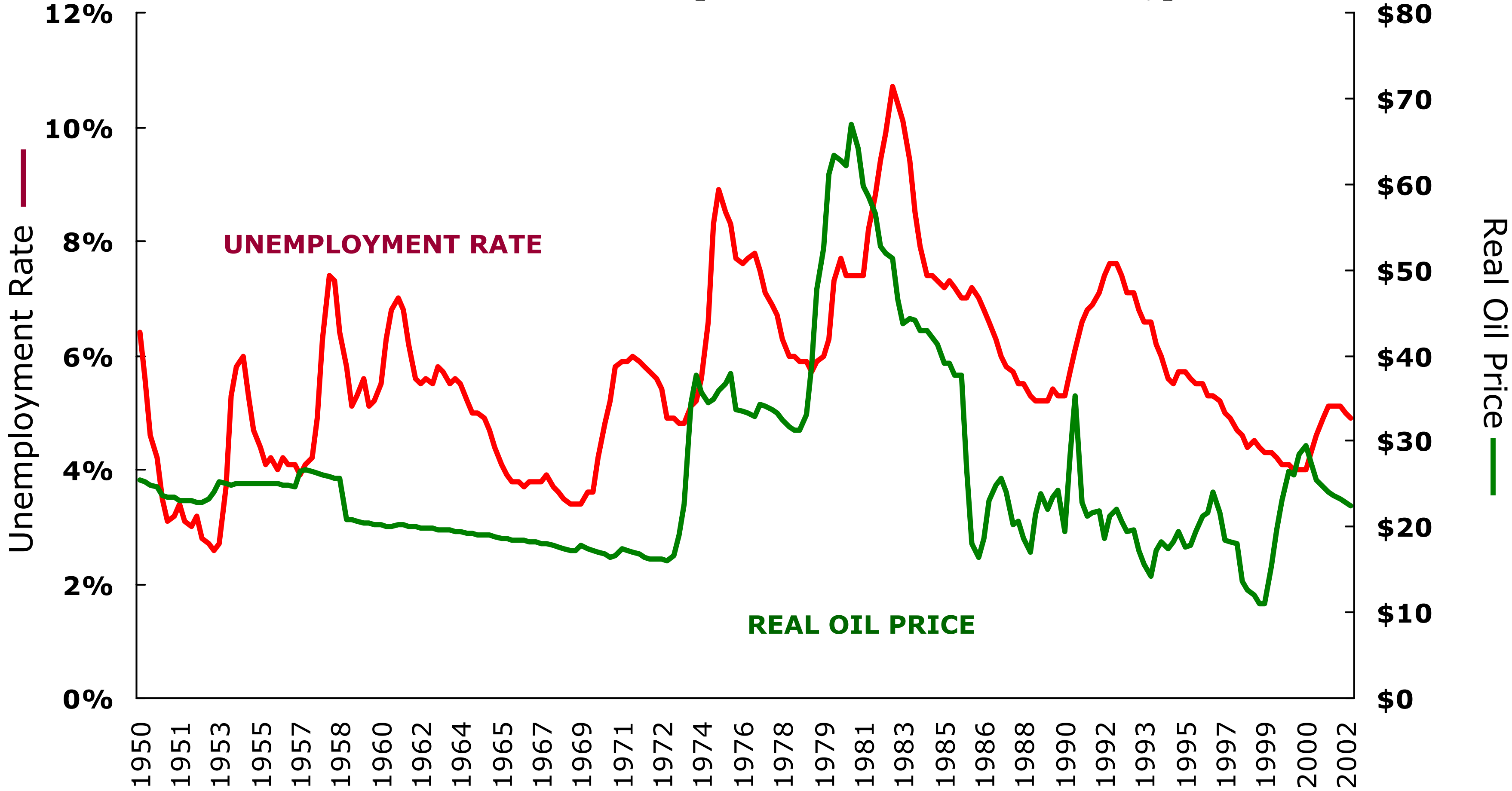
- What Forces Create Major Business Cycles in the United States?

- Generally, do recessions emanate from government policies or private sector decisions?

The Forces Creating Macroeconomic Cycles

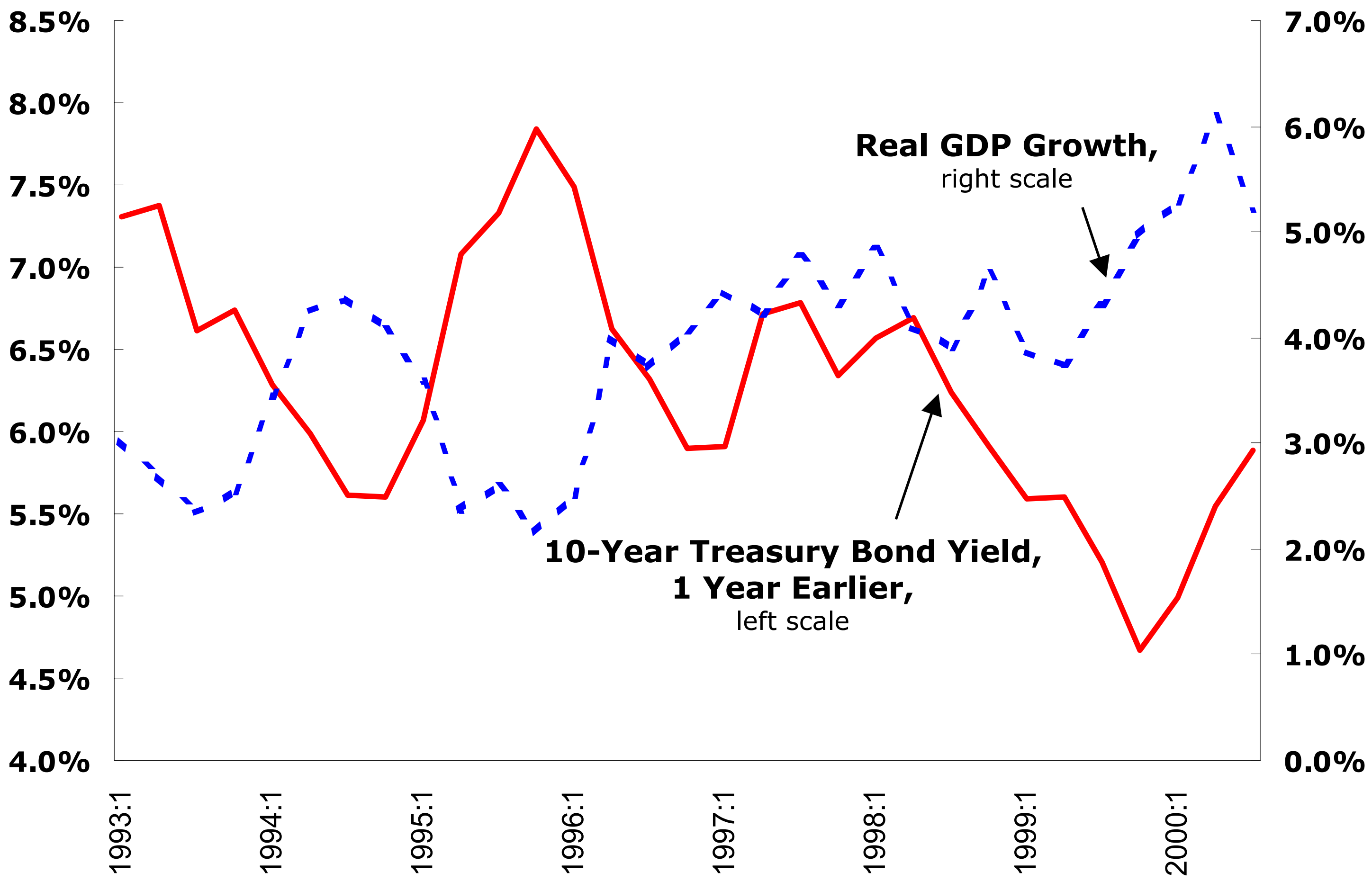
Oil Price Shocks Are Also Commonly Recognized

This Illustration Adapted from *The Economist* is Typical



The Forces Creating Macroeconomic Cycles

The "1 - 1 - 1 Rule": 1% Lower Rates 1 Year Later Adds 1% to Growth



This link between bond yields and the economy holds until another major force exerts its influence

The Core Model

<u>Structural or Behavioral Model</u>

$C=C0 + C1 * (GDP - T) - C2 * i$

$I= I0 + I1 * (GDP- GDP(-1)) + I2 * I$

$M = M0 + M1 * Y + M2 * I$

$X = X0 + X1 * GNPW + X2 * I$

$G=G$

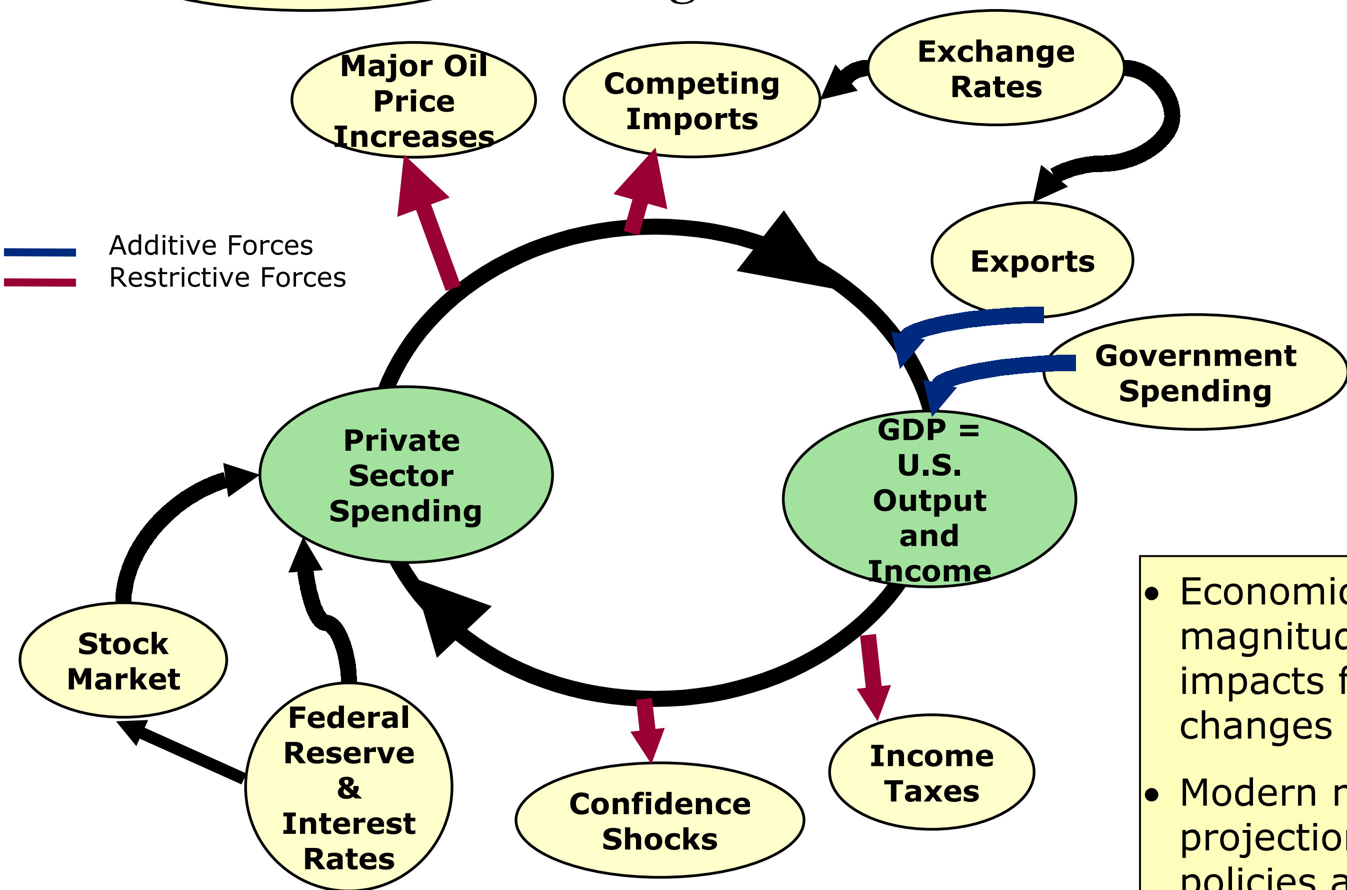
$GDP=C+I+G+X-M$

Substitute to eliminate all endogenous variables from left-side of each equation

- **<u>Reduced Form Model</u>**
- **<u>Derived from Structural Model</u>**
- **C=C (G, T, i, GNPW)**
- **I = I (G, T, i, GNPW)**
- **M = M (G, T, i, GNPW)**
- **X = X (G, T, i, GNPW)**
- **<u>GNP = C+I+X-M +G</u>**
  - **<u>= GNP (G, T, i, GNPW)</u>**

A Reliable Economic Model

Wave-Makers Affecting the Circular Flow of Income and Production



- Economic models define the magnitudes and timing of market impacts flowing from policy changes or international shocks
- Modern models begin with projections of 10-15 key domestic policies and global indicators
- They then translate these into the consequences for prices, volumes, wages, and credit costs in 100+ specific markets

Forecasting Economic Forces

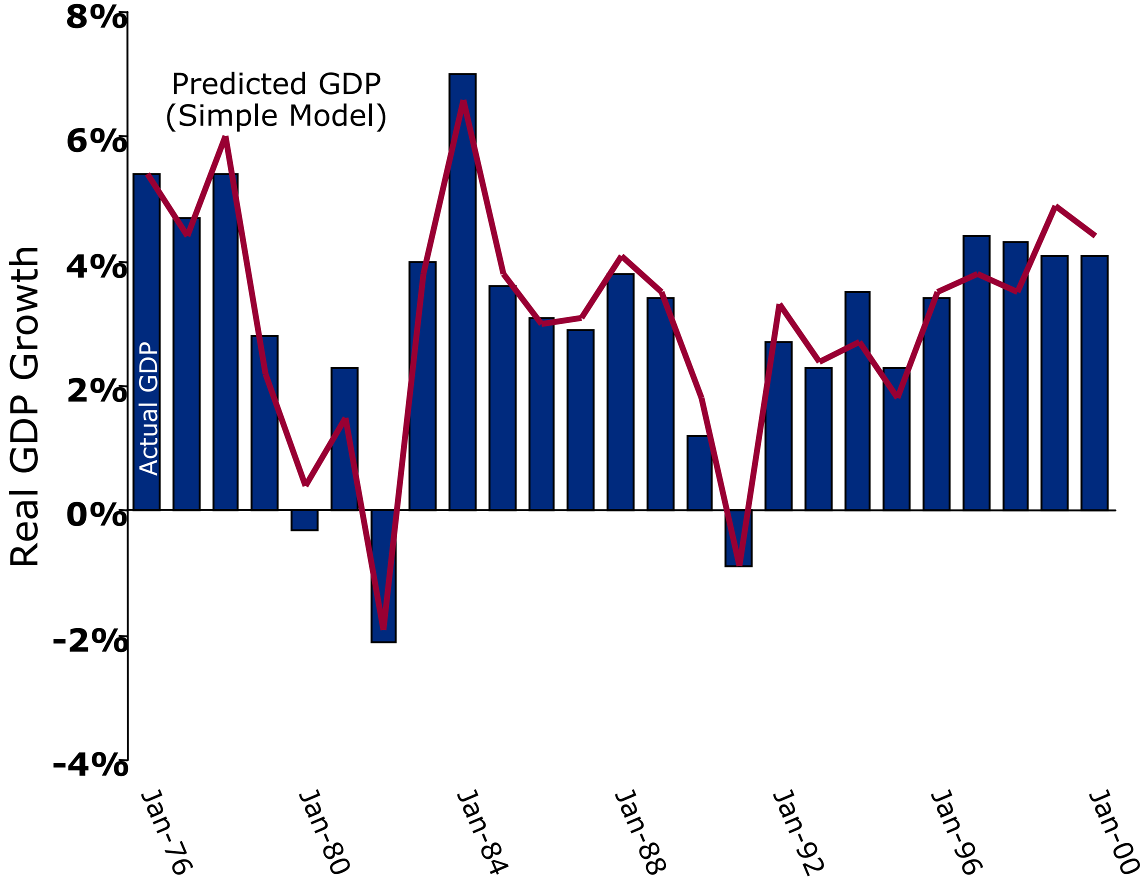
The Economic Factors Controlling Growth are Understood

Simple Model of Real GDP Growth					
Real GDP Growth		Dependent Variable: @PCH(GDP96C)			
		Method: Least Squares			
		Date: 09/24/01 Time: 11:27			
		Sample(adjusted): 1976 2000			
		Included observations: 25 after adjusting endpoints			
Variable	timing	math expression	Coefficient	Std. Error	t-Statistic
		C	**0.064**	0.021	3.05
Potential Labor Force Growth	lag 1	@PCH(LCFE+LCFE(-1))	**0.577**	0.504	1.15
Bond Yield	lag 1	RMGFCM10NS(-1)	**(0.006)**	0.002	(3.30)
Real Oil Price Inflation	current	PCOF/CPI-PCOF(-1)/CPI(-1)	**(0.002)**	0.001	(2.30)
" " " "	lag 1	PCOF(-1)/CPI(-1)-PCOF(-2)/CPI(-2)	**(0.001)**	0.001	(1.13)
Real Exchange Rate Apprec.	lag 1	@PCH(REALEXCHIND(-1))	**(0.093)**	0.062	(1.50)
Real Export Growth		@PCH(EX96C)	**0.122**	0.073	1.67
Real "G" Growth		@PCH(GF/CPI)	**0.401**	0.132	3.04
% Point Change in Tax Rate	lag 1	TGF(-1)/GDP(-1)-TGF(-2)/GDP(-2)	**(1.583)**	0.453	(3.50)
Real Stock Mkt Growth	lag 1	@PCH(JSAPNS(-1)/CPI)	**0.035**	0.025	1.37
special shock: tax reform		DTAXREFORM	**-5%**	0.018	(2.87)
special shock: Gulf War		DGULFWAR	**-4%**	0.012	(3.29)
		R-squared	0.84772	Mean dependent var	
		Adjusted R-squared	0.718868	S.D. dependent var	
		S.E. of regression	1.1%		

Source: US Bureau of Economic Activity, Parthenon analysis

Forecasting Economic Forces

The Economic Factors Controlling Growth are Understood



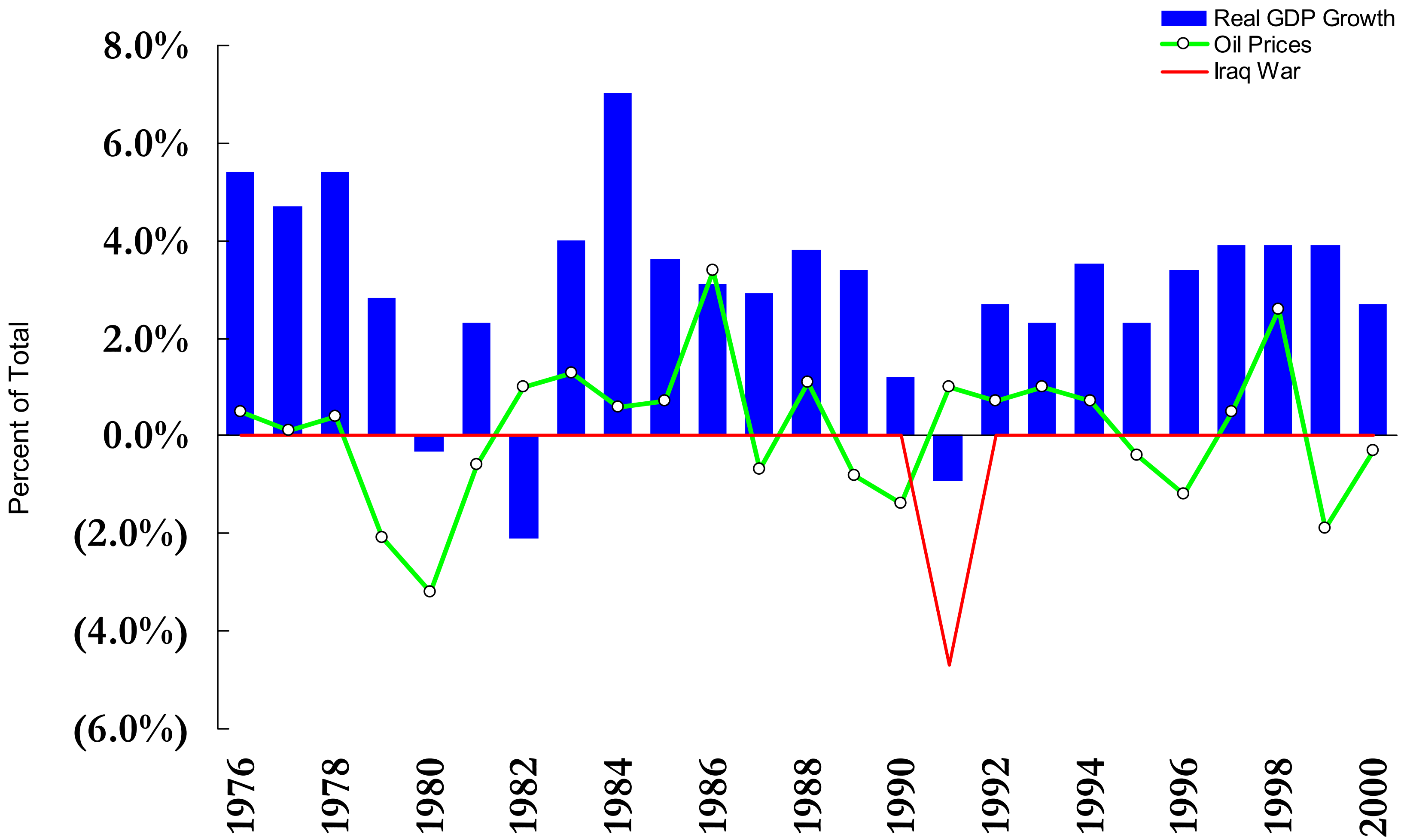
10 Key Forces
<u>Controlling GDP Growth</u>

- Supply "potential"
  - Growth in labor force and working age population
  - Growth in productivity due to technological advances
- Government budgets
  - Growth in purchases
  - Changes in tax rates
- Financial markets
  - Federal Reserve rates
  - Stock and bond market reactions
- International events and policies
  - Export growth
  - Changes in manipulated commodity prices (e.g. oil)
  - Changes in foreign exchange value of dollar
  - Extreme consumer confidence shocks from conflict and turmoil

Source: US Bureau of Economic Activity, Parthenon analysis

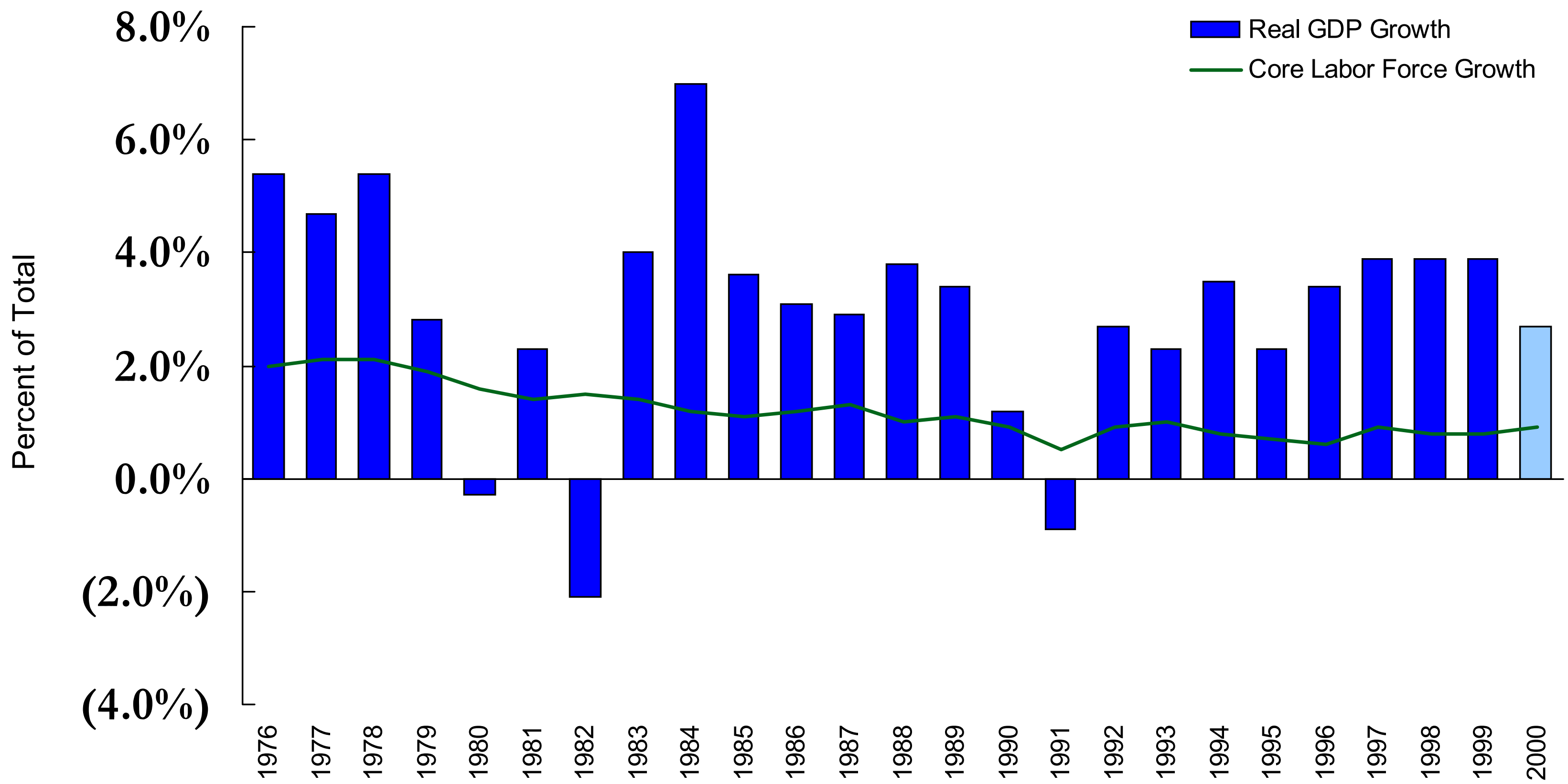
The Forces Creating Macroeconomic Cycles

Oil Shocks



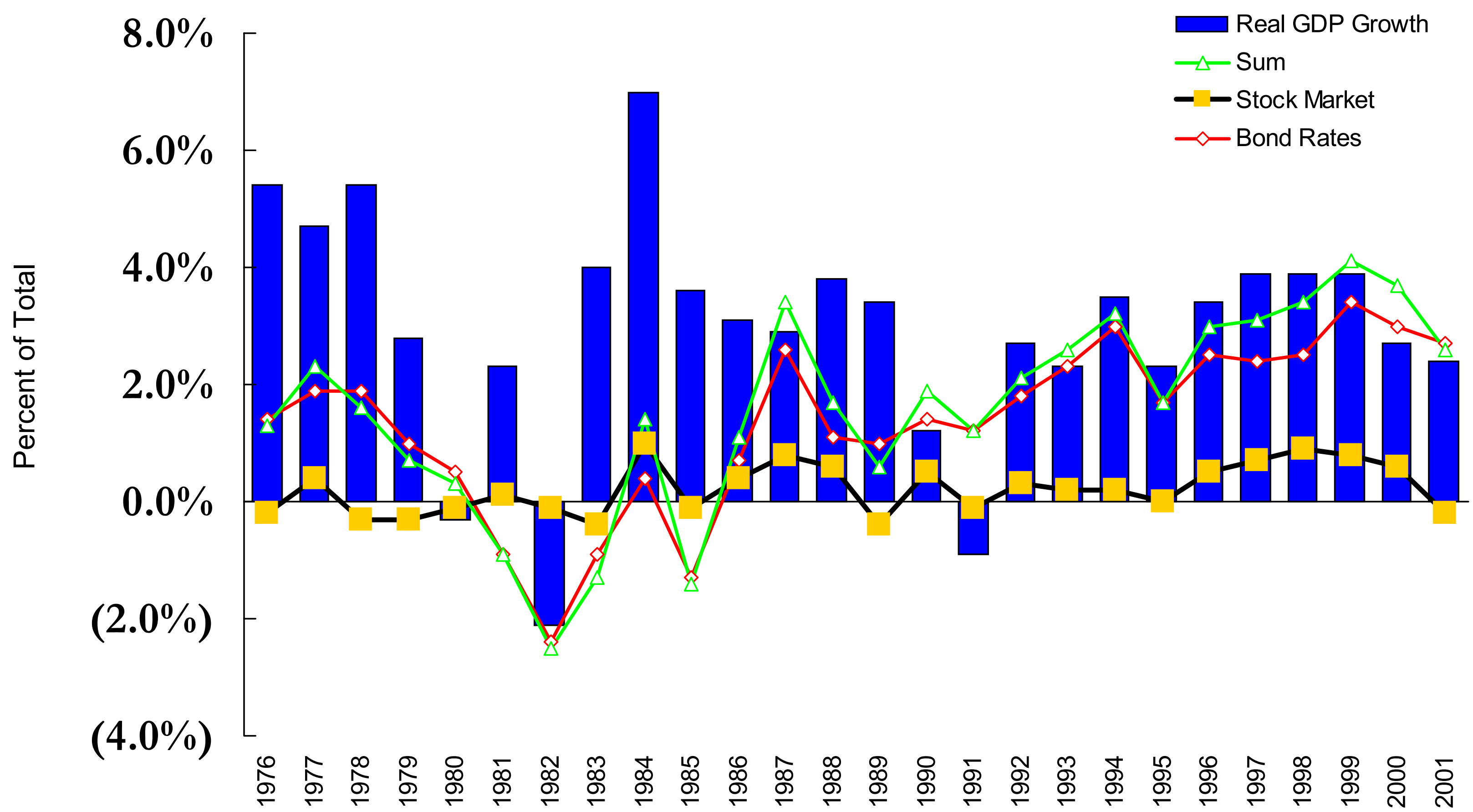
The Forces Creating Macroeconomic Cycles

Demographic Forces



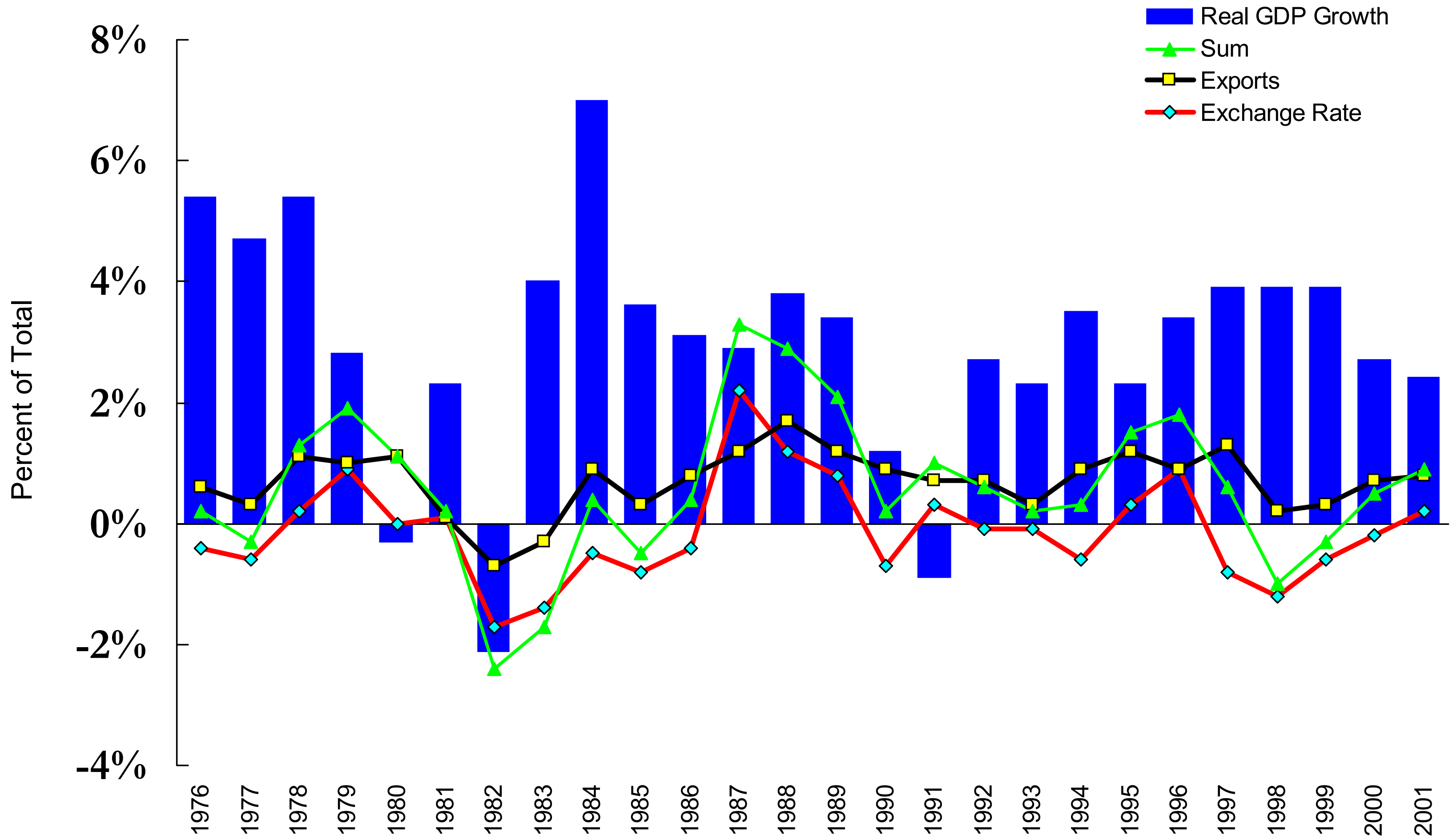
The Forces Creating Macroeconomic Cycles

Finance Factors



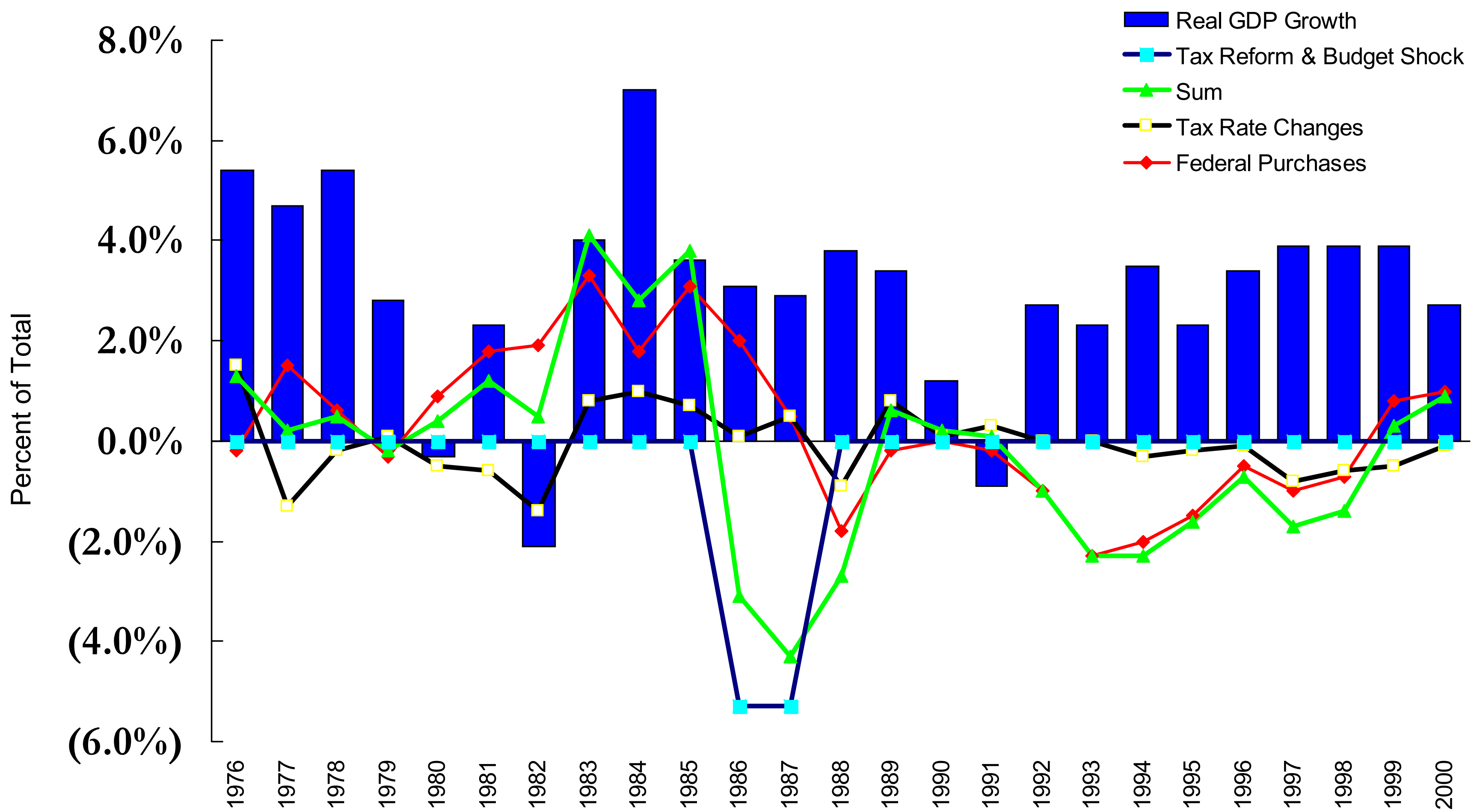
The Forces Creating Macroeconomic Cycles

International Trade Factors



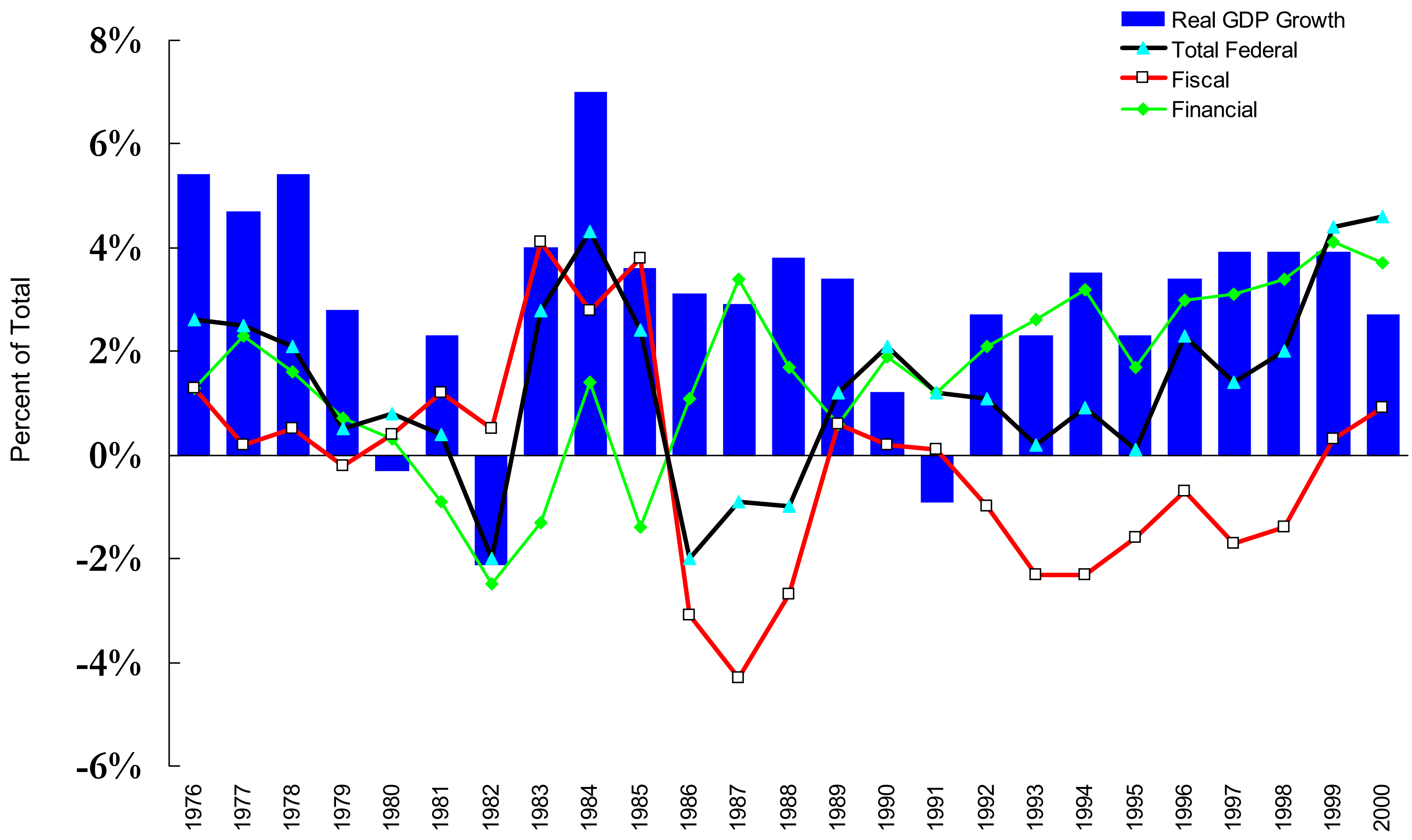
The Forces Creating Macroeconomic Cycles

Federal Government Roles



The Forces Creating Macroeconomic Cycles

Federal Policy Summary



The Forces Creating Macroeconomic Cycles

- **Before 2001, some observers thought the business cycle was dead**

- **It wasn’t dead, just fitfully sleeping**

- **The “nirvana” or “goldilocks” economy of recent years was due to:**

    - **Unusually stable federal government and Federal Reserve policies**

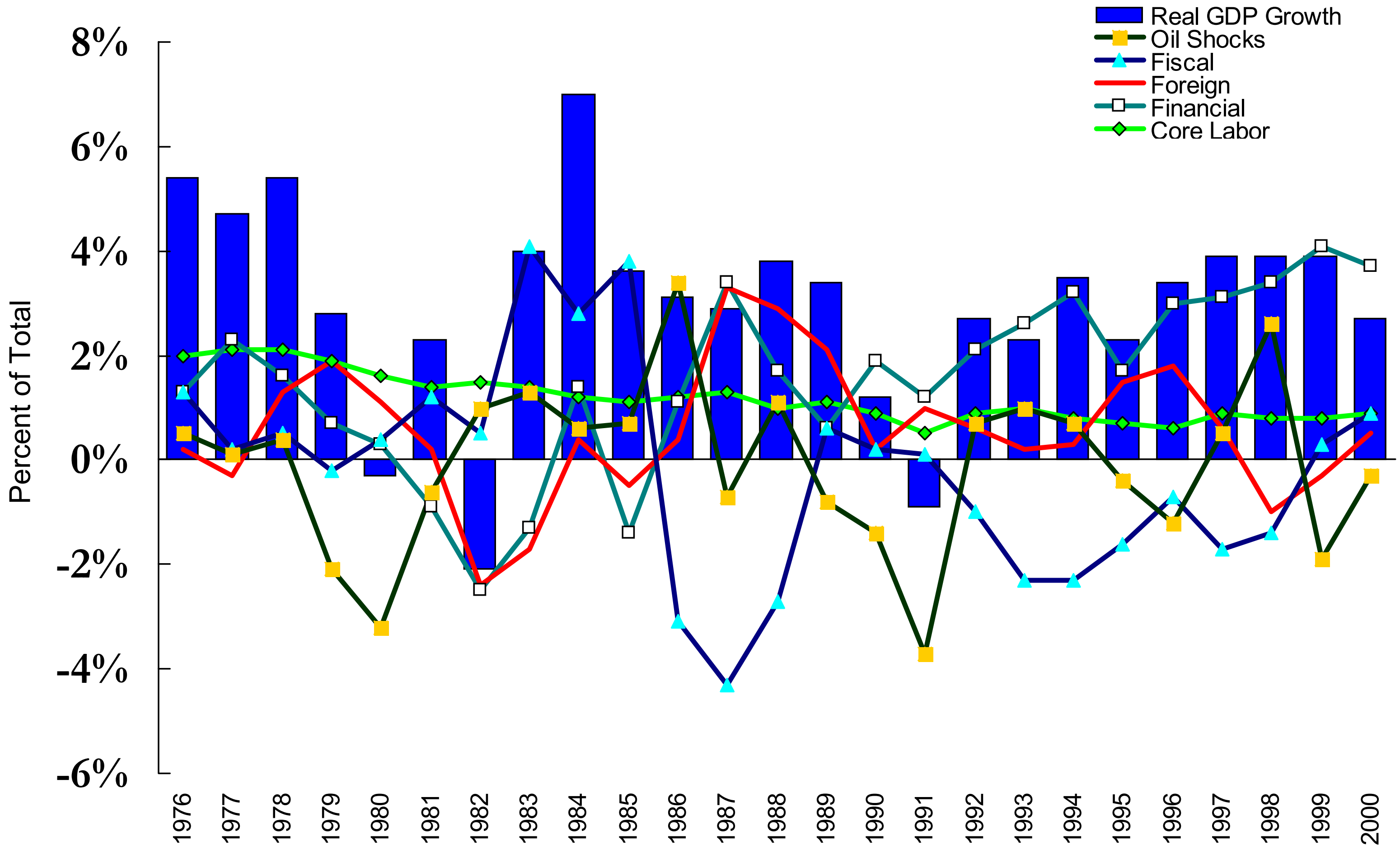
    - **A serendipitous balance of international forces**

- **The private sector follows the wave-makers; it does not lead or cause the cycles**

- **Whenever the “wave makers” once again create coincident forces, a major business cycle does re-appear**

The Forces Creating Macroeconomic Cycles

The Wave Makers Were Either Benign or Offsetting



Real World Example:

Explanations for Management and Investors Provided in September 2001

Recovery 2002

Economic Fundamentals

& Corporate Performance

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Economic Fundamentals

& Corporate Performance

- **An Outlook Neither as Grim nor Unpredictable as Feared**
  - A Trustworthy Framework of Analysis
  - The Economy Before & After September 11

- **Benchmarks for Corporate Performance**
  - True Drivers of Share Prices
  - Realistic Profit Expectations:
    - Macroeconomic Boundaries
    - Microeconomic Opportunities

An Old Recession in the New Economy

- **Traditional causes**:
  - Stock market bubble
  - OPEC-bred crisis
  - Fed tightening
  - Consumer responses
  - Business reactions
- **New dimensions:**
  - Tame inflation
  - Federal budget surplus available for stimulus
  - Many jobs unfilled
  - Ongoing technological revolutions (productivity & inventory issues)

Economic Fundamentals

- An Outlook Neither as Grim nor Unpredictable as Feared
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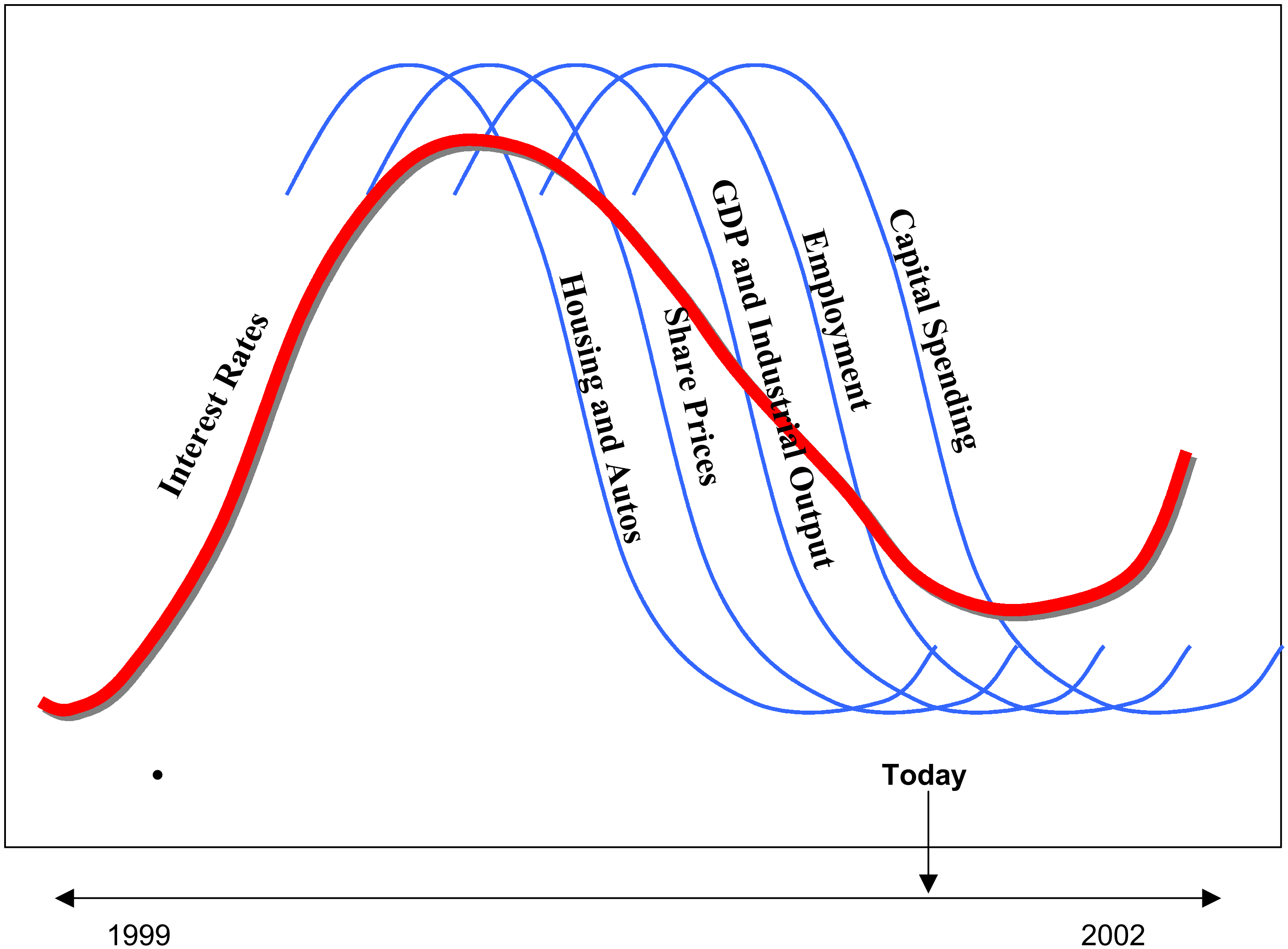
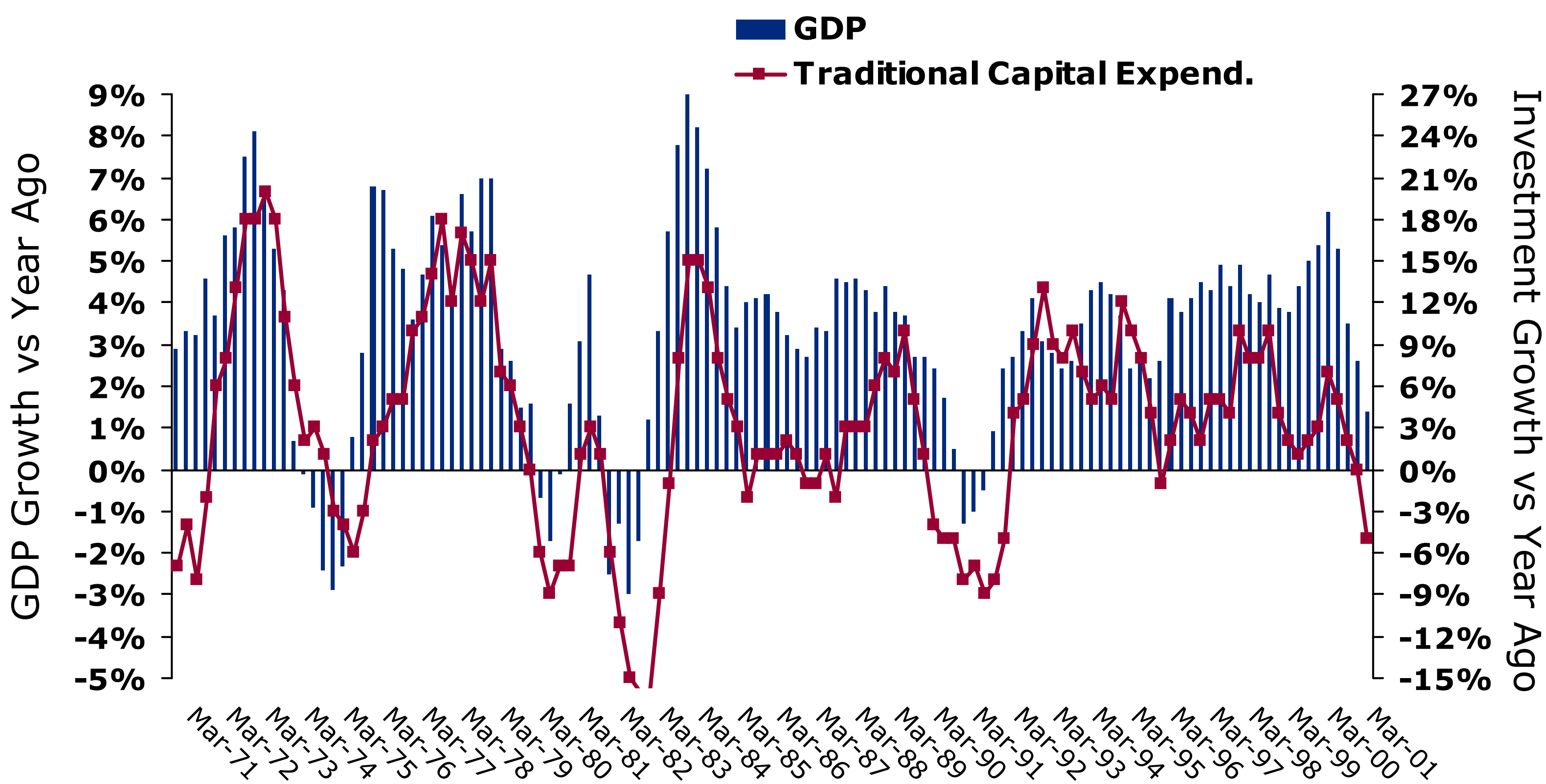
"Old" Recession Cyclical Patterns



Capital Spending Cycles are Always Greater and Later than GDP

Note: Right (Cap.Ex.) Scale = 3x Left (GDP) Scale



All growth rates measure actual spending minus economy-wide inflation are measured by the GDP price index

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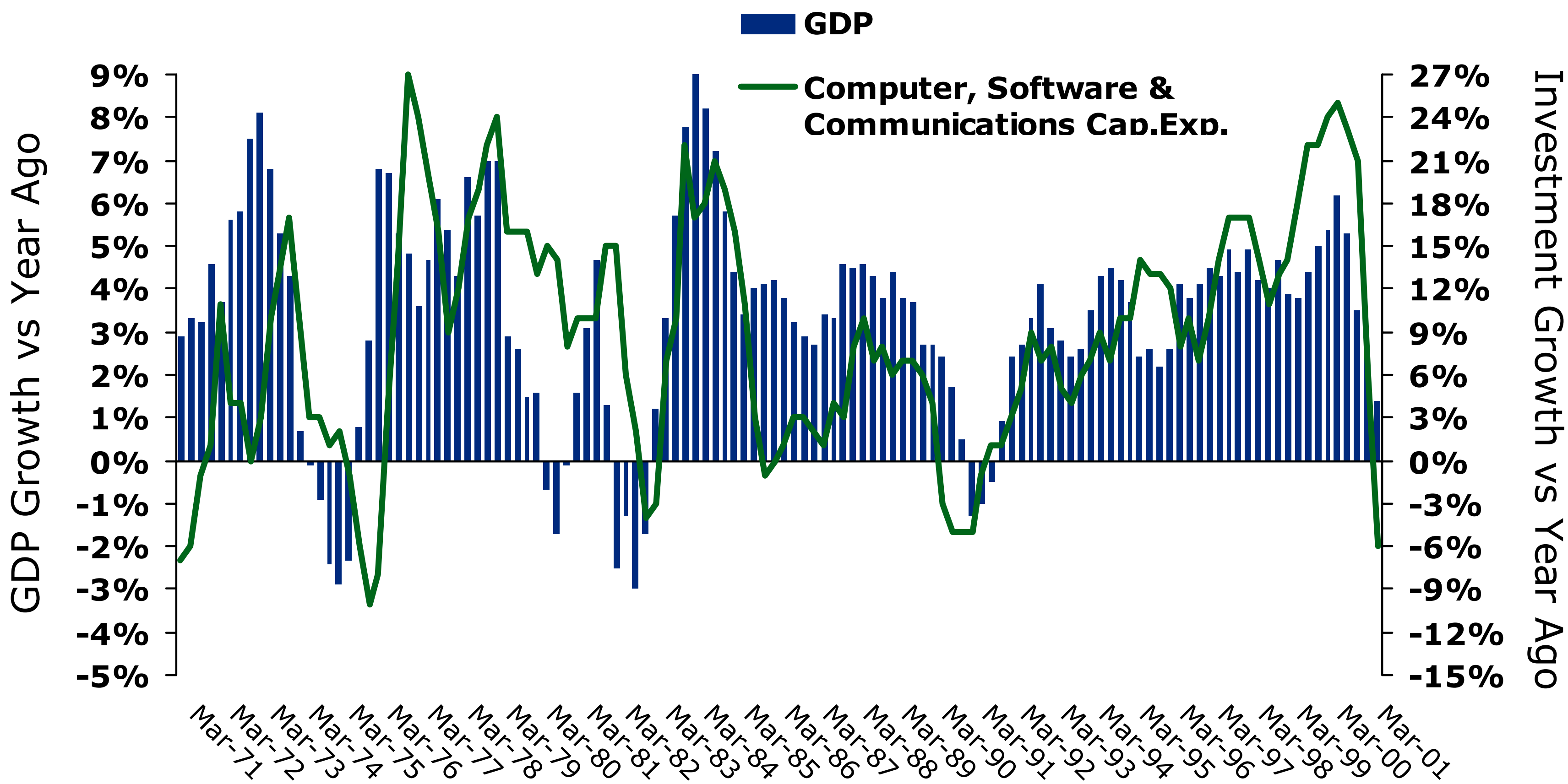

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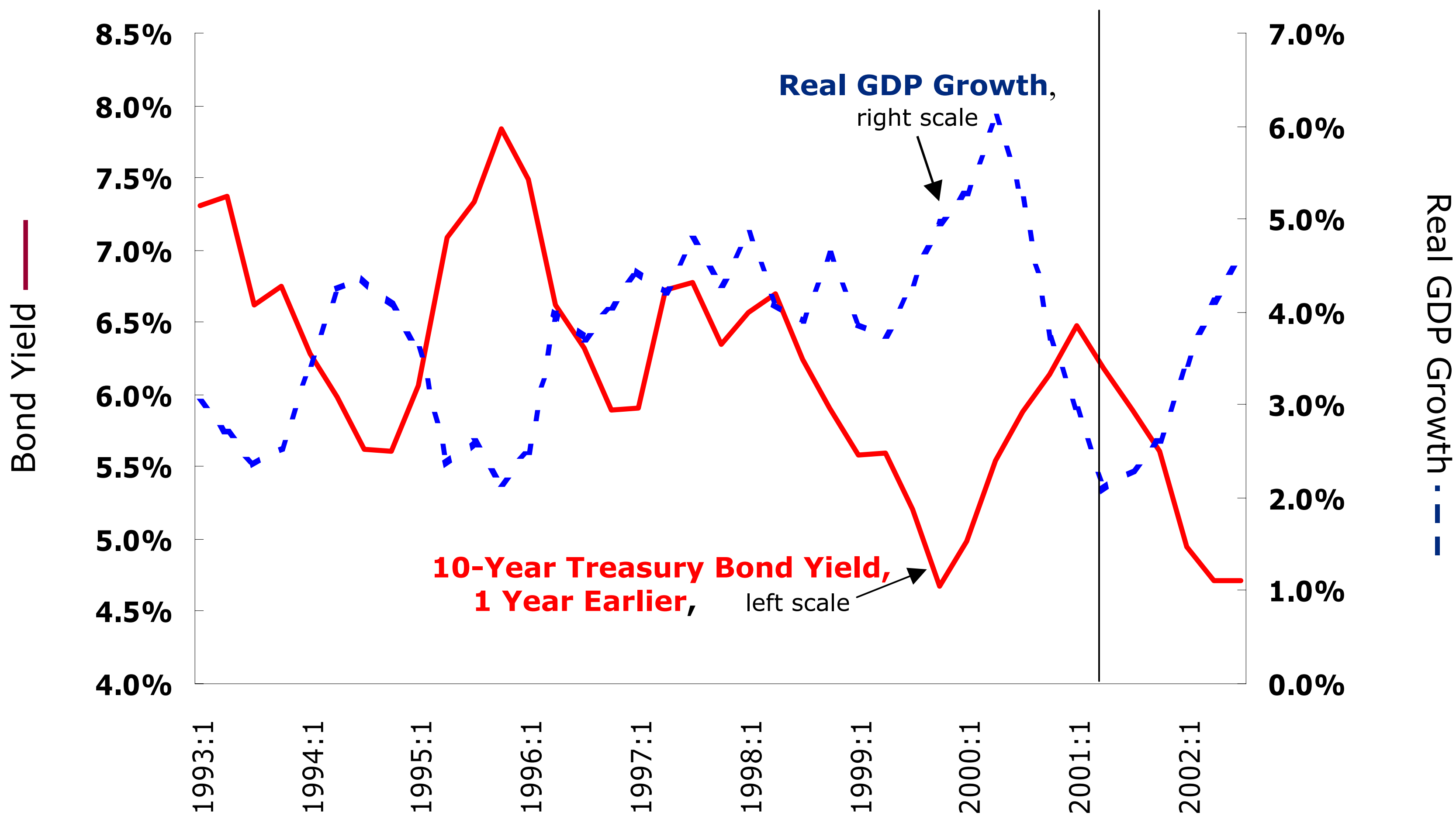
Economic Fundamentals

& Corporate Performance

- An Outlook Neither as Grim nor Unpredictable as Feared
  - A Trustworthy Framework of Analysis
  - **The Economy Before & After September 11**

This Should Have Been a Mild Recession

Interest Rates Began Falling in Early 2000



Forecasting Economic Forces

Pre-September 11th – Policy Set to Neutralize Shocks

Ultimate Magnitude of GDP Impacts ($Billion)

Shocks and Policy Responses	Equity Values	High-Tech Capital Spending	Consumer Energy Costs	Cost of capital (Bond rates)	Personal Tax Cuts	Extra Federal Spending	Total Disturbances to Normal Growth
1999-2000 Changes	62	163	(70)	(39)	-	-	**116**
2000-2001 Changes	(226)	(99)	(26)	102	111	18	**(120)**
Total: 1999-2001	(164)	65	(96)	63	111	18	**(4)**
Total Size as % of US GDP	-1.6%	0.7%	-1.0%	0.6%	1.1%	0.1%	**0.0%**

The tax cuts complemented earlier Federal Reserve actions to create a powerful stimulus almost perfectly offsetting the negative shocks.

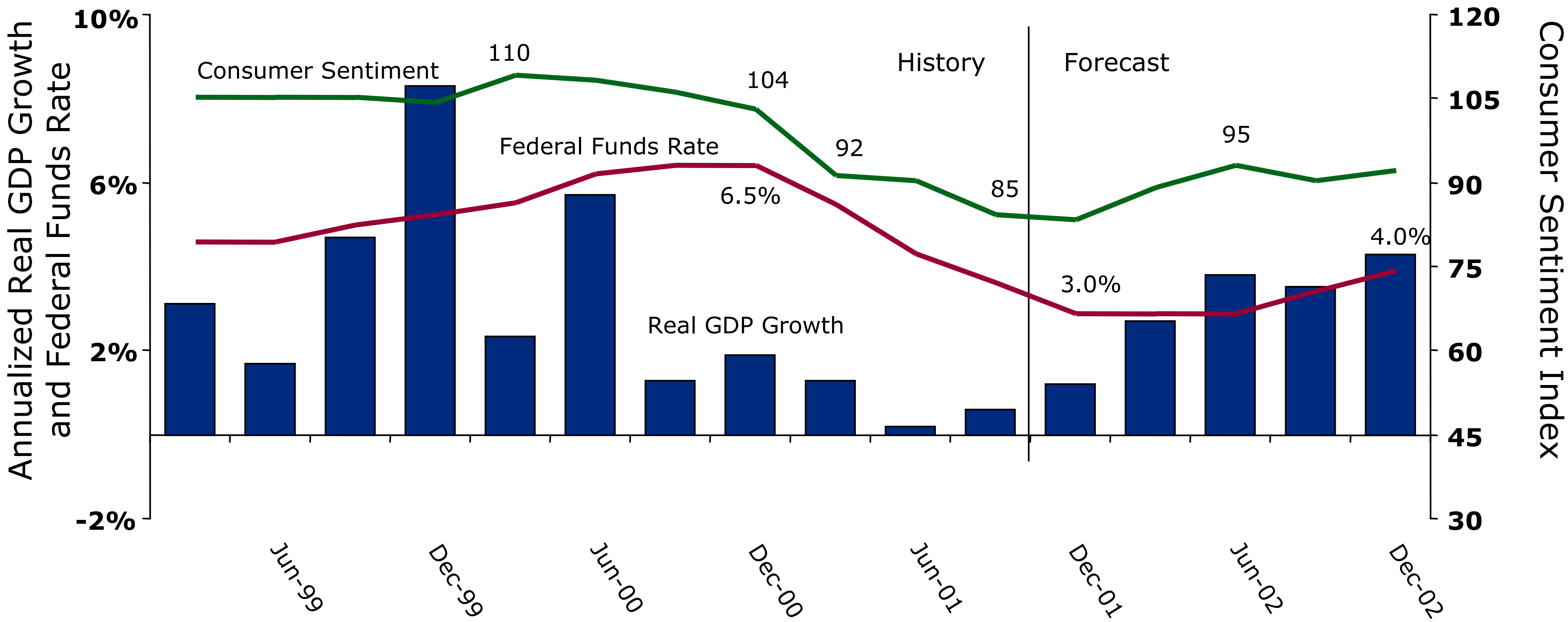
Source: Parthenon analysis

Estimating the Impacts: Equity Example

	Equity Value Shock		Analytical Basis of Estimate: Loss in Net Worth	x	% Directed to Spending	x	Multiplier
1999-2000 Shock	62	=	827	x	3%	x	2.5
2000-2001 Shock	(226)	=	-3016	x	3%	x	2.5
Total: 1999-2001	(164)	=	-2190	x	3%	x	2.5
Total Size as % of US GDP	-1.6%	=	-164	divided by $10 trillion dollar economy			

Forecasting Economic Forces

Economic Forecast **PRIOR** to September 11th



Policy & Psychology Forces Setting up 2002

Federal Funds: Each 1% reduction = +.5% GDP Impact

Consumer Sentiment: Each 10% gain = +.7% GDP Impact

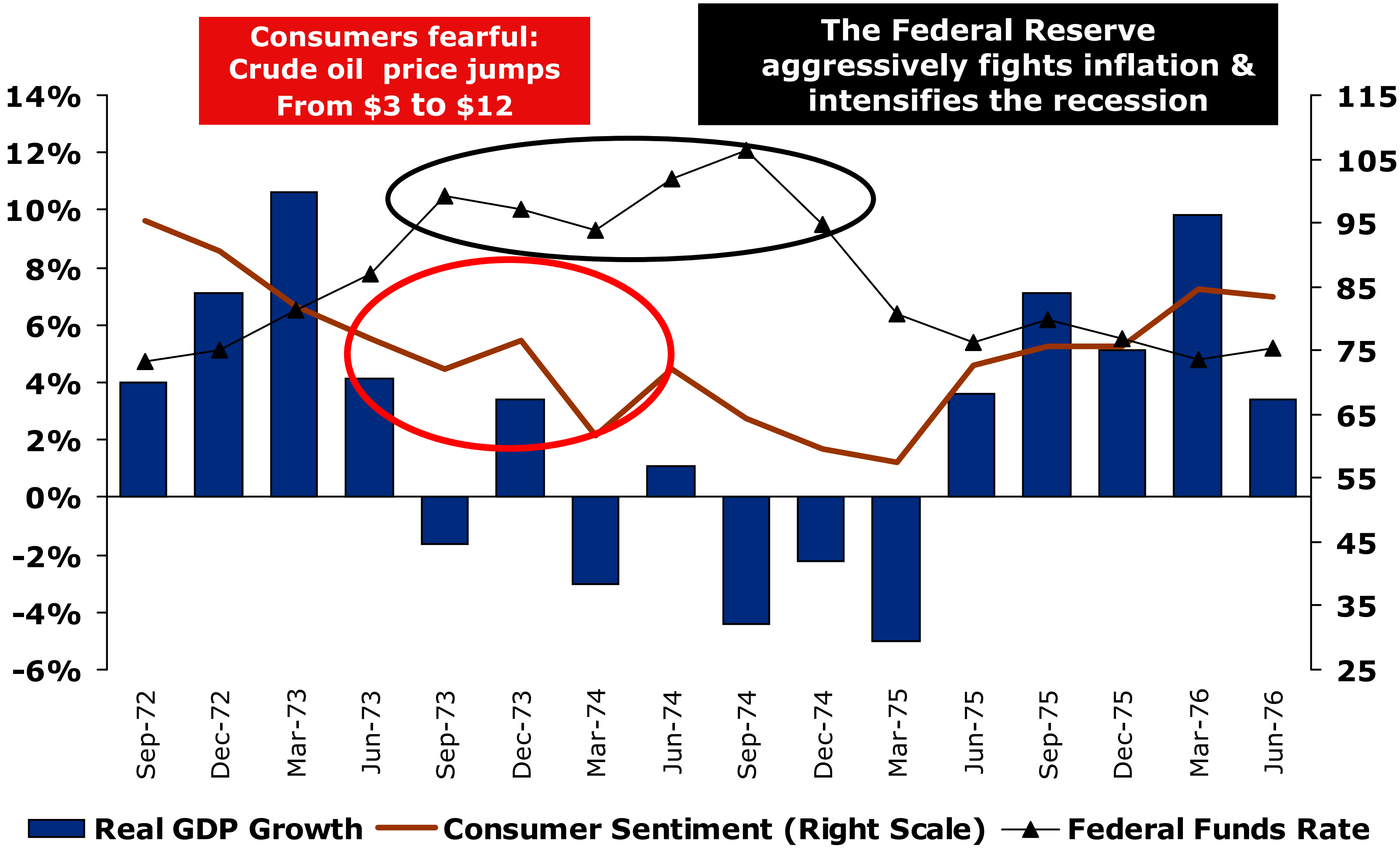
Source: Parthenon analysis, DRI-WEFA

Scaling the Terrorist Economic Shock and Impacts

- At least two major, prior shocks to our economic and personal security were arguably the same order of magnitude as September 11
  - The original OPEC oil embargo in 1973 revealed for the first time since WWII an immense American vulnerability.
  - The 1990-91 Gulf War threatened not only energy supplies but the lives of 500,000 military men and women.
- Then, as now, consumers abruptly scaled back discretionary spending.
- The policy responses in the past were either sharply counter-productive or absent.

Global Shocks Involving Transformed US Situations:

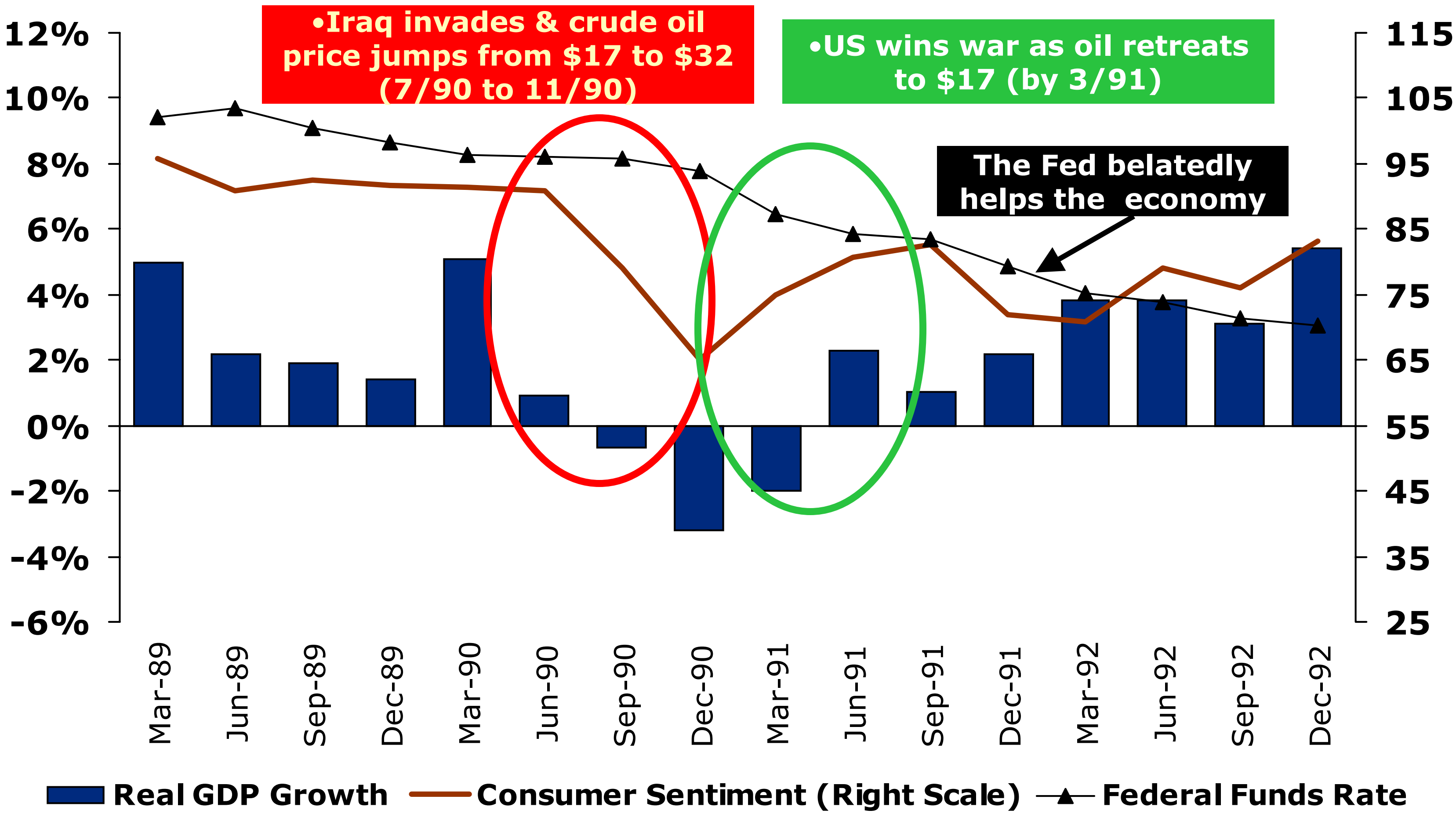
The First OPEC Shock



The OPEC and Fed actions doomed the US to 15 months of recession

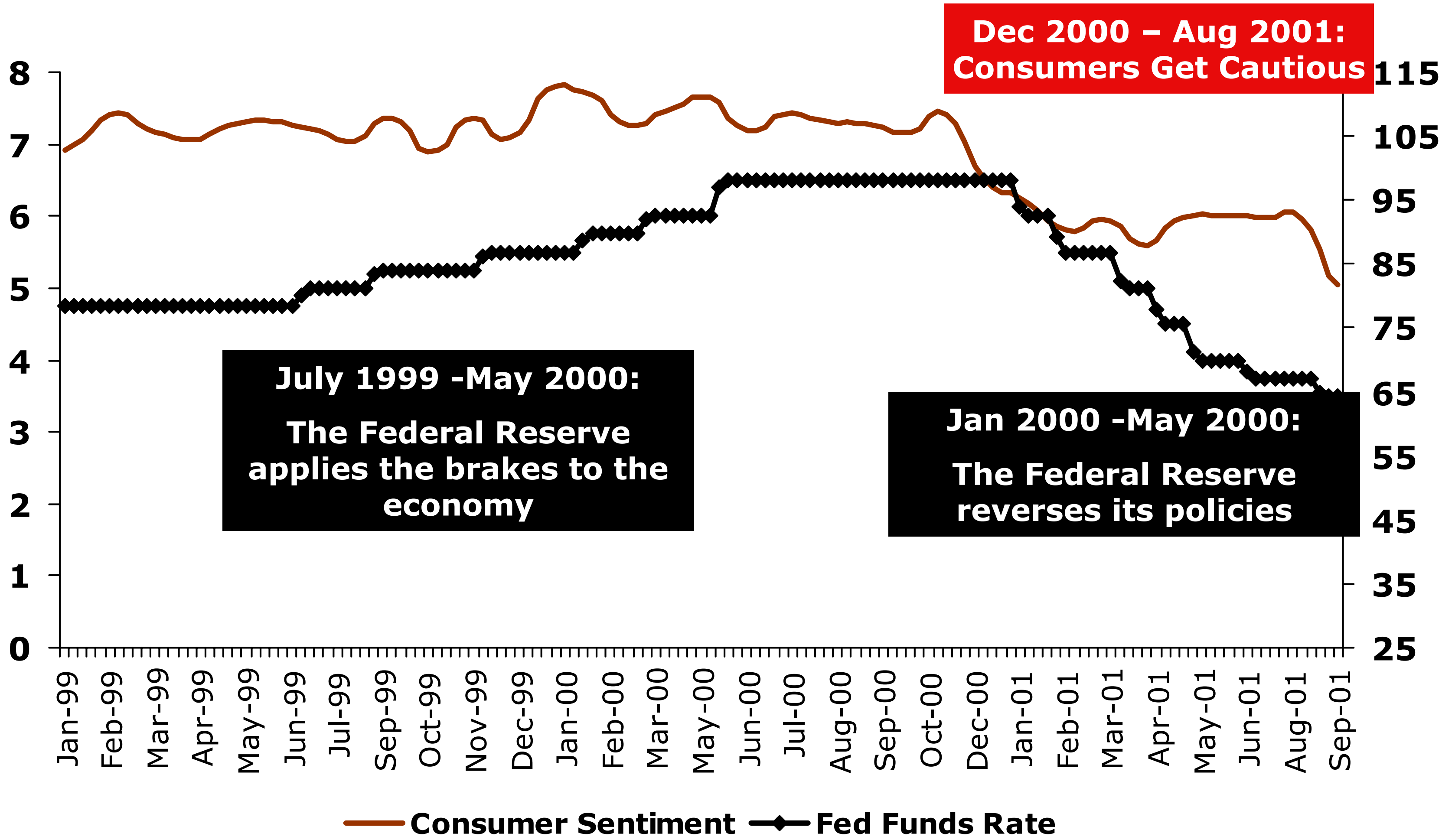
Global Shocks Involving Transformed US Situations:

The War Against Iraq



In spite of a huge initial decline in consumer sentiment, a decisive victory in the air war plus late Fed stimulus limit the recession to 9 months

The Economy Before Sept 11



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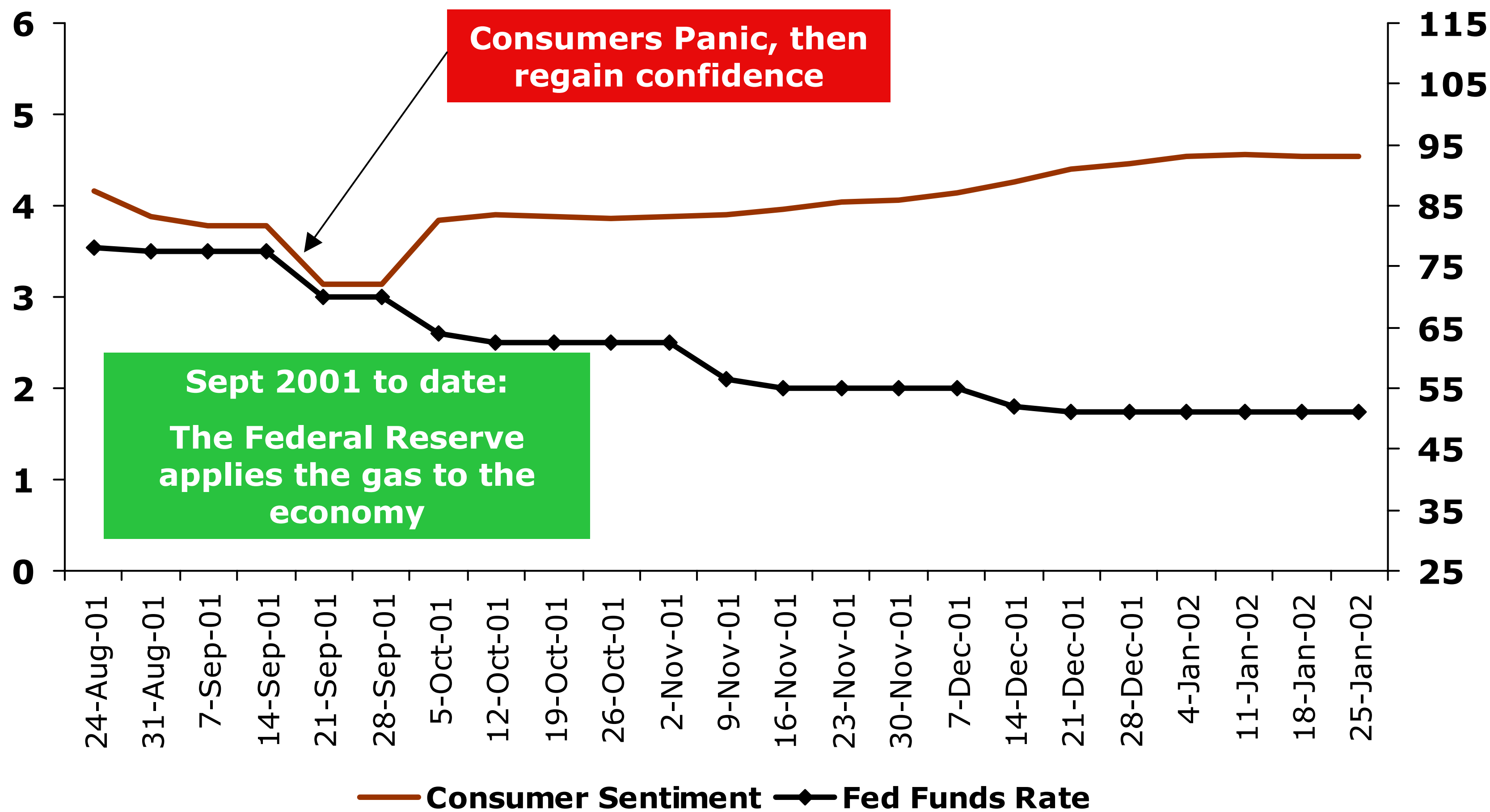
The September 11 Terrorist Attack



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Forecasting Economic Forces

Post-September 11th – Terrorist Actions and Policy Responses

Ultimate Magnitude of GDP Impacts ($Billion)

Shocks and Policy Responses	Equity Values	High-Tech Capital Spending	Consumer Energy Costs	Cost of Capital (Bond rates)	Personal Tax Cuts	Extra Federal Spending	Consumer Psychology Shock	Travel Industry	Total Disturbances to Normal Growth
New Shocks Estimates (as of Late November)	0	-	25	35	60	125	-50	-95	100

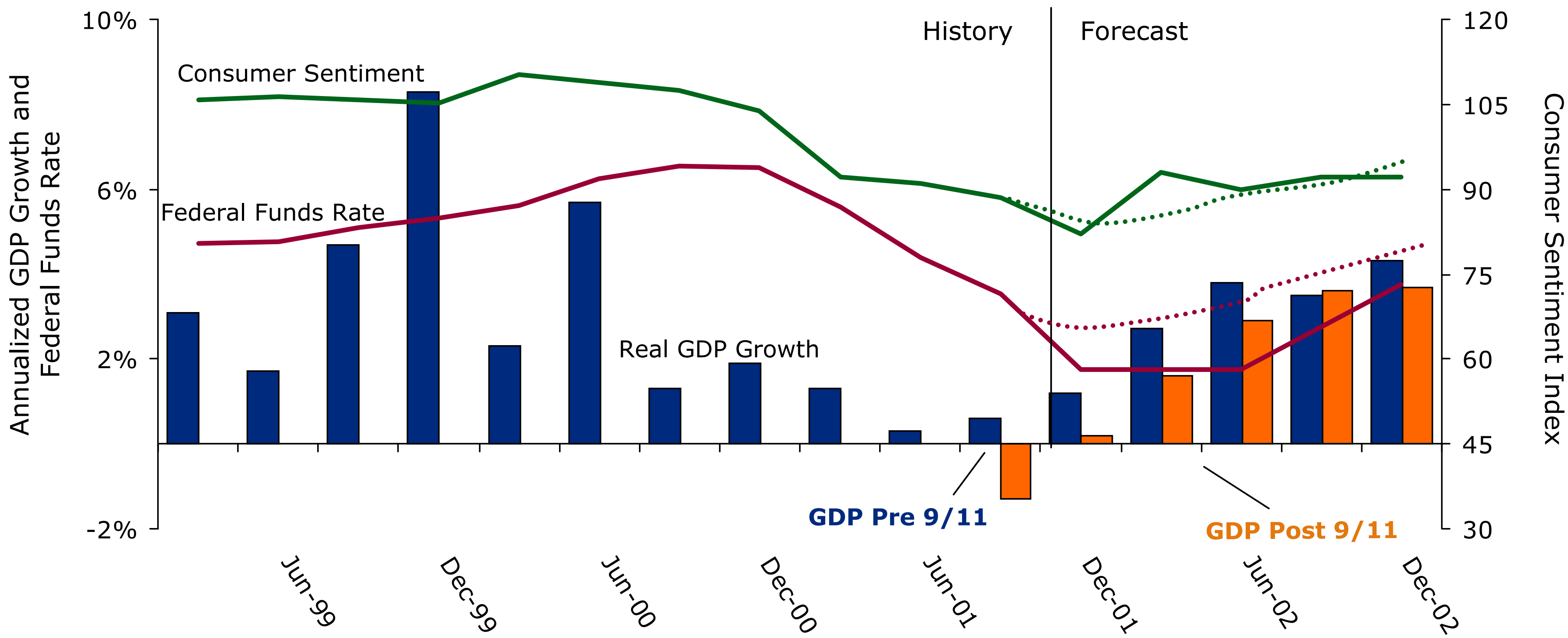
The federal tax cuts, new emergency spending needs, and Federal Reserve actions are powerful stimuli, fully offsetting the negative shocks

Source: Parthenon analysis

Forecasting Economic Forces

The Economic Impact of the September 11th Terrorist Attack

Parthenon's Economic Forecast Post-September 11th



The Federal Reserve and all global central banks pour in extra liquidity; Congress and the President add perhaps $100 billion in fiscal stimulus

Source: DRI-WEFA, Parthenon customization of DRI-WEFA forecast