The Unsustainable New Economy Boom and its Lessons for the next Economic Expansion

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Waiting for Godot, the Next Expansion

- Business Forecasters started saying one year ago: 3-4 percent growth forever starting “next quarter”
- Everyone now agrees 2002:Q4 = 1.0 %. But what then?
- CBO vs Consensus, startling difference
  - Next three quarters (02:Q4-03:Q2) only 1 percent growth each quarter
  - Why the difference?

The Paradox of ICT Investment and the Productivity Growth Revival

- Post-1995 productivity growth revival still going strong
- Keeps inflation low, allows Fed to promote growth without concern for inflation
- Current consensus; productivity revival *entirely* caused by late 90s investment boom

But Here’ s the Paradox

- ICT Investment Boom Has Died, Bad News for Productivity
- Bad News vs. Good News, how can we make sense of this?
  - ICT Investment is the bad news
  - Continuing strong productivity the good news
- Why is productivity doing so well when ICT investment is doing so badly?
- Has the role of ICT Investment Been Exaggerated?

Four Components to the Talk

- Standard View: ICT Caused Productivity Revival
- Why the Standard View Exaggerates ICT’s Role (Good News)
- Why the ICT Boom Is Not Coming Back: the Macro and Micro Reasons (Bad News)
- Why Business Forecasters are Too Optimistic

The Post-1995 Productivity Growth Revival: What was ICT’s Contribution?

- 1995-2001 vs. 1972-95, how big was the productivity revival?
  - Biggest number, ERP Jan 2001, ~1.5
  - Now more like ~0.8
- Why the lower number?
  - Data revisions July 2001 and 2002
  - The cyclical effect really happened in 2001 as predicted

Table 4

Contributions to Growth in Labor Productivity by Source

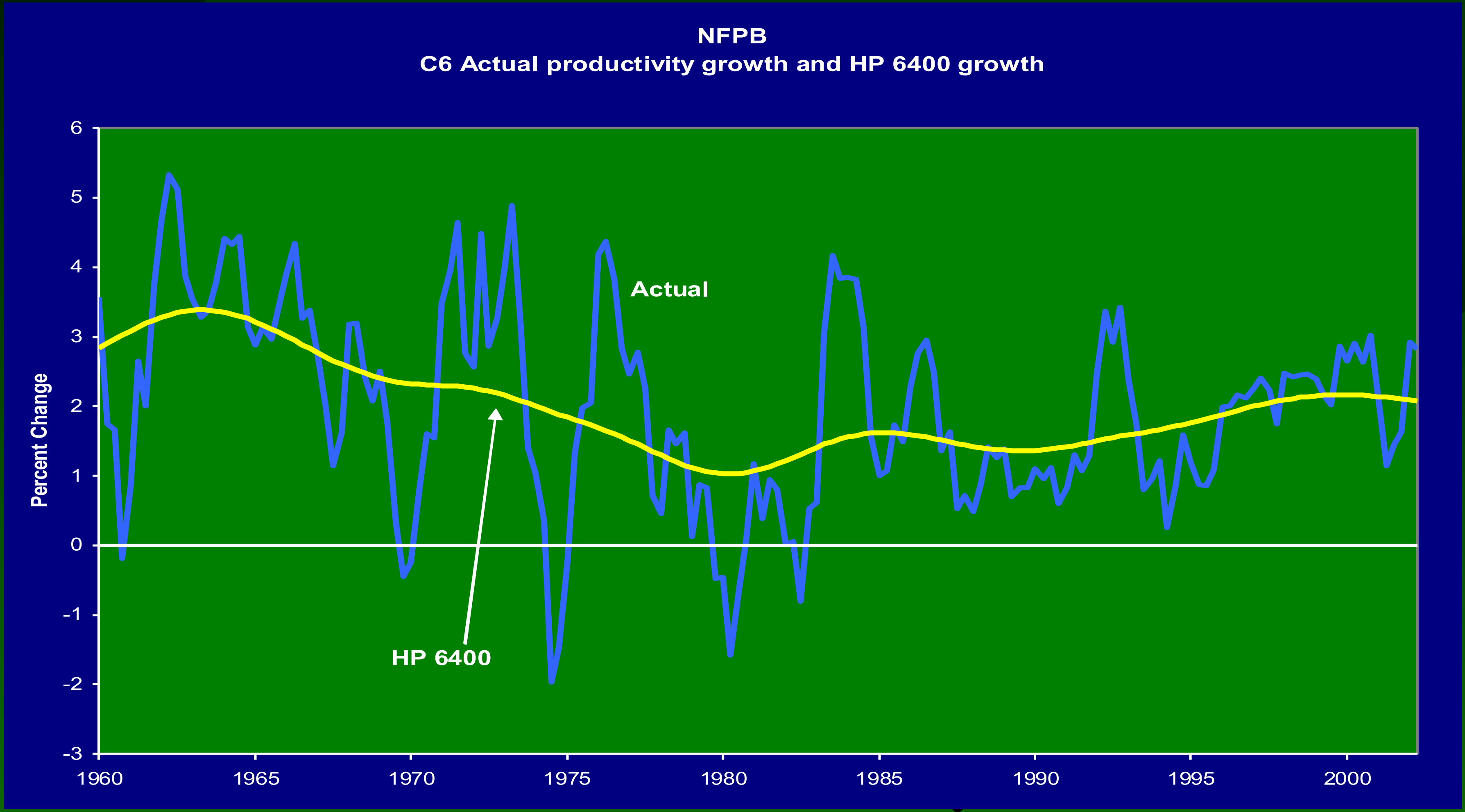
1973-95 vs. 1995-2001 and post-1995 Growth Acceleration

	1973-1995	1995-2001	Post-1995 Change
Labor Productivity	1.40	2.25	0.85
Contributions from:			
Capital Deepening	0.71	1.17	0.46
Information Technology Capital	0.42	0.97	0.55
Other Capital	0.30	0.20	-0.10
Labor Quality	0.27	0.25	-0.02
Multifactor Productivity	0.42	0.83	0.41
Information Technology Capital	0.30	0.73	0.43
Other Sectors	0.12	0.10	-0.02
Memo: Total IT Contribution	0.72	1.70	0.98

That Takes us to 2001, What about the Productivity Boom of 2002?

- Two Parts to the Cyclical Effect
- The Growth Rate of Productivity Depends Positively on the Growth Rate of Output
  - 1995:Q4-2000:Q2 Q=4.78, Q/H=2.59
  - 2000:Q2-2001:Q3 Q=-0.79, Q/H=0.6
- The Early Recovery "Bubble"

Productivity Growth in the NFPB Economy: Actual and Trend



The Winter 2001-02 Productivity Bubble

- Bubble Growth, next 8 qtrs AAGR
  - 2001:Q3-2002:Q3 5.30 ????
  - 1991:Q1-1992:Q1 4.01 1.15
  - 1982:Q3-1983:Q3 5.19 1.58
  - 1975:Q1-1976:Q1 4.63 0.99
- Are Forecasters Treating the Bubble as Normal or Incorporating a Historical Interpretation into their Analysis?

Reasons for Skepticism about the Standard Decomposition

- Delay (analogy with electricity in the 1920s)
- Retailing in the 1990s: all the big boxes
- Europe: retail is where the gap is
- U. S. States: no role for ICT use

Table 5

Labor Productivity by Industry Group, U. S. vs. Europe,

1990-95 vs. 1995-2000, Annual Growth Rates in Percent

	United States		European Union	
	1990-1995	1995-2000	1990-1995	1995-2000
Total Economy	1.1	2.2	2.4	1.5
ICT Producing Industries	6.1	6.5	6.0	8.5
ICT Using Industries	1.4	4.2	1.9	1.3
Non-ICT Industries	0.4	0.4	2.4	1.0

Why Won’t ICT Investment Come Back?

- This is the Bad News
  - For Productivity Growth (but ICT role exaggerated)
  - For the Economic Recovery
- Two Reasons
  - Macro (total economy)
  - Micro (special aspects of ICT Boom)

Historical Analogies to the end of the late 90s IT Investment Boom

- Sir Edward Grey, August 3, 1914
- “The lamps are going out all over Europe; we shall not see them lit again in our lifetime.”
- Will the Late 90s ICT Investment boom Occur Again in our Lifetime?

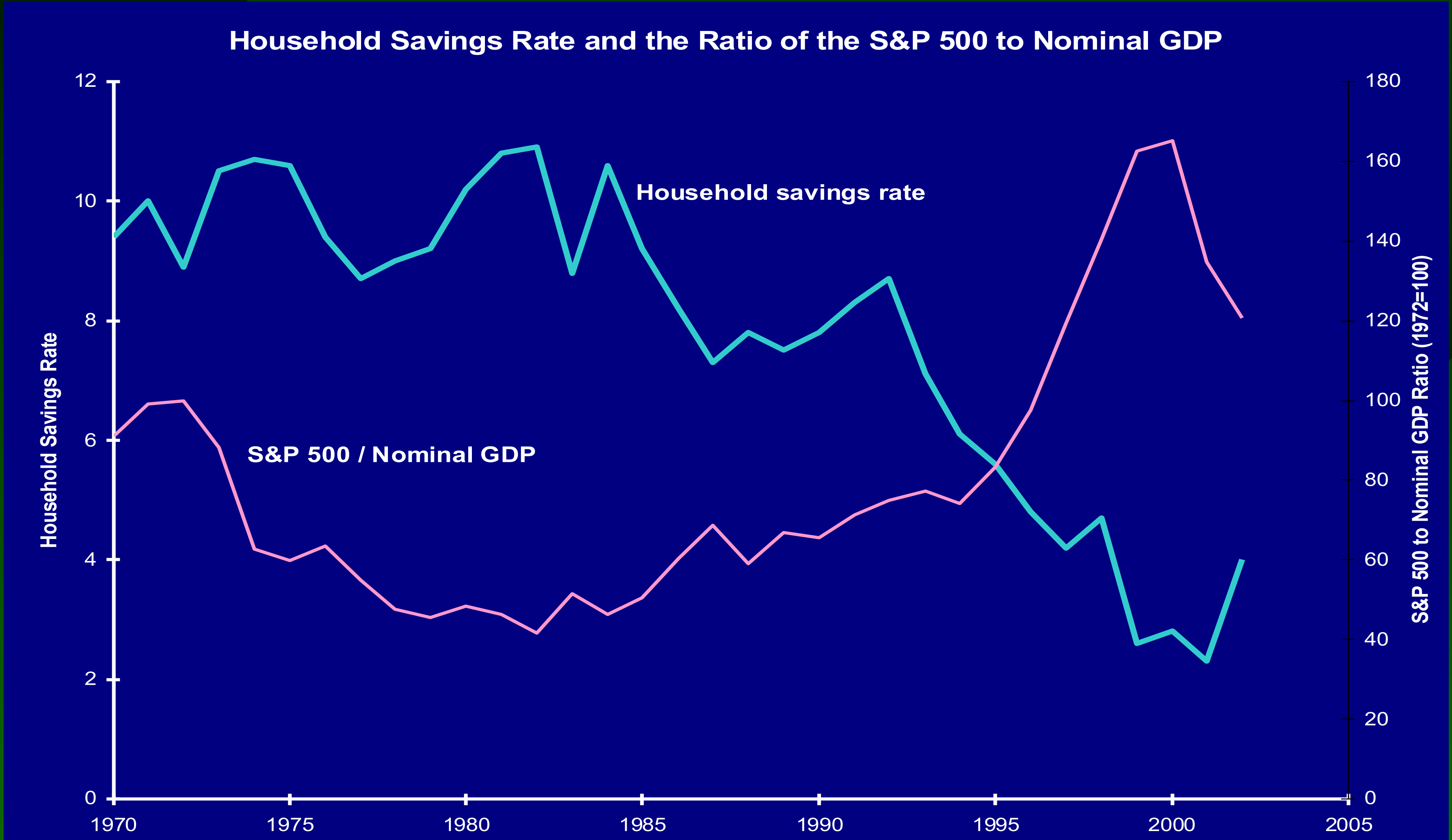
The Macro Triangle: The “New Economy” ICT Boom Didn’t Happen in Isolation

- The “triangle approach”
  - Why the ICT investment boom and bust?
  - Stock market: causes and effects
  - Economy-wide factors: productivity growth, inflation, monetary policy

Macro: the Short Version – A Positive Feedback Loop in the Late 1990s

- Stock Market
  - Fed ICT Boom, Consumption Boom, Fed by New Economy Optimism
- Productivity Growth
  - Fed by ICT Boom, Held Down Inflation
- Inflation and Monetary Policy

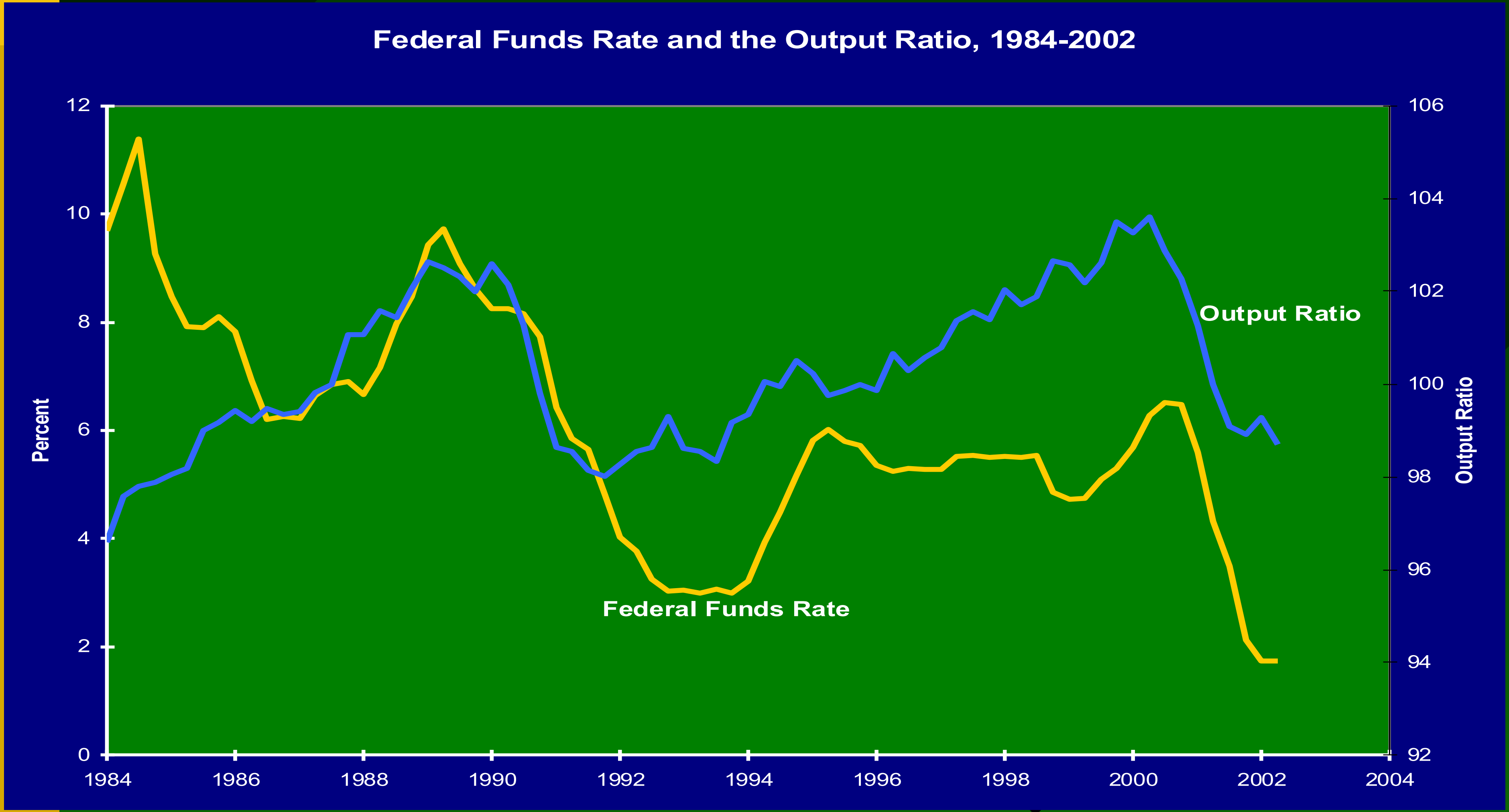
Stock Market reduced Saving and Boosted Consumption



The Five Beneficial Supply Shocks that Held Inflation Down

- Productivity Growth Revival
- Appreciation of Dollar 1995-early 2002 reduced growth in Import Prices
- Energy Prices, trough in early 1998 fueled expansion
- Temporary Hiatus in Medical Care Prices
- Faster Computer Price Deflation ("New Economy")

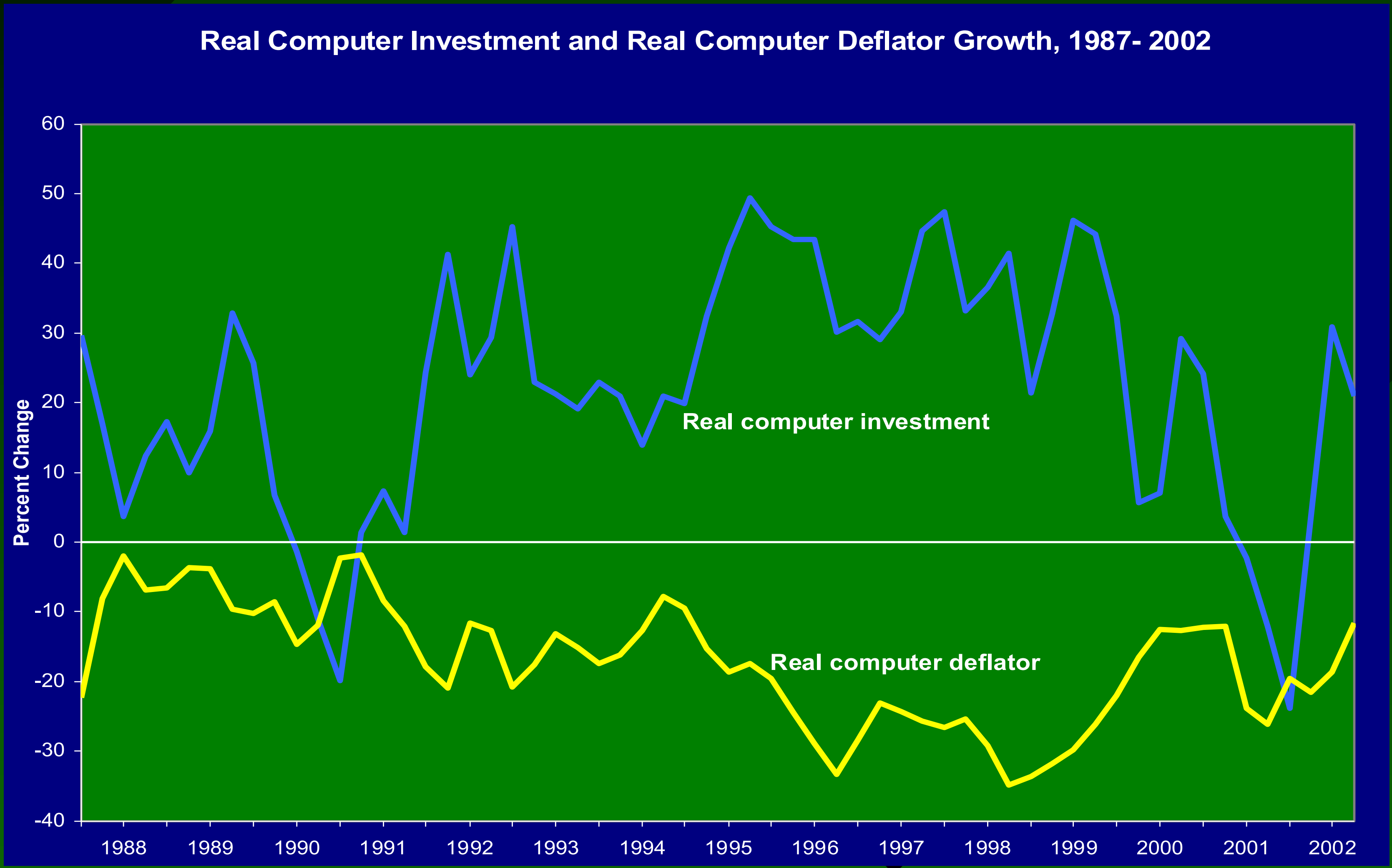
The Benign Fed: Contrast with the Late 80s and Early 90s



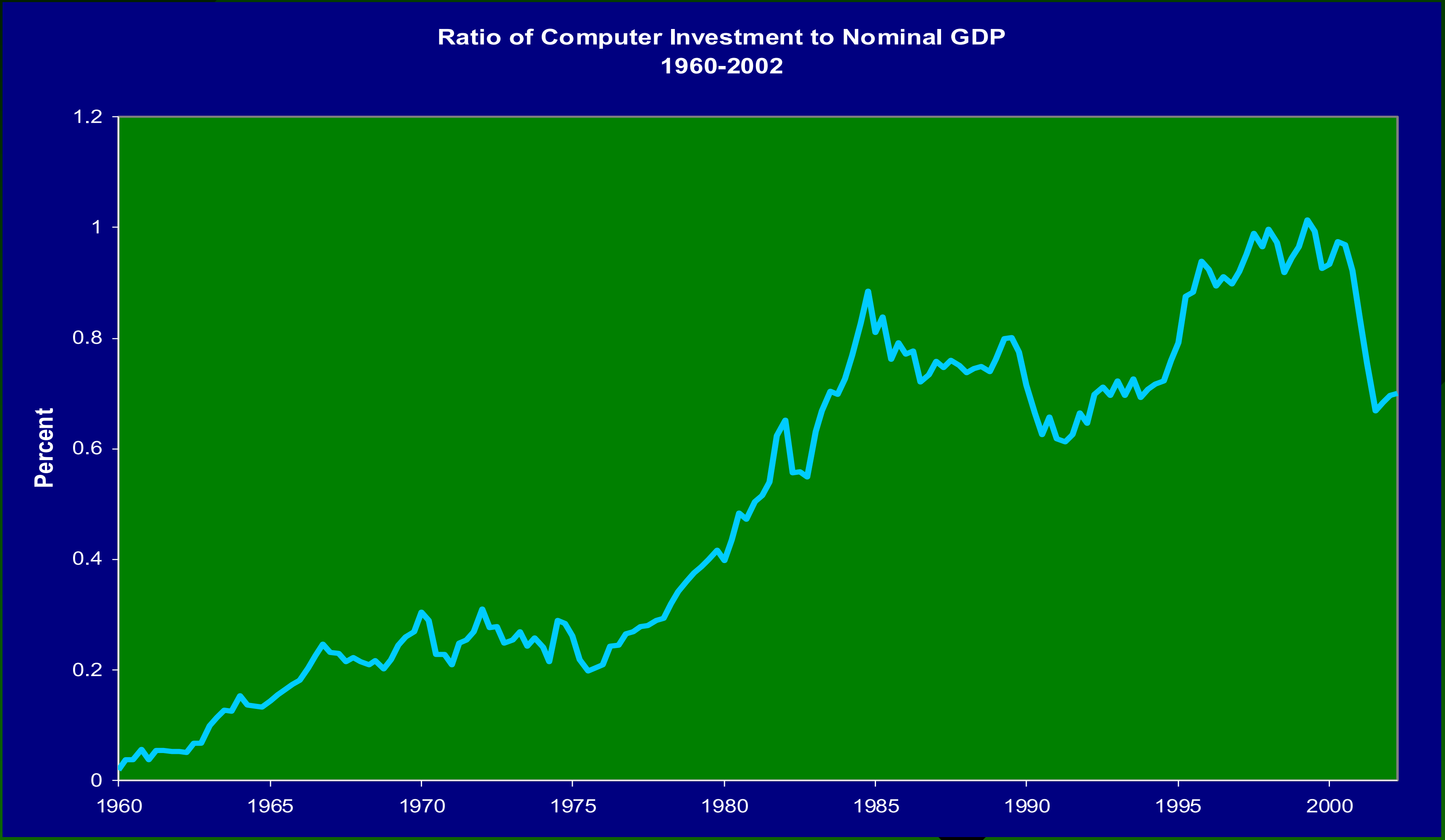
The Micro Side: Does Supply Create its Own Demand?

- Moore’s Law Cycle Time is About Supply, but Economics is About Supply *and* Demand
- Demand Fundamentals of the late 1990’s: One-time-only sources of ICT Demand

Triangle Side #1: The Investment Boom and the Bust



Falling Prices Doesn't Mean that Real Investment will Rise



The Micro Reasons why the ICT Investment Boom Won't Come Back

- Least Controversial: Telecom Equipment
- The WWW Could Only be Invented Once
- Legacy of the Failed Dot-Coms
- Most Controversial: Software Falling Behind Hardware

Macro + Micro Implications

- We won’t have another five consecutive years with ~40% annual growth in computer investment
- Even if ICT investment goes back to 1995 rates, productivity growth will not
- That leaves the last topic: diagnosing the recovery

Something Fishy is Going On: the Forecasting Consensus

- 3+ percent growth forever starting next quarter
- Fixed Investment Starts Growing at Double Digits
  - CBO late 2003 Equip Investment +17
- Classroom:
  - GDP = Multiplier times a+I+G+NX

Well, let's look at Autonomous Components of Spending

- Consumption
  - Auto Sale Payback
  - Overextended Consumer debt
- Government Spending
  - Today's NYT Op-Ed: "Watching the S&L Finances Implode is like watching a multiple-car auto wreck happen in slow motion"

And the Rest?

- Net Exports?
  - Residual effect of strong dollar
  - No matter how slowly U. S. economy grows, forecast for foreign growth is slower
- That leaves Investment
  - Fixed investment 1992<1989

Investment Pessimism?

- We’ve Already Seen: One-time-only aspects of late 1990s
- Capacity Utilization Rate: Historically Low
- Tight Credit Despite Alan Greenspan

If Everything is So Dire, How Come the Recovery Continues? The Bond Market Gyroscope!

- Signs of Weakness? Bond Market yields tank
- A Housing Refinance Boom follows, money flows to consumer pockets, the economy is not weak after all
- So far, so good

The BCDC: Why Doesn't it Declare the Trough?

- Inside-Committee Dissention: Employment vs. Output
- BCDC and Journalists don't understand "double dip"
  - Business Cycle in LEVEL of GDP
  - Real GDP now 3.0% > trough in 2001:Q3
  - DD would require -12 in one quarter, -6 over two quarters

Finale: No Double Dip but Slow Recovery

- And Now, the Part of the Program You've all been Waiting For!
- The Other Panelists will tell us:
- WHAT ALL THIS MEANS FOR THE STOCK MARKET . . .