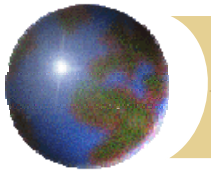


Economic Impacts of Hurricane Katrina



**Jeff Werling
INFORUM
University of Maryland
September 22, 2005**

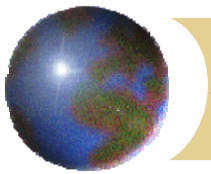


Overview

- First natural disaster to have significant negative macroeconomic impact
 - Size of regional economy disrupted
 - Knock-on effects of energy and transportation industry problems

- Redistribution of income/wealth
 - From energy consumers to energy stockholders and OPEC
 - From (future) taxpayers, property insurance purchasers, and charitable givers to compensate hurricane's victims

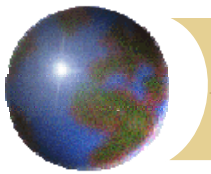
- Rita regional effect could be similar, but could compound energy problems and macro effects



Katrina: Human and Material Losses

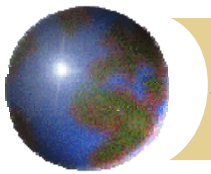
- 1000+ deaths
- 500K to 1 million homeless
- 200K homes ruined in Louisiana/Mississippi
- 300K+ jobs disrupted
- \$100-\$150 billion property loss

- Compare to Andrew (1992)
 - 43 deaths
 - 300K homeless
 - 100,000 homes damaged



Three broad types of economic impacts

- Loss of property or wealth (productive capital stock). These do not show up as reductions in “gross” domestic product, but in “net” national income as “capital consumption” (depreciation) increases.
- Disruption of production, employment and income flows will reduce GDP temporarily.
 - Paradox: Income and production (GDP) are down initially from disruption. Production accelerates over medium term as wealth is “re-accumulated.”
- Cost-Push Inflation: energy, construction materials, and downstream price pressures.

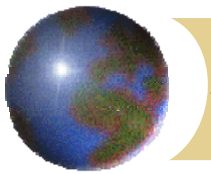


Katrina is largest catastrophe in history

Figures in billions of 2005\$

Event	Region	Date	Wealth Destruction	Production Disruption	Total Loss	Priv Aid & Insurance	Govt Aid
Katrina	GOM	Sep-05	\$80-150	\$25-50	\$100-200	\$40-60	\$100-200
Ivan	GOM	Sep-04	7.2	6.5	13.7	7.3	6.3
9/11	Nat'l	Sep-01	25.7	61.8	87.5	20.2	67.3
Northridge EQ	LA	Jan-94	23.6	12.5	36.1	16.1	15.5
Midwest Floods	MN to MO	Sum 93	6.1	9.4	15.5	1.3	7
Andrew	So. FL.	Aug-92	36.7	11.6	48.3	21.3	10.8
Loma Prieta EQ	Bay Area	Oct-89	10.6	5.4	16	1.6	7.6
Hugo	SC	Sep-89	14.5	4.7	19.2	6.6	3.1

Sources: Economy.com, Swiss Re, RMS, Insurance Information Institute, Inforum estimates



Everyone loses in disasters

Income disruption

Wealth destruction

Local/Regional

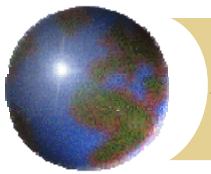
direct employment
and income loss

direct property
loss

Natl./Global

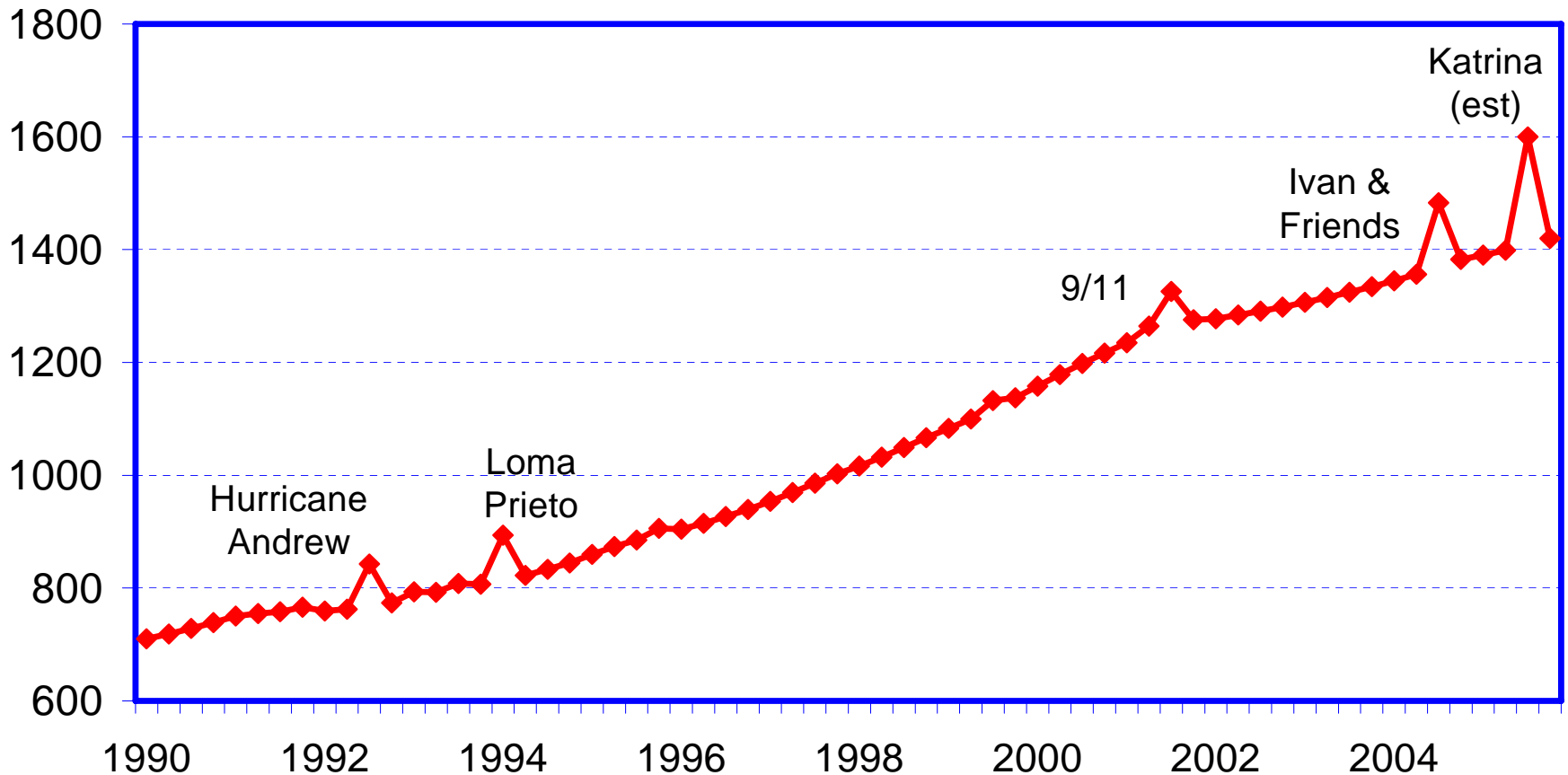
indirect thru energy
& commodity prices,
income subsidies/
donations

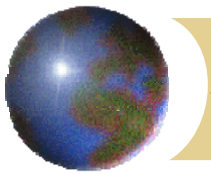
indirect thru
insurance
premiums, federal
building subsidies/
donations



Destruction of capital in National Income Accounts

Capital Consumption Allowance 1990-2005 (thousands of 2000\$)

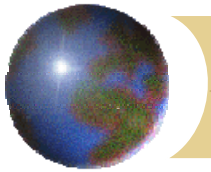




Affected Region is Sizable

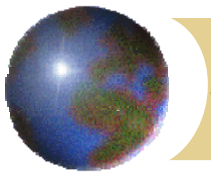
Economic Area	Population (thous)	% U.S.	Income (thous)	% U.S.	Employment (thous)	% U.S.
Severe Disruption						
New Orleans, LA	1733	0.60	49161	0.54	971	0.58
Gulfport -Biloxi-Pas	404	0.14	10226	0.11	223	0.13
Moderate Disruption						
Baton Rouge, LA	755	0.26	20196	0.22	432	0.26
Mobile-Daphne-Fair	708	0.24	16748	0.18	356	0.21
Houston	5966	2.05	196048	2.14	3385.637	2.03

Source: Bureau of Economic Analysis



Unlike previous catastrophes, economic impact of Katrina will be significantly felt beyond the region.

- Energy supply/prices: oil, natural gas and gasoline production are significantly impaired
- Transportation of agriculture commodities (Port of NO) and other items
- Reallocation of income and wealth through insurance, federal expenditure/taxes, charitable organizations
- Federal budgetary impact

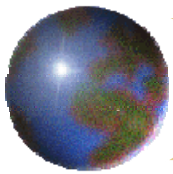


Gulf of Mexico is center of oil and gas industry (Rita presents even greater threat)

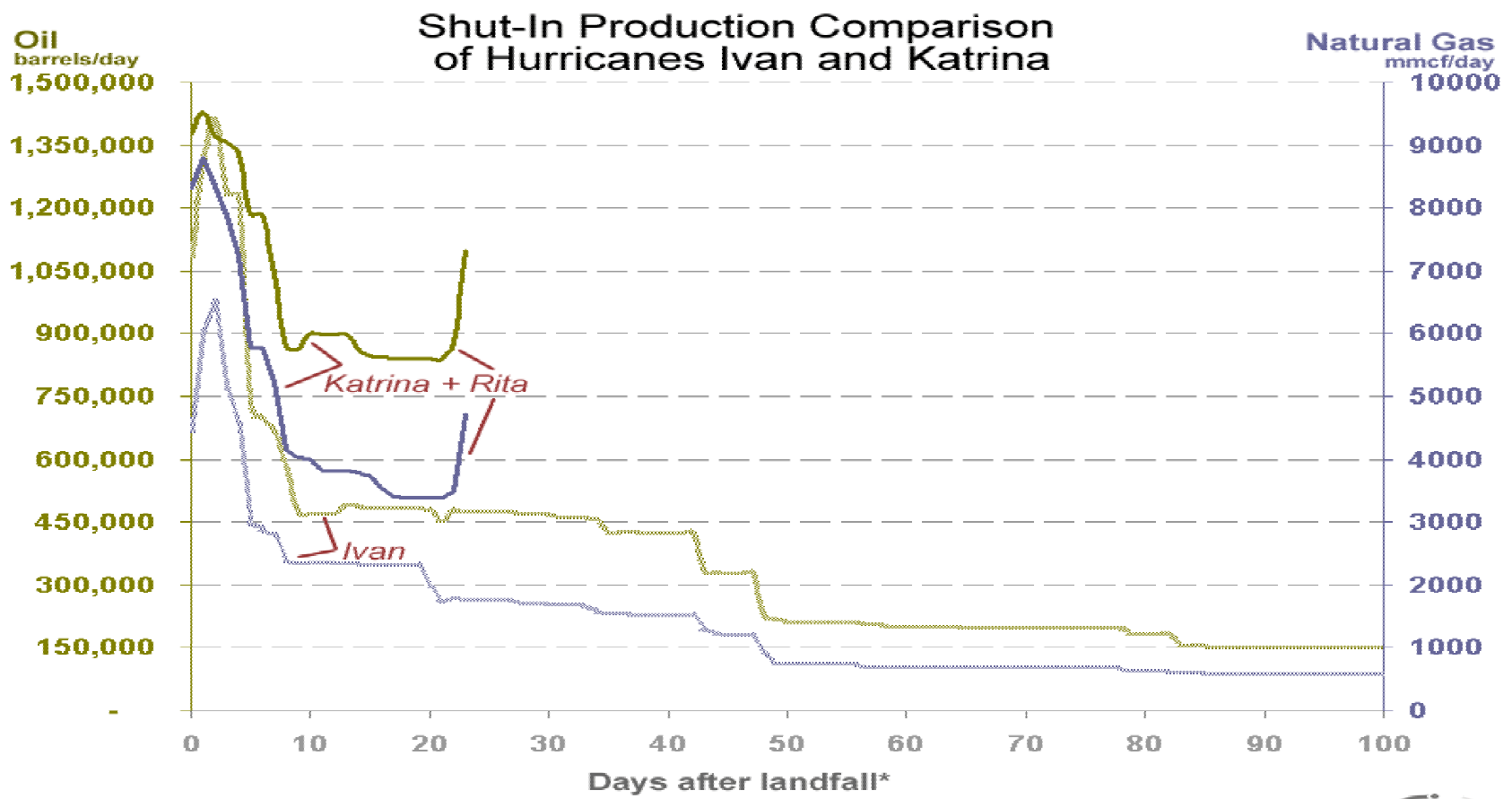
Gulf of Mexico Oil & Natural Gas Facts
Energy Information Administration
Data as of June 2005 unless otherwise noted.

	Gulf of Mexico	Total U.S.	% from Gulf of Mexico
Oil (million barrels per day)			
Federal Offshore Crude Oil Production (4/05)	1.56	5.49	29%
Total Gulf Coast Refinery Capacity (1/05)	8.07	17.01	47%
Total Gulf Coast Region Crude Oil Imports	6.49	10.75	60%
- of which into ports in LA, MS and AL	2.52	10.75	24%
- of which into LOOP	0.91	10.75	9%
Natural Gas (billion cubic feet per day)			
Federal Offshore Marketed Production (3/05)	10.40	54.10	19%

Source: Energy Information Agency, DOE

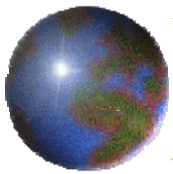


"Shut-In" of Petroleum & NG production



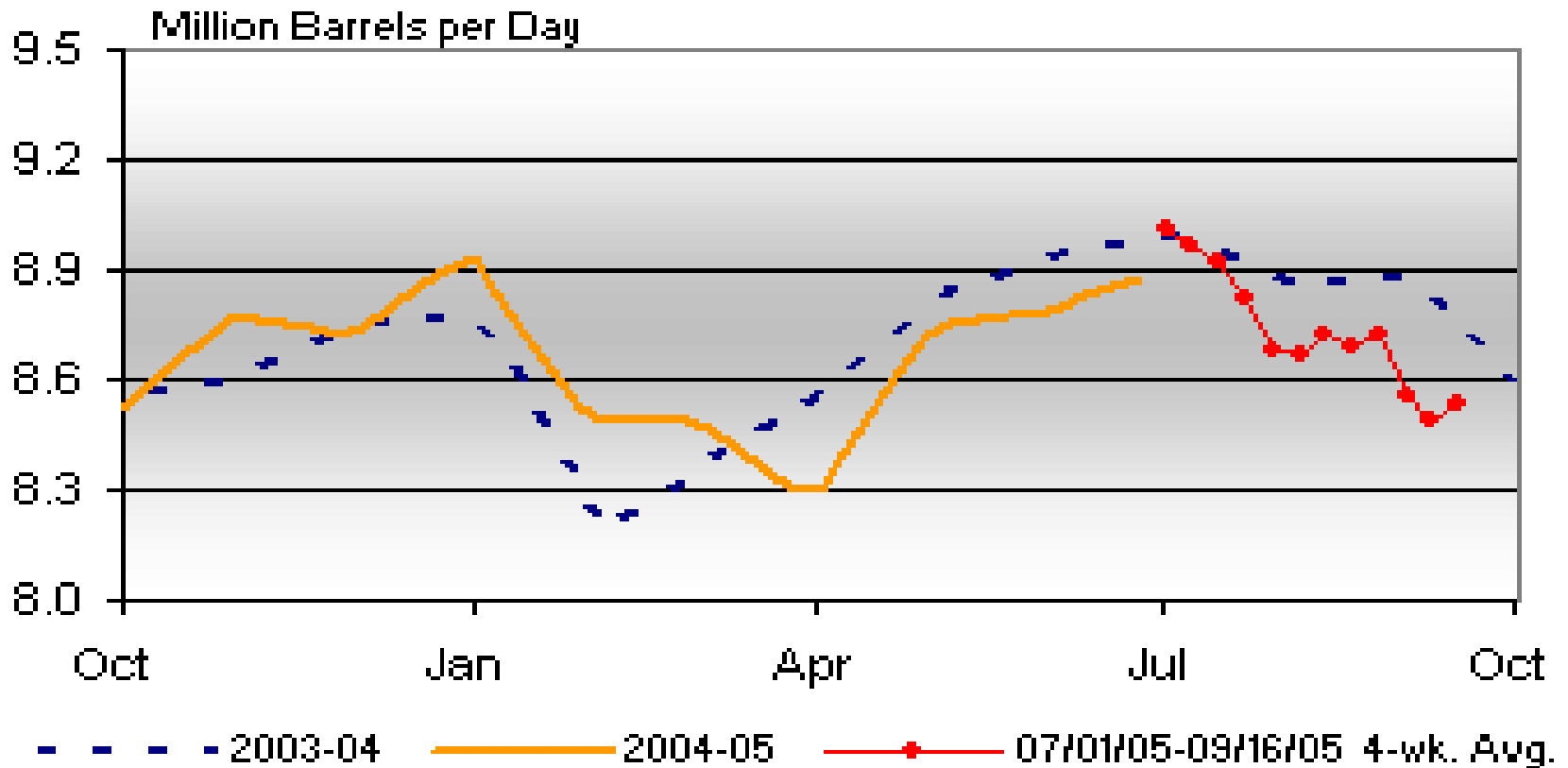
*Note: Ivan shut in roughly 130,000 bbl/d of oil and 0.3 Bcf/d of natural gas from Jan.-Mar. 2005. The graph above shows 3 months.



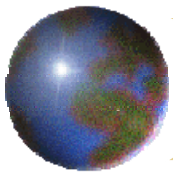


Refinery activity substantially impacted

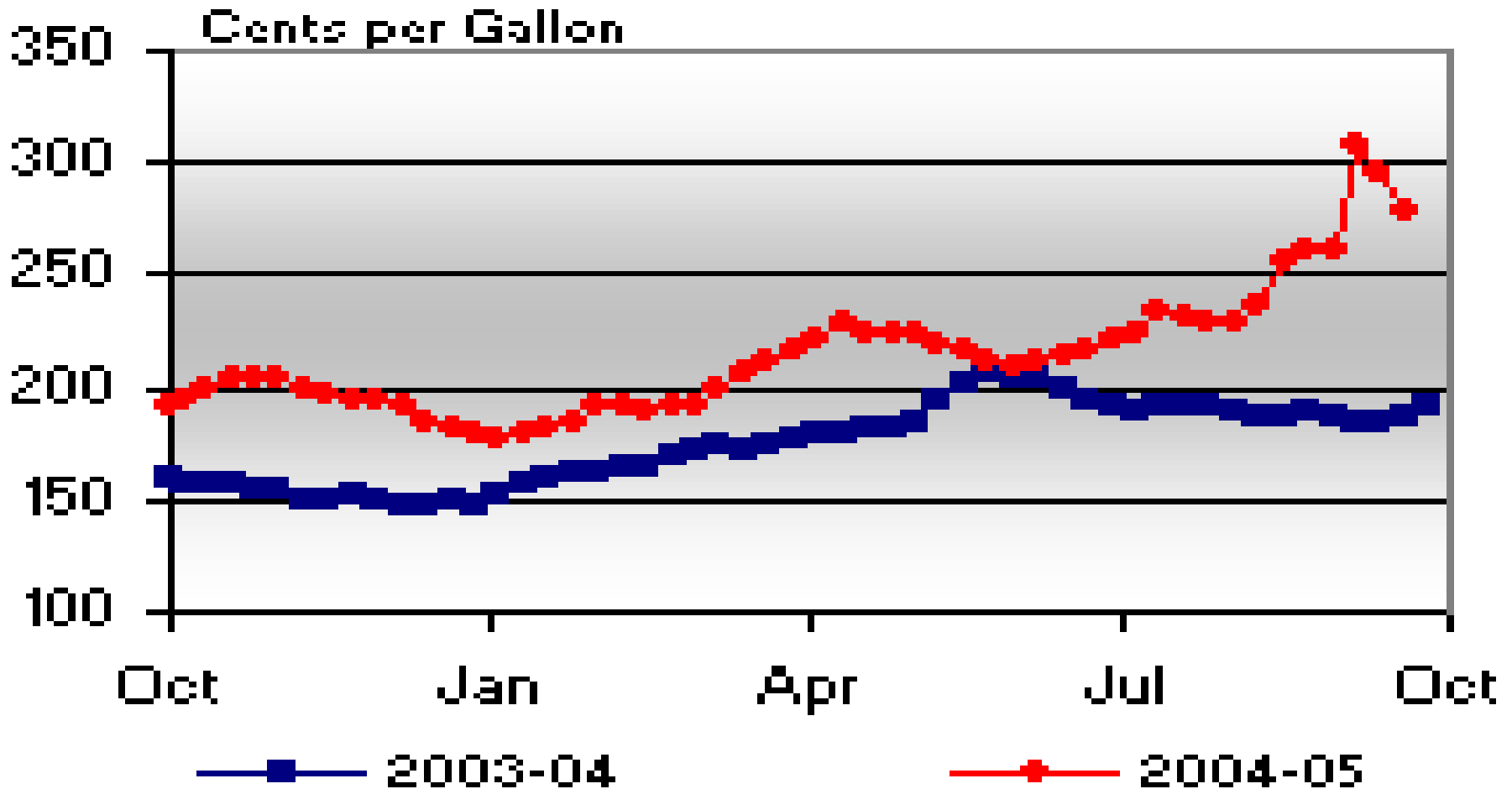
U.S. Finished Gasoline Production



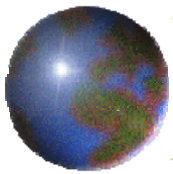
Source: Energy Information Agency, DOE



Regular Gasoline Prices

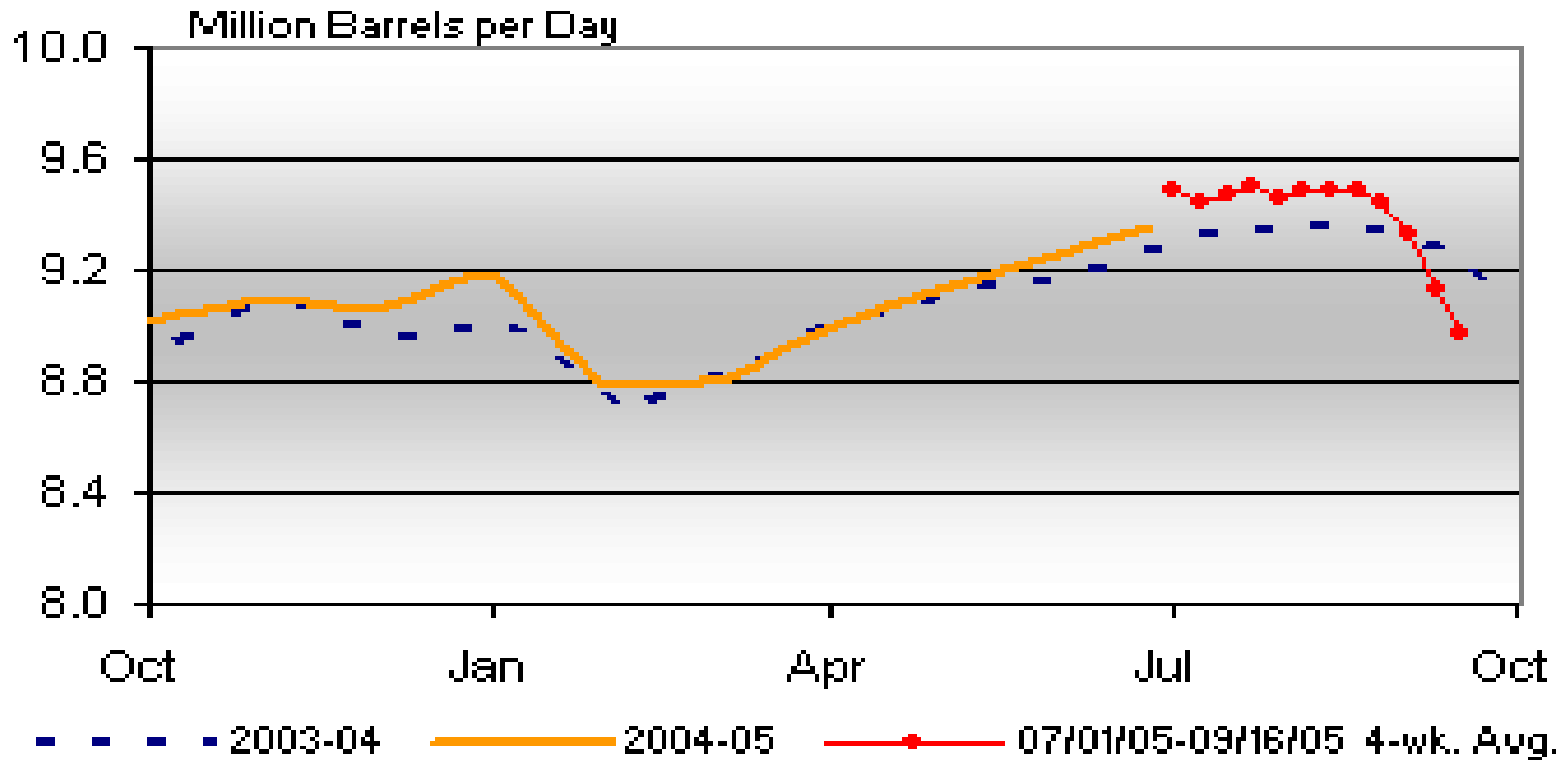


Source: Energy Information Agency, DOE

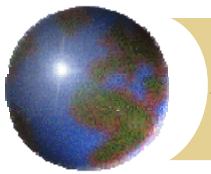


Higher prices affect demand?!

U.S. Gasoline Demand



Source: Energy Information Agency, DOE



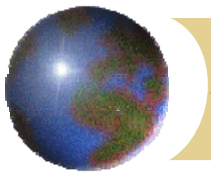
Interesting Economics Lesson: Should gasoline prices be regulated?

More Than 20 Georgia Gas Retailers Could Face Fines Over Prices

Associated Press

Wednesday, September 21, 2005

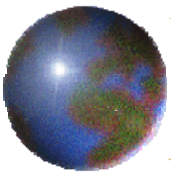
“As many as 26 area gasoline retailers may be fined for not reducing their prices after Governor Perdue declared a temporary moratorium on the state's gas tax. “



Large potential trade disruption

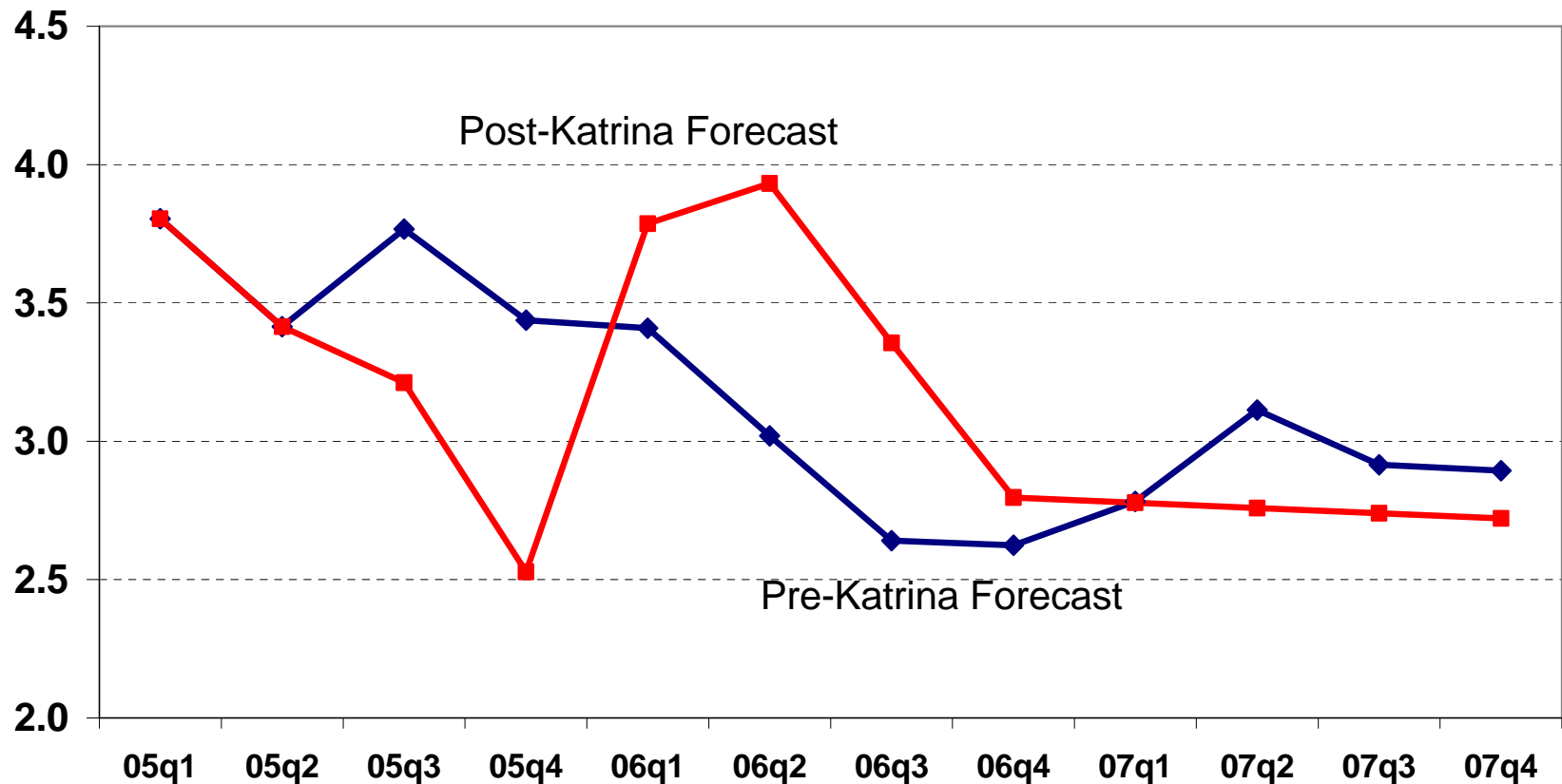
International port traffic, Customs data

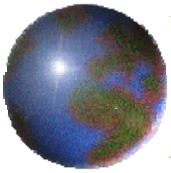
Port Area	Imports				Exports			
	Weight (bil kg)	Share	Value (bil \$)	Share	Weight (bill kg)	Share	Value (bil \$)	Share
Total U.S.	881.4	100%	604.6	100%	324.8	100%	202.5	100%
New Orleans/South LA Mobile AL/ Gulfport-Pascagoula, MS	145.2	16%	29.7	5%	88.3	27%	18.5	9%
Houston Region, TX Port Arthur, TX	182.0	21%	46.8	8%	48.3	15%	27.0	13%
Baltimore	18.0	2%	20.3	3%	4.5	1%	5.7	3%



GDP growth impact

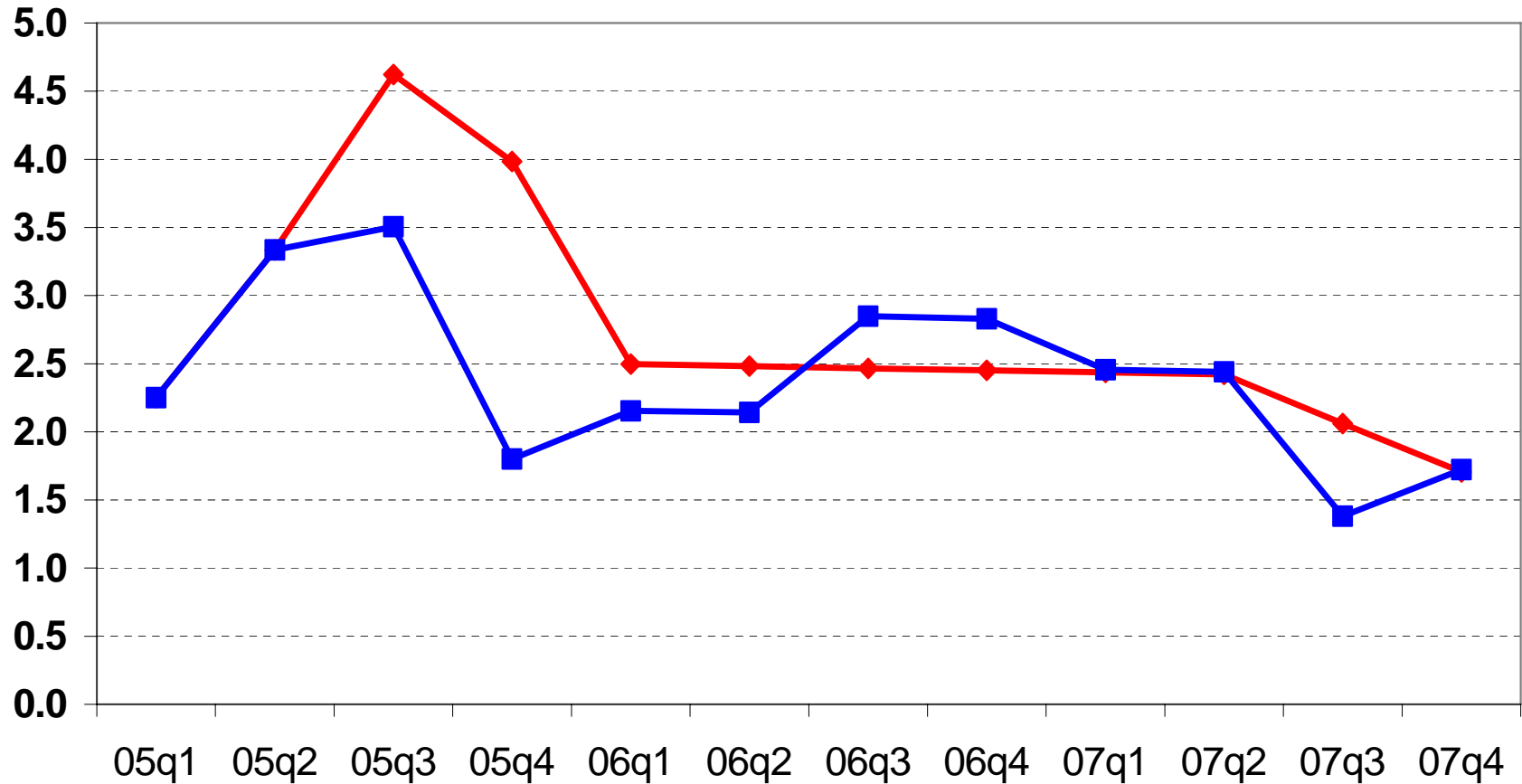
Quarter over quarter GDP growth, annual rate

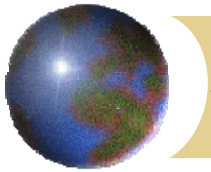




Inflation impact

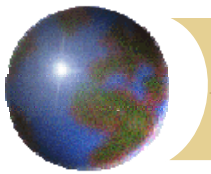
Personal consumption deflator, qoq change %





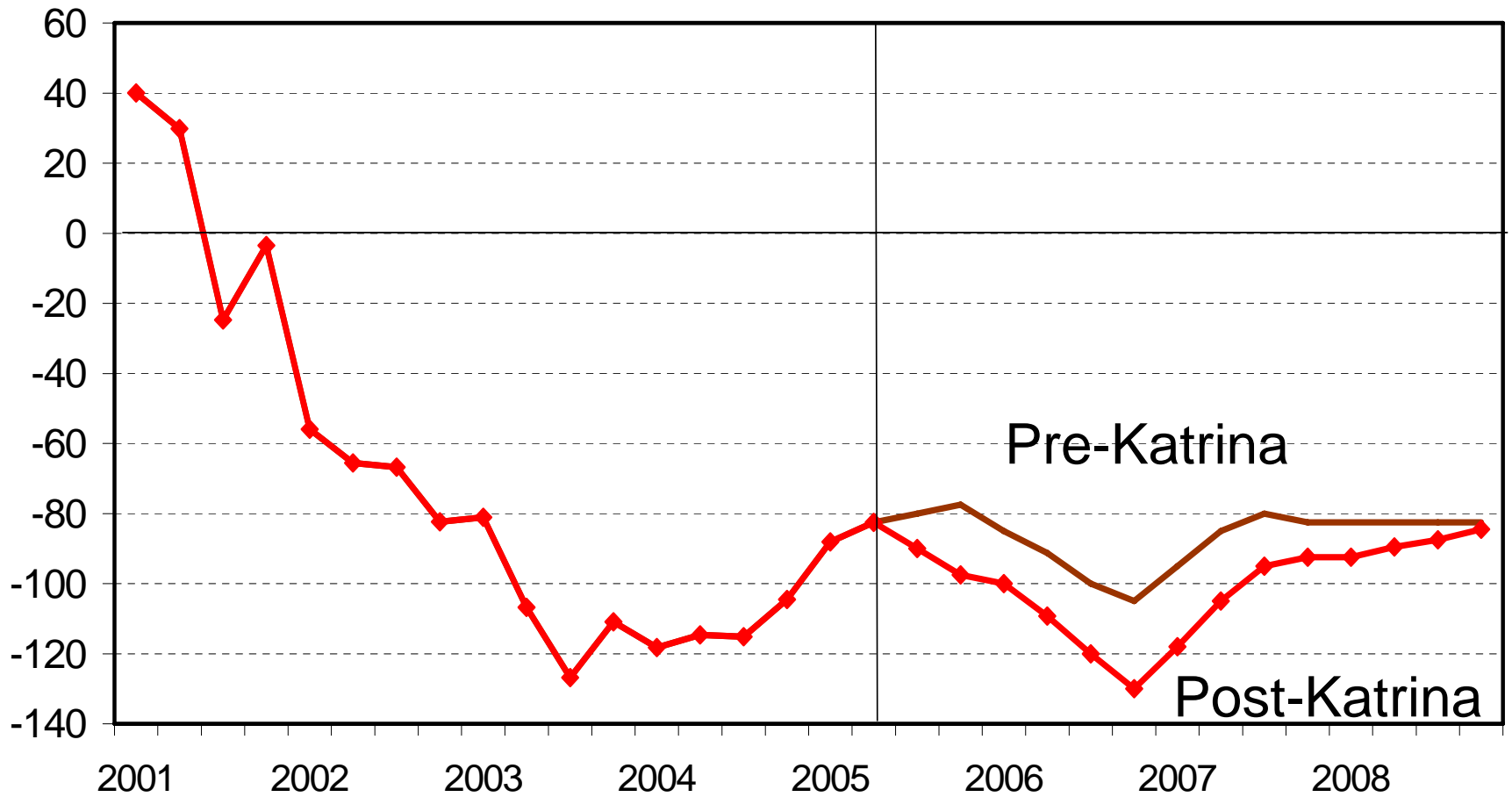
Budgetary Impact

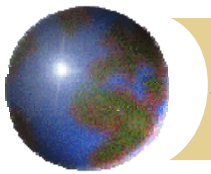
- "It's going to cost whatever it costs." (President Bush)
- Current estimates of Federal share up to \$200 billion in recovery and reconstruction. Spread over three-four years. Plus interest.
- Iraq is due for another \$80+ billion installment early next year.
- Medicare drug coverage starts in 2006 (\$40-60 bill).
- Long-term borrowing scenario already ugly.
- Promises of other cuts don't seem credible.
- No change in tax policy?



Katrina's Federal Budget Impact

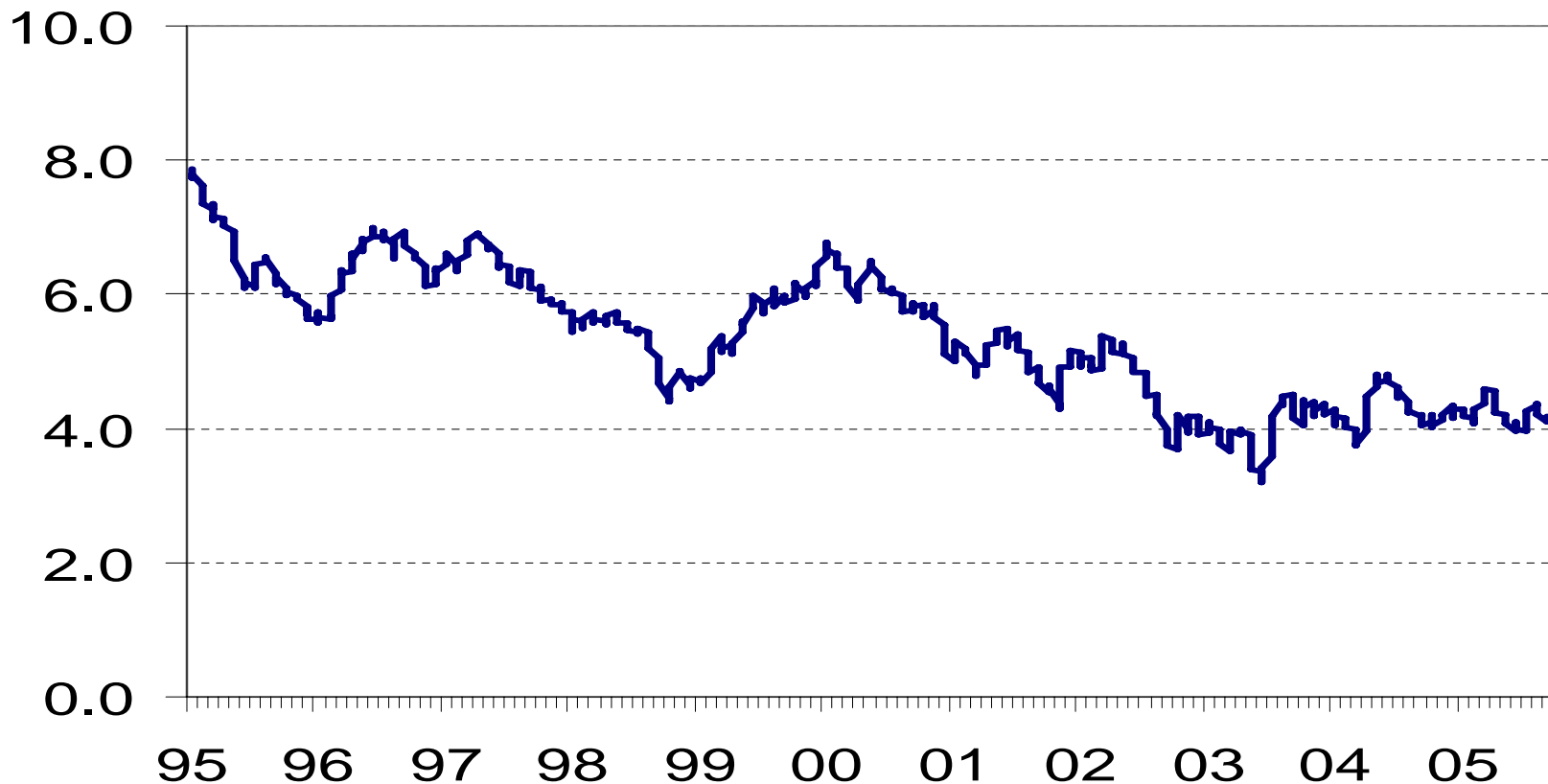
Short run federal budget impact of 200 bill \$

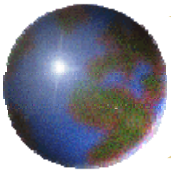




Ultimate Katrina/Rita impact may be on bond market reaction to increasing government deficits

10 yr Federal Bond Yield





Hurricane Katrina: Conclusions

- Regional disruption is unprecedented in size.
- Macroeconomic consequences (output and inflation) significant but not disastrous.
- Rita has potential to double the impacts.