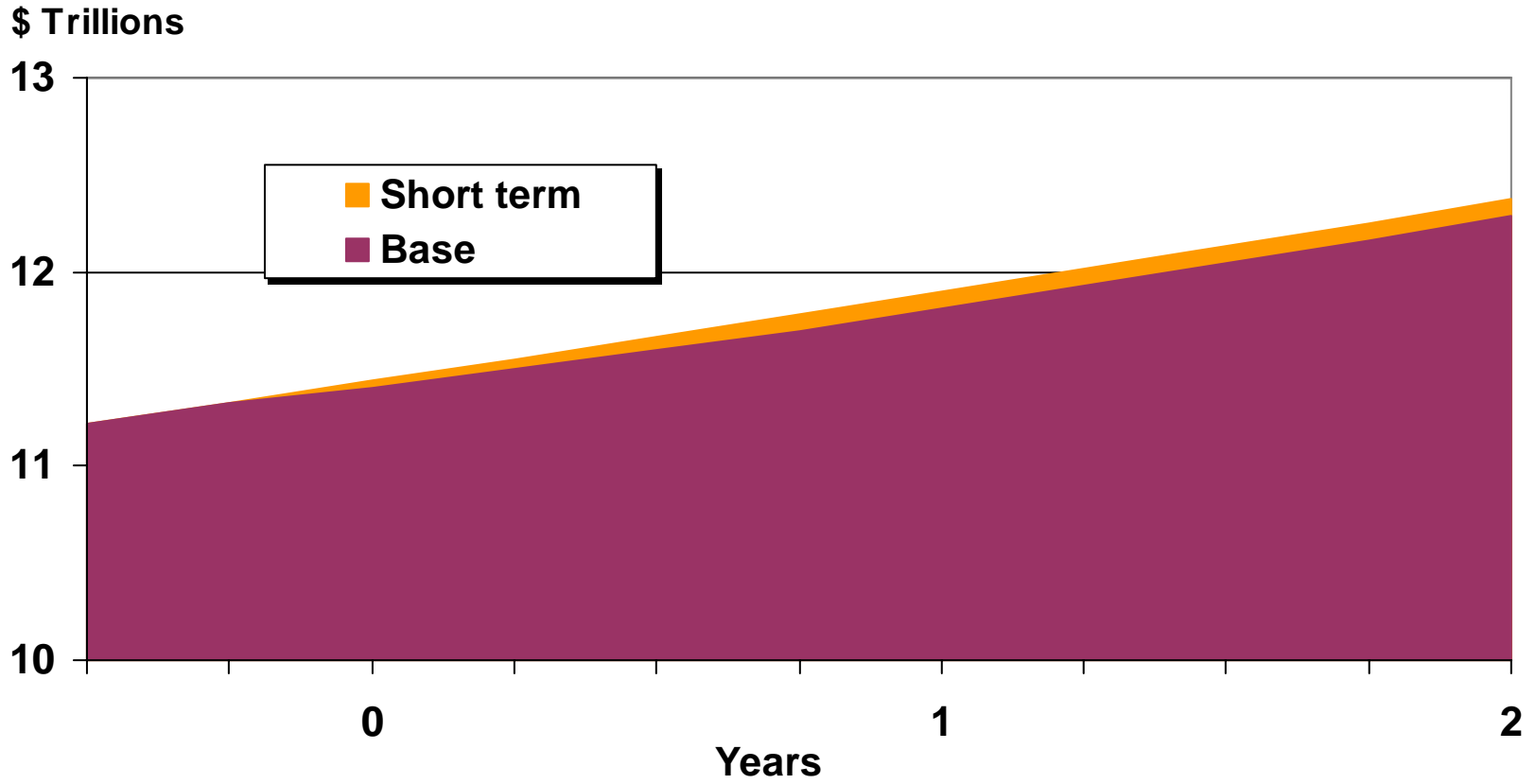


# **The National Economic Impact of a Food Terrorism Event: Preliminary Estimates**

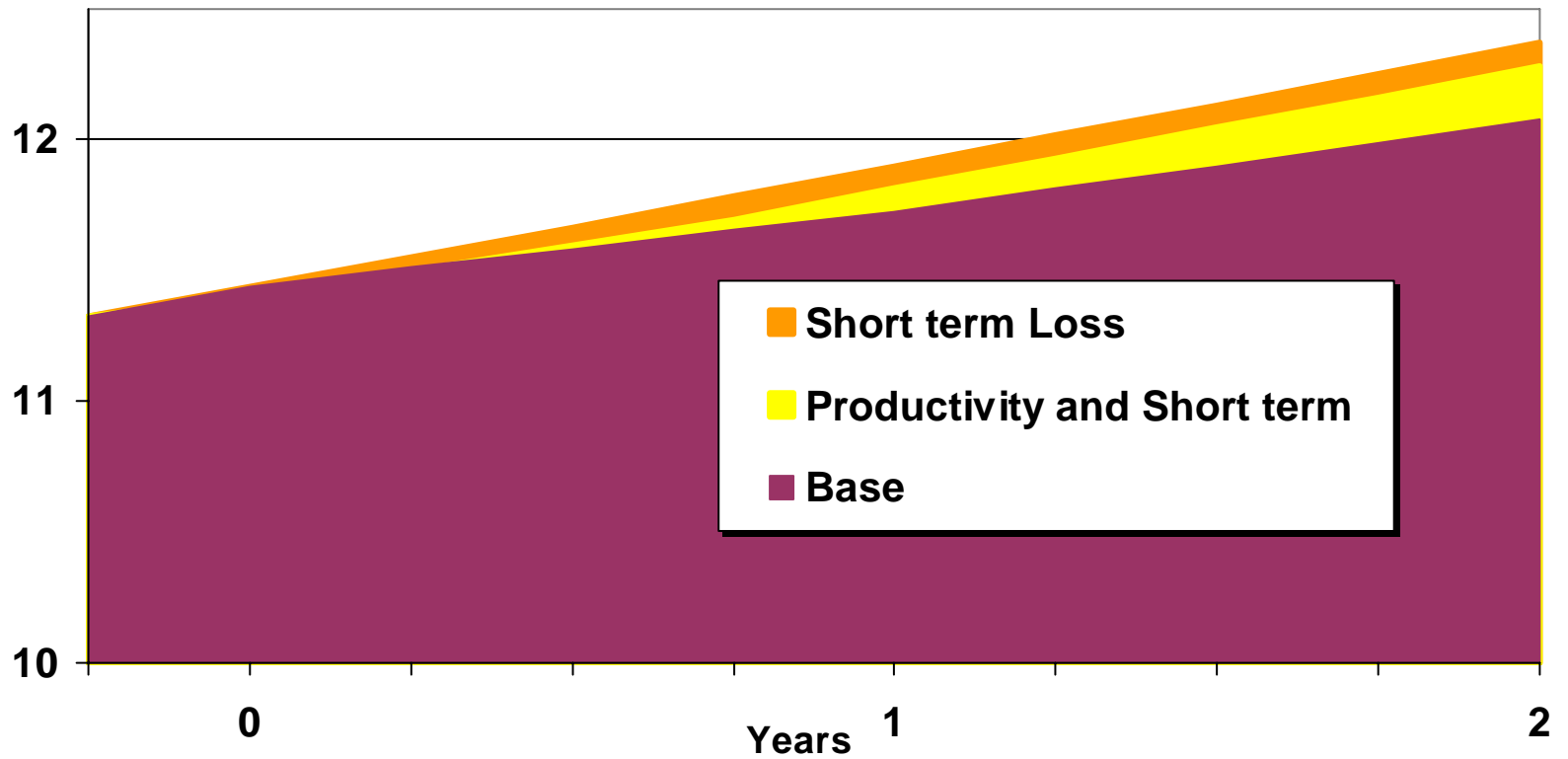
**Thomas F. Stinson  
National Center for Food Protection and Defense  
University of Minnesota  
August 20, 2004**

# Short Term Economic Losses Are Never Regained



# Productivity Losses Grow in the Future

\$Trillions



# Study Design

- **Objective:** Simulate short-term economic impacts of food terrorism
- Large, U.S. macro model used
- Attack occurs in summer 2005
- Only major macro variables changed from baseline scenario
- No productivity changes, no food sector specific changes

# Standard Open Economy Model

$$Y = C + I + G + NX$$

$$C = a + b(Y - T)$$

$$I = i_0 - i_1(r)$$

$$NX = e_0 - e_1(FX)$$

$$NFI = n_0 - n_1(r)$$

**(G and T exogenous)**

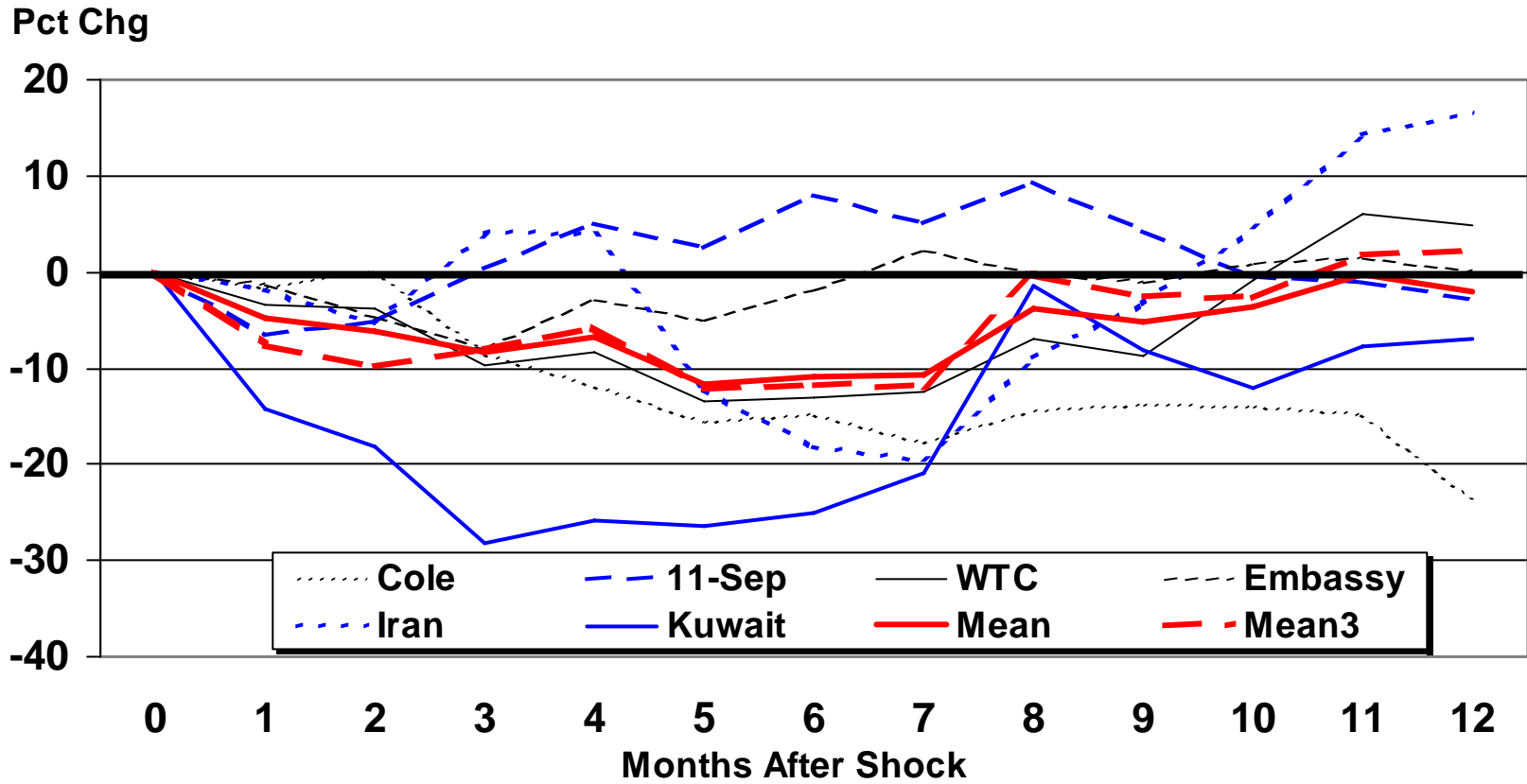
# Add Factors Adjusted to Provide Shock to Baseline Forecast

$$\begin{aligned} C = & a_0 + a_1 CS + \alpha_1 CS + a_2 W + \alpha_2 W \\ & + a_z Z + b(Y-T) \end{aligned}$$

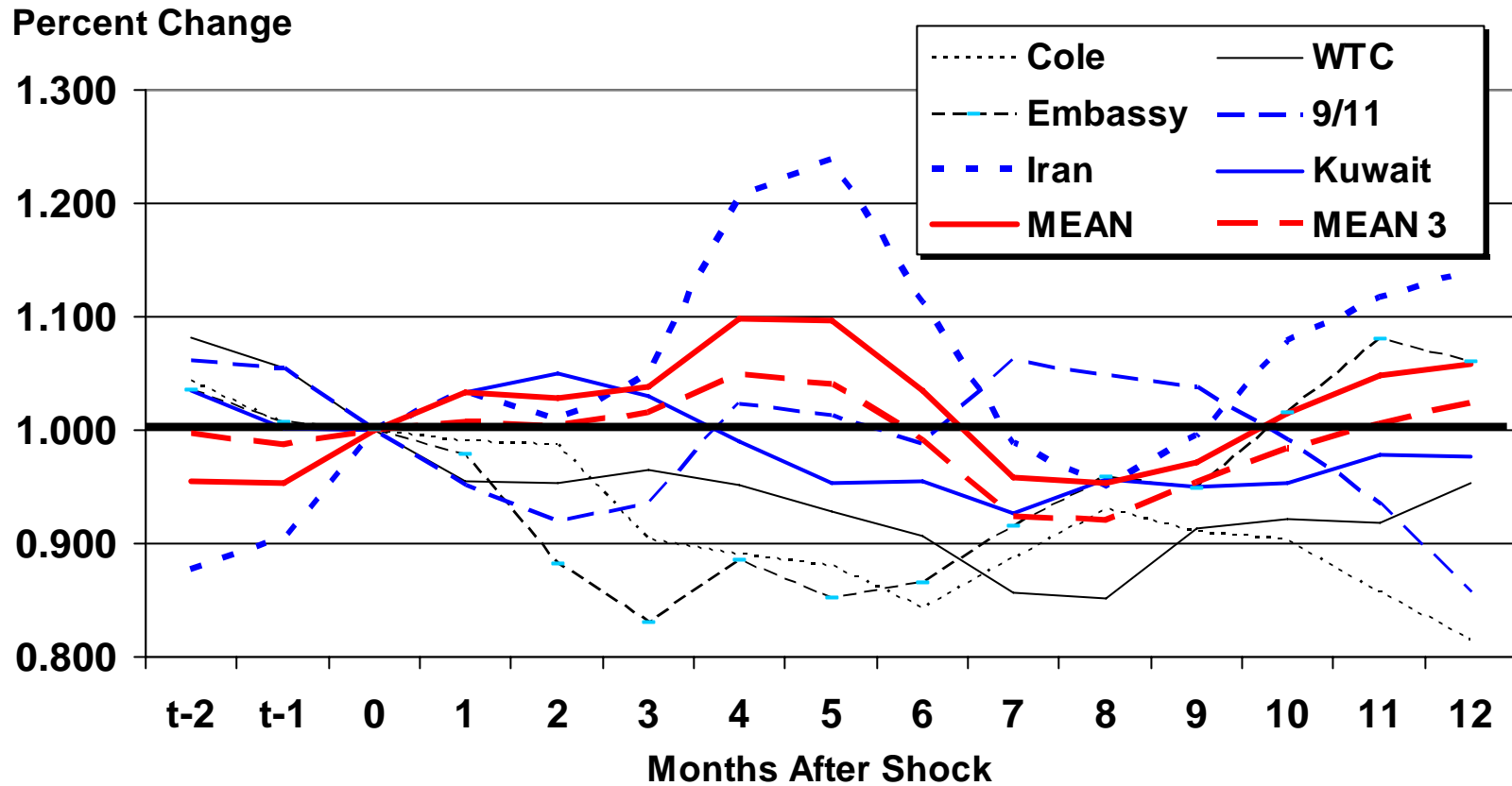
# **Six Shocks Affecting the U.S. Economy**

- **September 11, 2001**
- **Kuwait Invasion**
- **Iranian Hostage**
- **World Trade Center Bombing**
- **U.S.S. Cole**
- **Embassy Bombings**

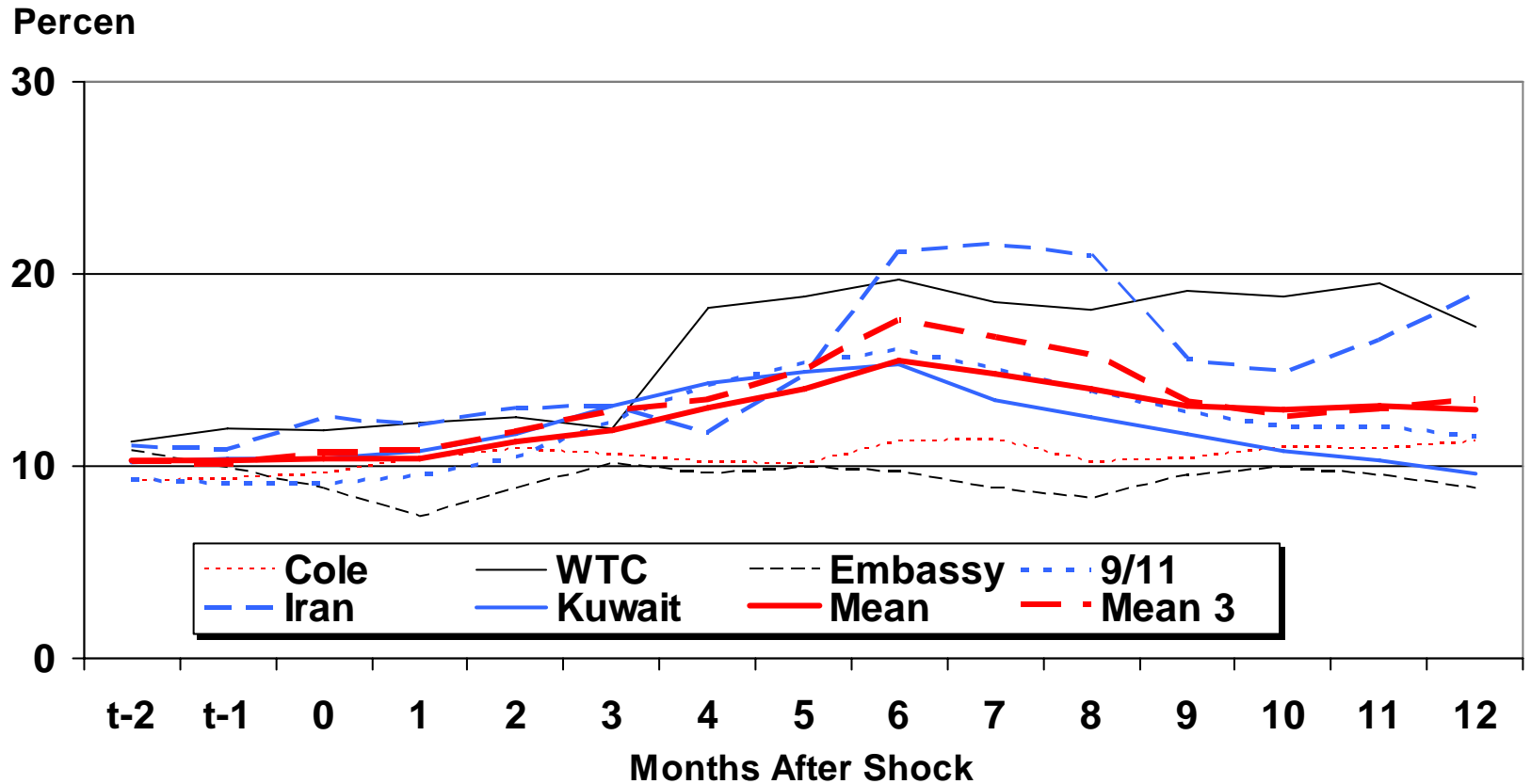
# Consumer Sentiment Falls By 10 Percent in First Two Quarters, but Recovers within 12 Months



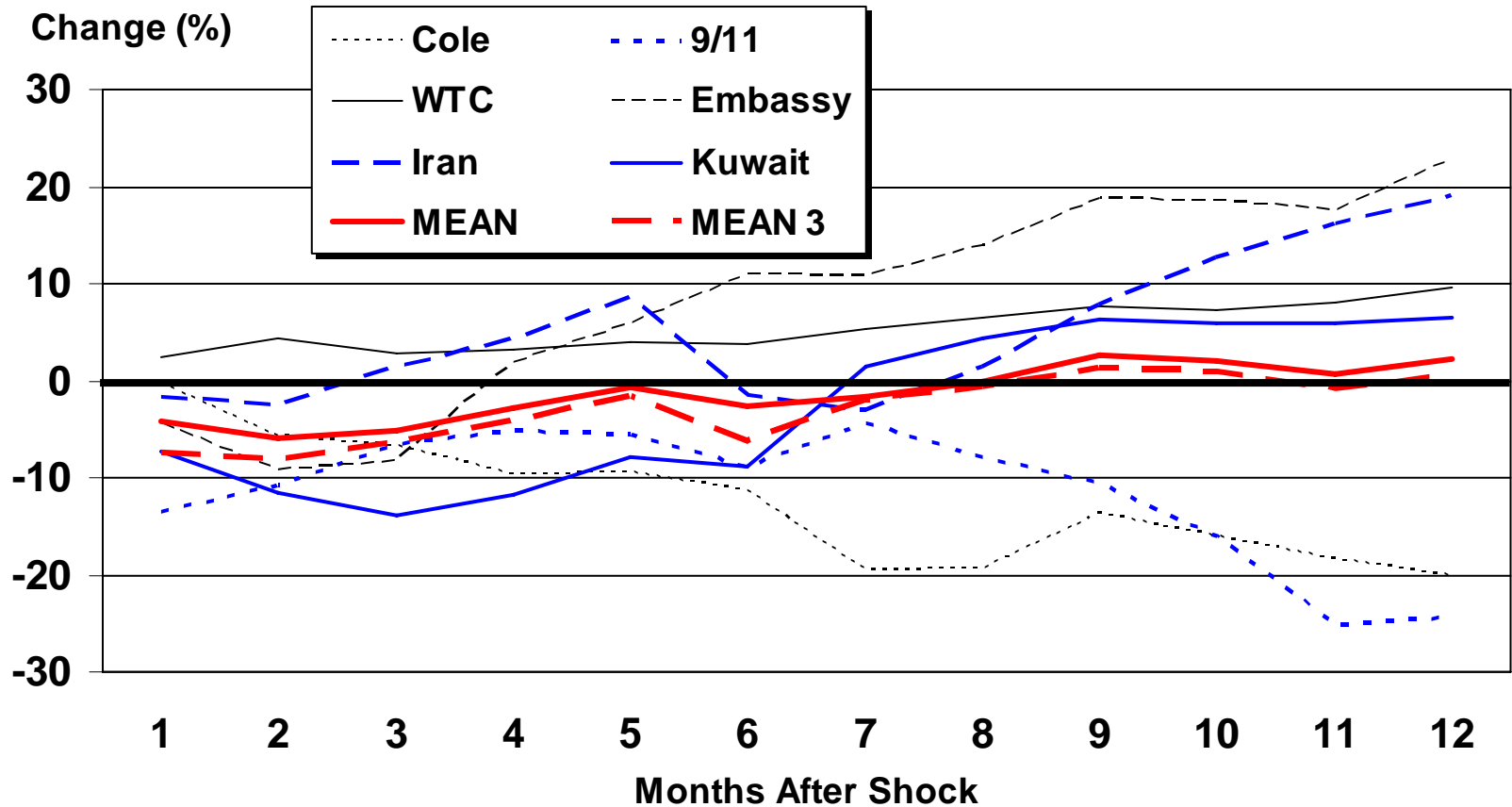
# Average 10 Year Treasury Rates Increase Slightly, Then Fall



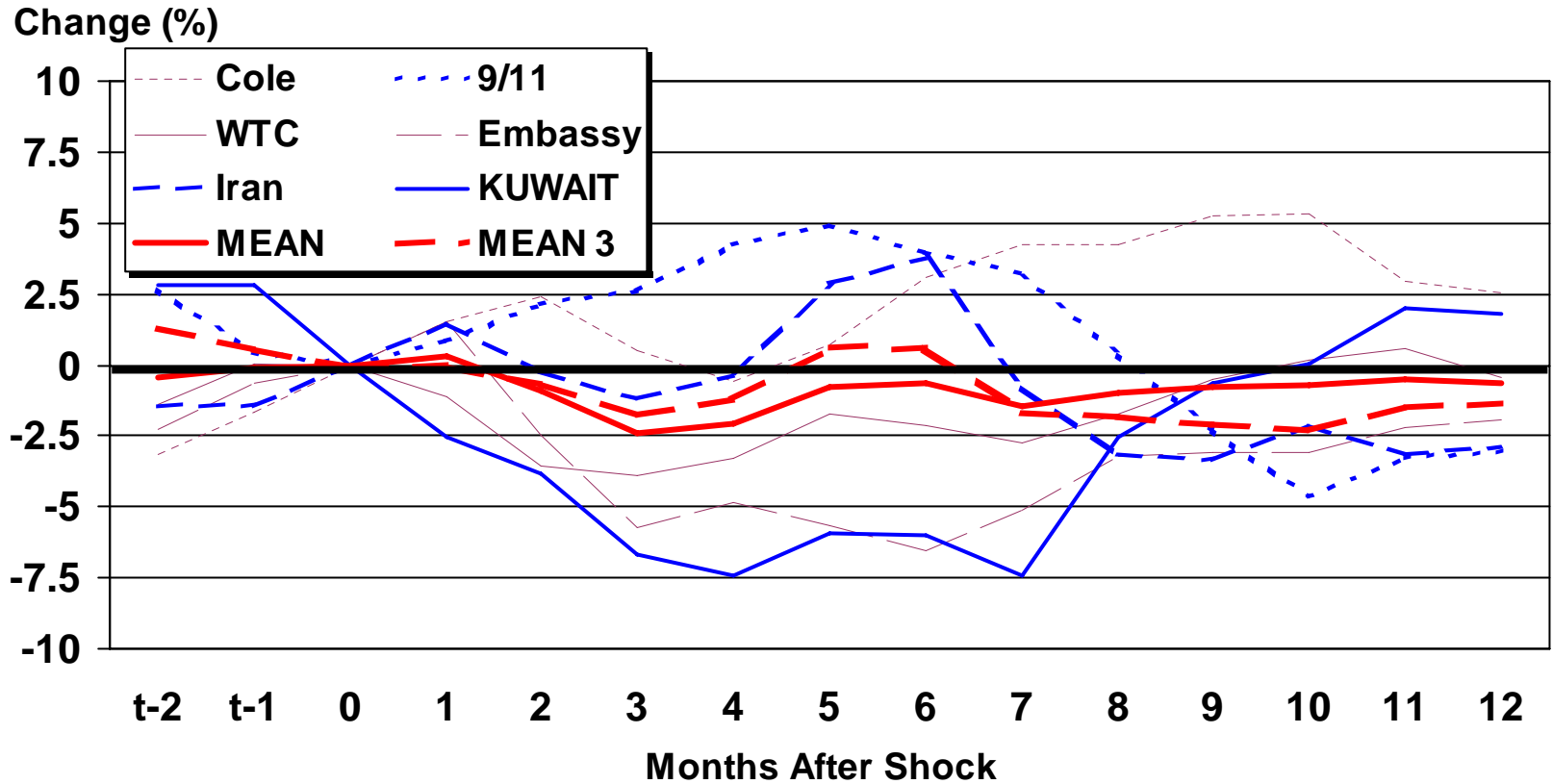
# Corporate Baa - Aaa Spreads Widen After Terrorist Acts



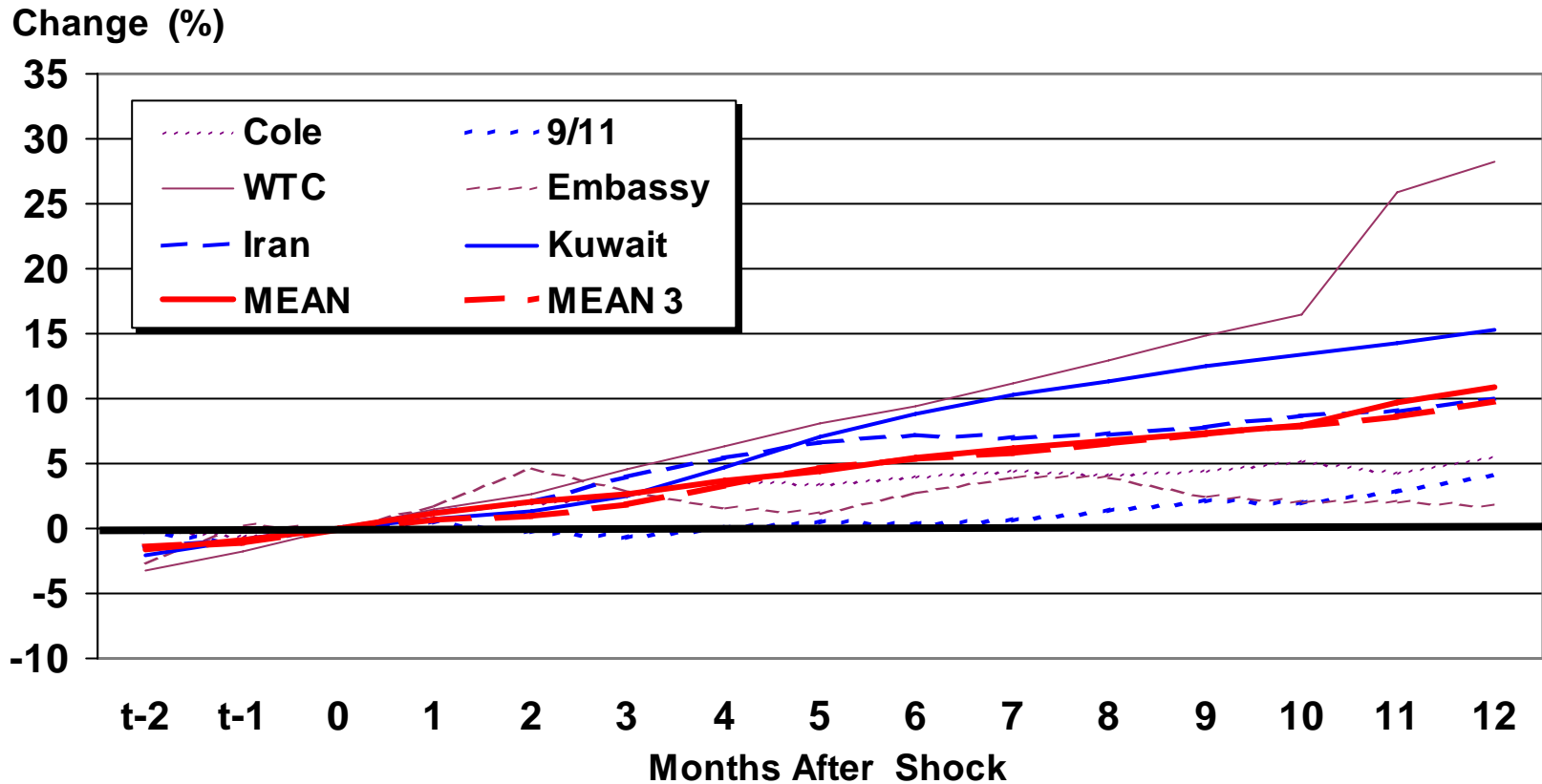
# S&P 500 Declines Slightly, But Recovers Within Six Months



# Dollar Declines Slightly Against Other Major Trading Partners

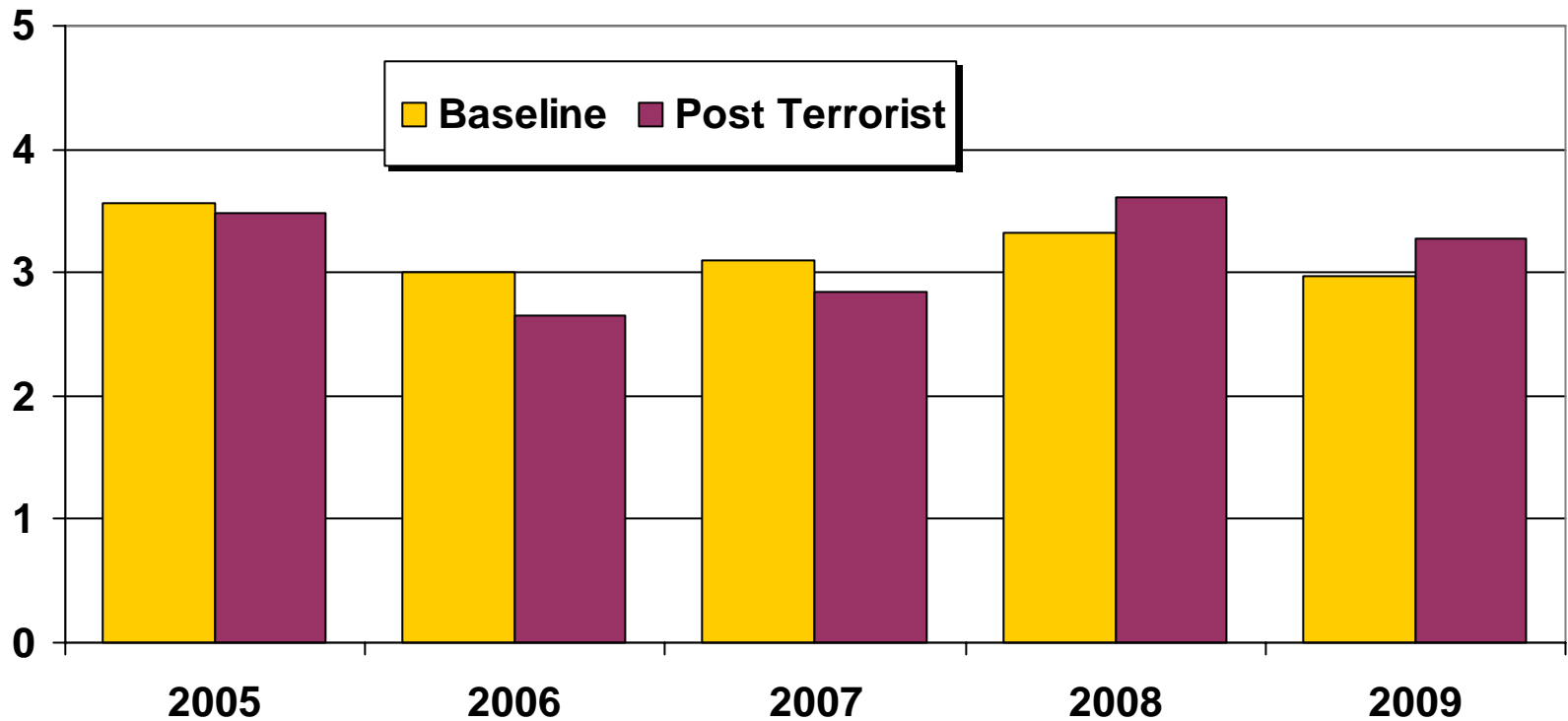


# Dollar Gains Significantly Against Currencies of Other Important Trading Partners

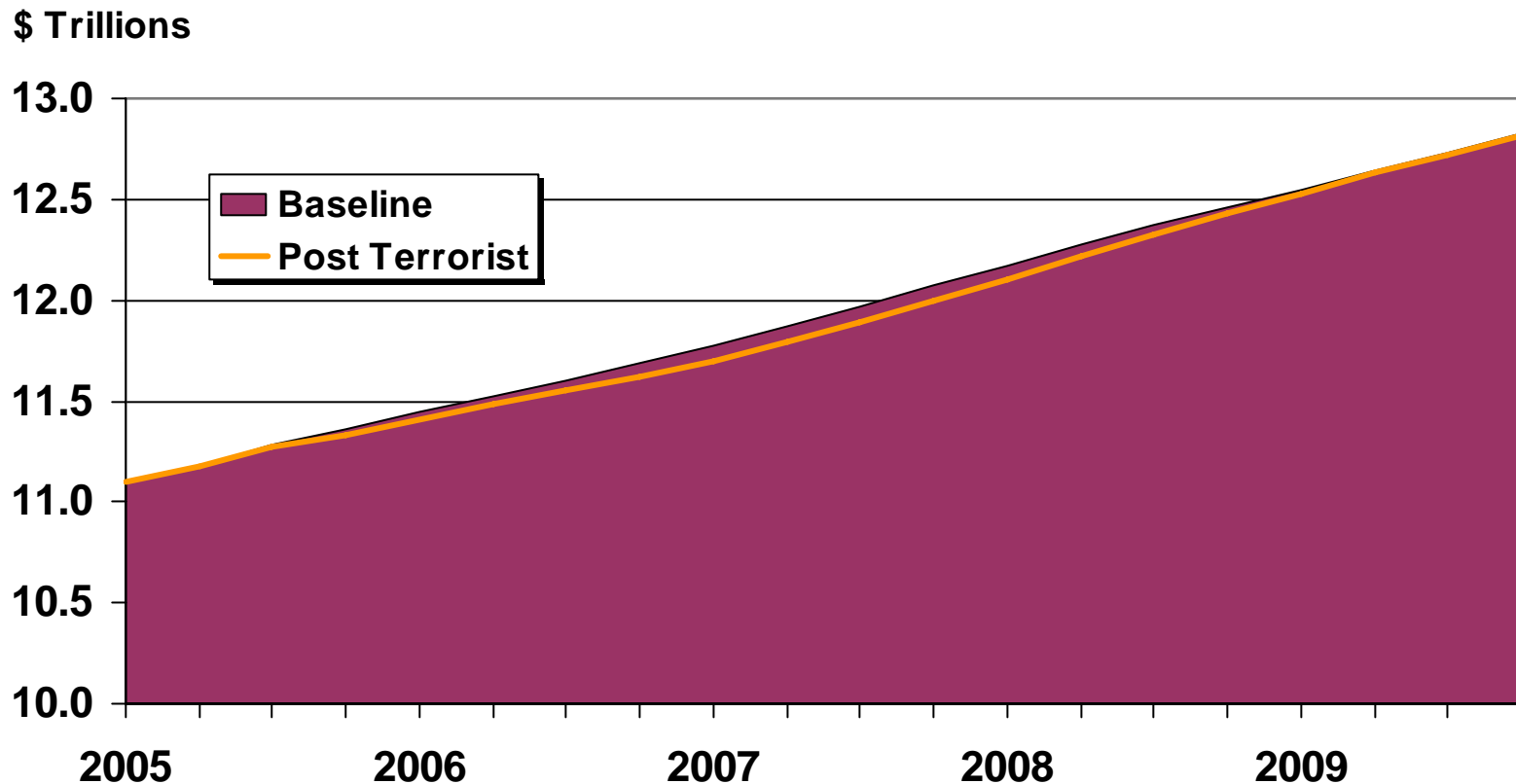


# Terrorism Would Reduce Short Term Real GDP Growth

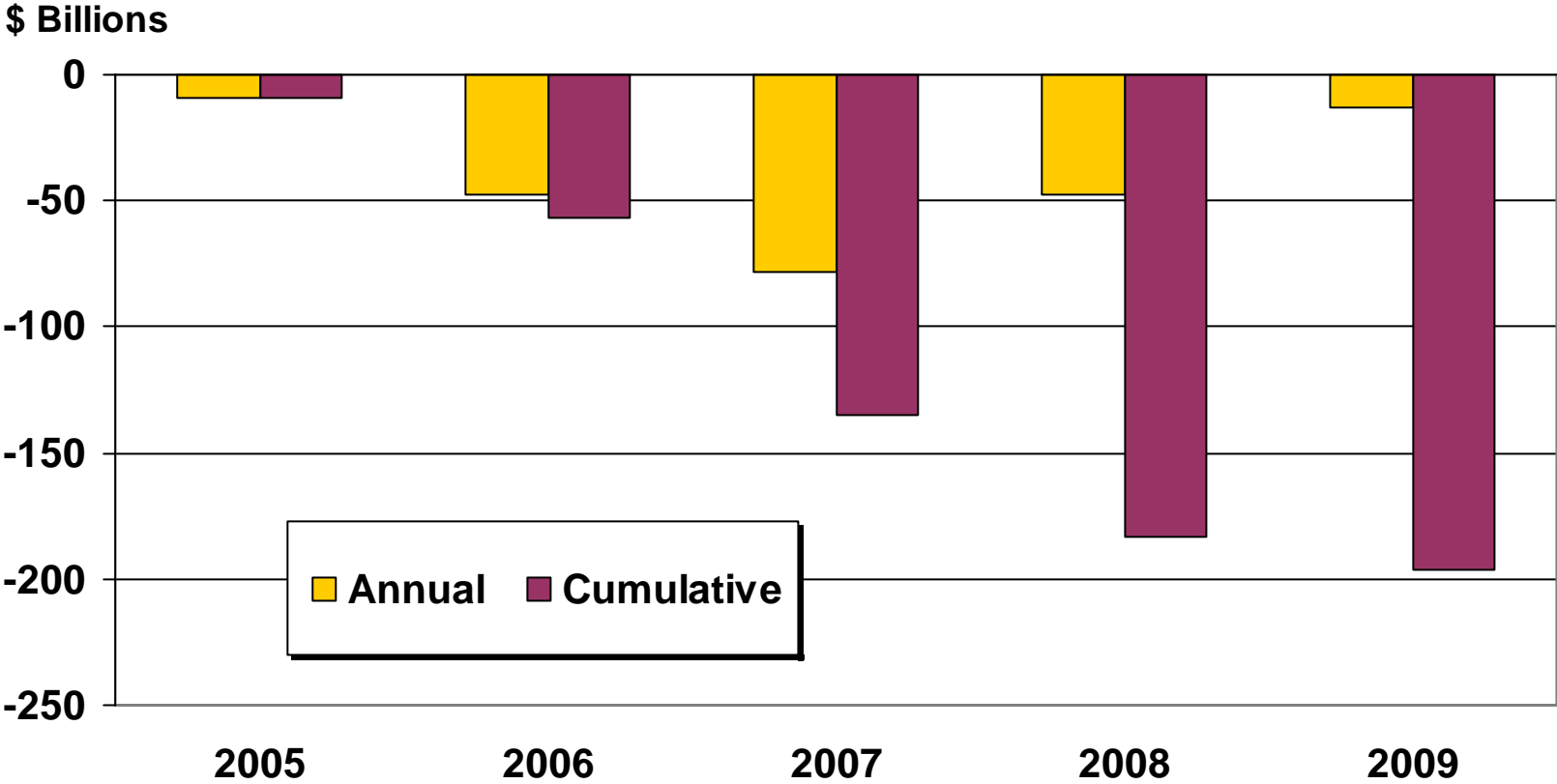
Pct Chg (SAAR)



# Short Term Economic Impact of Terrorist Attack Would Be Small Compared to U.S. Economy

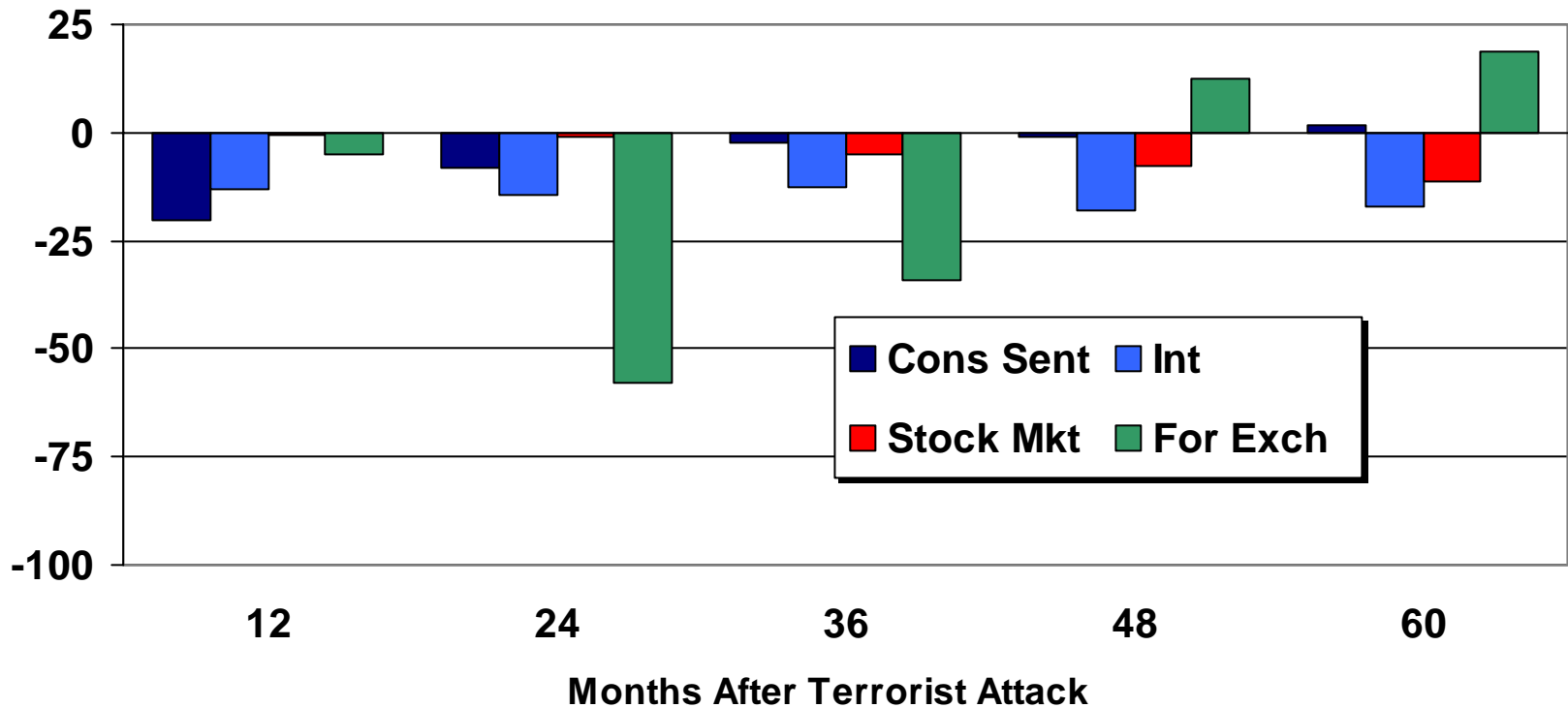


# Cumulative Short-term Loss of Real GDP Exceeds \$190 Billion by 2009



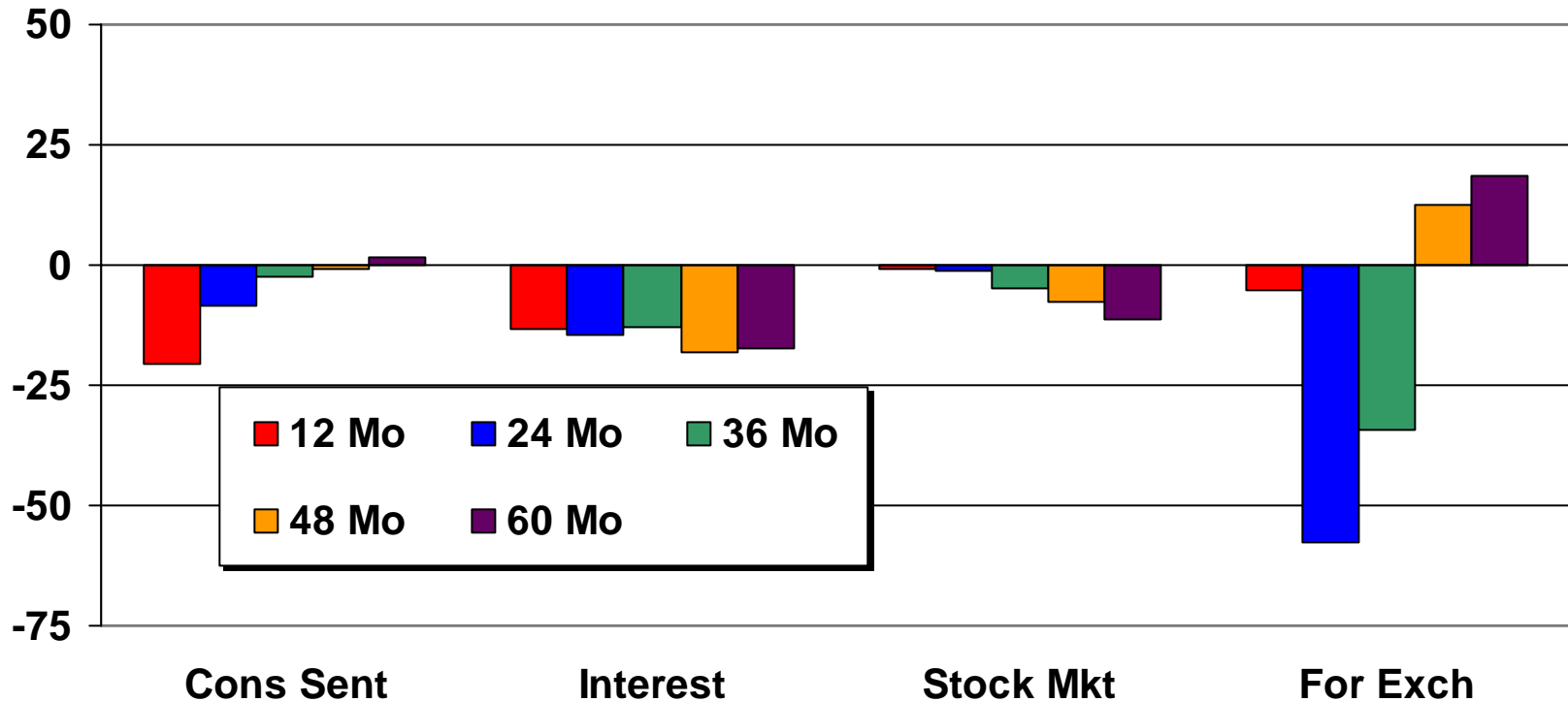
# Composition of Annual Losses in Real GDP Due to Terrorist Attack

Chg in Real GDP  
(\$ Billions)



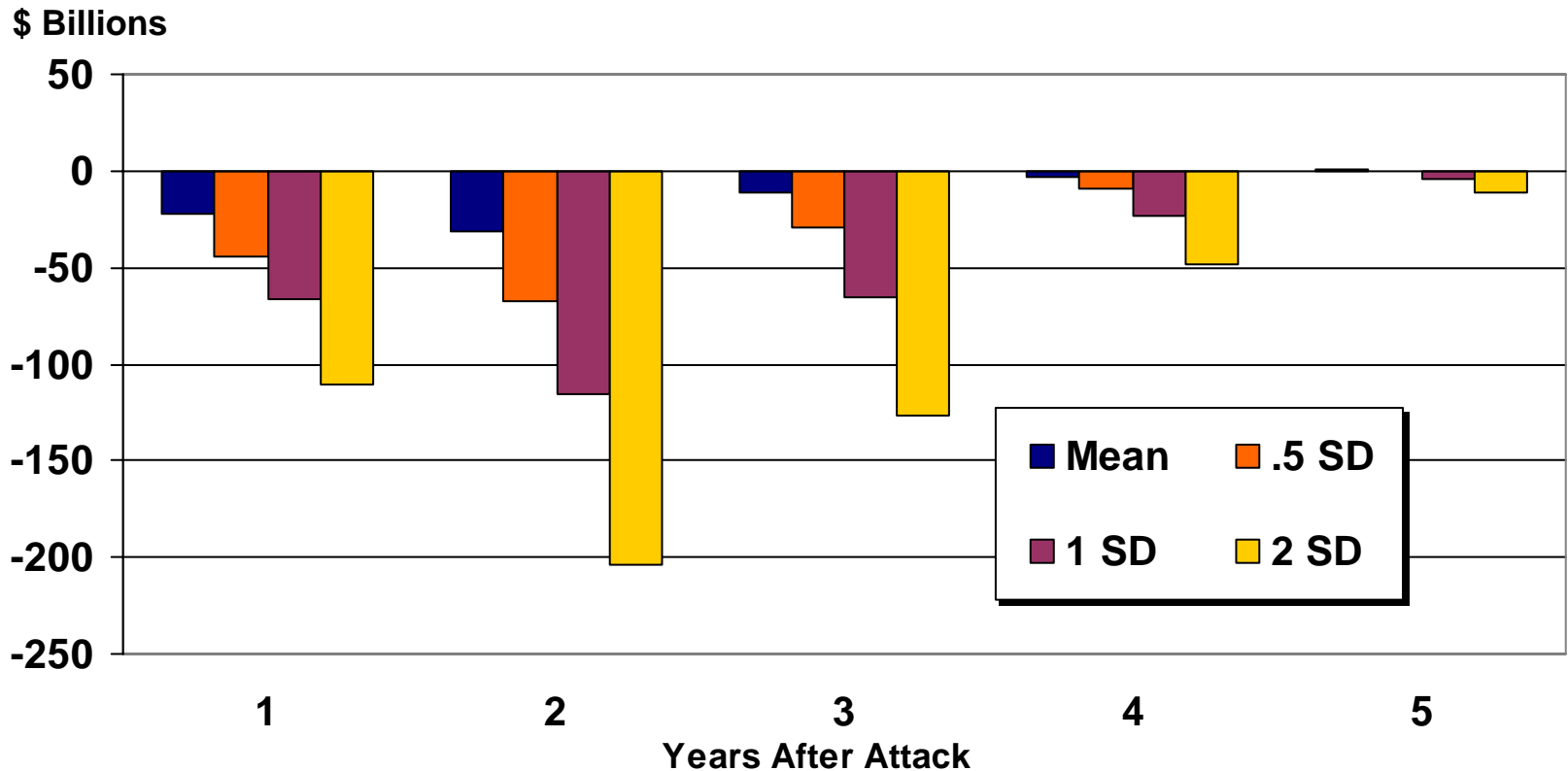
# Impact on Investment Lingers, Consumption Impacts Abate

Chg in Real GDP  
\$ Billions



# Small Changes in Assumptions Produce Large Changes in Projected Losses

## (Impact of Changes in Consumer Sentiment)



# Summary

- **Terrorist attack slows real GDP growth rates (4Q/4Q) by 25 b.p. points in 2005 and 33 b.p. in 2006**
- **Cumulative current value losses in real GDP exceed \$190 billion by 2010**
- **Lost economic output exceeds \$500 billion under other assumptions**
- **Estimates exclude productivity changes, loss of life, or damage to existing capital stock**