

## What Business Cycles Cost Us Part 1



## The Basic Problem

- Business Cycles Occur
  - People get upset about them.

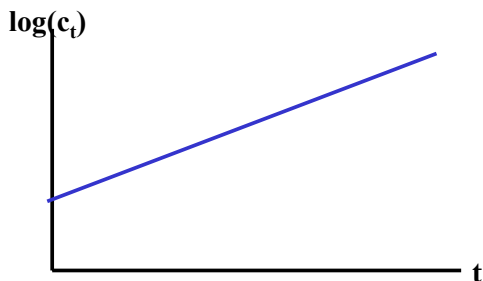
## The Basic Problem

- Business Cycles Occur
- A lot of time is spend discussing Business Cycles
  - Economists spend a lot of time discussing how to deal with them.
  - Politicians take a lot of time taking credit for good times and passing blame for bad times.

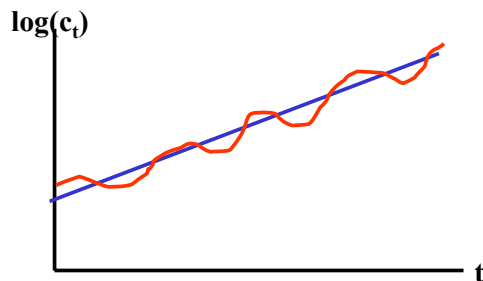
## The Basic Problem

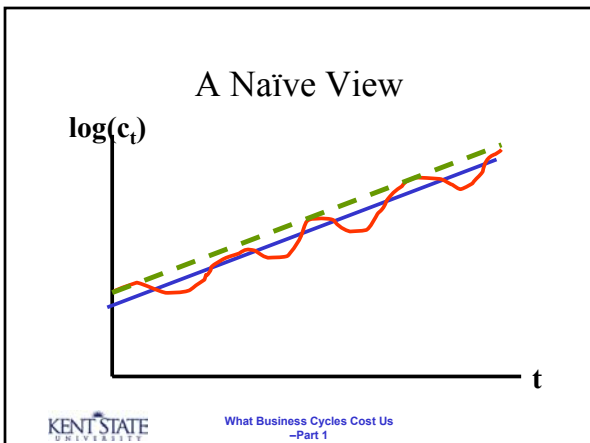
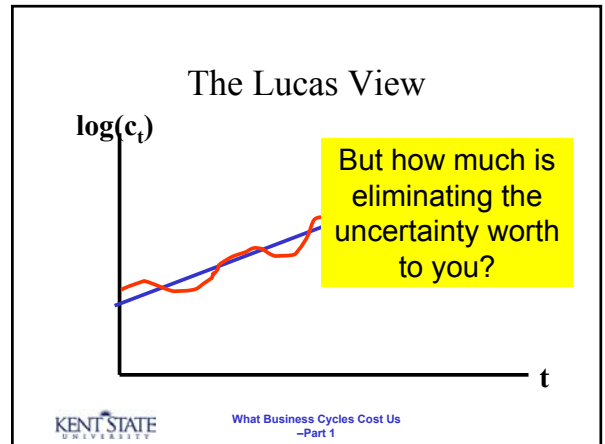
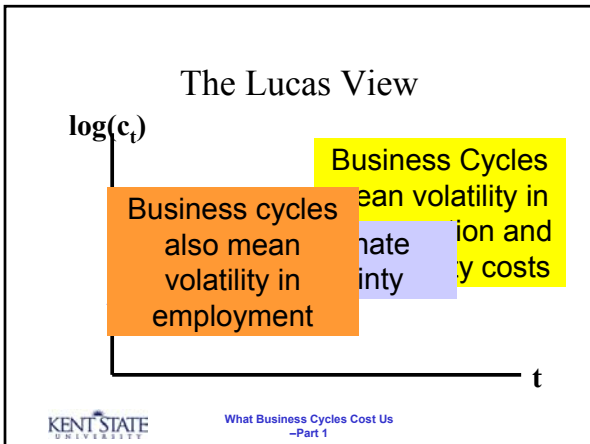
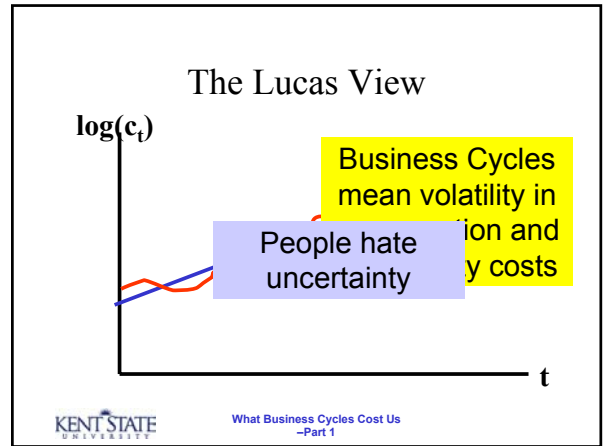
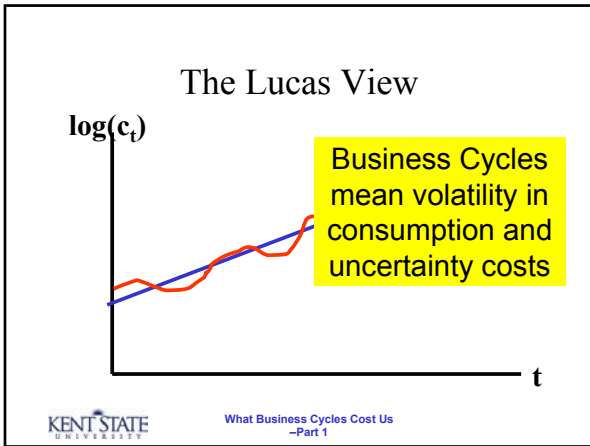
- Business Cycles Occur
  - A lot of time is spend discussing Business Cycles
    - Economists spend a lot of time discussing how to deal with them.
    - Politicians take a lot of time taking credit for good times and passing blame for bad times.
- But how bad are business cycles?**

## The Lucas View



## The Lucas View





### The Choice

50% Chance  $C = \$800$   
50% Chance  $C = \$1200$   
or  
 $C = \$1000$

KENT STATE UNIVERSITY  
What Business Cycles Cost Us  
-Part 1

## The Choice

50% Chance C = \$800  
50% Chance C = \$1200  
or  
C = \$1000

## A Formal Analysis

$$E(U) = \frac{1}{2} \log(\$800) + \frac{1}{2} \log(\$1200) = 6.89$$

or

$$\log(\$1000) = 6.91$$

## A Formal Analysis

$$E(U) = \frac{1}{2} \log(\$800) + \frac{1}{2} \log(\$1200) = 6.89$$

or

$$\log(\$1000) = 6.91$$

## A Formal Analysis

I use natural logs, not common logs (in Excel the  $\ln$  function, not the  $\log$  function)

$$E(U) = \frac{1}{2} \log(\$800) + \frac{1}{2} \log(\$1200) = 6.89$$

or

$$\log(\$1000) = 6.91$$

## The Real Choice

50% Chance C = \$808  
50% Chance C = \$1212  
or  
C = \$1000

## The Real Choice

Not so obvious  
50% Chance C = \$808  
50% Chance C = \$1212  
or  
C = \$1000

## The Real Choice

$$\begin{aligned}
 &50\% \text{ Chance } C = \$800(1 + \lambda) \\
 &50\% \text{ Chance } C = \$1200(1 + \lambda) \\
 &\text{or} \\
 &C = \$1000
 \end{aligned}$$

## The Real Choice

Suppose  $\lambda = 0.02$ . Then it would be worth giving up a 2% increase in uncertain consumption to eliminate the uncertainty.

$$C = \$1000$$

## The Numbers

$$\begin{aligned}
 E(U) &= \frac{1}{2} \log(\$800[1 + \lambda]) + \\
 &\frac{1}{2} \log(\$1200[1 + \lambda]) = \\
 &\log(\$1000)
 \end{aligned}$$

## The Numbers

$$\begin{aligned}
 &\lambda = 0.0205 \\
 E(U) &= \frac{1}{2} \log(\$800[1 + \lambda]) + \\
 &\frac{1}{2} \log(\$1200[1 + \lambda]) = \\
 &\log(\$1000)
 \end{aligned}$$

## The Numbers

$$\begin{aligned}
 &\lambda = 0.0205 \\
 E(U) &= \frac{1}{2} \log(\$800[1 + \lambda]) + \\
 &\frac{1}{2} \log(\$1200[1 + \lambda]) = \\
 &\log(\$1000)
 \end{aligned}$$

Eliminating uncertainty would have the same benefit as a 2.05% increase in consumption

## The Answer

$$\lambda \approx 0.015$$

## The Answer

$$\lambda \cong 0.015$$

Eliminating business cycles is worth as much as a 1.5% increase in consumption.

## The Answer

$$\lambda \cong 0.0$$

Eliminating business cycles is worth as much as a 1.5% increase in consumption.

Since C runs about \$7,000 billion per year, this is equal to about \$105 billion per year.

## End

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