

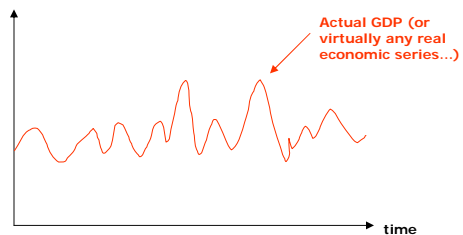
STEADY-STATE (LONG-RUN) OF INFINITE-PERIOD ECONOMY: WHY ARE INTEREST RATES POSITIVE?

MARCH 4, 2009

Modern Macro

A LONG-RUN THEORY OF MACRO

- Aggregate economic activity tends to “settle down eventually”



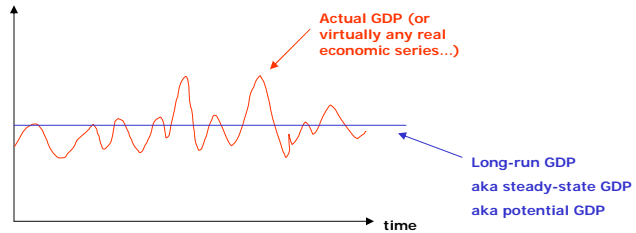
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- The “ups and downs” are **business cycles**
- The “average” is the **long-run**
 - **Technical terminology: steady-state**
- **Business-cycle theory after midterm exam**

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STEADY STATE

- **Steady state**
 - A concept from differential equations
 - (Optimality conditions of economic models are differential equations...)
 - Heuristic definition: in a dynamic (mathematical) system, a **steady-state** is a condition in which the variables that are moving over time settle down to constant values

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A LONG-RUN THEORY OF MACRO

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Inverse of subjective discount factor (one plus) real interest rate

KEY RELATIONSHIP

REAL INTEREST RATE

- Recall first interpretation of r
 - Price of consumption in a given period in terms of consumption in the next period
 - (Chapter 3 & 4: r was the price of period-1 consumption in terms of period-2 consumption)

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- Long-run (i.e., steady state) real interest rate simply a reflection of degree of impatience of individuals in an economy
 - The lower is β , the higher is r
 - The more impatient a populace is, the higher are interest rates
- Which came first, β or r ?
 - Modern macro view: $\beta < 1$ causes $r > 0$, not the other way around
 - A deep view of why positive interest rates exist in the world