Introduction to Business Cycles

Aggregate Demand and Supply
Business Cycles are Short-Run Variation around Long-Run Trends

• Time horizon: approximately 0-4 years
  – Beyond ≈5 years is domain of long run

• Abstract from (long-run) trends in output and inflation
Recessions

• Definition

• Length ("Duration Dependence")

• Timing

• Approximate International Coincidence – a big fact, especially for rich countries
Critical Distinction(s) between Long Run and Business Cycles

1. Theoretical: prices are *fully* flexible only in the long run

2. Horizon: Looking forward more than around four years means essentially ignoring business cycle movements
Model of Aggregate Demand and Supply
Aggregate Demand

• Developed by Keynesians

• Can derive from “quantity theory” (MV=PY)
  – Problems in applying this in short-run

• More sophisticated models lead to same conclusions; material to come
Aggregate Supply in Long Run

• Output fixed in long run by growth/production considerations
  – Solow model focuses on capital accumulation, technological progress, labor force growth ...

• Long run supply curve is vertical
  – \( Y = F(K,L) \) where \( K, L, \) and \( F(.) \) fixed at point in time
Short-Run Supply

• More controversial topic
• Assumed to be flat or positively sloped
• Works well empirically
  – Otherwise would be easy to reduce inflation without cost
• Theory more of a mystery
Equilibrium

\[ Y = F(K,L) : S_{LR} \]

\[ D: MV = PY \]

\[ P \]

\[ Y_{LR} \]

\[ Y \]

\[ P^e \]
Equilibrium

• Equilibrium at intersection of aggregate demand and supply curves
• Short-run supply curve may shift as converge to long run
• Thus short-run equilibrium need not be long-run equilibrium
• Note: can interpret axes (Y, P) as levels or deviations from long-run trend growth rates
What Causes Business Cycles?

• Accounting for the *timing* and *global coincidence* mean that determining causes of business cycles is non-trivial

• Recessions are unusual, so focus there
Contractionary Monetary Policy

• Leftward shift of aggregate demand curve ($M \downarrow$)
• hence short-run reduction in output ($Y \downarrow$)
• long-run reduction in prices/inflation ($P \downarrow$); no long-run output effect

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Contractionary Monetary Policy

– Identical to decrease in velocity ($V \downarrow$)

– Just one example of contractionary demand shocks (more to come, including investment, fiscal, foreign, confidence shocks …)
Empirics

• Negative shocks to money often lead recessions empirically
  – Friedman and Schwartz “Monetary History”
  – Tobin
  – Romers
Why Are There Recessions?

• Why should there be contractionary monetary shocks? Initial inflation excessive.
  – Good Motivation
  – Recessions as inadvertent by-product of anti-inflationary policy
    • Shows that aggregate short-run supply is not vertical

• Consistency with Other Stylized Facts?
Adverse Supply Shock

- Example: increase in price of oil (e.g., OPEC)
- Short-run aggregate supply curve shifts up; temporary inflation, recession
Notes

• Empirically, Hamilton’s work on oil prices shows that oil price increases precede recessions

• Oil shocks are “global” shocks – but not all countries are net oil importers

• Monetary policy may “accommodate” shock (Bernanke, Gertler, Watson), shift up demand
  – Reduces size of recession, but inflationary consequences

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Graphically
Key Takeaways

• Recession Stylized Facts: definition, length, timing, coincidence
• Demand Shocks, monetary contractions
• Supply Shocks, oil prices