The Market for Loanable Funds

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Outline: Unit II, Section RE 3

I. Introduction
II. Savings (S) & Investment (I) in the National Income Accounts
III. Market for Loanable Funds (LF)
IV. Comparative Statics
V. LF Market Application: Secular Stagnation

I. Introduction

Recall labor productivity growth equation:

$$(*\,2) \quad \%\Delta\left(\frac{Y}{L}\right) = \%\Delta\, A + \alpha\%\Delta\left(\frac{K}{L}\right)$$

Key variable is K stock

- Real long-run GDP growth determined by K
- Savings (S) and Investment (I) determine K
- =>Loanable Funds Market, (Financial Markets)

II. S & I in the National Income Accounts

$$Y = C + I + G + NX$$
$$Assume\ closed\ economy \Rightarrow NX = 0$$
$$Y = C + I + G$$
$$Y - C - G = I$$
$$S = I$$

- S = National Savings = Total income in the economy that remains after paying for consumption and government purchases

Savings

$$S = Y - C - G = (Y - C - T) + (T - G)$$
$$S = S^{PR} + S^{PUB}$$
$$S = S^{PR}(r) + S^{PUB}$$
$$[Aside: I = I(r)]$$

Def: S^{PR}= Private Savings = Income that households have left after paying for taxes and consumption

Def: S^{PUB}= Public Savings = Tax revenue that the government has left after paying for spending

- $T > G$: Budget Surplus
- $T < G$: Budget Deficit
- $T = G$: Budget Balance

III. Market for Loanable Funds

- Market for Loanable Funds (LF) = Market in which those who want to save supply funds, and those who want to borrow to invest in K demand funds
- Simplified Model
  - Aggregate all markets
  - Only one r, or real interest rate
    - Different markets
    - Different maturities
  - LR model: r determined by “real variables”

Graph: LF market

Supply and Demand

- Supply S
  - Savings: H (or F) spend less than they earn $[S^{PR}(r)]$
  - Public savings exogenously determined $[S^{PUB}]$
  - Slopes upward
  - Financial intermediaries, eg. Banks(indirect)
  - [Stocks and bonds (direct) =>next lecture]
- Demand D
  - Investment: F (or H) who wish to borrow to make investments in K $[I(r)]$
  - Slopes downward
  - Homes or mortgages (Households)
  - Machines/factories (Firms)

continued

- Market equilibrium: $r^*, Q_{LF} = 1200, Q^D = Q^S$
  - Case 1: Suppose $r = r_1 \Rightarrow Q^S > Q^D$
    - Banks/lenders compete down r
      - Lower return on savings
      - Lower cost of borrowing on loans
  - Case 2: Suppose $r = r_2 \Rightarrow Q^D > Q^S$
    - Banks/lenders raise r
      - Higher return on savings
      - Higher cost of borrowing on loans

Nominal vs Real Interest Rates

Aside: Fisher equation

$$i = \boldsymbol{r} + \pi$$

Nominal = **real** + inflation

- Covered in future lecture

IV. Comparative Statics Graph: Savings incentives

Government encourages savings with Roth IRA in the 80s

(For now, ignore budget deficit effects)

Graph: Investment incentives

Government encourages investment with investment tax credits

(For now, ignore budget deficit effects)

Graph: Government budget deficits and surpluses

Crowding Out

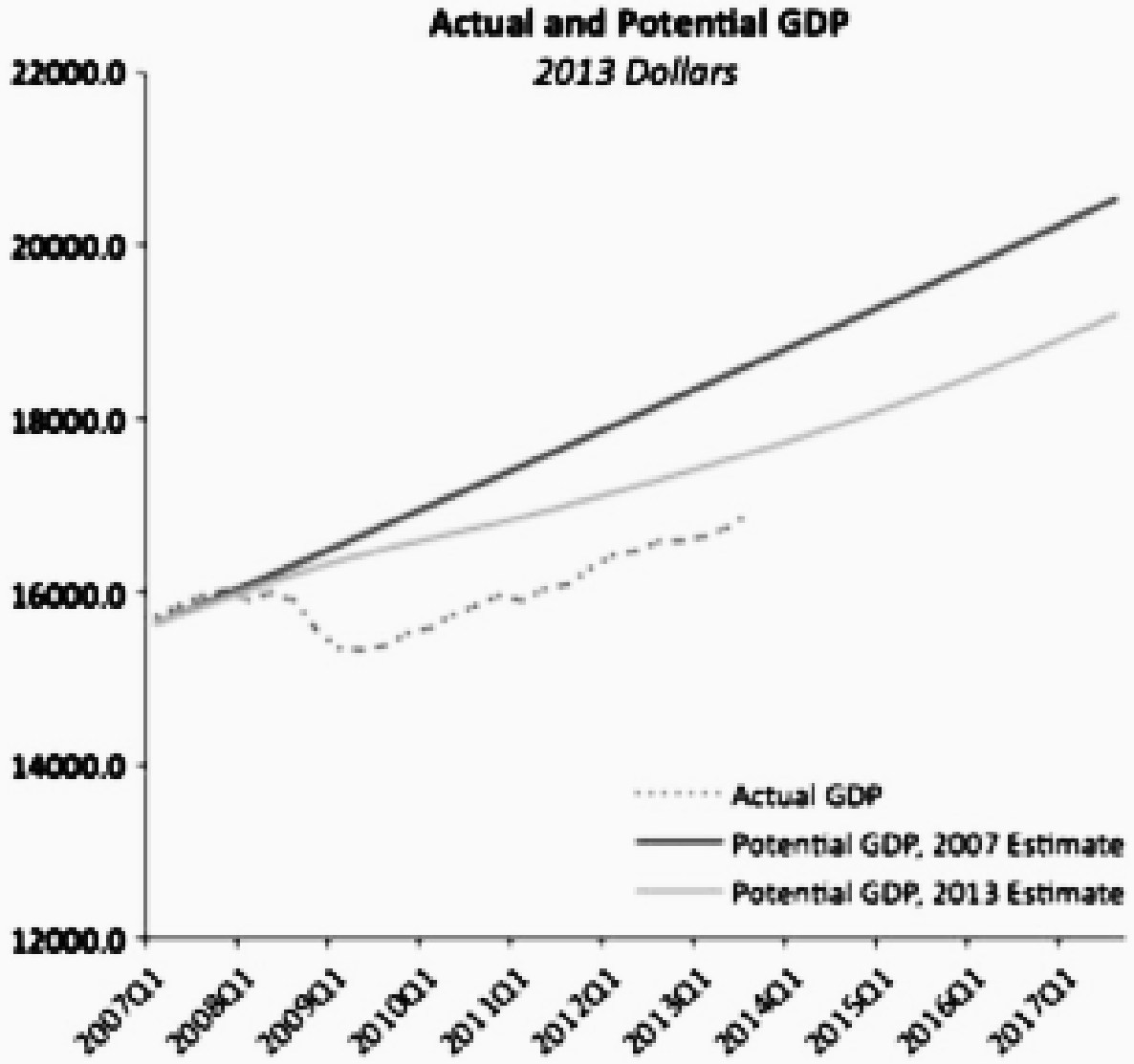
- Definition: Crowding Out = Decrease in investment resulting from government borrowing
  - Econ Int: Government borrows more in LF market
    => less LF in the private sector for I
    => K stock decreases or lower capital accumulation
  - Baby Boomers and Entitlement Spending: Social Security & Medicare

V. Secular Stagnation

- SR Macroeconomics: Managing small amplitude business cycle [Great Moderation 1980-2007]
- Advanced economies experience long-term low growth in GDP per capita, ≈1.5%
  - E.g. Japan 1990-today (approx 1%), US 1990-today (approx 1.6%)

- Alvin Hansen 1938, Lawrence Summers 2014

Figure 1. Downward Revision in Potential GDP, U.S.A.



Source: CBO.


FRED
— Civilian Employment-Population Ratio
65
64
63
62
61
60
59
58
57
56
55
54
(Percent)
1950
1960
1970
1980
1990
2000
2010
Source: US. Bureau of Labor Statistics
Shaded areas indicate US recessions - 2015 research.stlouisfed.org

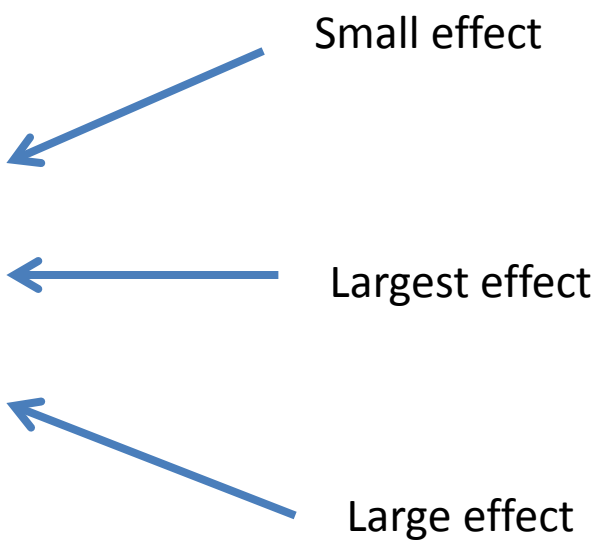
Hysteresis

- Labor force participation rate decreases
  => Workers skills deteriorate
  => Discouraged workers
  => Below potential GDP (see figure 1)

- Other reasons why potential GDP decreases (see figure 4)

Figure 4. Why did Potential GDP Fall?
Potential GDP in 2013 vs 2007 estimate: 10% decline
Why did the estimate decline?

Component of potential GDP	Contribution to decline in estimate
Potential TFP	11%
Capital	48%
Potential Hours Worked	41%
Source: CBO data. Author calculations.	



Supply and Demand of Loanable Funds

- Large companies do not require large K
  - E.g. Whatsapp and Sony, $1 billion market cap
  - E.g. Tech startups with little need for K

  => Demand for loanable funds decreases

- Policy: Raise Demand for loanable funds
  - Fiscal Policy: Increased government spending
    - e.g. Kennedy airport

LF graph