Using Historical Perspective of Keynesian vs. Neoclassical Macro in Teaching Principles

Teaching Economics: Instruction and Classroom Based Research

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History of Keynesian vs. Neoclassical Macro Principles

Principles of Macroeconomics: An Evolutionary Approach; Jan. 2017

- **Fallacies of AS-AD analysis**
- **Facts: Great Depression to Great Recession**
- **Analysis: Fisher vs. Keynes**
- **Policy: Neoclassical vs Keynesian**
- **Principles: What is $AS - AD$ analysis in Macroeconomics?**

Fallacies 1 & 2 of AS-AD derivation.

- **Fallacy 1 : Keynesian Cross is $AS - AD$ analysis in C,I,G,Y graph.**
  - **Truth: Accounting Identity of NIPA,** Made-up C function, Not Supply & Demand of Economics:
  - **Samuleson 1951 (2nd ed) starts this Fallacy.**

- **Fallacy 2 : IS-LM gives $AS - AD$ analysis in (r,Y) graph.**
  - **Truth: Horizontal Lines along Solow Growth Path**
  - IS & LM Curves are not Supply or Demand.
  - Reality is Opposite of Keynes's 1936 General Theory I&S graph:
  - Begining of **Highly Specialized Assumptions that Do Not Hold**

- **Colander (1995) "The Stories We Tell: A Reconsideration of AS/AD Analysis."**

Fallacy 3 : Dollar P with Output y, S&D, Lives On

Fallacy 3: AS-AD with Nominal Dollar Price P

- **1. Cost Push, Demand Pull gives $AS - AD$ analysis in (P,Y) graph;**
- **2. Oil Price Theory of Stagflation gives $AS - AD$ analysis;**
- **3. Phillips curve gives $AS - AD$ analysis.**
- **Mankiw 2016: includes all three of these versions of Fallacy**
  - **Truth: Economics always Graphs S and D with Relative Prices**

Stylized Facts

- **Normal Real Business Cycle Stylized Facts**
- **Solow Growth Facts of balanced growth path.**
- **Crises: Bank Collapse Causing Grt Dep.&Grt Rec.**
- **Oil Prices & Phillips curves & Vietnam & Bretton Woods Collapse**
- **US Lost Decades: 1929-1939 & 2007-2016.**

RBC Facts: Cons. & GDP Cycles Always There

Can't Flatten Out with "Stabilization Policy"

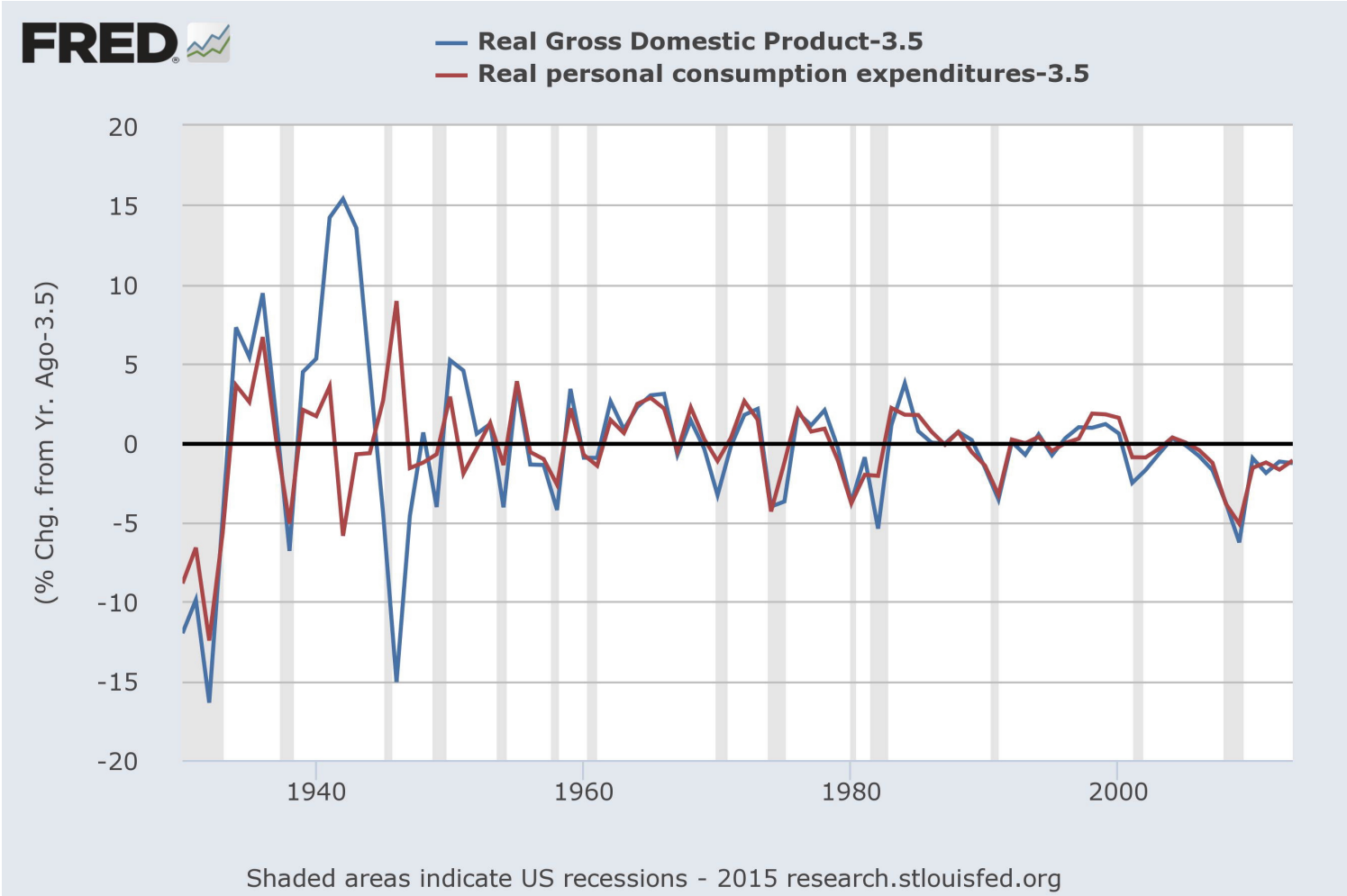


Figure: US 1930-2014, Growth Rate of Both Real Personal Consumption Expenditure (Red) and Real GDP (Blue) Minus 3.5% (trend growth rate).

RBC Facts: Rate of Change in Real Wage: ProCyclic Until Great Recession

Unusual Increase when Real Interest Rate Negative

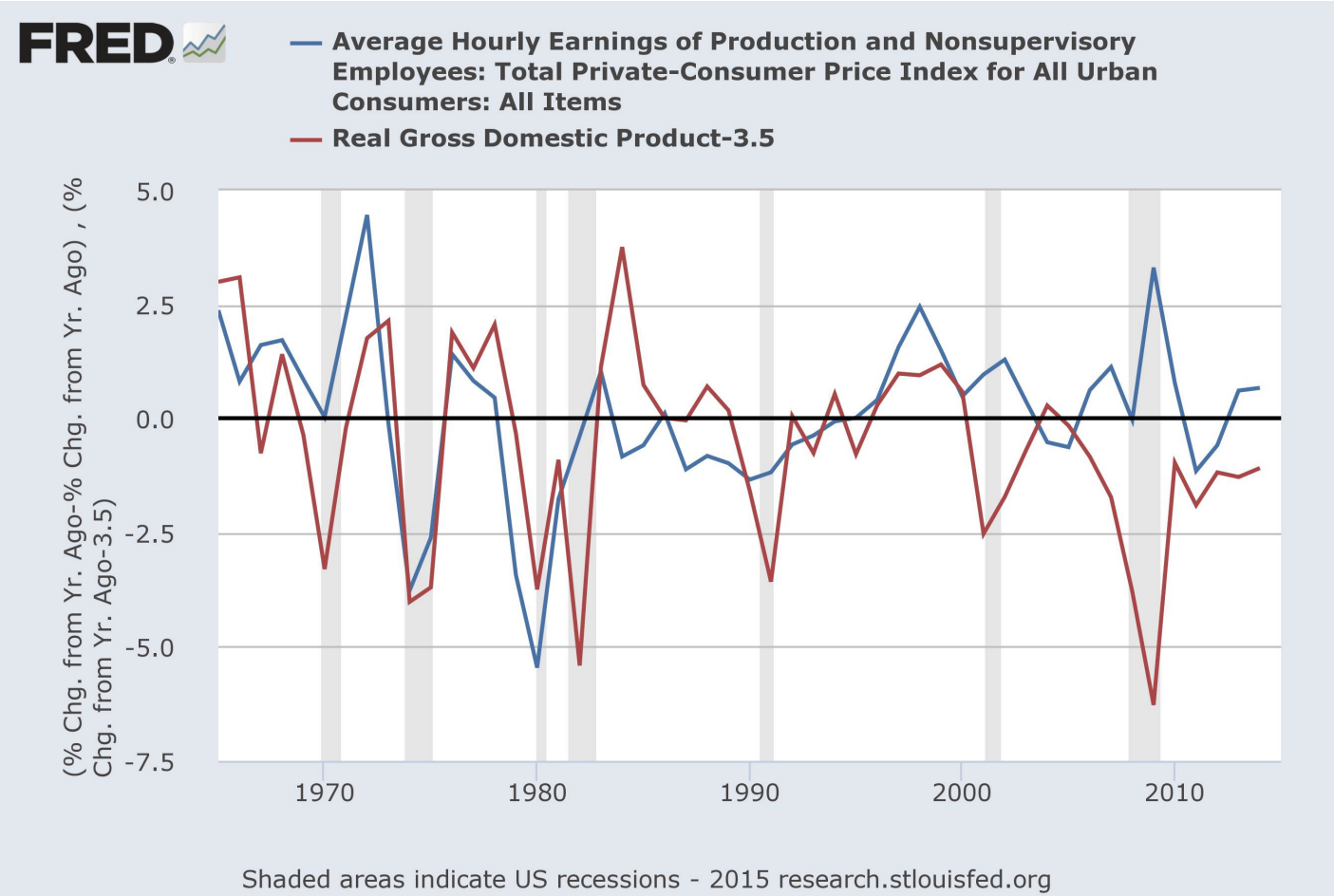


Figure: Annual Growth Rate of Real Wage Rate and Trend-Adjusted Real GDP, US 1965:Q 2014

RBC Facts: Labor Force Participation Rate Procyclic

including Great Recession

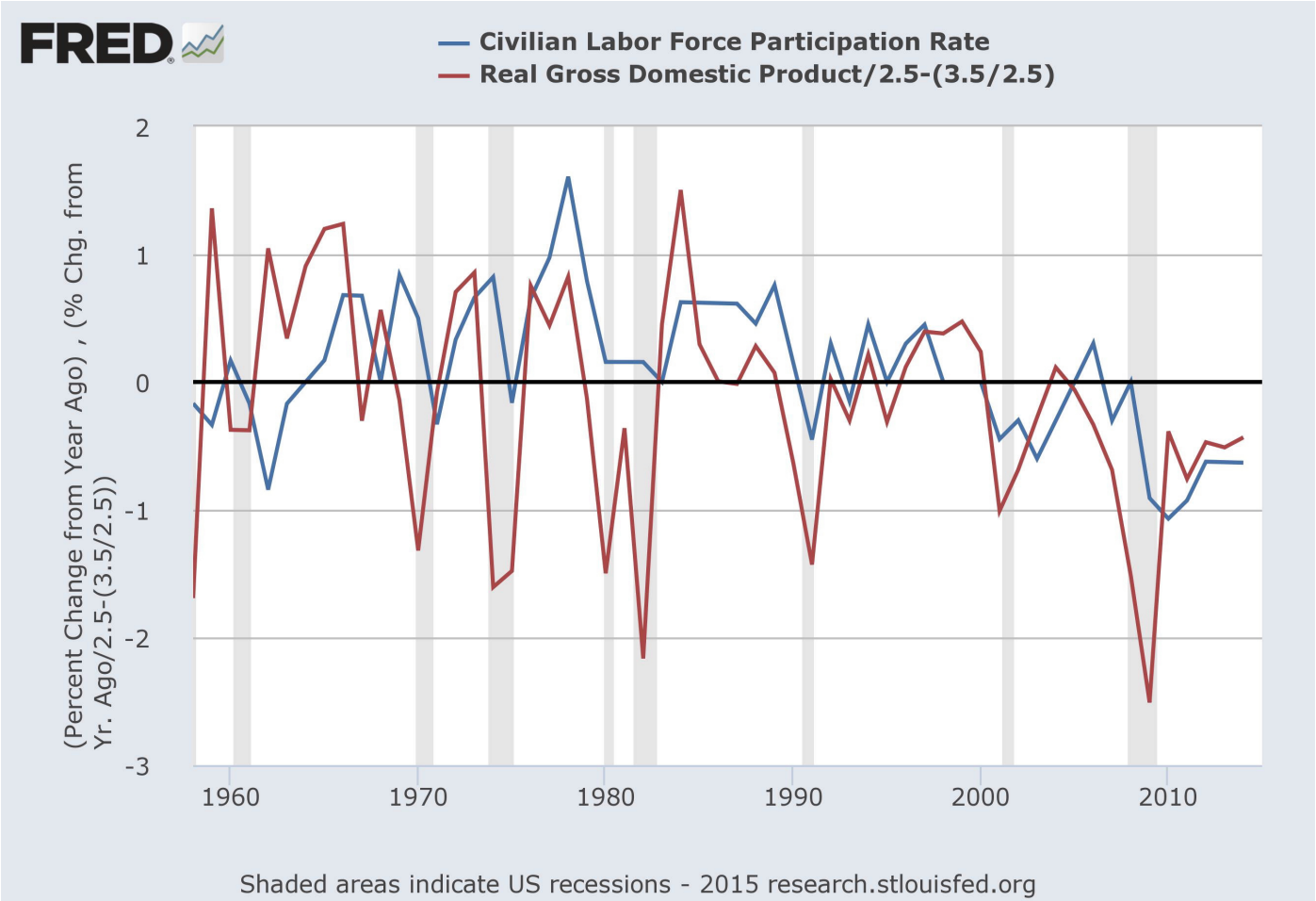


Figure: Annual Average Growth Rates of US Civilian Labor Force Participation Rate, 1957:7-2015.14, (Blue) and Normalized Real GDP (Red).

Inflation-Growth Facts: Inflation (Tax) Decreases Output Growth Rate

Evidence in Panel Data Shows OECD, Same for APEC

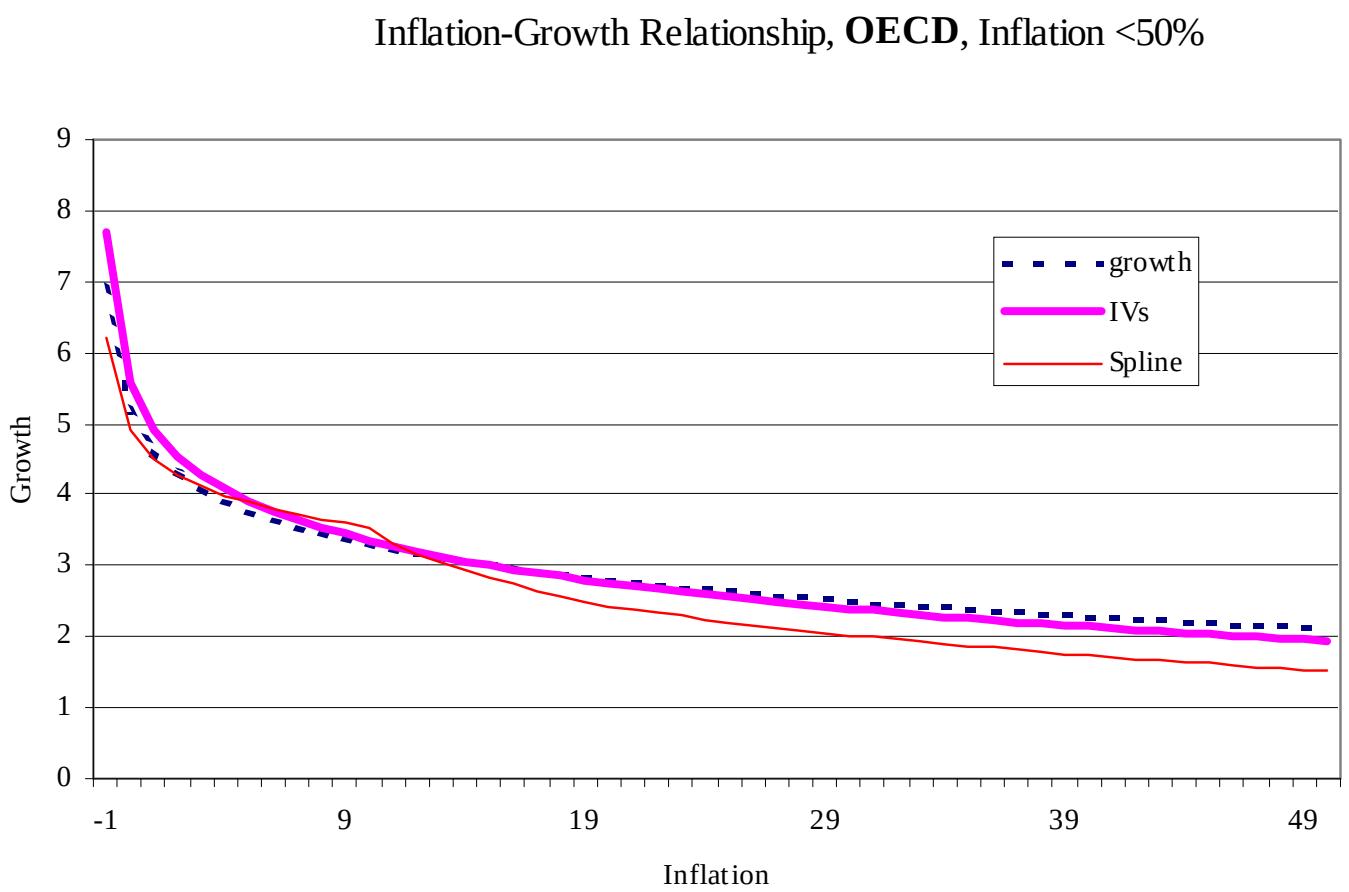


Figure: Effect of inflation on real GDP Growth rate, OECD developed country

Crisis Facts: FDIC Insurance, Not Keynes Spending, Ended Great Depression.

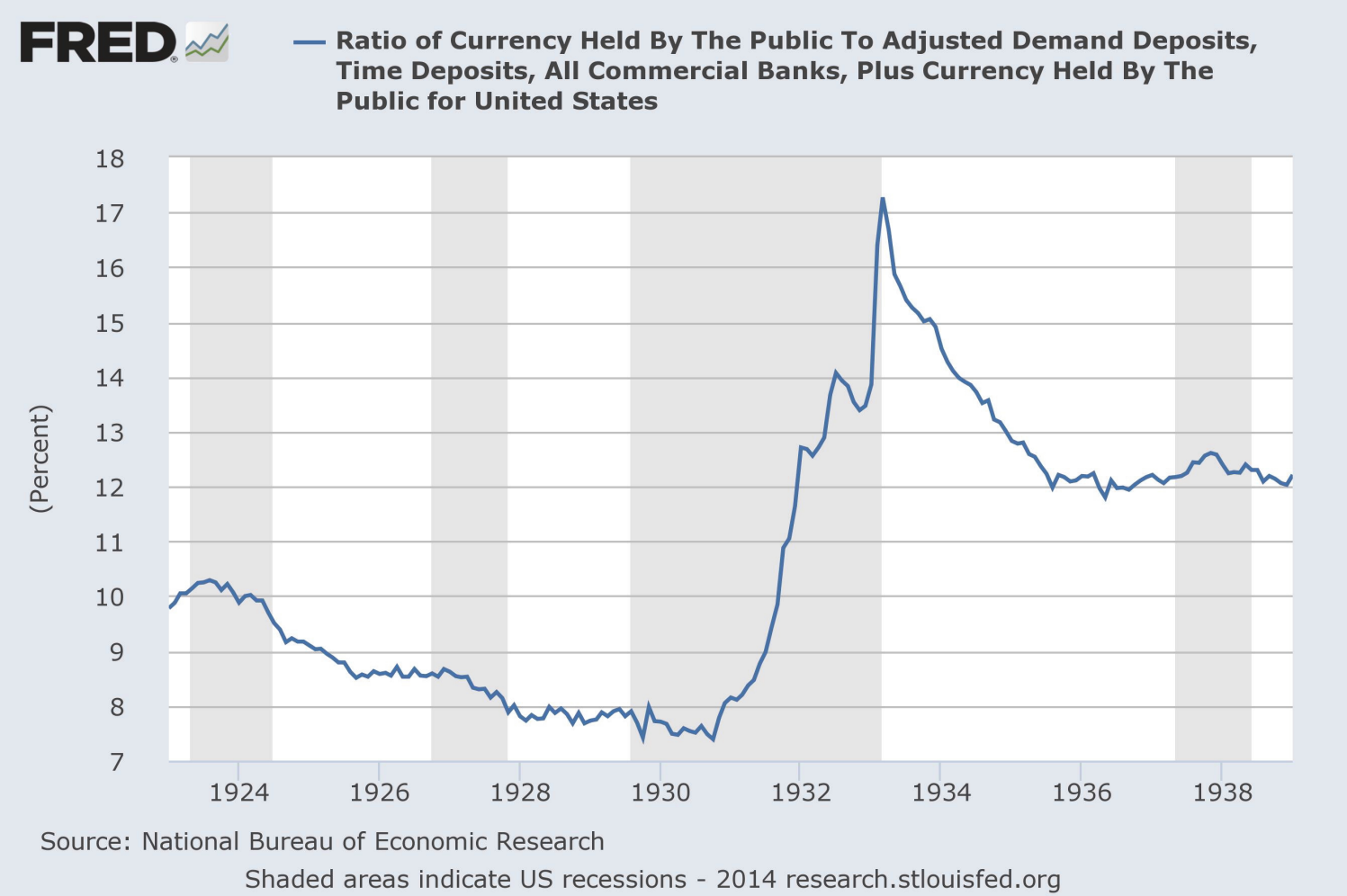
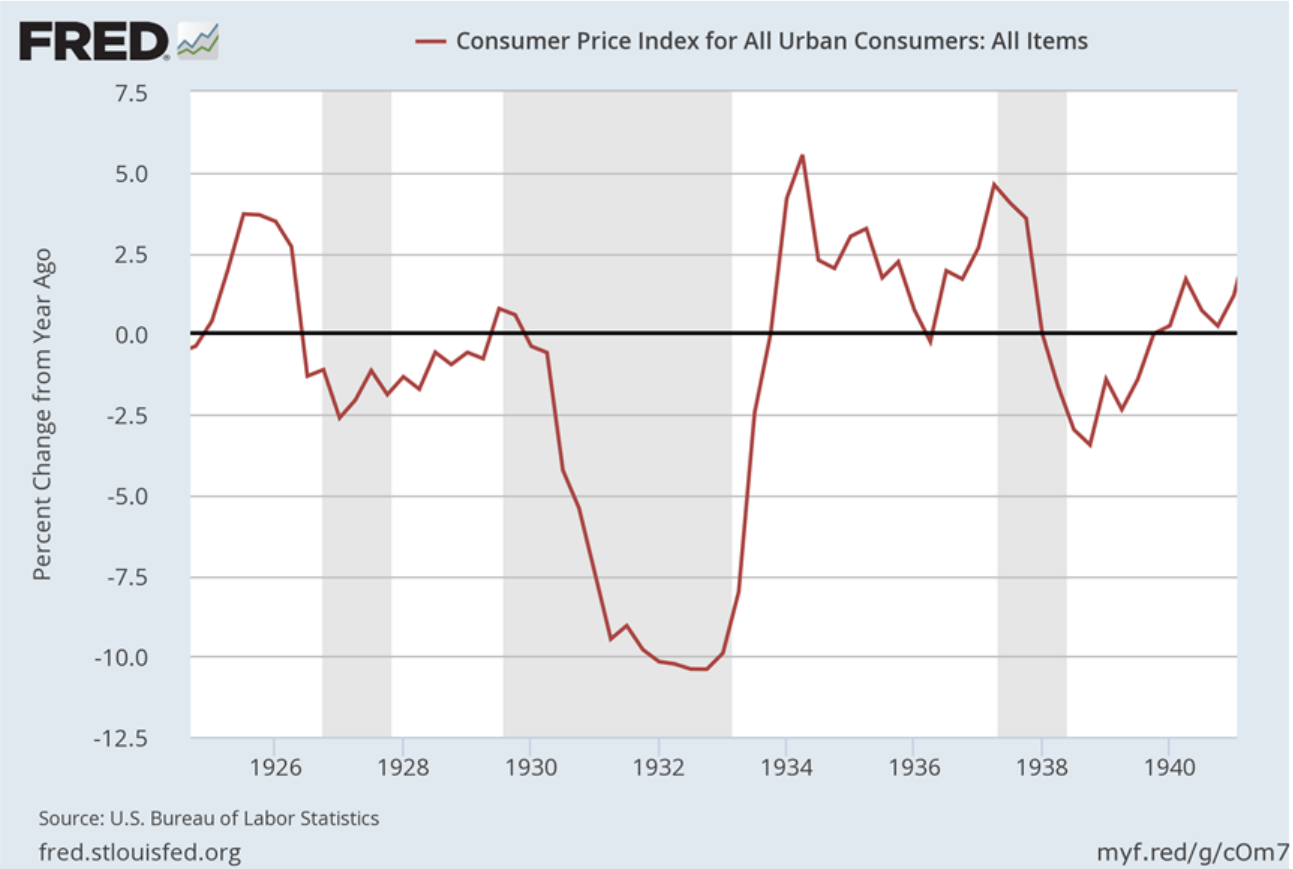


Figure: US Currency to Demand Deposit Ratio, 1923-1939.

1930's Inflation Rate Turnaround with FDIC



Emergency Banking Act of March 9, 1933

The Emergency Banking Act of 1933, passed by Congress on March 9—combined with the Federal Reserve's commitment to supply unlimited amounts of currency to reopened banks—created de facto 100 percent deposit insurance. Moreover, the evidence shows that people recognized this guarantee and, as a result, believed the President on March 12, 1933, when he said that the reopened banks would be safer than the proverbial "money under the mattress." Confirmation of the turnaround in expectations came in two parts: the Dow Jones Industrial Average rose by a statistically significant 15.34 percent on March 15, 1933 (taking into account the two-week trading halt during the Bank Holiday), and by the end of the month, the public had returned to the banks two-thirds of the currencyhoarded since the onset of the panic. FRBNY Economic Policy Review / July 2009, by William Silbur

Crisis Facts: Oil Price Shock Offset 15 Year Real Decline

As US Exported Inflation Worldwide Under Bretton Woods

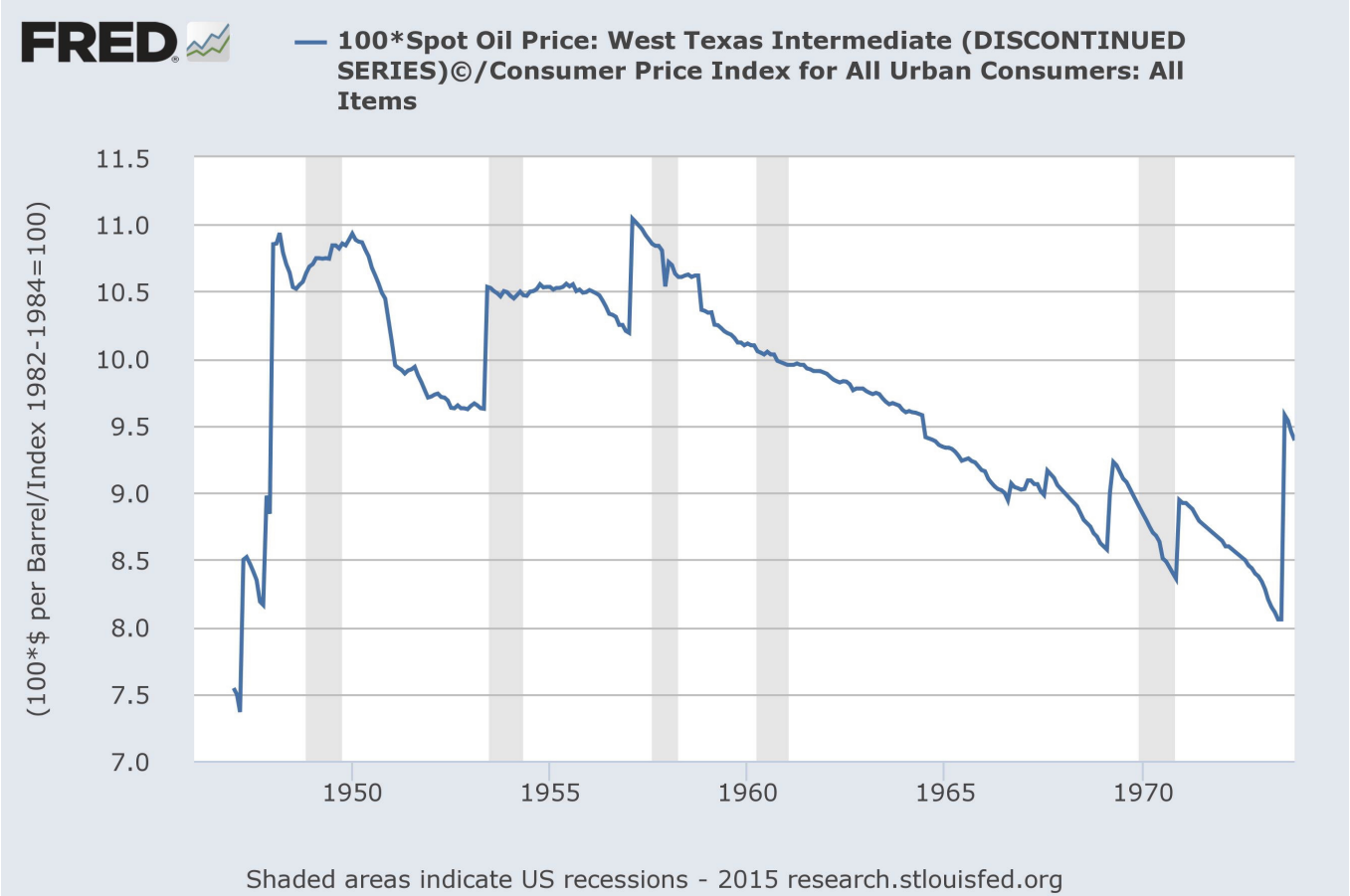
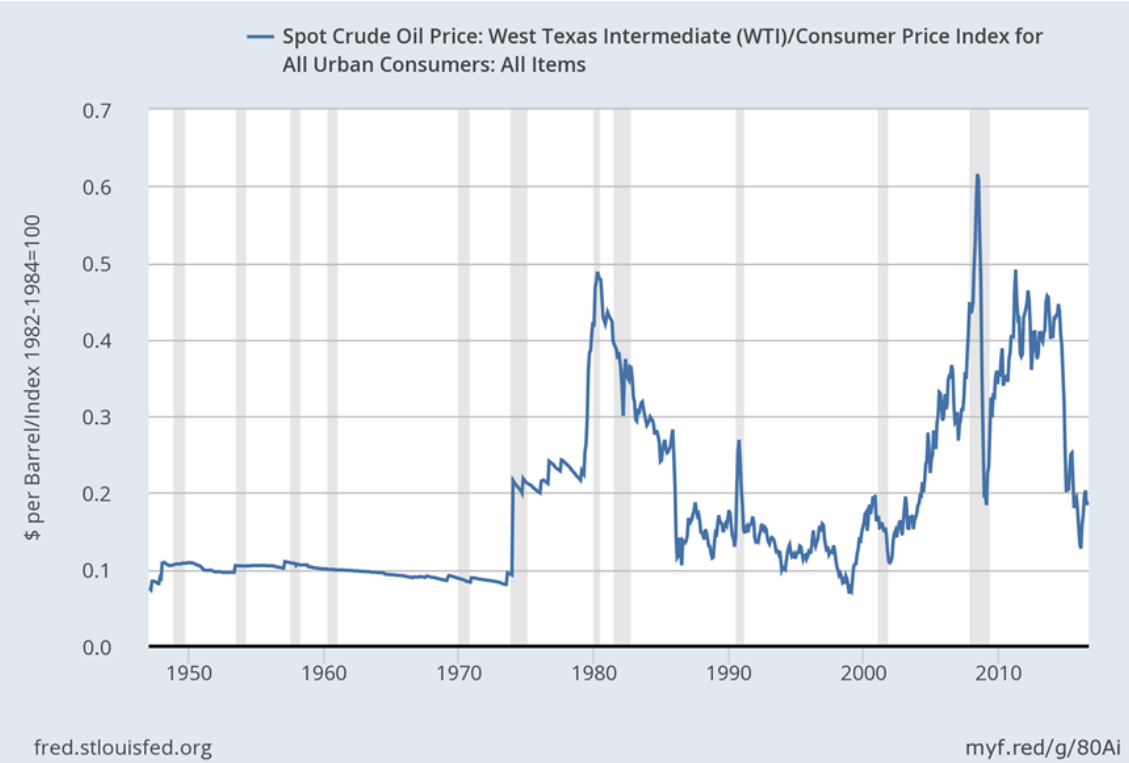


Figure: Real WTI Oil Prices, from Jan. 1947 to Dec. 1973: WTI US$ per barrel divided by US CPI index, in 1982 Constant Dollars.

Facts: Oil Shocks: Granger Causality from Inflation & Money Supply to Oil Prices

Check out Lutz Kilian's Oil Paper Publications

$$10\,(1.025)^{60} = 44$$



Crisis Facts: Phillips Curves: During Bank Productivity Change

Relative Price Deflation from Capital Market Crashes

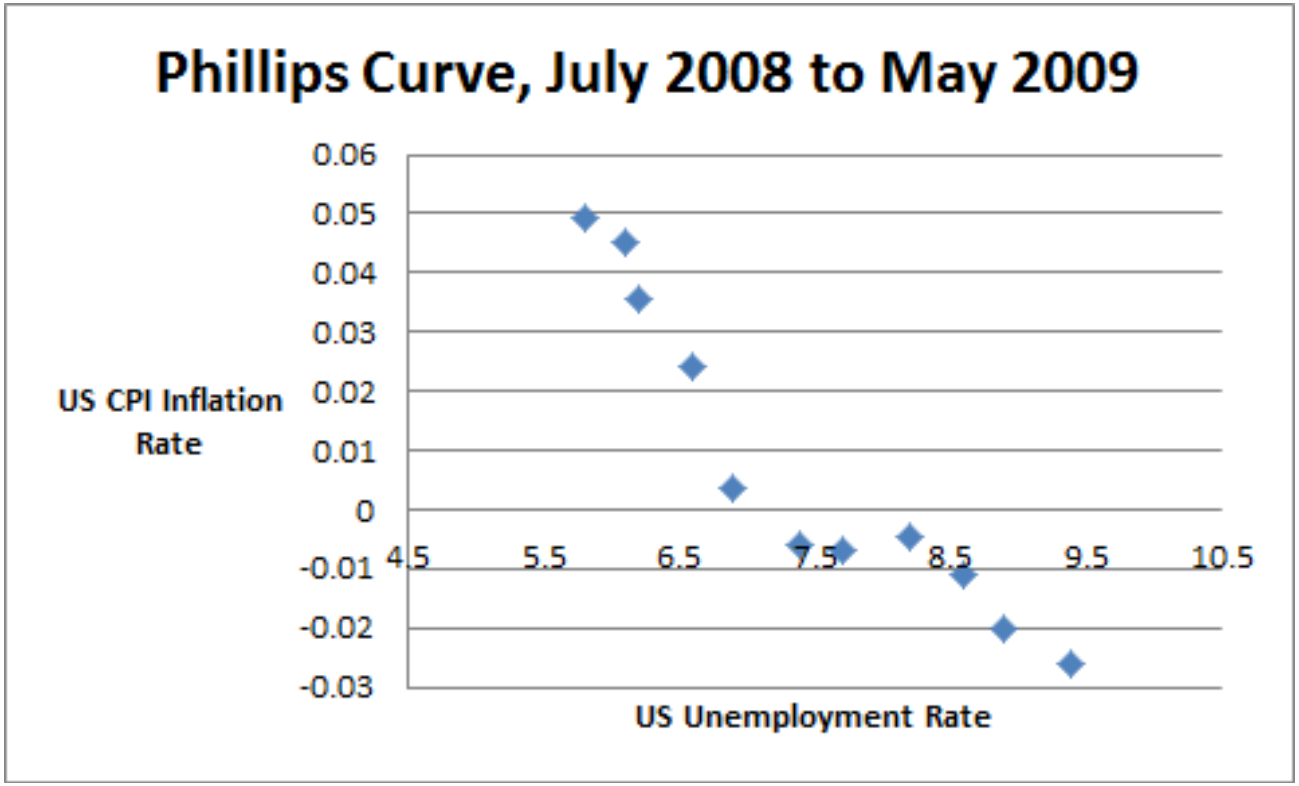


Figure: Phillips Curve During US Stock Market Crash and the Great Recession

Crisis Facts: And July 2008-May 2009 Stock Crash with Bank Crash

Figure: S&P 500 Index During Great Recession.

Crisis Facts: May 29-May 33 US Great Depression Phillips Curve

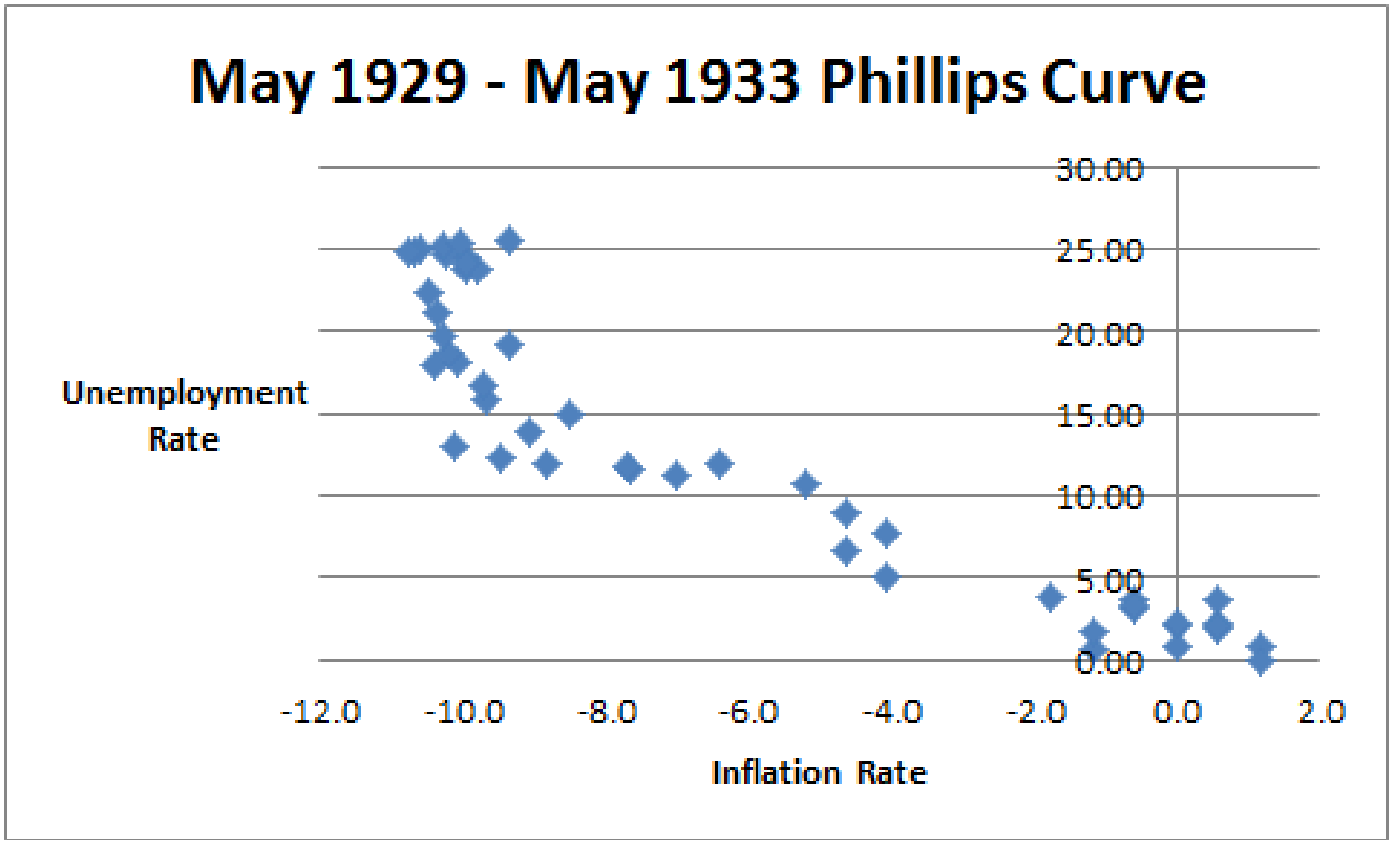


Figure: US Phillips Curve During Great Depression

Crisis Facts: And Grt Depres. Stock Market Crash with Bank Crash

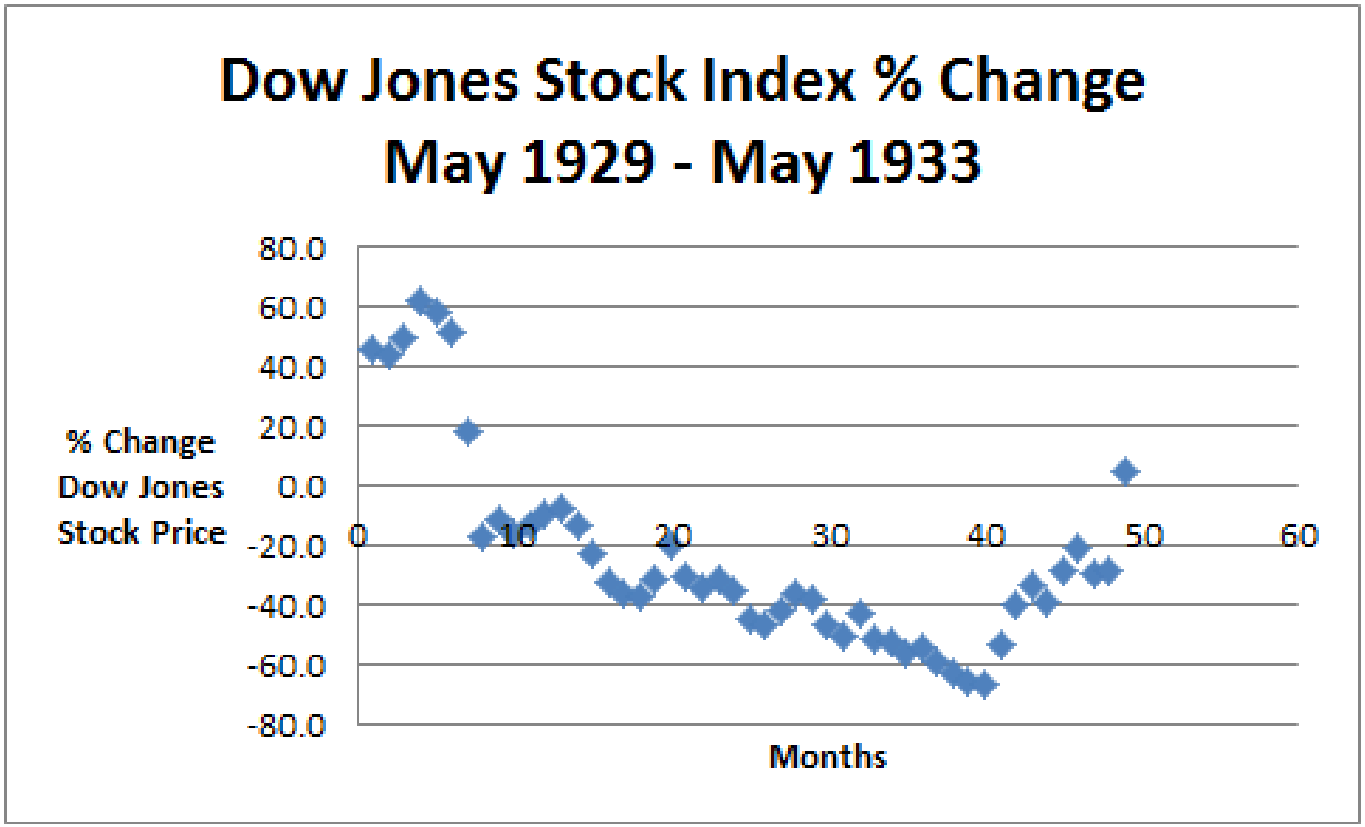


Figure: Dow Jones Industrial Average Percentage Change in Great Depression

Bank Boom Facts: Reverse 1960s "FAMOUS" Phillips Curve

Relative Price Inflation From Bank Productivity Boom and Stock Market Rise

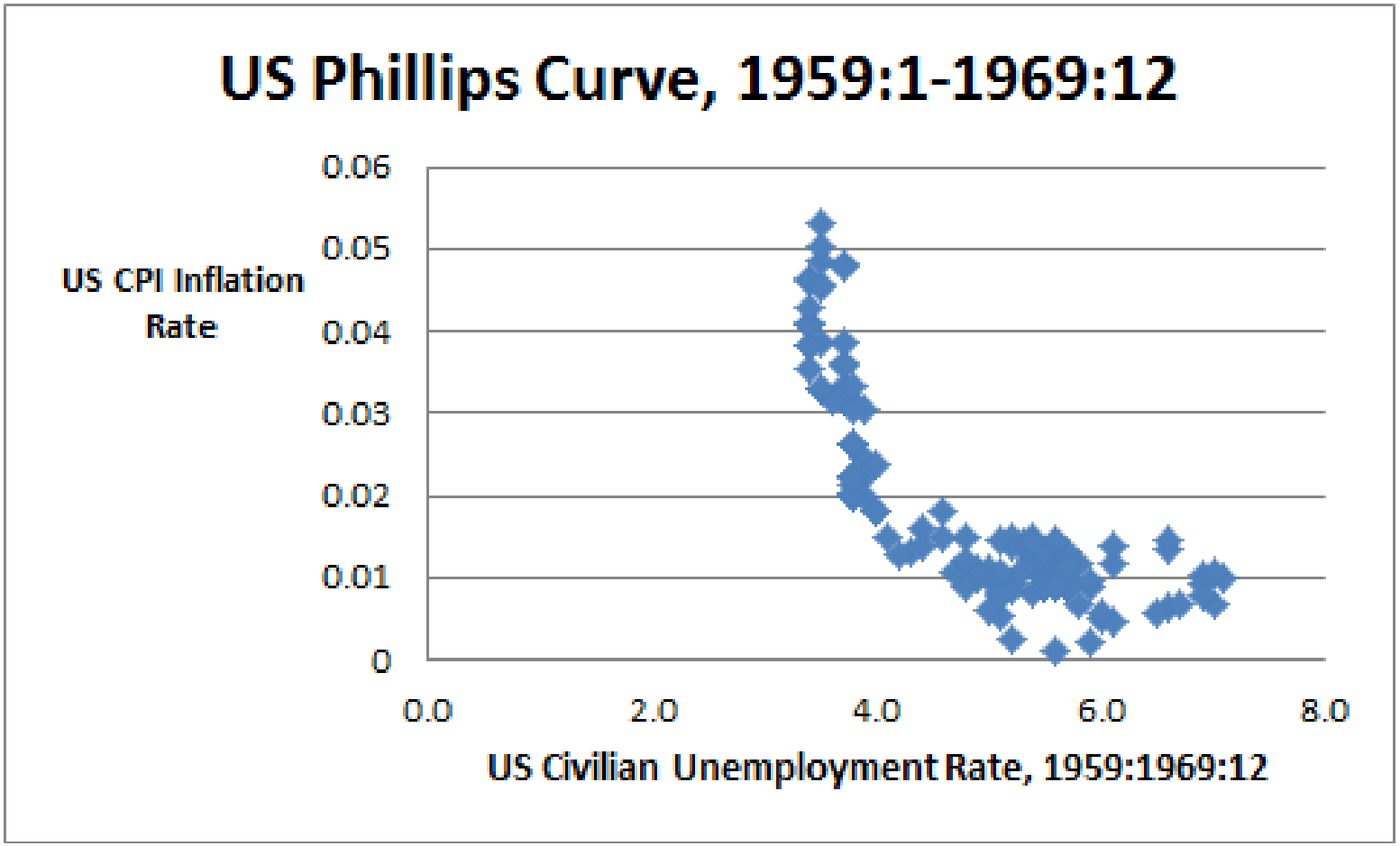


Figure: Phillips Curve from 1959:1 to 1969:12

Bank Boom Facts: Dawn of Multinational Corp

& Global Finance: Bnk Prod. Boom

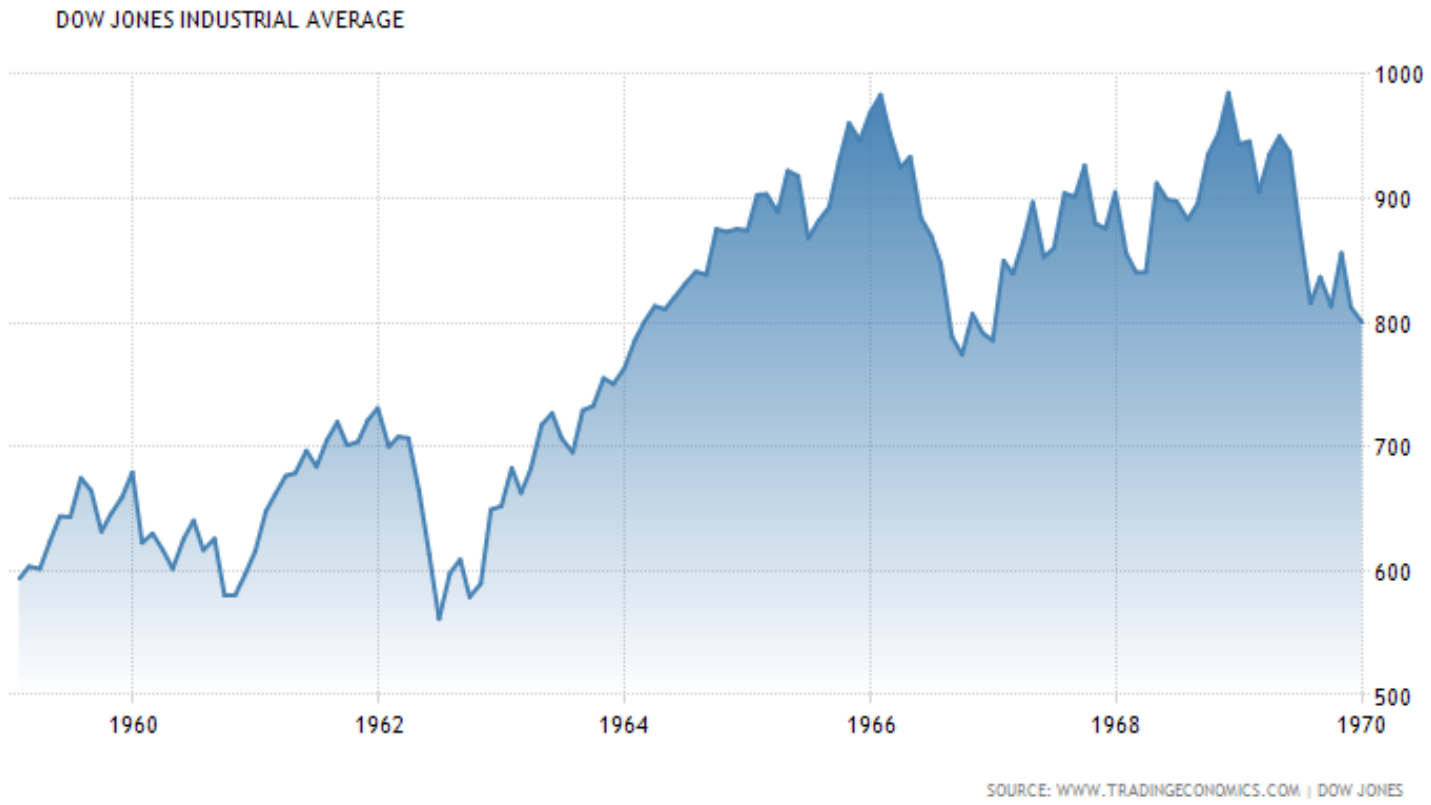


Figure: Dow Jones Industrial Average during the 1960's: 66% Percent Increase in Decade.

Macro Analysis: Principles

- **S & D for capital depends on Real Interest Rate:**
- **Real Business Cycle (RBC) and Growth Theory.**
- **Use Comparative Static Analysis**
- **with Goods, Labor & Capital Markets**

Analysis: Start with Real Interest Rate and Capital k

NeoClass. Fisher 2-period Capital Mrkt & Productivity Increase

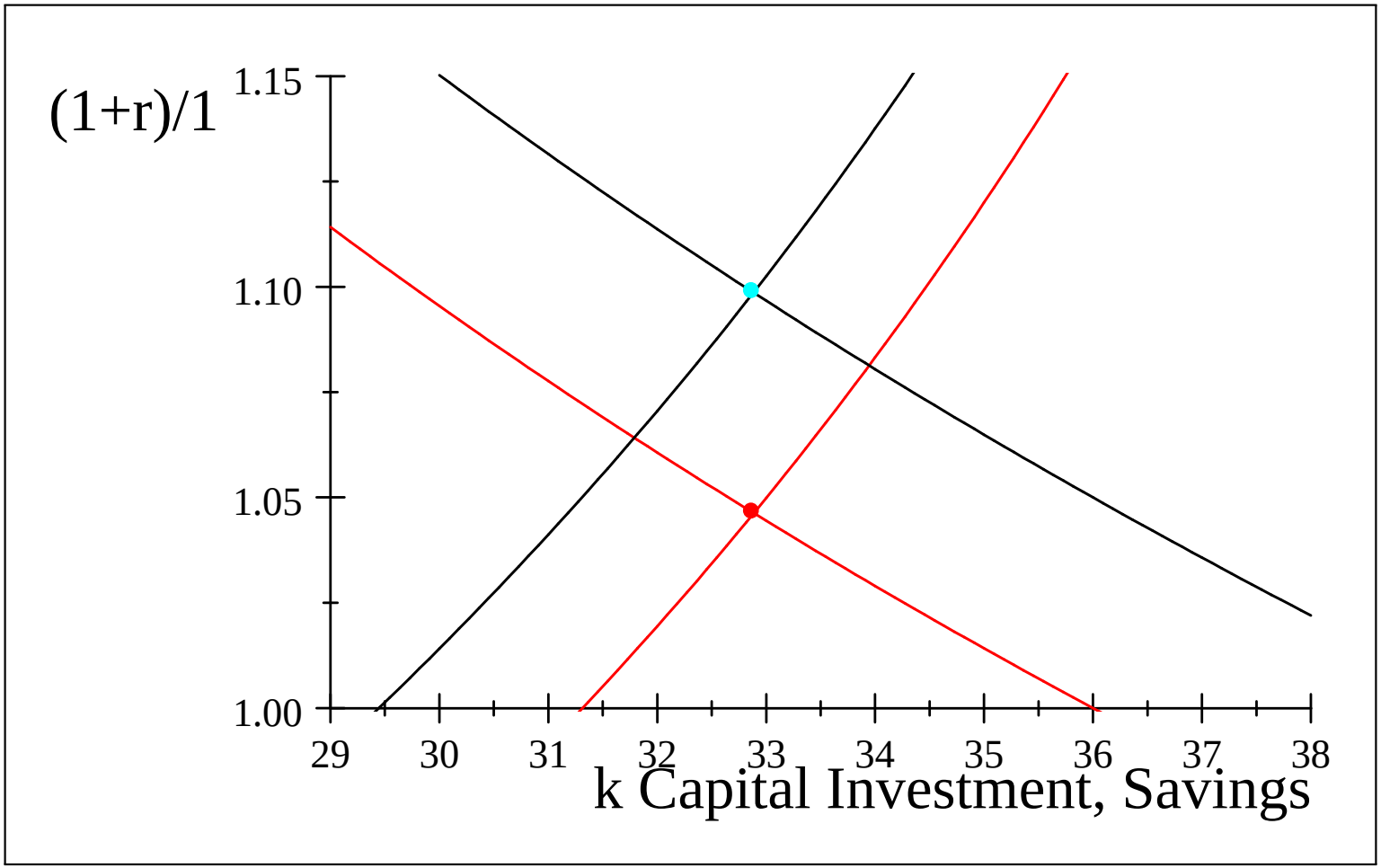


Figure: Shift Back in Supply and Upwards in Demand for Capital (Black), from a Productivity Increase Relative to Baseline (Red): Capital Investment (and Savings) Unchanged, but Interest Rate Higher.

Analysis: Current Income Increase in Fisher's 2-period Capital Market

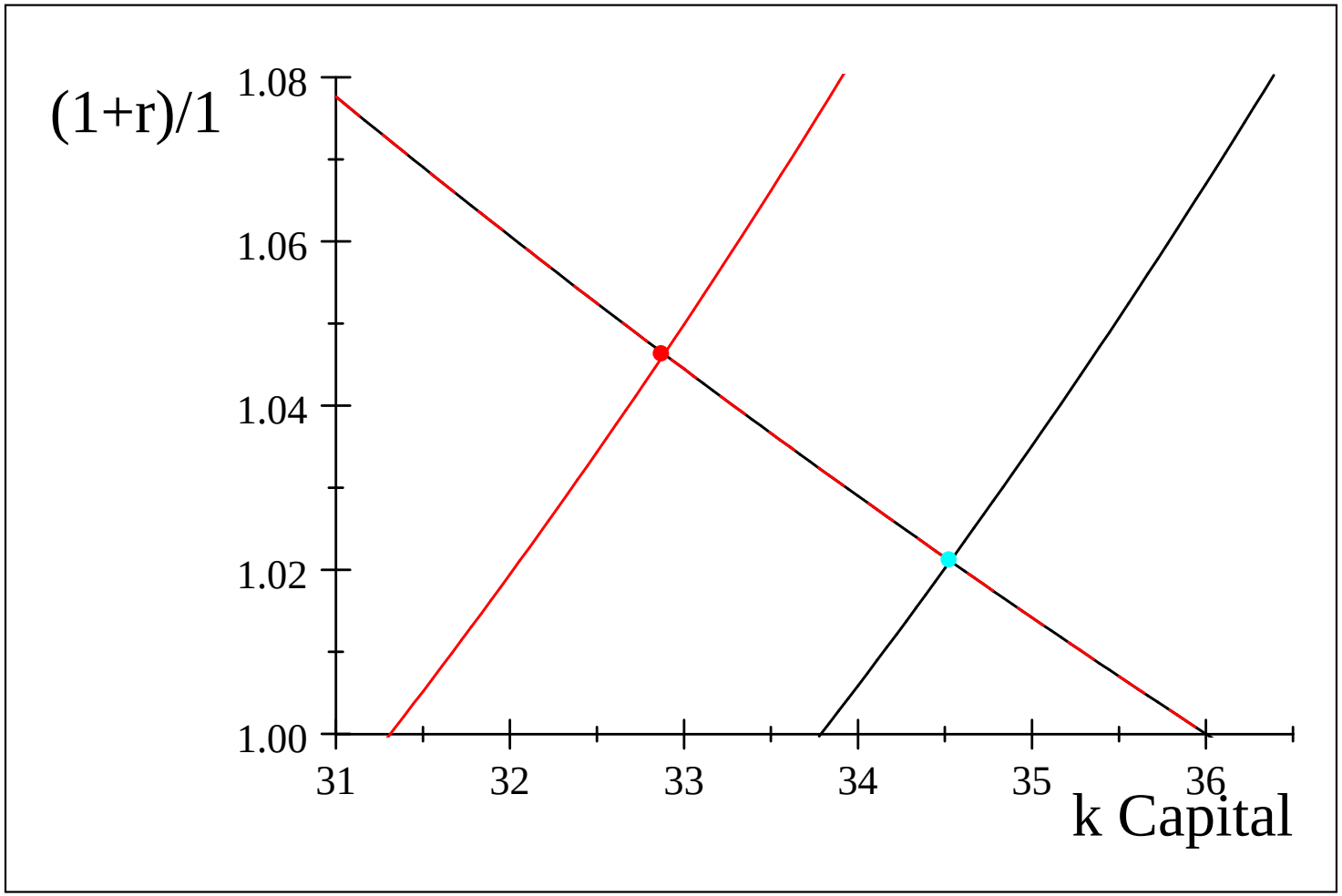


Figure: An Increase in Current Income Endowment Shifts out the Supply of Capital (Black Curve) and Lowers the Real Interest Rate.

Analysis: Fisher: Productivity & Endow. Income Increase

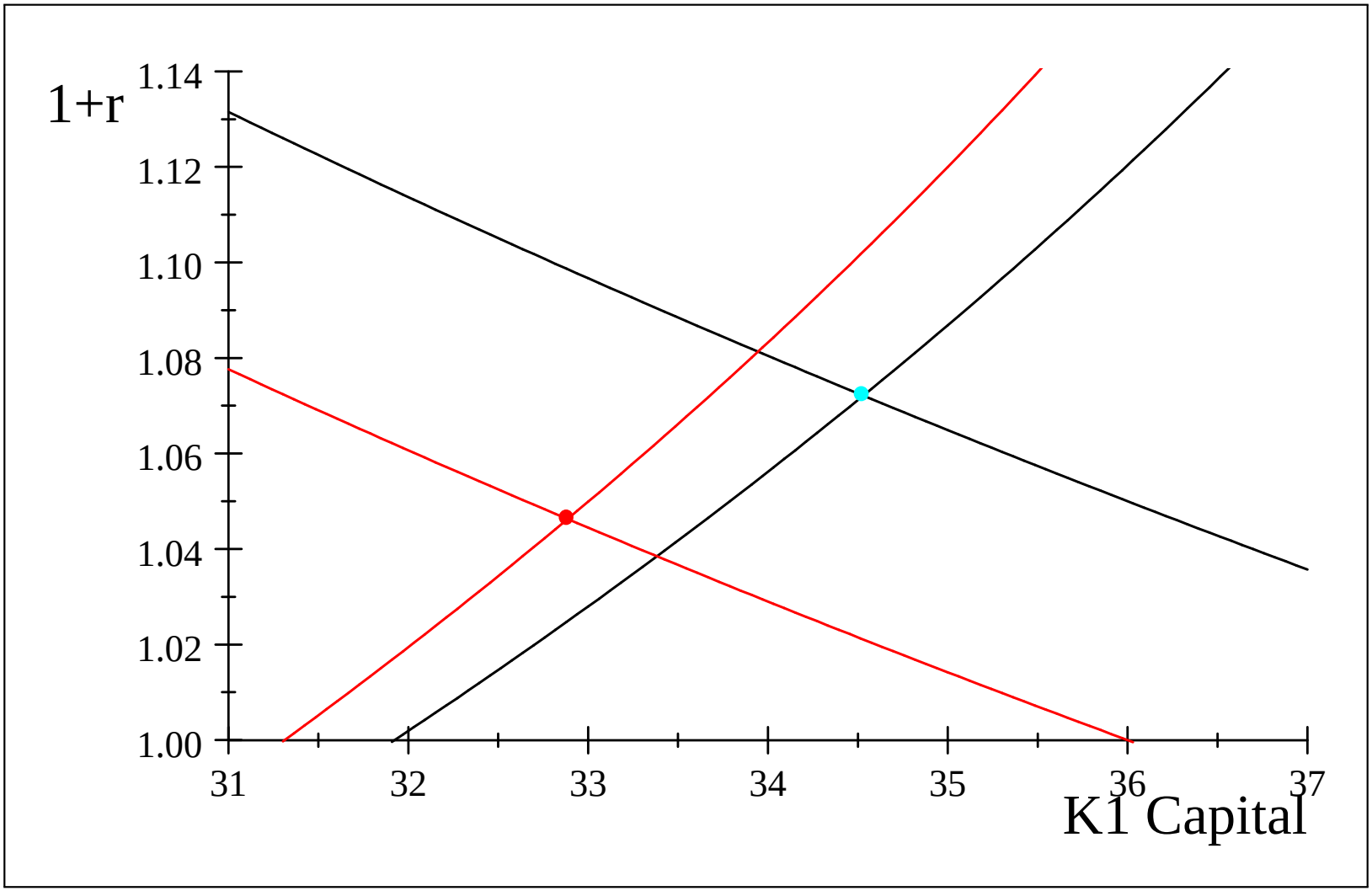


Figure: Capital Market with 5% Increase in Goods Productivity and Income Endowment (Black) versus Baseline (Red).

Analysis: Explain Business Cycle & Growth in Ramsey World

- **Just 2 Comparative Static Changes:**
- **Goods Sector Productivity (TFP)**
- **Time Endowment (Labor Force Participation Rate)**
  - **Labor's "External Margin" of Leaving Workforce or Entering.**
- **Captures Real Business Cycle (RBC) Theory & Solow Growth Theory.**
- **In $AS - AD$ Goods Market, Labor Market, & Capital Markets,**
  - **And In General Equilibrium if Desired.**

Analysis: Ramsey (1928) Basis of Keynesian & Neoclassical Macro

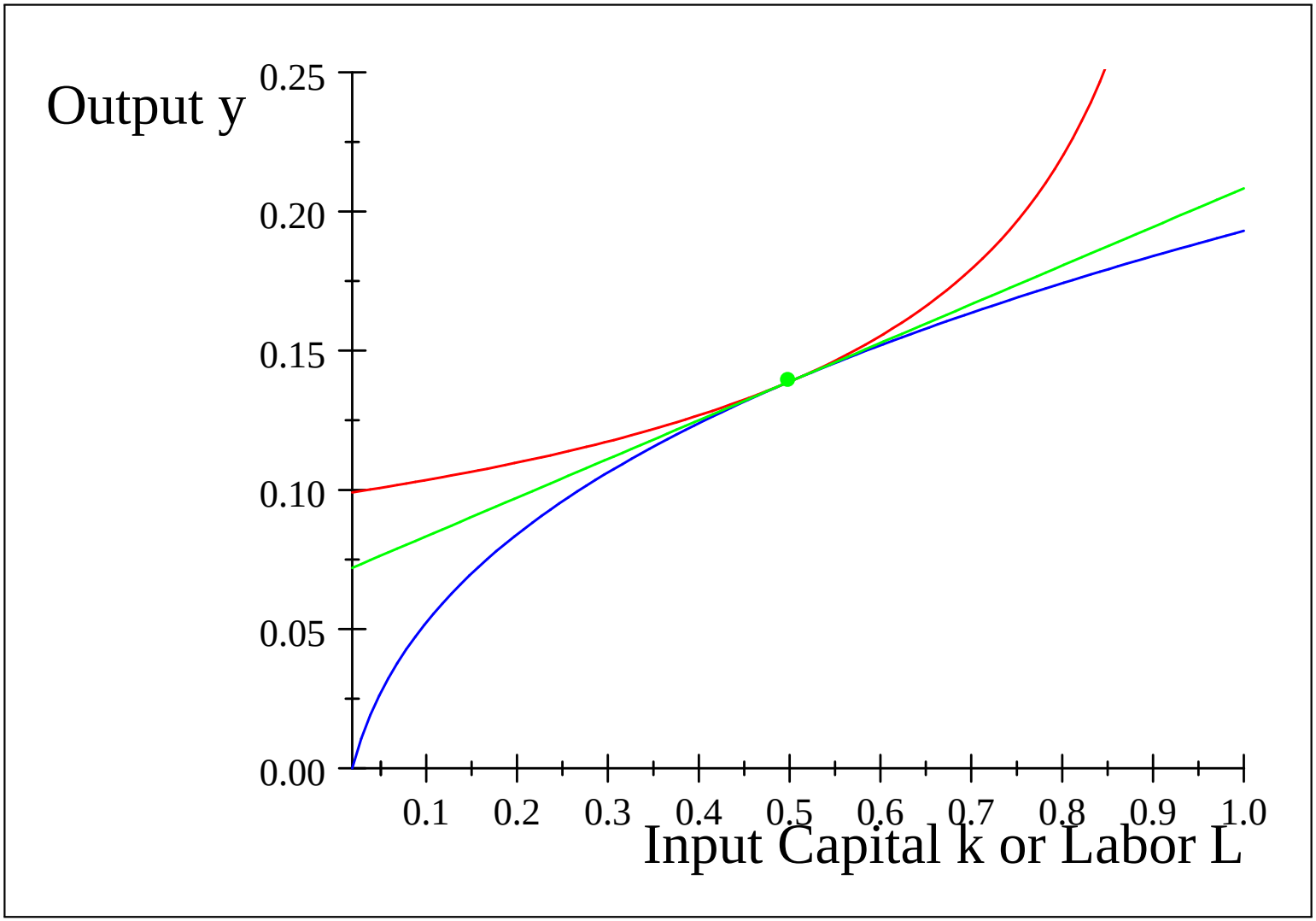
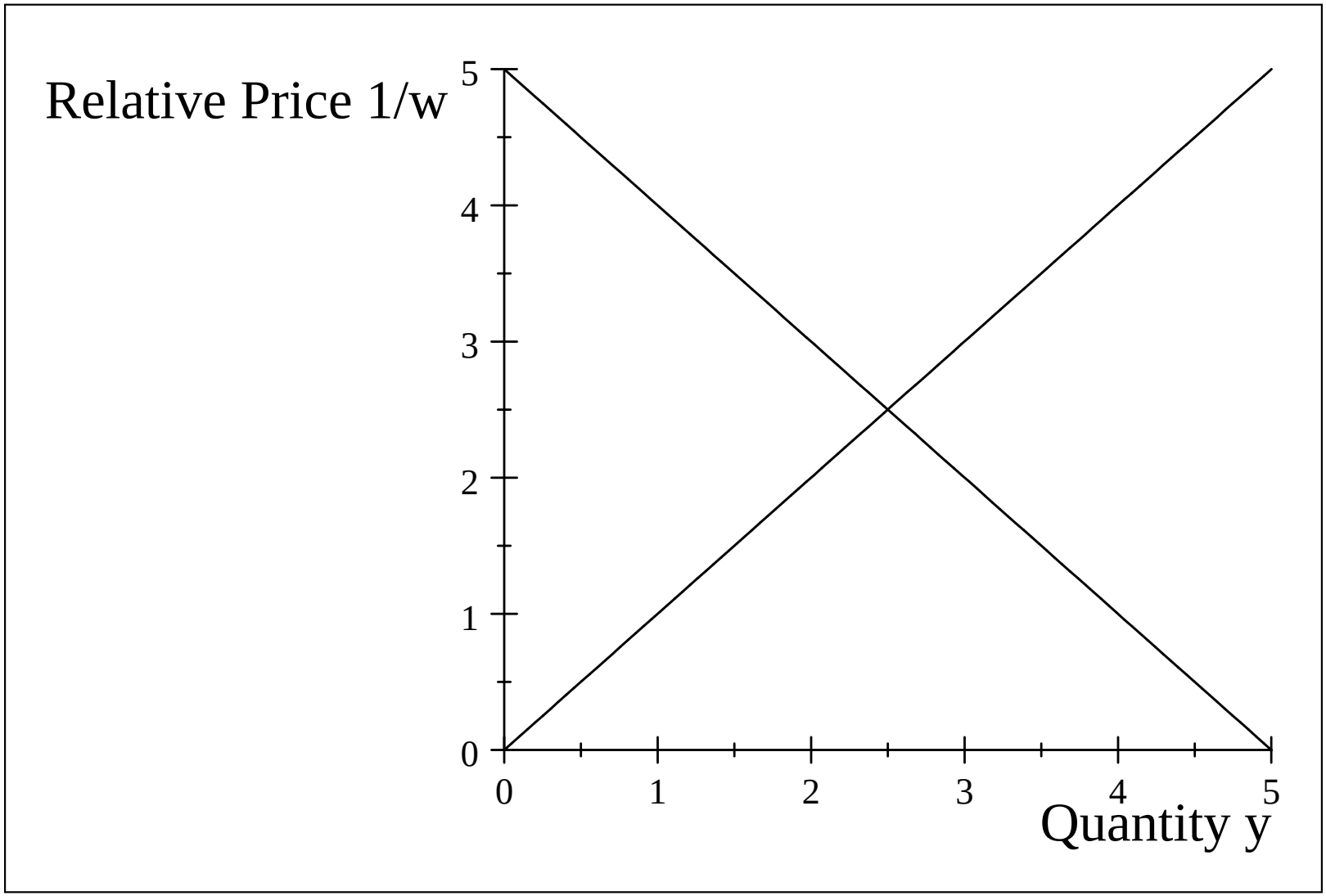


Figure: General Equilibrium Production Function (Blue) and Utility Level

Ramsey World: 2 Scarce Resources; GOODS & TIME

- **Relative Price: of Goods versus Time?**
- **Price of goods: 1. Price of time:** $W/P = w$
- **Relative Price in** $AS - AD$ **:** $1/w$**. OR:** P/W
- **Graph Output** y **against relative price** $1/w : AS - AD$
  - **[given capital stock** k^* **which is known].**

Analysis: What AS-AD Looks Like



Analysis: Ramsey AS-AD : Output Increase, 1/w Decrease

Productivity Increase & Time Endowment Increase

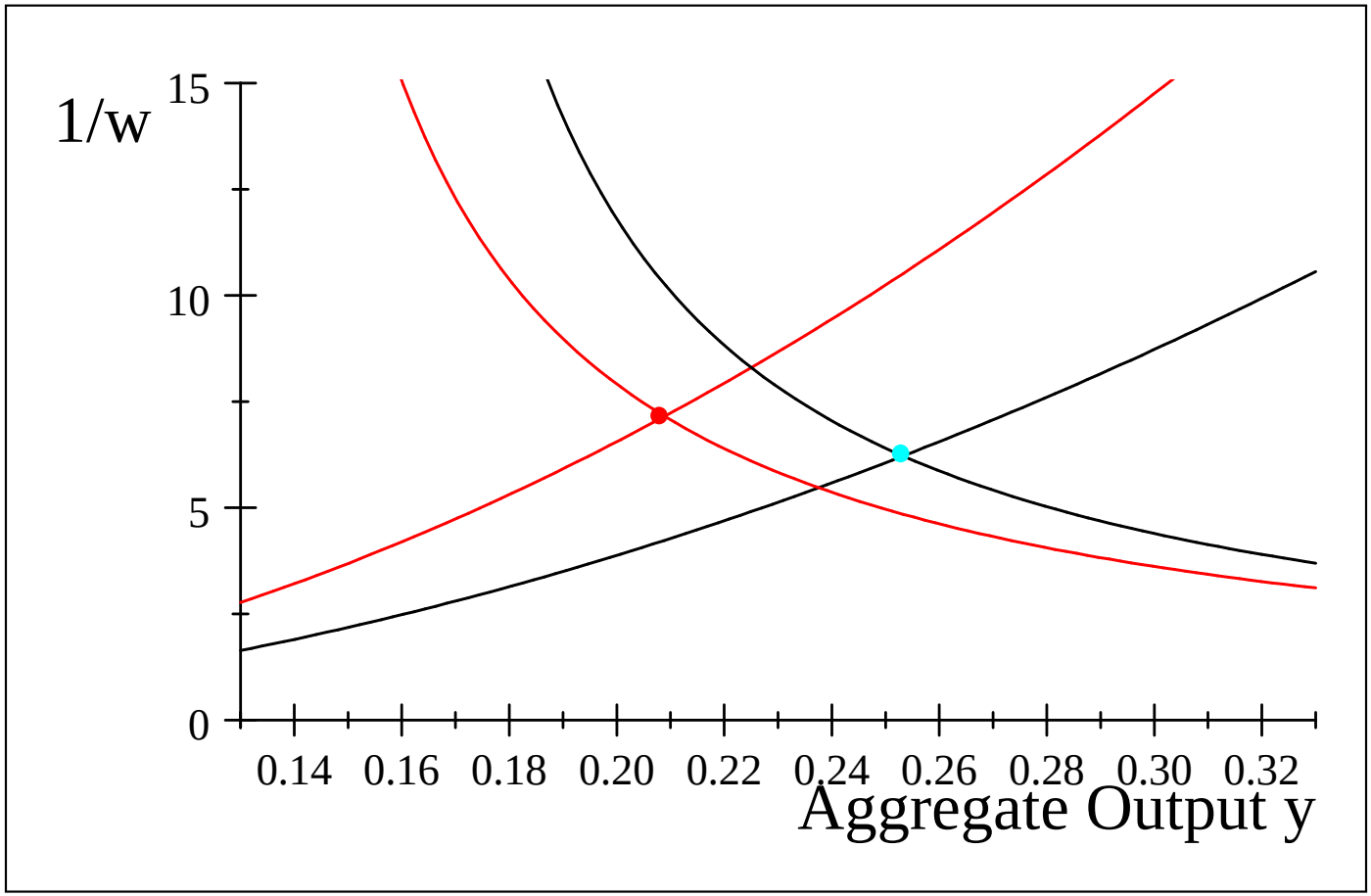


Figure: Business Cycle Expansion in Goods Market: $AS - AD$ Equilibrium with 5% Increase (in Black) in Both Productivity A and Time T as Compared to the Original (in Red).

Analysis: Ramsey Labor Market in RBC Expansion

Wage and Employment Rise

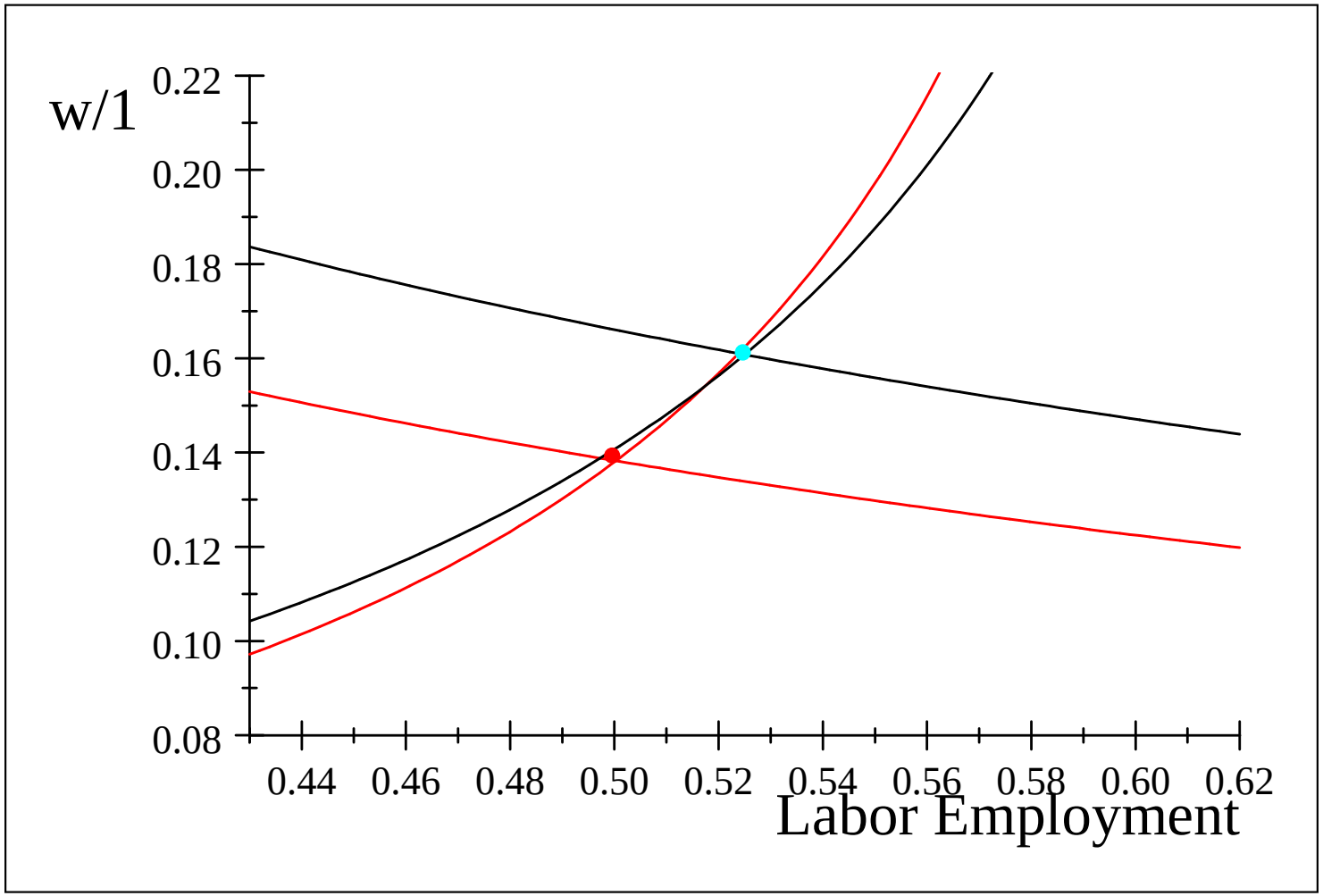


Figure: Business Cycle Expansion: Labor Market has a Shift out in Demand (Black) and Pivoting of Supply (Black) as Compared to Original (Red).

Analysis: Capital Market with RBC Expansion

Interest Rate Unchanged, Investment k up.

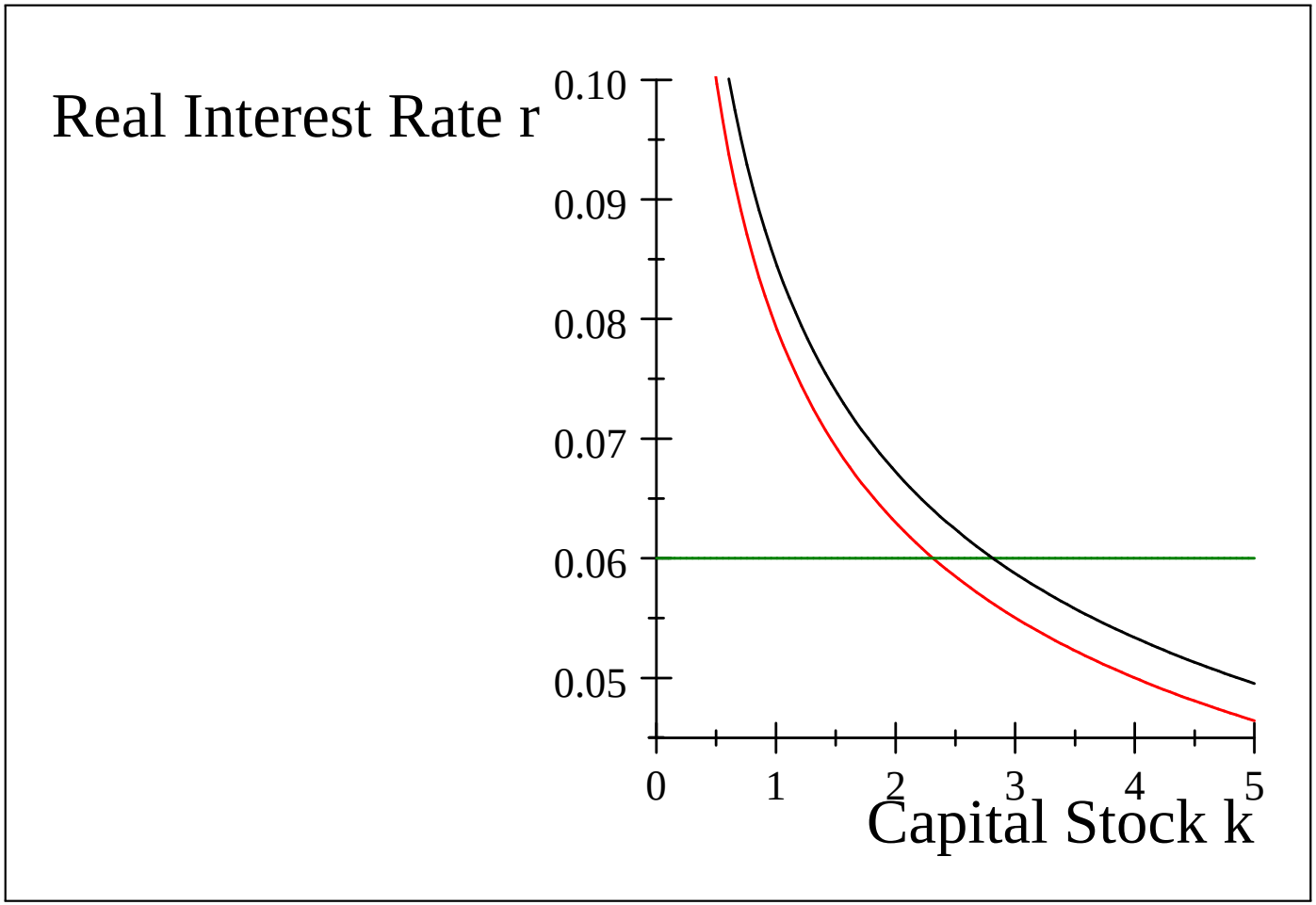


Figure: Capital Market Shows Shift Out of Demand for Capital (Black Curve) When both Factor Productivity A and Time Endowments T Increase by 5% relative to the Original Example Equilibrium (Red Curve).

Analysis: Excess Supply of Labor or Capital, Keynes Style

Worse Employment Drop if Wage Rate Fixed During Recession

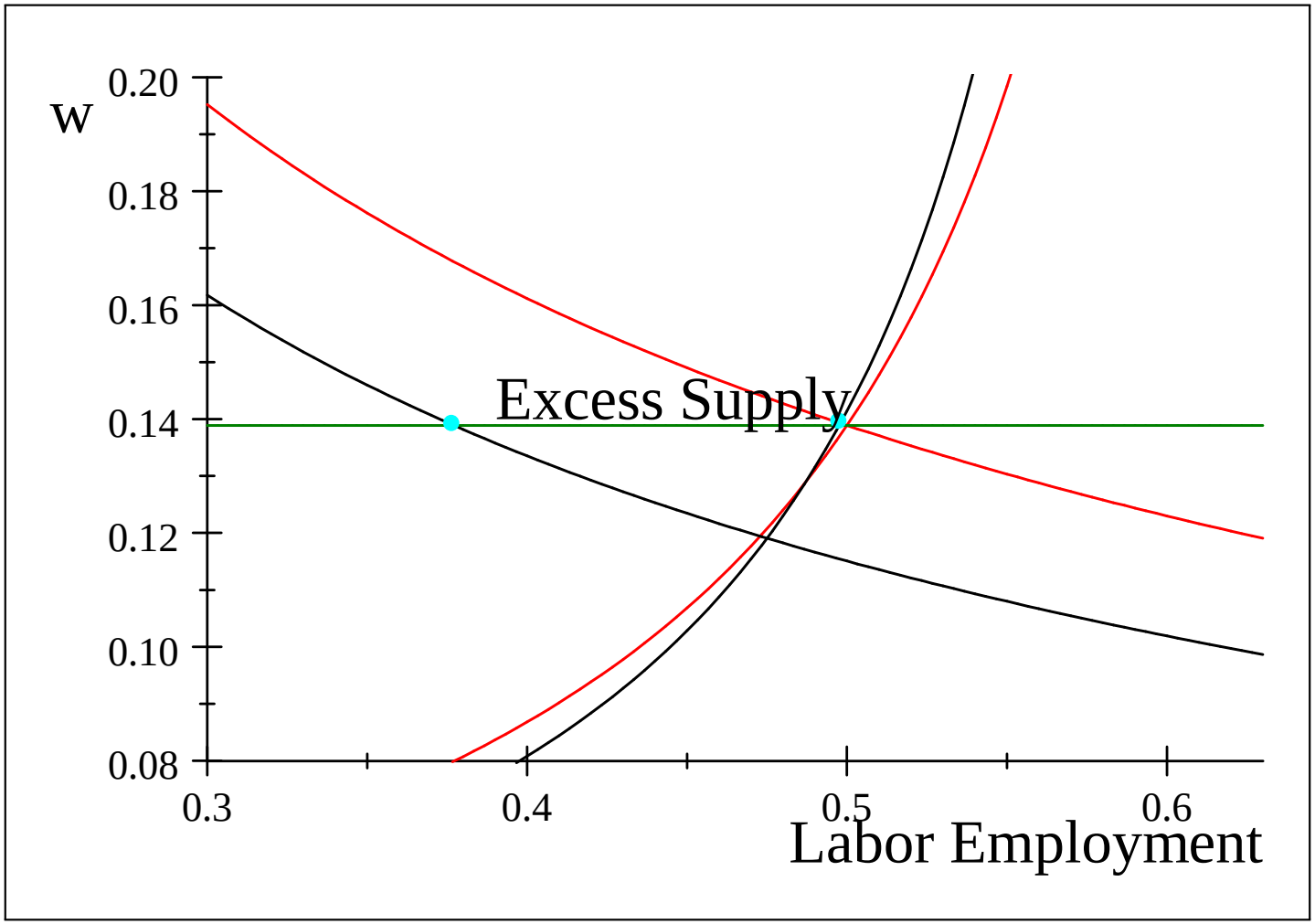


Figure: Excess Labor Supply with a Fixed Wage During Contraction (in Black) relative to the original example equilibrium (in Red).

Analysis: Solow Growth Theory in AS-AD: only Productivity increase Trend

1/w Falls, Per Capita Income Rises; SUPPLY SIDE ECONOMICS

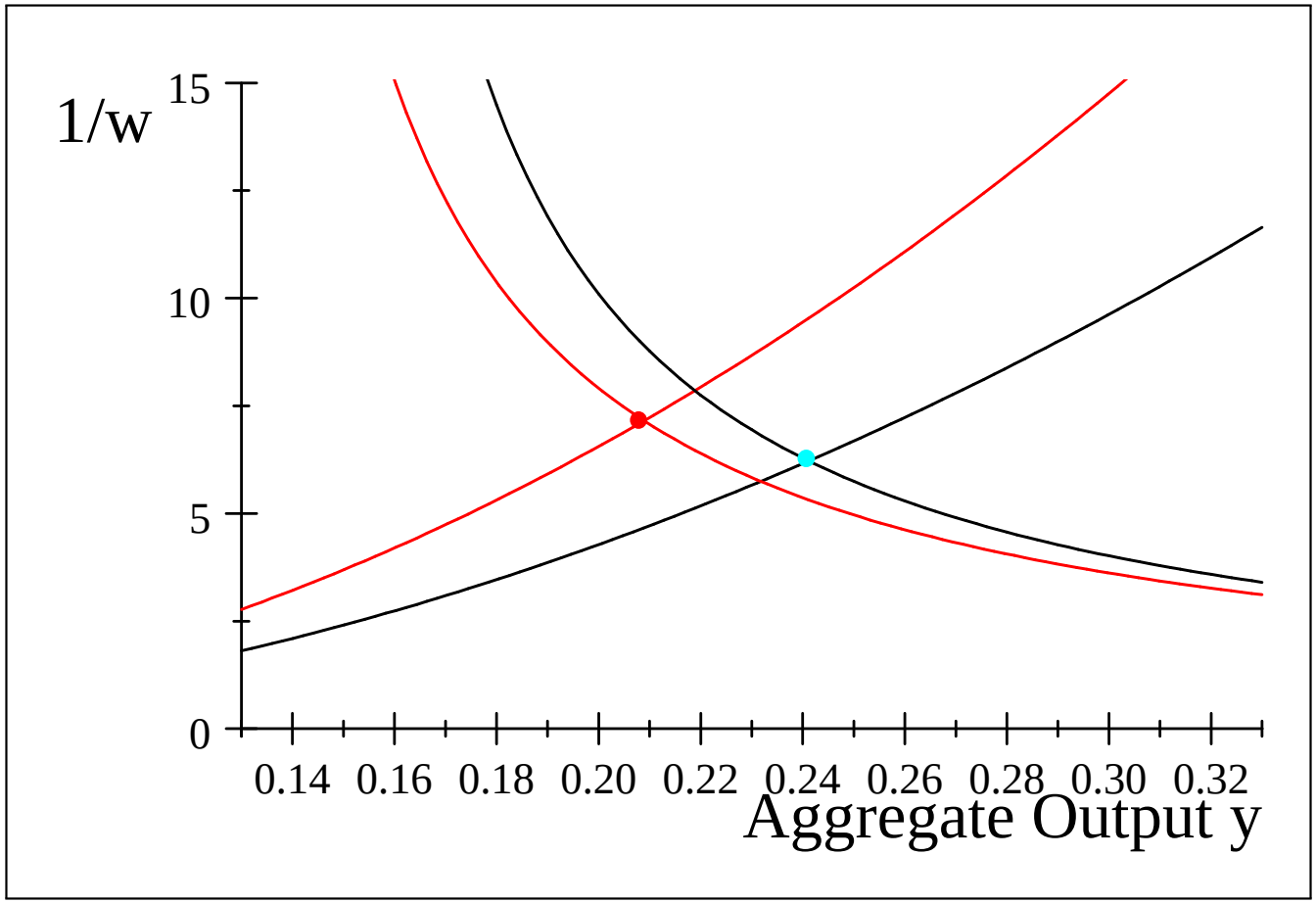


Figure: $AS - AD$ Equilibrium with Goods Productivity Increase (in Black) as Compared to the Original (in Red).

Analysis: Solow Growth Fact In Labor Market

Wage Rate Rises

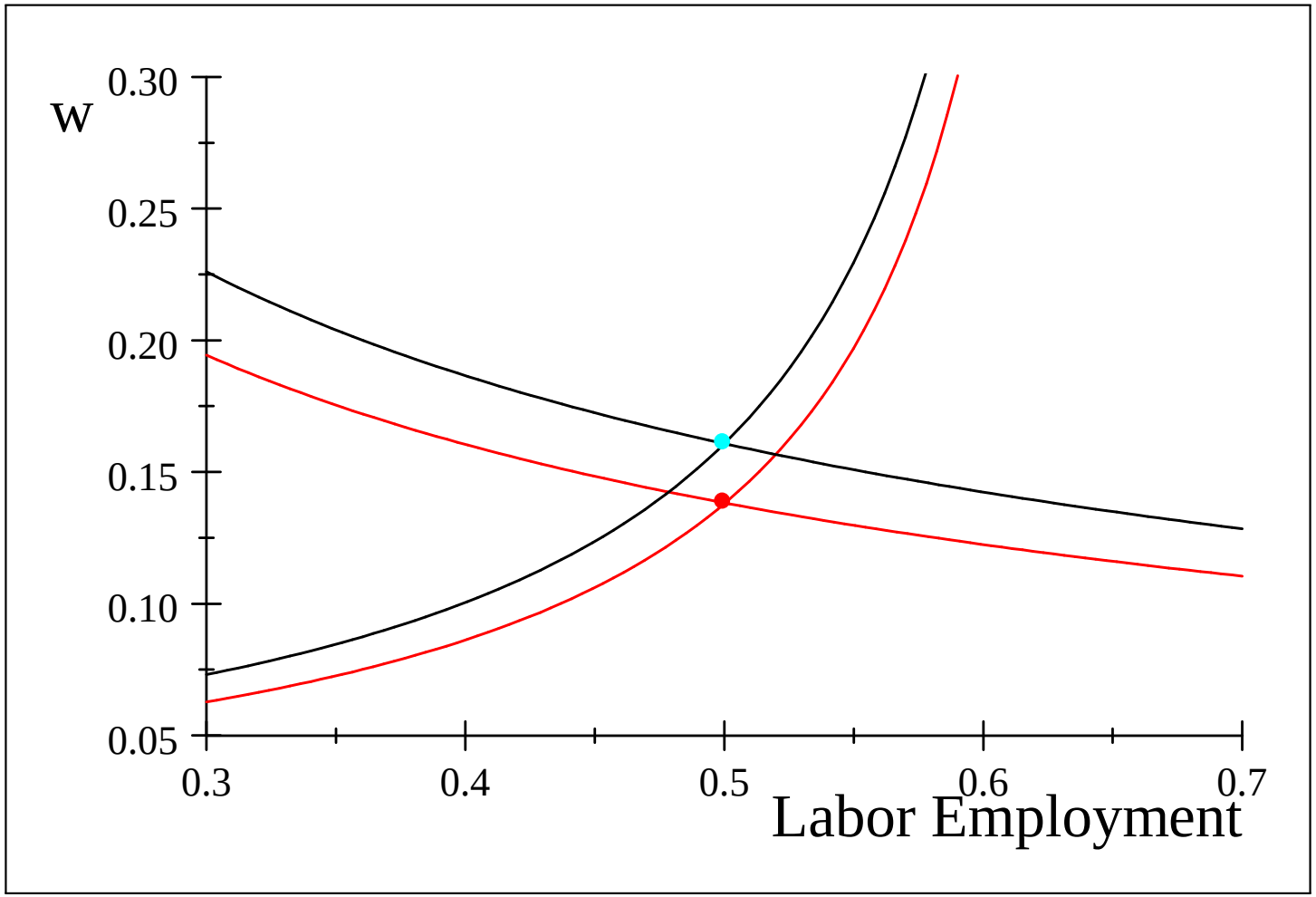


Figure: Increase in Productivity (Black Curves) Raises w and Leaves Employment Unchanged.

Analysis: Solow Growth Fact In Labor Market

Per Capita Income Rises Over Time

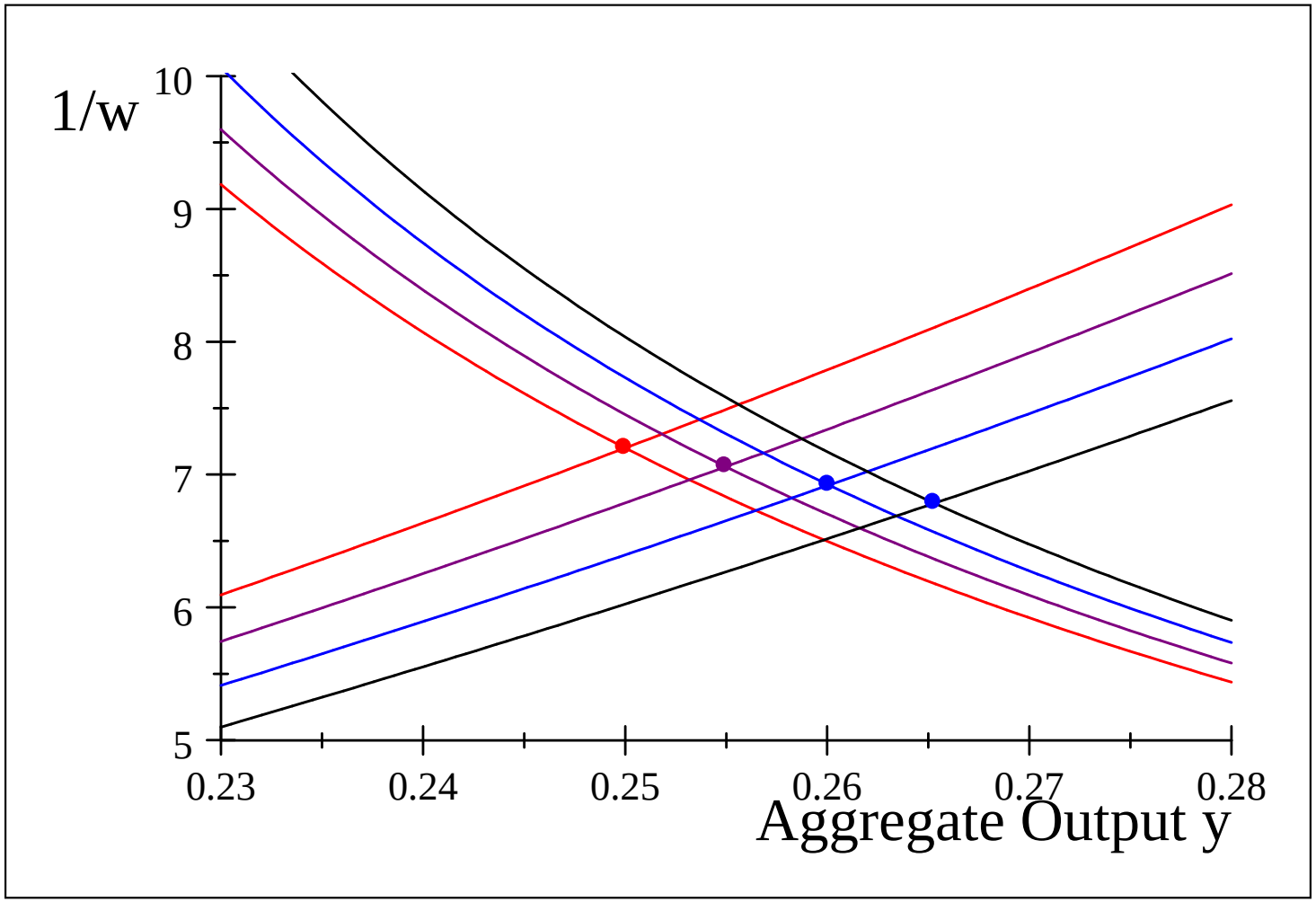


Figure: $AS - AD$ Equilibria Over Time With 2% Exogenous Growth Example; Moving From Red to Black Curves over 4 years.

Analysis: Solow Growth Fact In Labor Market

Wage Rate Rises Over Time

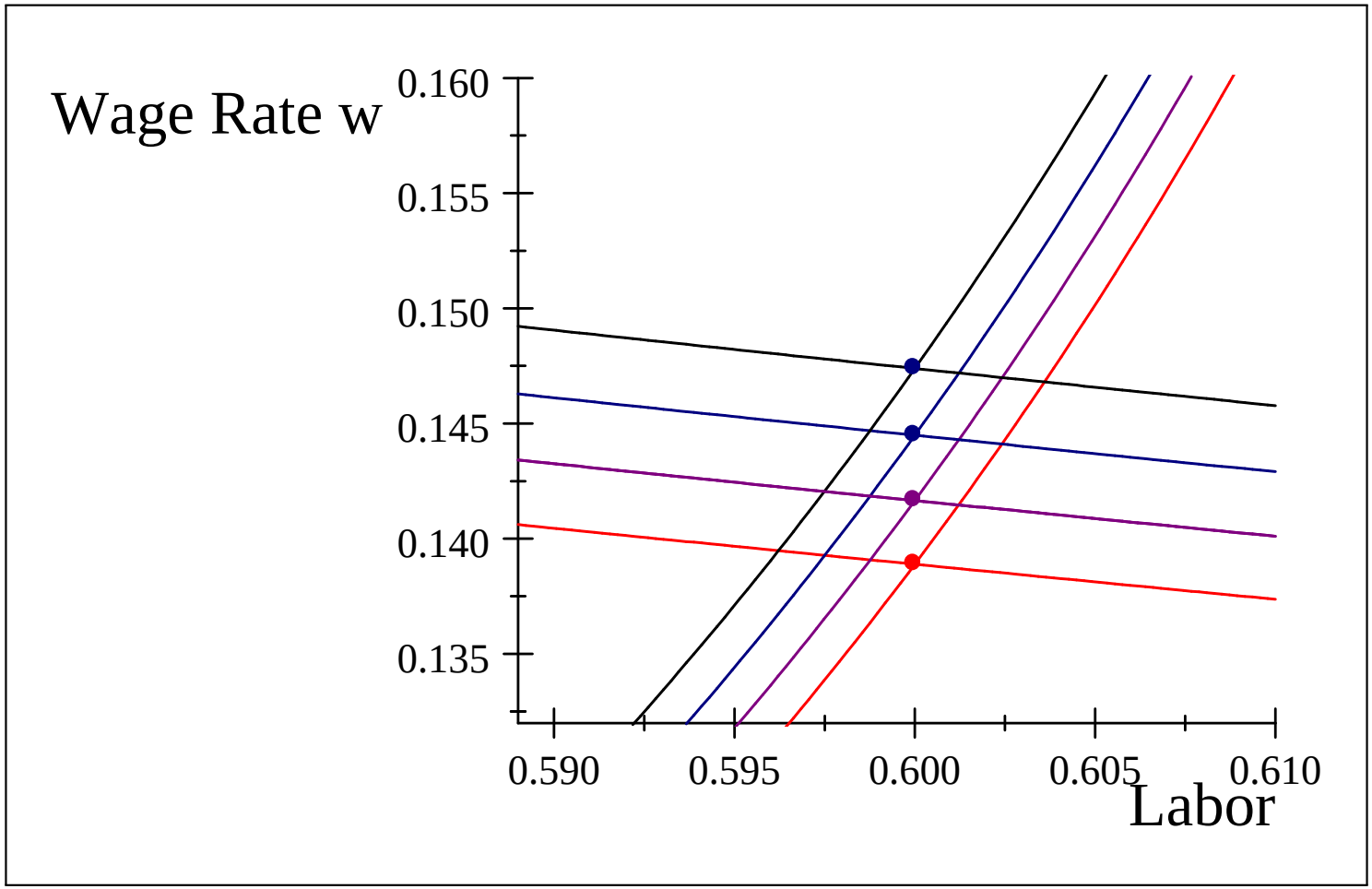


Figure: Labor Market with 2% Exogenous Growth and Rising Real Wage, Constant Employment, Over Time.

Facts: Can Explain Growth with AS-AD & (Endogenous) Growth,

Using Human Capital

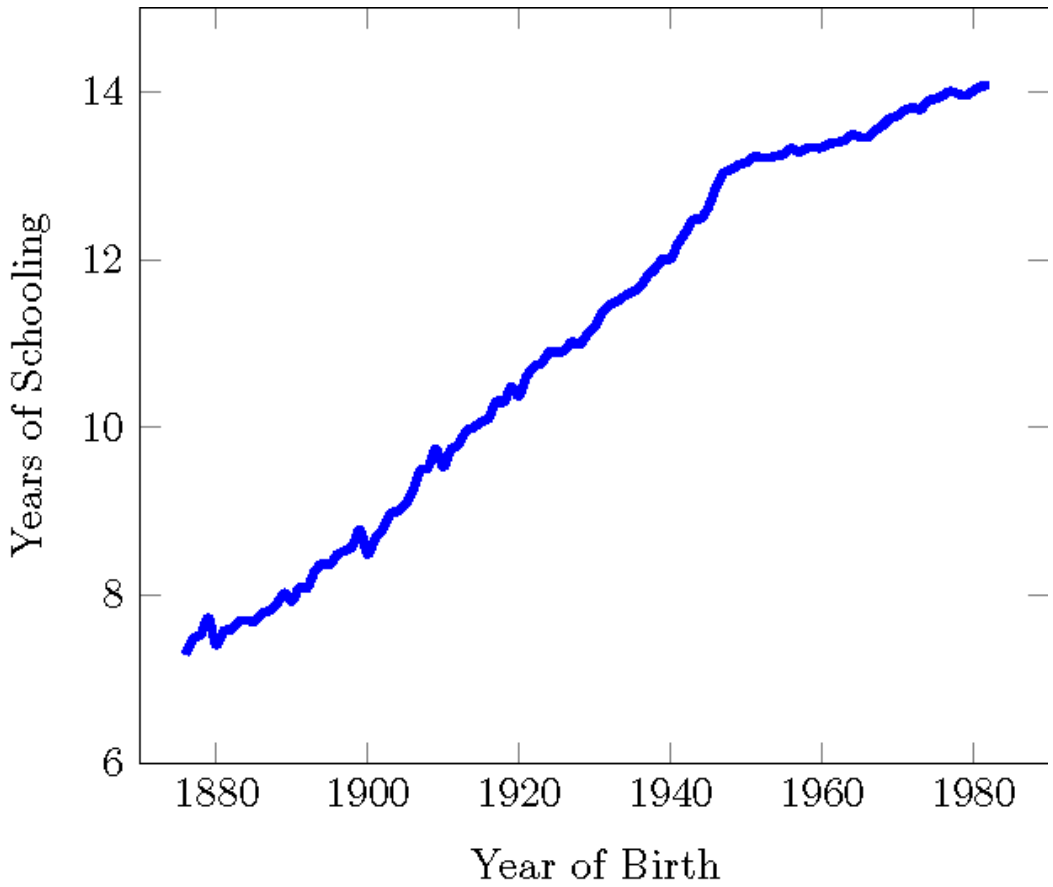


Figure: US Years of Education by Birth Cohort

Policy: Consumption Function: Keynes Redistribution

Low Income Spend More: End of Story

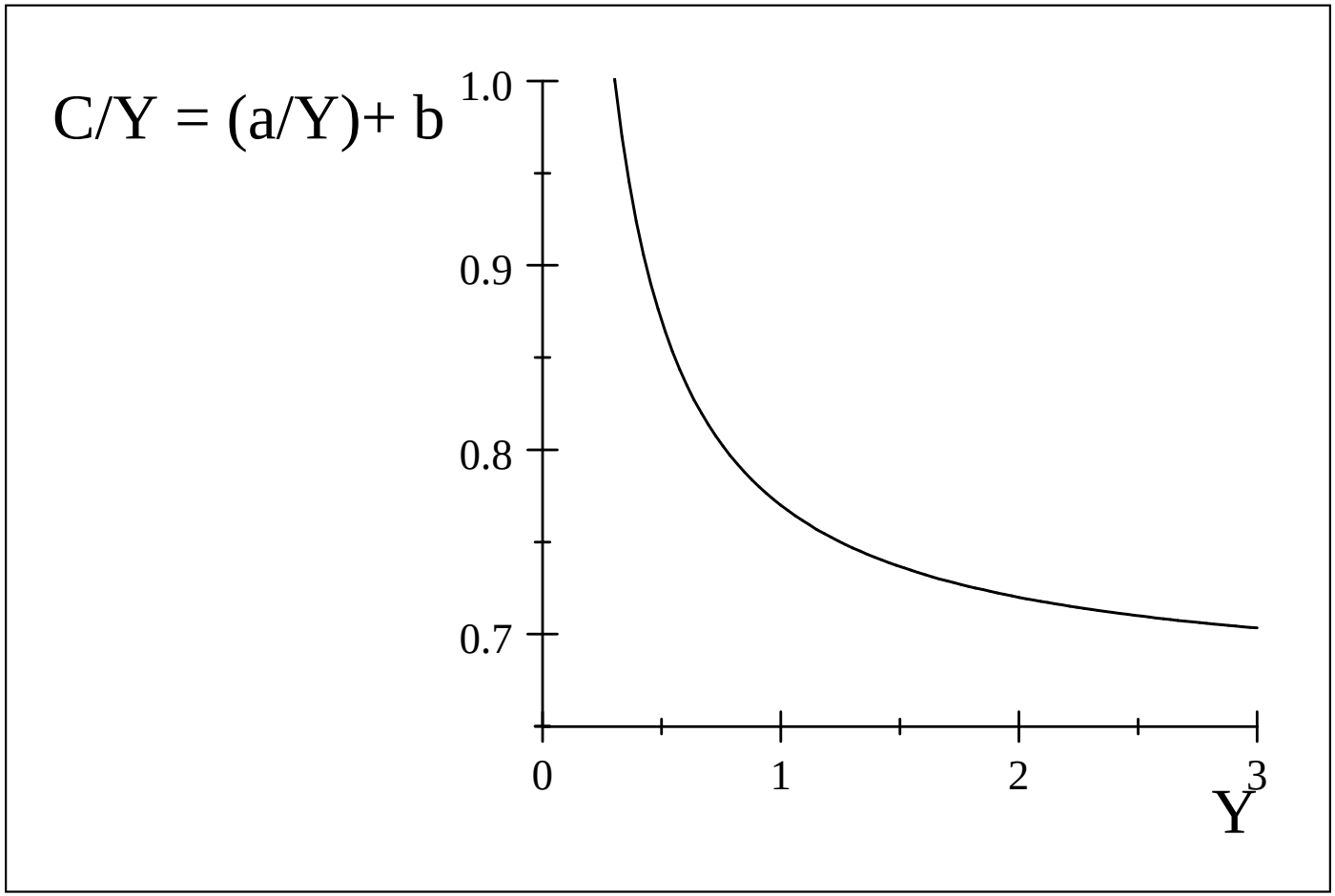


Figure: Consumption as a Fraction of Income: in the Keynesian Theory of Consumption $C = a + bY$.

Policy: Consumption Function: Fisher-Ramsey-Friedman Wealth-Building

Raise Permanent Income of Citizens: eg. Education

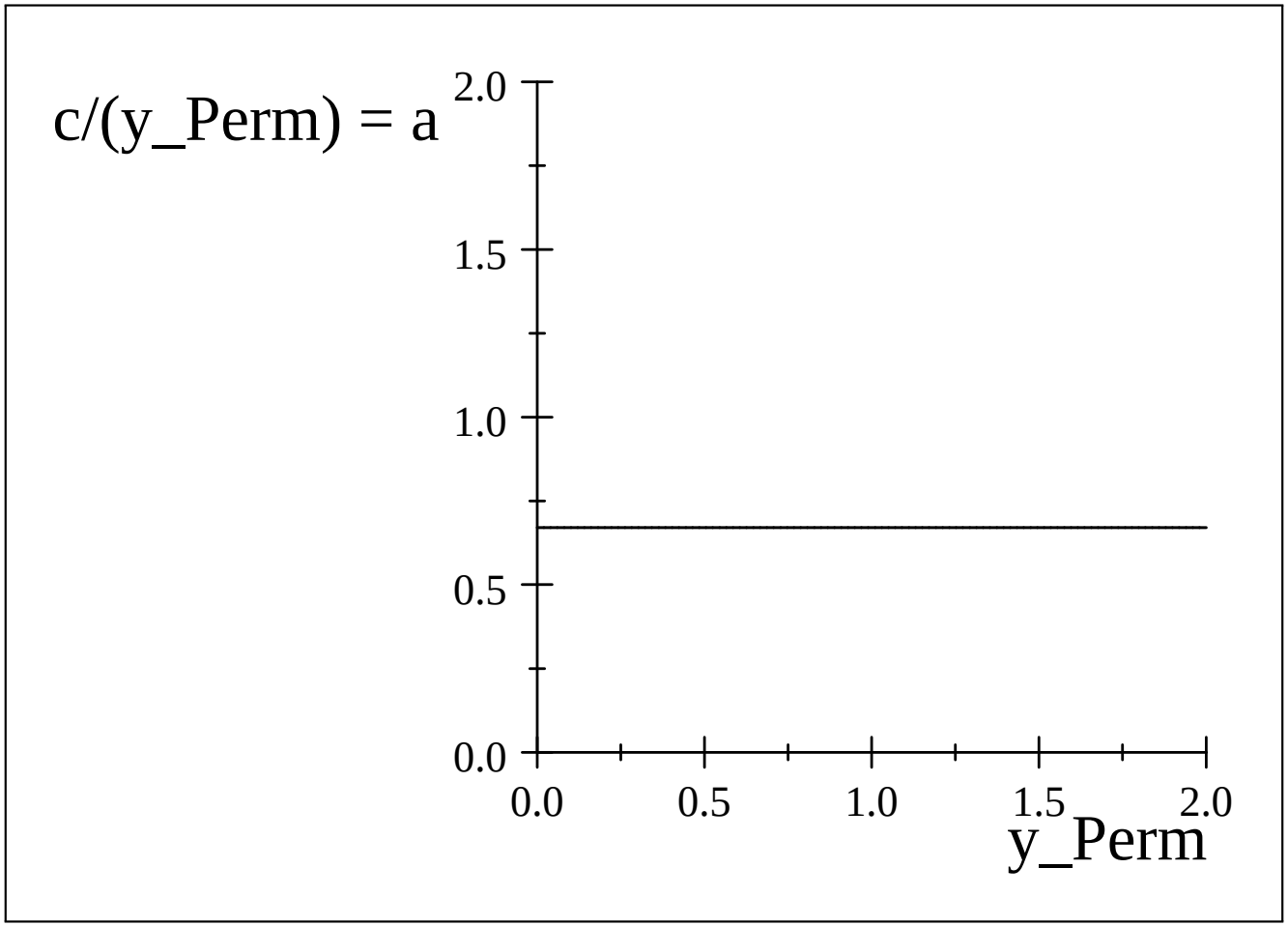


Figure: Consumption as a Fraction of Permanent Income: Ramsey-Friedman Theory

Policy in "Ramsey Cross"?:

RBC Productivity Increase Shifting up c+i=y; Raise Society Perm. Income

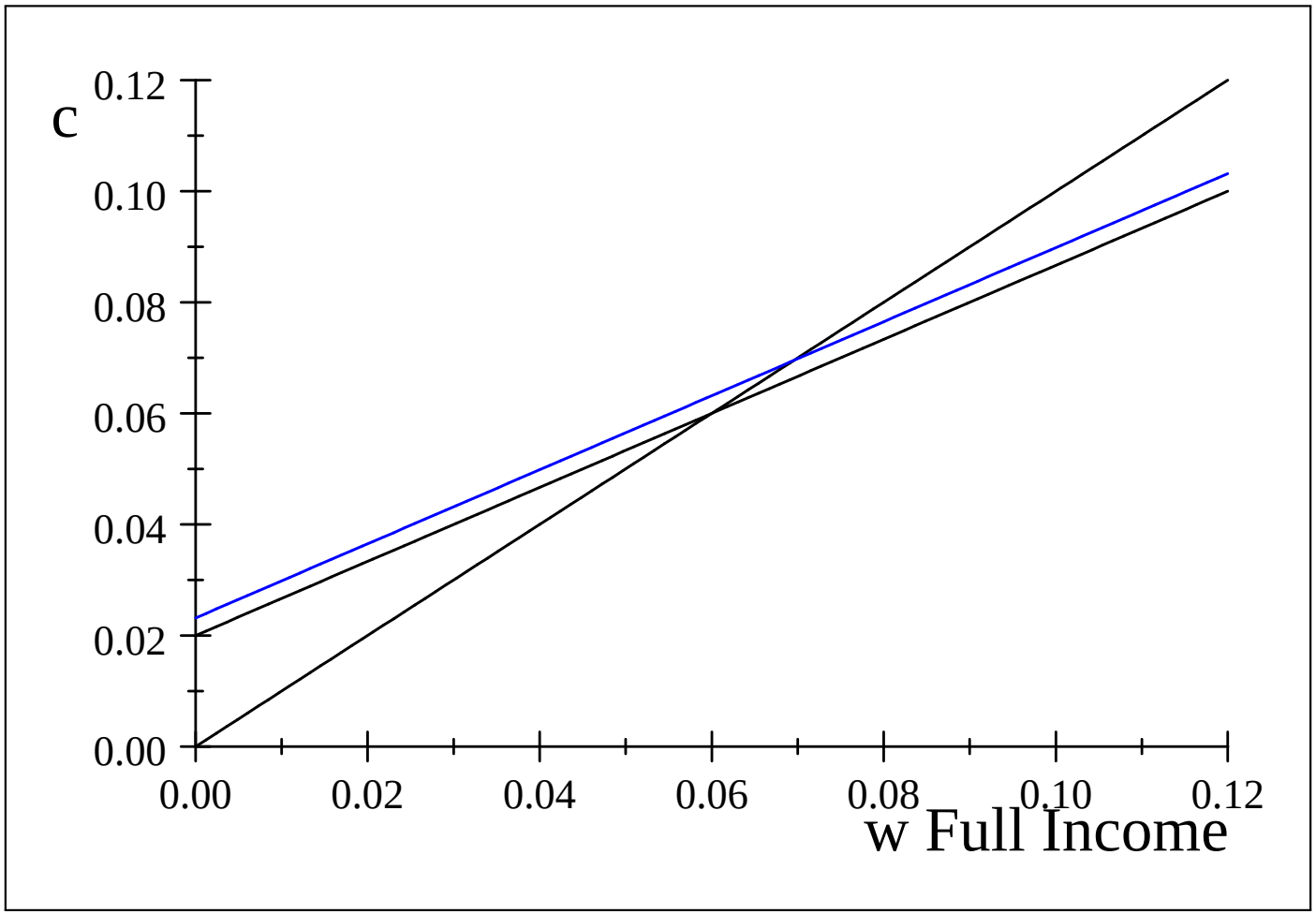
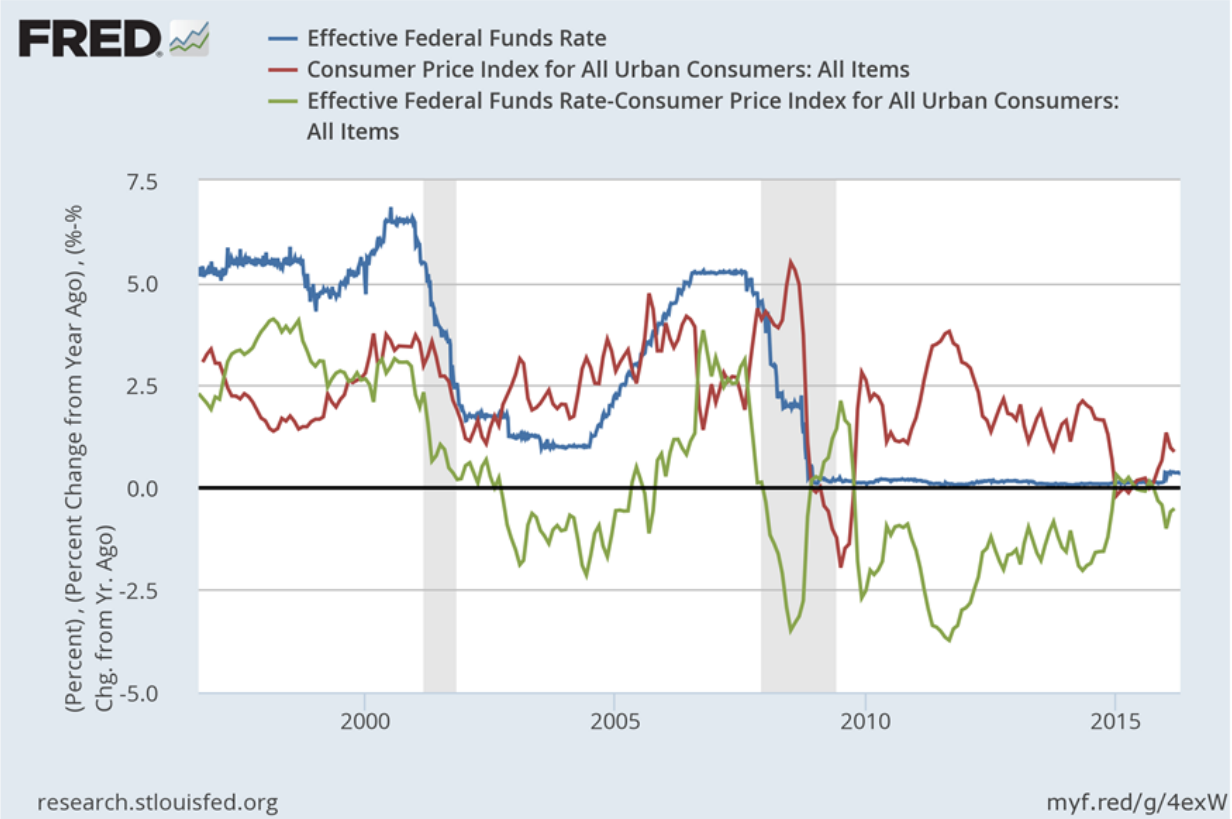


Figure: Ramsey Consumption Theory and Busines Cycles: Increase in A.

Policy Crisis: When the Fed Drives the Real Interest Rate to be Negative

In 2002-2005 and 2008-2016



Policy Crisis: Fed Caused Lost Decade?

Purple line (Total Assets) - (MBS) follows Red (Excess Reserves)

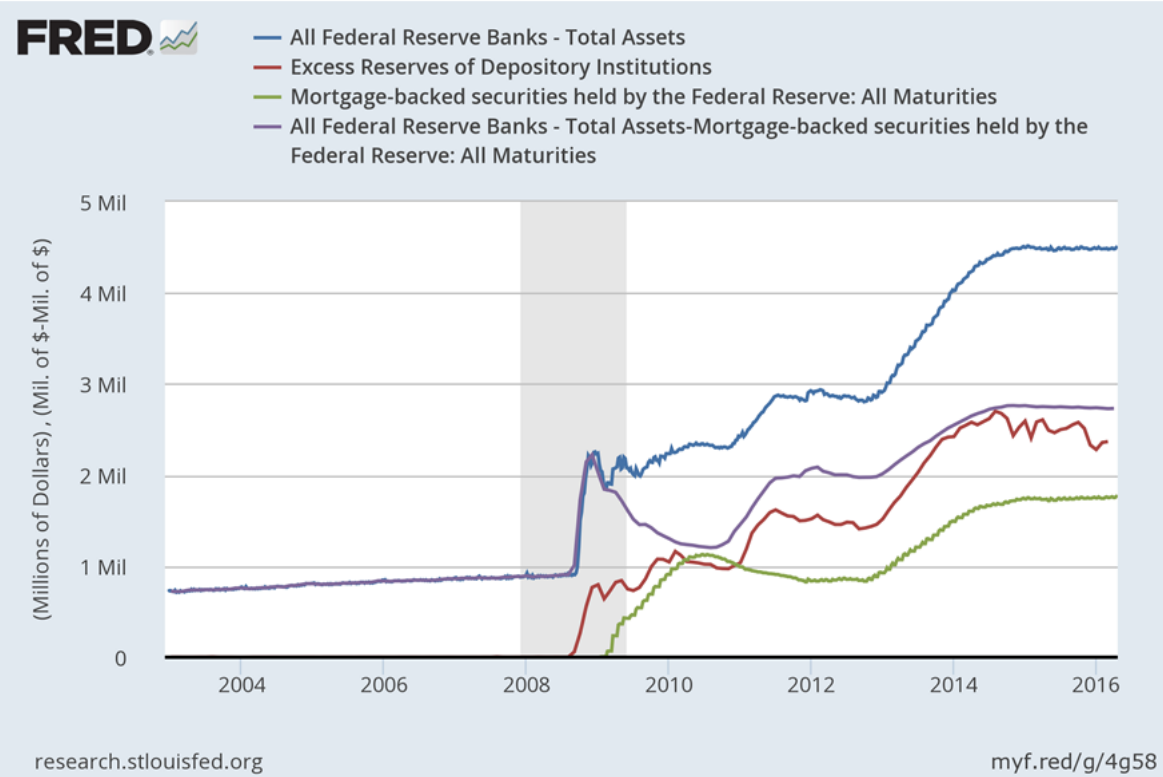


Figure:

Policy Crisis: Fed's Assets Minus MBS & Excess Res.= 0

Purple line Subtracts MBS and Excess Reserves

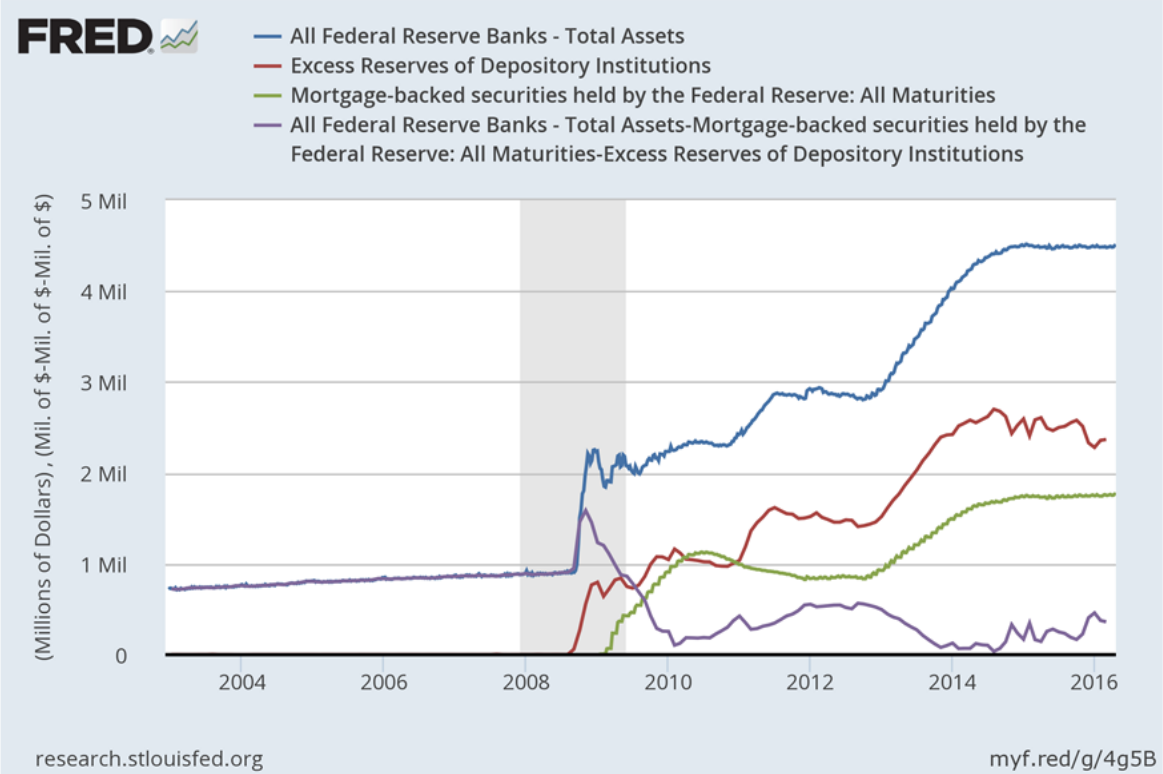


Figure:

Policy Crisis: Interest on Excess Reserves Forces Down Real Interest Rt.

Investment Rate and Real Interest Rate Move Together

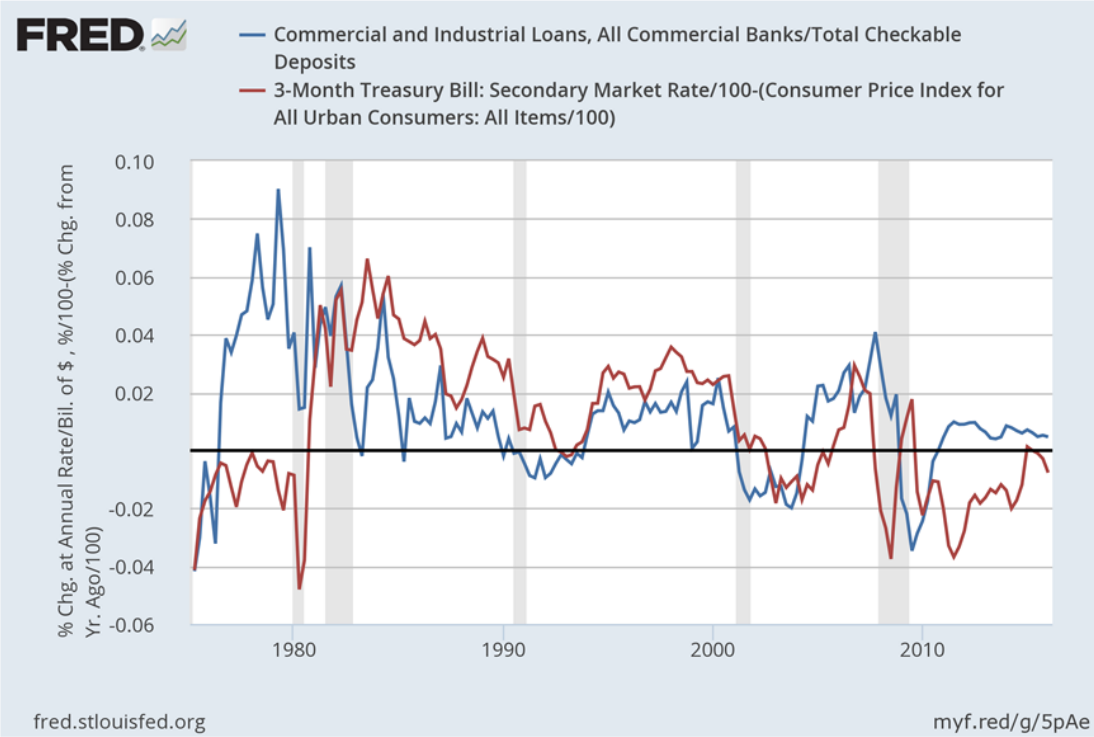


Figure: Loan Ratio (Blue) & Real Int.Rt (Red)

Policy Crisis: Loans Decline and Stay Low

No Recovery Here

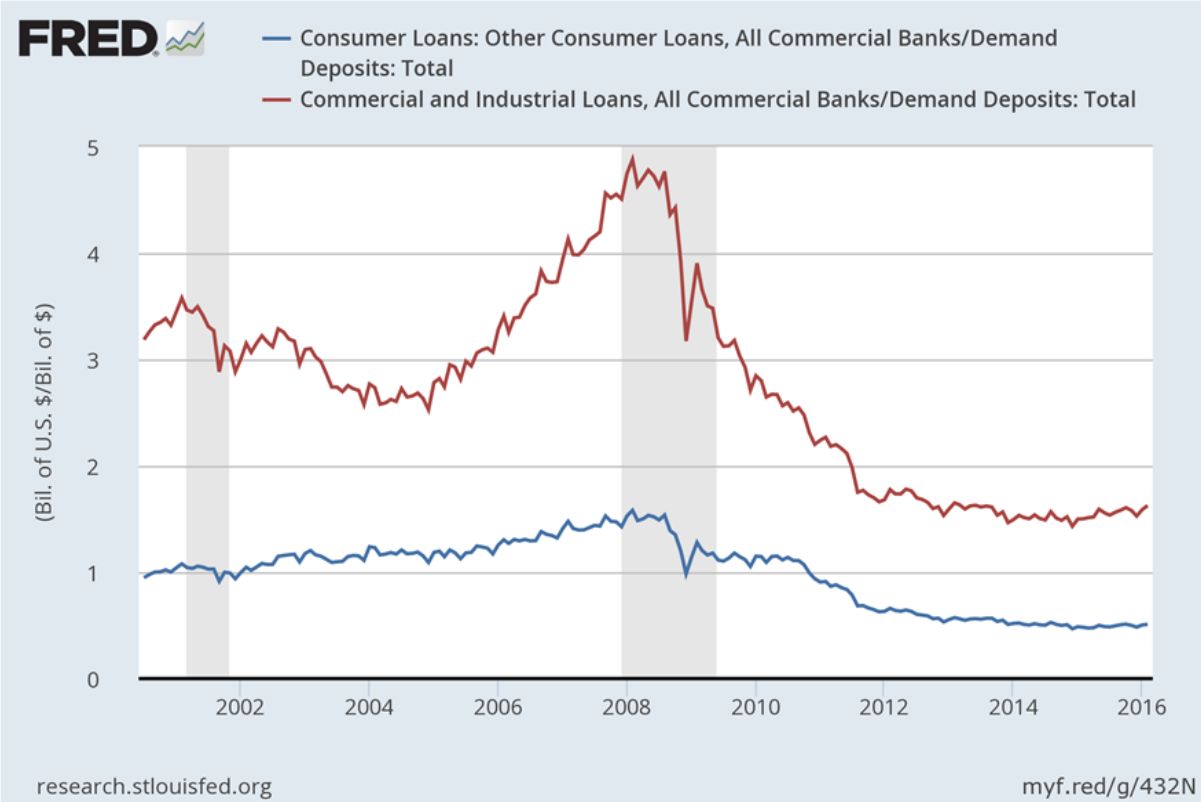


Figure: Loan to Demand Deposit Ratios: Consumer Loans Ratio in Red; Commercial and Industrial Loans Ratio in Blue.

Anatomy of a Crisis: Effective Ceiling Imposed On Real Interest Rate

Simple Analysis, But Big Story

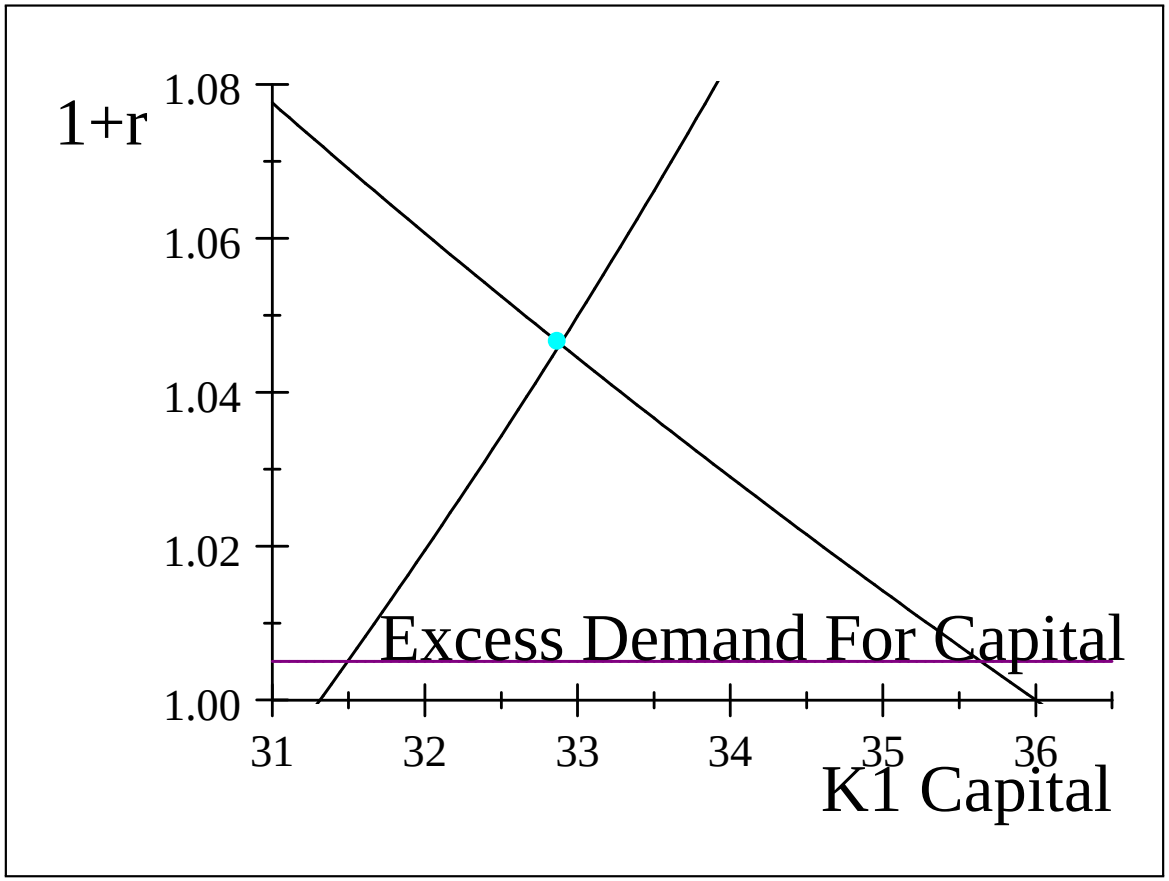


Figure: Savings and Investment: Aggregate Supply and Demand for Capital k With Real Interest Rate Ceiling

Anatomy of a Crisis: Persistent Liquidity:

Capital Supply Shifted out by Excess Reserves That Fed Supplied Buying Treas Debt

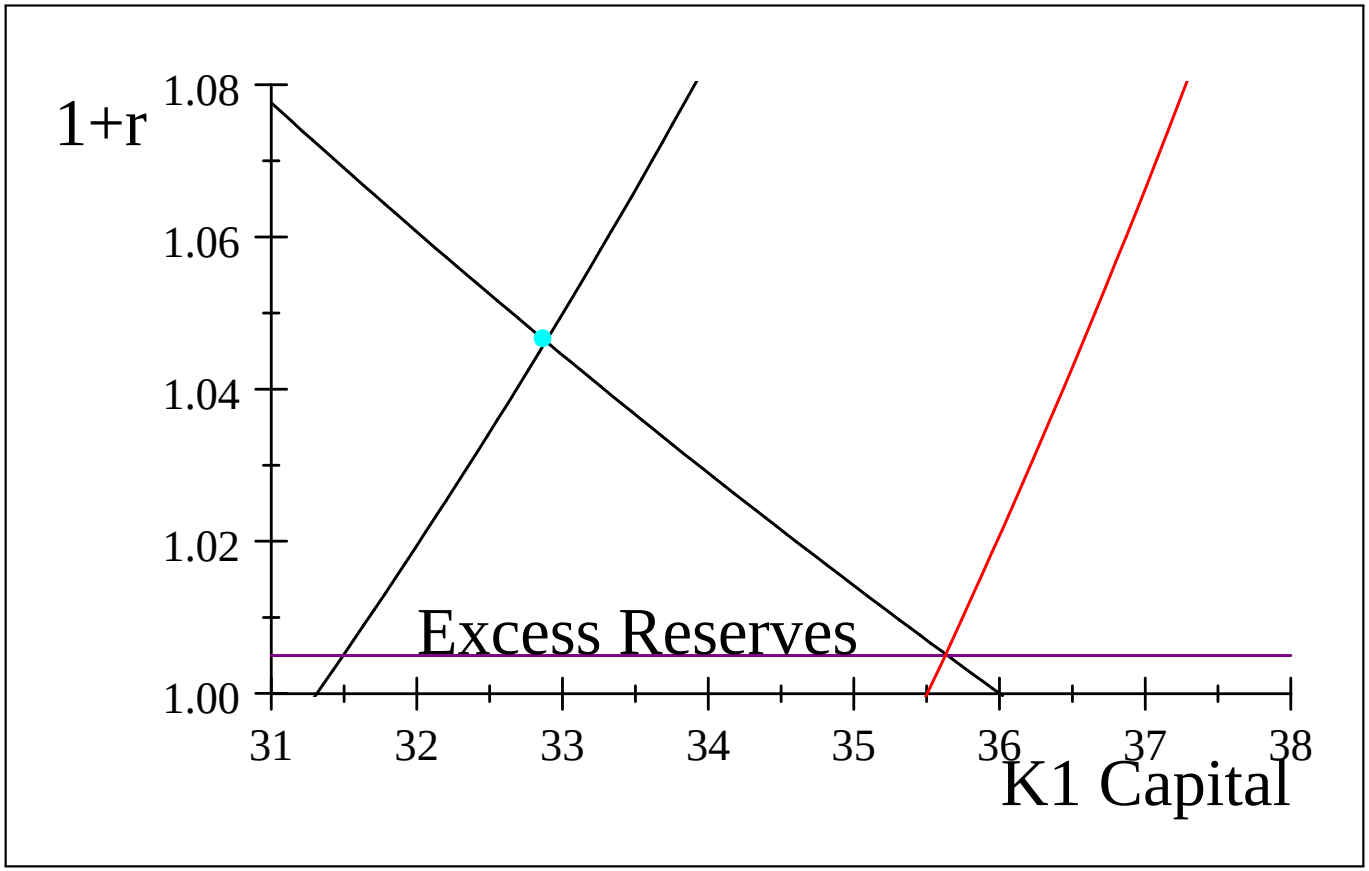


Figure: Fed's Shift out of Supply of Capital through the Open Market Purchases of US Treasury or Treasury backed Securities: Creating the Bank System's Excess Reserves .

Anatomy of a Crisis: Capital Tax Wedge on Priv Invest.

High r for Investment, Low r for Savings: Dead Weight Triangle Loss of Welfare

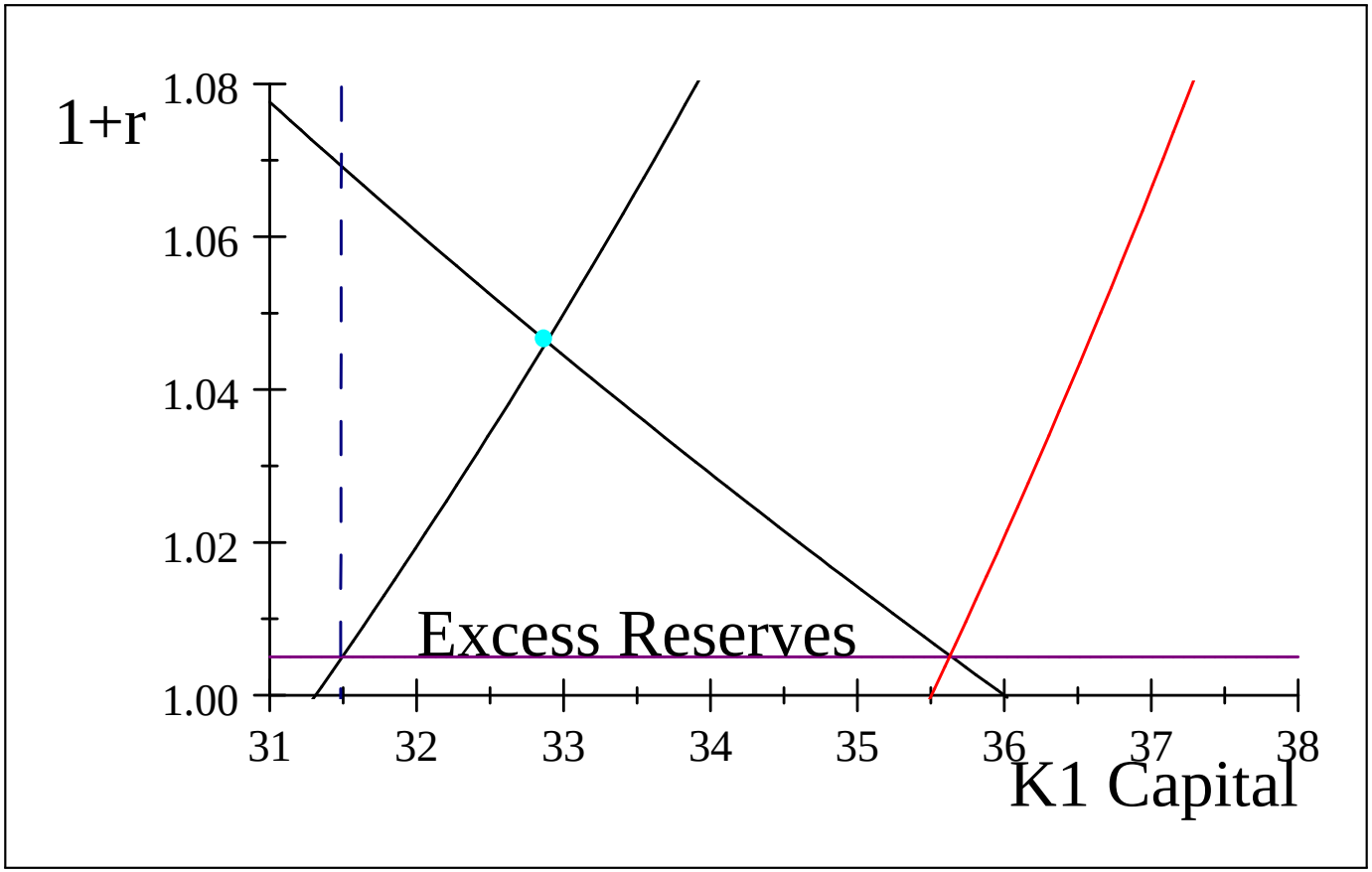


Figure: "Deadweight Loss Triangle"

Anatomy of a Crisis: Wedge in Gen Equil CCAPM: "Seeking Yield"

Brown Indiff Curve CUTS Prod Funct at Low Diversification Level

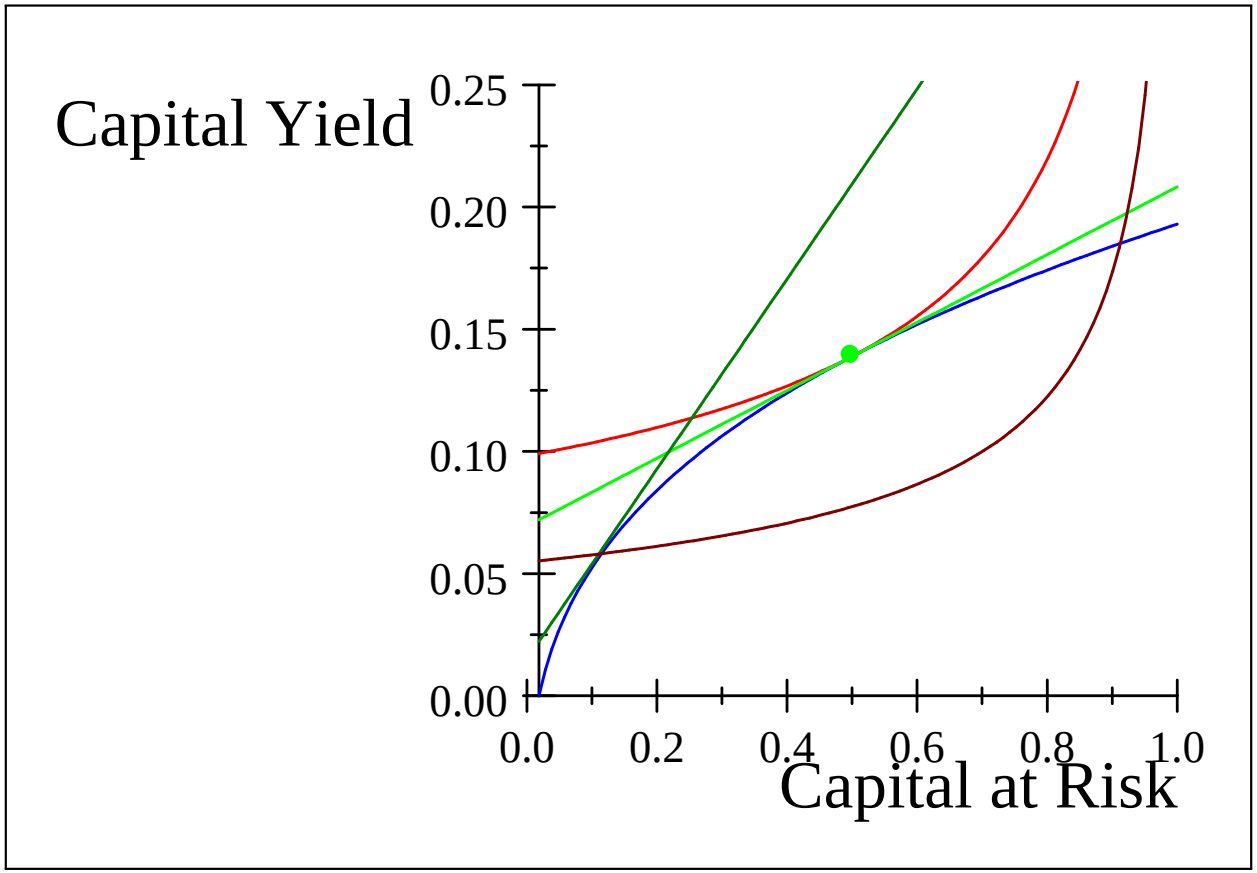
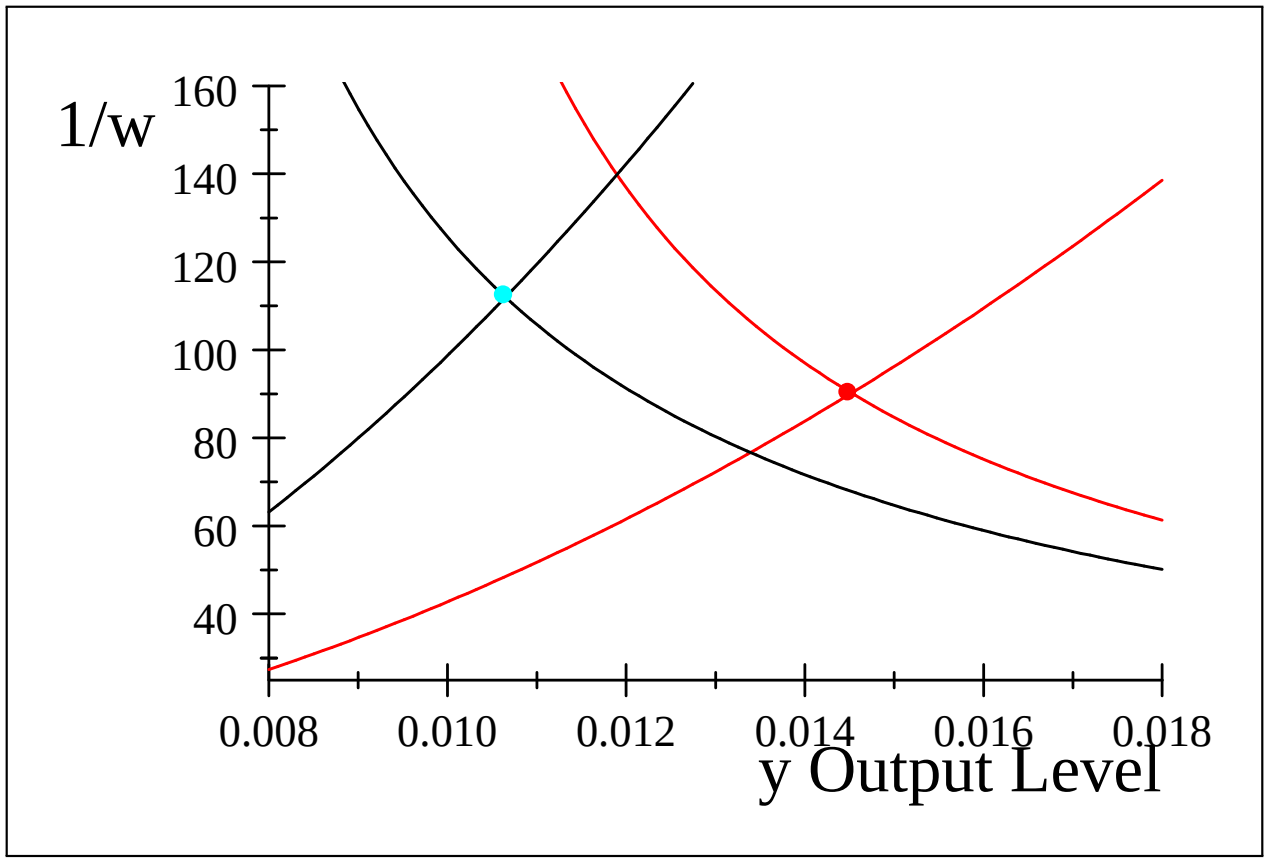


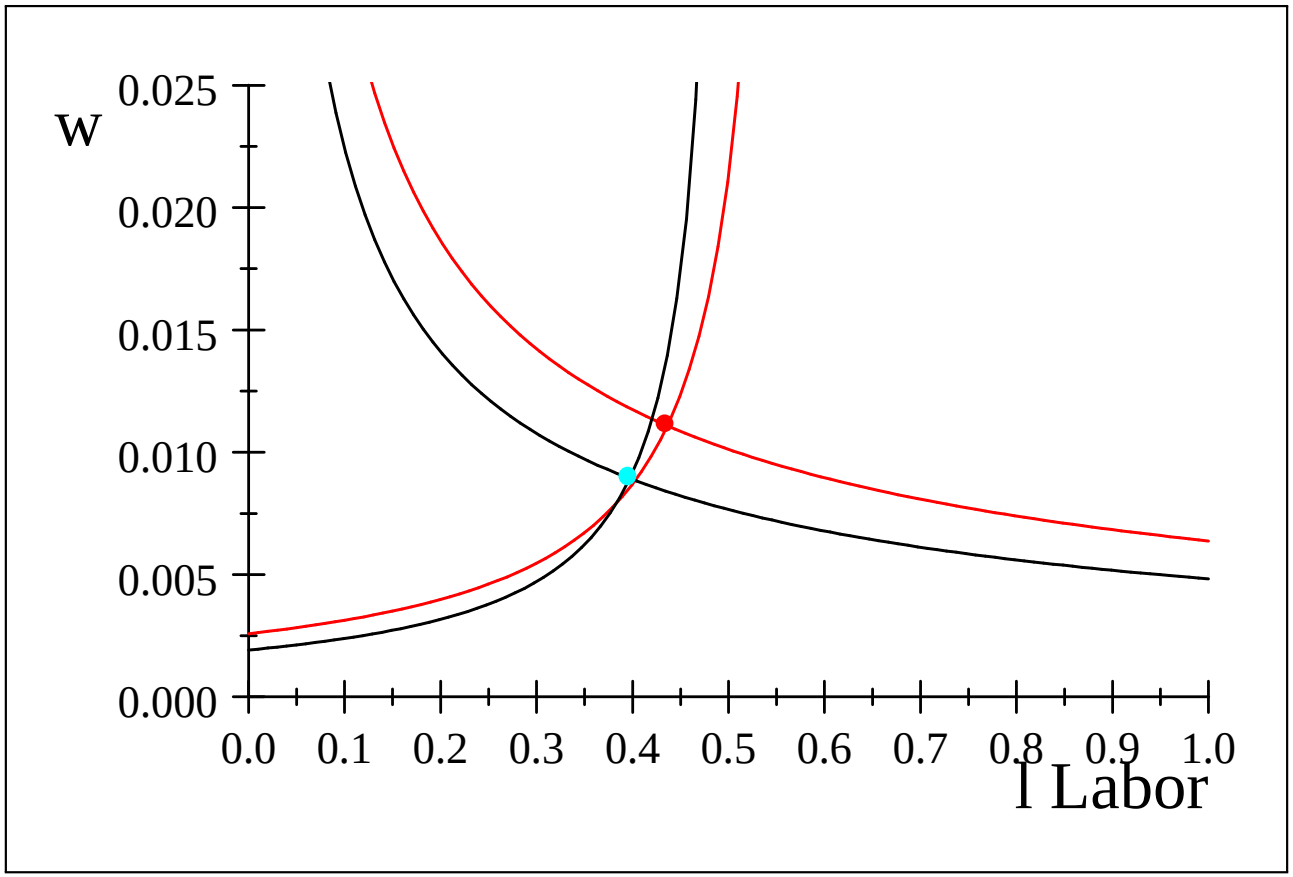
Figure: Optimal Portfolio Diversification between Market Portfolio (Tangency) and "Risk-free" Government Debt.

Anatomy of a Crisis: AS & AD Shift Back



AS – *AD* Bank Crisis fall in Bank Producitivity and Capital Decrease

Anatomy of a Crisis: Labor Demand & Supply Shift Back



Lower Employment and Wage Rate during Bank Crisis fall in Bank Producitivity and Capital Decrease

Policy Crisis Analysis: US Python's Digestion of Prickly Problem

Porcupine of Excess-Reserves Eaten?: Prickly Future Inflation

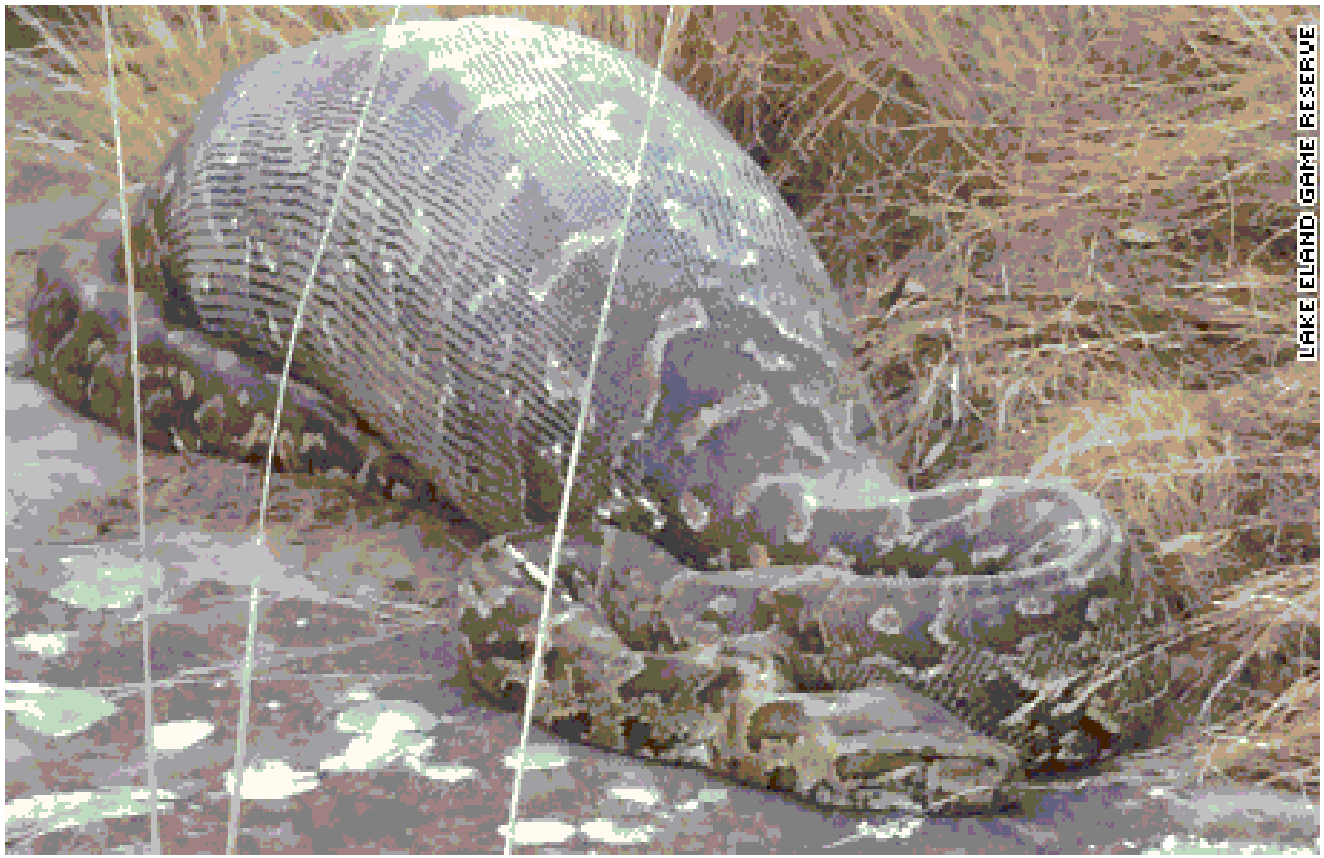


Figure: US Economy's Python