A New Monetary and Fiscal Framework for Economic Stability

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The Current Situation

- The Great Recession ended in June of 2009
- Unemployment has remained at 9% for the past 23 months
- The Fed has no plans to extend Quantitative Easing
- A second large fiscal expansion is unlikely
- What can we do to reduce unemployment?

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The Plan of My Talk

- I will present some evidence from the US on the connection between unemployment and wealth
- I will discuss a new way of explaining these data
- I will discuss the implications for economic policy
The Bottom Line

- Use traditional monetary policy (e.g. a Taylor Rule to control inflation)
  - This involves varying the interest rate by expanding or contracting the monetary base

- Use a new policy of stock-market targeting to control unemployment
  - This would involve buying and selling assets by varying the composition of the monetary base
Wealth

Two Sources of US Wealth

Shaded areas are recessions

US wealth is:

2/5 housing

3/5 factories and machines

The Real Value of the Case-Shiller Home Price Index

The Real Value of the S&P 500

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The Stock Market During the Great Depression

Unemployment and the Stock Market During the Great Depression

Shaded areas are recessions

The S&P 500 Measured in Wage Units

Unemployment Rate

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Wealth During the Great Depression

Unemployment and Wealth During the Great Depression

Shaded areas are recessions

The Real Value of Wealth

Unemployment Rate

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The Stock Market During the Great Recession

Unemployment and the Stock Market During the Great Recession

Shaded areas are recessions

The S&P 500 Measured in Wage Units
Unemployment Rate

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Housing Wealth During the Great Recession

Unemployment and Housing Wealth During the Great Recession

- The Real Value of the Case-Shiller Home Price Index
- Unemployment Rate

Shaded areas are recessions.

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Post-War Unemployment and the Stock Market

Unemployment and the Stock Market

The Unemployment Rate (transformed)
The Log Ratio of the S&P to GDP

Shaded areas are recessions

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There is a Stable Relationship Between these Two Variables

<table>
<thead>
<tr>
<th></th>
<th>First sample 1946q1--1979q3</th>
<th>Second sample 1980q1--2011q1</th>
<th>p is the log ratio of the S&amp;P 500 to GDP</th>
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<tr>
<td>dependent variable</td>
<td>p</td>
<td>u</td>
<td>p</td>
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<tr>
<td>p(-1)</td>
<td>1.34</td>
<td>-0.3</td>
<td>1.34</td>
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<tr>
<td>(0.08)</td>
<td>(0.05)</td>
<td>(0.09)</td>
<td>(0.12)</td>
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<tr>
<td>p(-2)</td>
<td>-0.34</td>
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<td>(0.08)</td>
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<tr>
<td>u(-1)</td>
<td>-0.02</td>
<td>1.6</td>
<td>0.14</td>
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<tr>
<td>(0.1)</td>
<td>(0.06)</td>
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<td>u(-2)</td>
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<td>c</td>
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<td>0.16</td>
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<td>(0.05)</td>
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</tbody>
</table>

u is the transformed unemployment rate
Characterizing these Data

- \( u \) and \( p \) both have a unit root
- They are cointegrated
- There is some evidence of non-linearity
- There is also evidence that volatility matters
- I will ignore both of these aspects in this talk
The Cointegrating Relationship

To reduce the steady state unemployment rate by 1%: The ratio of the stock market to GDP must increase by a factor of 28.

\[ u = 8 - 28p \]
Back to Basics

- Is the economy self-correcting?
  - Yes
    - Classical economics
    - New-Keynesian economics
  - No
    - Keynes of the General Theory
    - Farmer’s interpretation of Keynes
A Simple Model

- Representative agent
- Logarithmic utility
- Cobb-Douglas technology
- One good
- Inelastic labor
- Non-reproducible capital
- Money as a unit of account
The Classical Model

\[ y = f(L) \quad \quad L = \bar{L} \]

\[ f'(L) = \frac{w}{p} \quad \quad p_k = \theta yp \]
Classical Economics 101

GDP (wage units) \( \frac{py}{w} \)

Labor first order condition

\[
\frac{py}{w} = (1 - \alpha) L
\]

Employment (% of the Labor Force)

Labor Supply

\[ L = \exp(a_t) \]

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The Keynesian Model

\[ C = a + bY \]

\[ Y = C + G \]

\[ L = \frac{1}{1 - \alpha} Y \]

\[ Y = \frac{py}{w} \]

C and Y are measured in wage units.
Keynesian Economics 101

\[ Y = \frac{1}{1 - \alpha} \]

\[ Y = \frac{1}{1 - \alpha} L \]

\[ Y = (a + G) + \frac{b}{1 - \alpha} L \]

GDP (wage units)

\[ Y = \frac{py}{w} \]
Questions for Keynesian Economics

- **Theory of Aggregate Demand**
  - Why don’t households optimize?
    - Keynesians: Credit constraints
    - Farmer: They do. Consumption depends on wealth.

- **Theory of Aggregate Supply**
  - Why doesn’t the labor market clear?
    - Keynesians: Prices are sticky
    - Farmer: Search externalities
The Farmerian Model

\[ y = f(L, \tilde{L}) \quad L = \tilde{L} \]

\[ f_1(L, \tilde{L}) = \frac{w}{p} \quad p_k = \theta yp \]

\[ \frac{p_k}{w} \text{ is a random walk} \]
Farmerian Economics 101

GDP (wage units)

\[ Y = \frac{p_Y}{w} \]

Labor first order condition

\[ Y = \frac{1}{1-\alpha} \]

Aggregate Demand

\[ Y = \theta \frac{p_k}{w} \]

Employment (% of the Labor Force)

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Two Layers

- How are real variables determined?
  - Aggregate demand and supply

- How are monetary variables determined?
  - Liquidity preference vs. loanable funds

- Do we need monetary economics to understand unemployment?
  - No
Ph.D. Keynesian Economics

GDP (wage units)

\[ Y = \frac{p_y}{w} \]

Price adjustment
Causes demand to shift

\[ Y = \frac{1}{1 - \alpha} L \]

Labor first order condition

Aggregate Demand

\[ Y = (a + G) + \frac{b}{1 - \alpha} L \]

Employment (% of the Labor Force)

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Ph.D. Farmerian Economics

\[ Y = \frac{1}{1 - \alpha} L \]

GDP (wage units)

\[ Y = \frac{py}{w} \]

Labor first order condition

Aggregate Demand

Employment (% of the Labor Force)

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A New Fiscal Policy for Economic Stability

- Define a broad value weighted stock market index
- Set up an exchange traded fund based on the index
- Buy an initial share in the fund -- $800b -- paid for with agency debt
- Announce a price path for the fund
How to Trade the Fund

- Set a target for the unemployment rate at (for example) 4%

- Let \( p \) be the ratio of the value of the index to GDP

- Announce an initial level, and a growth rate, for \( p \)

- Adjust \( p \) in response to excess unemployment above or below target
Isn’t this Inflationary?

- No. The new fiscal policy and current monetary policy can be run independently.

- If the Fed were to run the new policy:
  - The size of the monetary base would be adjusted to set the interest using, for example, a Taylor Rule.
  - The composition of the monetary base between T-bills and the index fund would be set in response to an unemployment target.
Wouldn’t this ignite a New Stock Market Bubble?

- No: To remedy the current situation of high unemployment we would need a big initial boost to the stock market.

- As employment picks up – the policy would choose a lower growth rate for the index, with the index converging back a value consistent with the long-run relationship between p and u.
Summary

- The economy is not self-stabilizing.
- Any inflation rate is consistent with any unemployment rate as a long-run steady-state equilibrium.
- It took a century or more to learn how to use monetary policy to stabilize inflation. We must now learn how to stabilize unemployment.