The Phillips Curve: Prices or Real Exchange Rates?

Annual Conference of the Chair Banque de France at PSE

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September 23, 2019

Contents

1 Summary

1.1 Main Results

Exchange Rate Regime	PC Slope	t-stat	Adj. R2	N
Fixed / Peg	-10.23**	-2.1	4.7%	64
Crawling Peg	-16.31***	-3.5	6.6%	155
Crawling Band	-17.04***	-7.5	15%	314
Floating	-5.99	-0.9	-0.3%	100

Exchange Rate Regime	PC Slope	t-stat	Adj. R2	N
Fixed / Peg	-17.14***	-3.4	13.8%	64
Crawling Peg	-15.58***	-5.4	15.1%	155
Crawling Band	-0.14	-0.1	-0.3%	314
Floating	14.01***	2.8	6.5%	100

2 1970s Stagflation

2.1 1970s stagflation: Theory ahead of Facts?

- Previous excerpt comes from Blanchard's *Macroeconomics* textbook.
- Alternative explanation: the exchange rate regime changed, so that all of a sudden:

$$\text{Real Exchange Rate growth} \neq \text{Inflation}.$$

- This explanation is more parsimonious, as Friedman and Phelps do not explain why expectations changed then (why people suddenly started having rational expectations). On the contrary, it is a fact that Nixon ended the Bretton Woods system in 1971.
- This is important more generally for Macroeconomics:
  - The triumph of Rational Expectations Macroeconomics largely came from that one example.
  - Stagflation was viewed a major blow to Keynesianism. It only was to sticky-price (Phillips curve) based Keynesianism. Nothing changed in the 1970s.

3 Discontinuity-Based Identification

3.1 Discontinuity-Based Identification

- According to Nakamura and Steinsson (2018), this is a very important source of identification in Macroeconomics.
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- These two events are **very important** for Keynesian Economics, as they are taken from "Focus" boxes in a leading mainstream undergraduate textbook. (Blanchard, *Macroeconomics*)
- These

3.2 1933-1939 Missing Deflation

Deflation in the Great Depression

After the collapse of the stock market in 1929, the U.S. economy plunged into an economic depression. As the first two columns of Table 1 show, the unemployment rate increased from 3.2% in 1929 to 24.9% in 1933, and output growth was strongly negative for four years in a row. From 1933 on, the economy recovered slowly, but by 1940, the unemployment rate was still a high 14.6%.

The Great Depression has many elements in common with the recent crisis. A large increase in asset prices before the crash—housing prices in the recent crisis, stock market prices in the Great Depression, and the amplification of the shock through the banking system. There are also important differences. As you can see by comparing the output growth and unemployment numbers in Table 1 to the numbers for the recent crisis in Chapter 1, the decrease in output and the increase in unemployment were much larger then than they have been in the recent crisis. In this box, we shall focus on just one aspect of the Great Depression: the evolution of the nominal and the real interest rates and the dangers of deflation.

As you can see in the third column of the table, monetary policy decreased the nominal rate, measured in the table by the one-year T-bill rate, although it did this slowly and did not quite go all the way to zero. The nominal rate decreased from 5.3% in 1929 to 2.6% in 1933. At the same time, as shown in the fourth column, the decline in output and the increase in unemployment led to a sharp decrease in inflation. Inflation, equal to zero 1929, turned negative in 1930, reaching −9.2% in 1931, and −10.8% in 1932. If we make the assumption that expected deflation was equal to actual deflation in each year, we can construct a series for the real rate. This is done in the last column of the table and gives a hint for why output continued to decline until 1933. The real rate reached 12.3% in 1931, 14.8% in 1932, and still a high 7.8% in 1933! It is no great surprise that, at those interest rates, both consumption and investment demand remained very low, and the depression worsened.

In 1933, the economy seemed to be in a deflation trap, with low activity leading to more deflation, a higher real interest rate, lower spending, and so on. Starting in 1934, however, deflation gave way to inflation, leading to a large decrease in the real interest rate, and the economy began to recover. Why, despite a high unemployment rate, the U.S. economy was able to avoid further deflation remains a hotly debated issue in economics. Some point to a change in monetary policy, a large increase in the money supply, leading to a change in inflation expectations. Others point to the policies of the New Deal, in particular the establishment of a minimum wage, thus limiting further wage decreases. Whatever the reason, this was the end of the deflation trap and the beginning of a long recovery.

For more on the Great Depression:
Lester Chandler, *America's Greatest Depression* (1970), gives the basic facts. So does the book by John A. Garraty, *The Great Depression* (1986).

Did Monetary Forces Cause the Great Depression? (1976), by Peter Temin, looks more specifically at the macroeconomic issues. So do the articles in a symposium on the Great Depression in the *Journal of Economic Perspectives*, Spring 1993.

For a look at the Great Depression in countries other than the United States, read Peter Temin's *Lessons from the Great Depression* (1989).

3.3 1970s Stagflation

- Theory ahead of facts?
- Story told in Principles books: for example, Mankiw.
- Also in Intermediate Macroeconomics textbooks.
- I show the example of what is told in Blanchard's Intermediate Macroeconomics textbooks, Mankiw's Principles textbooks.

3.4 1970s Stagflation

FOCUS

Theory ahead of Facts: Milton Friedman and Edmund Phelps

Economists are usually not good at predicting major changes before they happen, and most of their insights are derived *after* the fact. Here is an exception.

In the late 1960s—precisely as the original Phillips curve relation was working like a charm—two economists, Milton Friedman and Edmund Phelps, argued that the appearance of a trade-off between inflation and unemployment was an illusion.

Here are a few quotes from Milton Friedman about the Phillips curve:

> "Implicitly, Phillips wrote his article for a world in which everyone anticipated that nominal prices would be stable and in which this anticipation remained unshaken and immutable whatever happened to actual prices and wages. Suppose, by contrast, that everyone anticipates that prices will rise at a rate of more than 75% a year—as, for example, Brazilians did a few years ago. Then, wages must rise at that rate simply to keep real wages unchanged. An excess supply of labor [by this, Friedman means high unemployment] will be reflected in a less rapid rise in nominal wages than in anticipated prices, not in an absolute decline in wages."

He went on:

> "To state [my] conclusion differently, there is always a temporary trade-off between inflation and unemployment; there is no permanent trade-off. The temporary trade-off comes not from inflation per se, but from a rising rate of inflation."

He then tried to guess how much longer the apparent trade-off between inflation and unemployment would last in the United States:

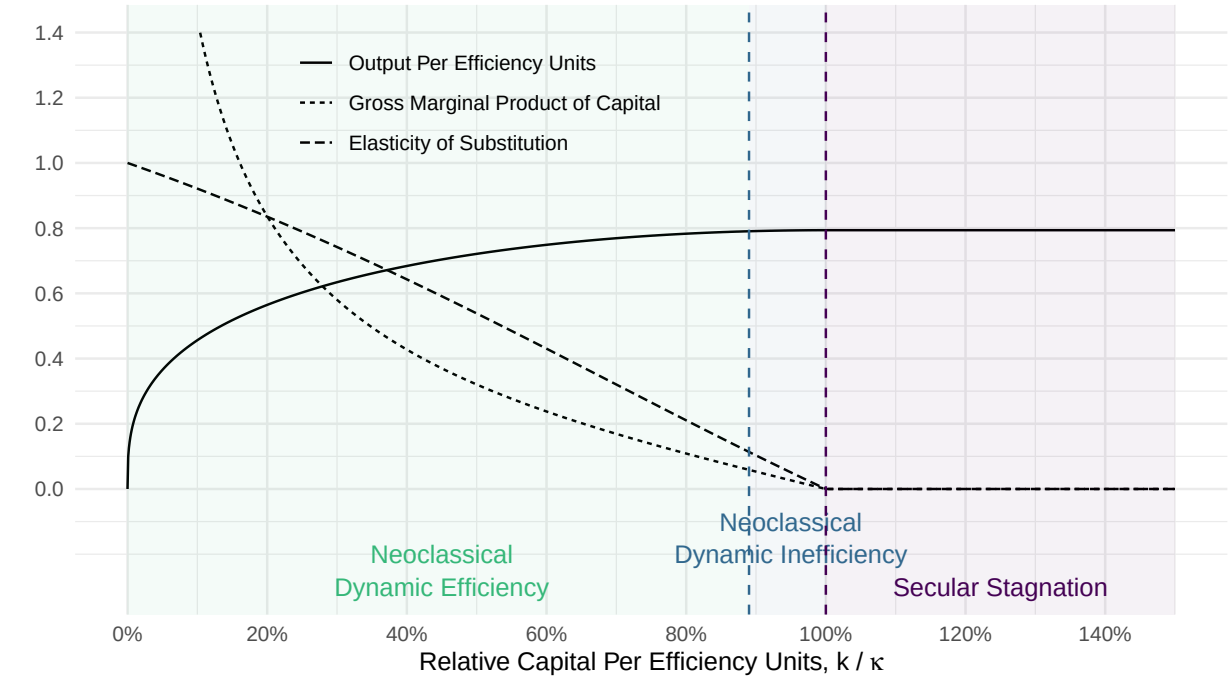
> "But how long, you will say, is 'temporary'?... I can at most venture a personal judgment, based on some examination of the historical evidence, that the initial effect of a higher and unanticipated rate of inflation lasts for something like two to five years; that this initial effect then begins to be reversed; and that a full adjustment to the new rate of inflation takes as long for employment as for interest rates, say, a couple of decades."

Friedman could not have been more right. A few years later, the original Phillips curve started to disappear, in exactly the way Friedman had predicted.

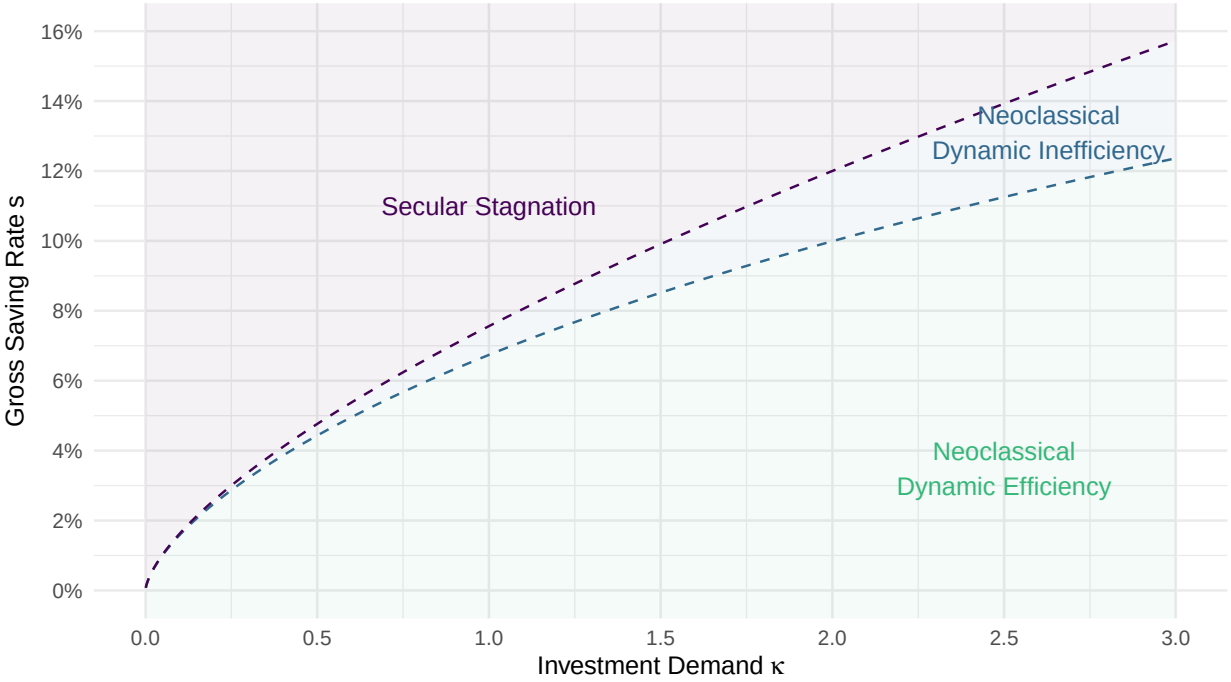
Source: Milton Friedman, "The Role of Monetary Policy," *American Economic Review* 1968 58(1): pp. 1–17. (The article by Phelps, "Money-Wage Dynamics and Labor-Market Equilibrium," *Journal of Political Economy* 1968 76(4–part 2): pp. 678–711, made many of the same points more formally.)

4 Alternative to sticky prices? (Geerolf (2019))

4.1 Production function



4.2 Neoclassical or Secular Stagnation?



5 Conclusions

5.1 Conclusions

- Robust relationship is between real exchange rates and unemployment.
- There never was a Phillips curve.

Geerolf, François. 2019. "A Theory of Demand Side Secular Stagnation." UCLA Working Paper. https://fgeerolf.com/hansen.pdf.

Nakamura, Emi, and Jón Steinsson. 2018. "Identification in Macroeconomics." *Journal of Economic Perspectives* 32 (3): 59–86. https://doi.org/10.1257/jep.32.3.59.