

Some Thoughts on “Do Central Banks Control the Price Level?”

Karl Whelan
Presentation at FMM Conference

School of Economics, University College Dublin

October 28, 2020

Do Central Banks Control the Price Level?

- An interesting question.
- For most of the past 40 years, the answer from most people would be “Yes ... of course”. And there are loads of examples of situations where macroeconomic policy has produced (and ended) high inflation.
- But in recent years, central banks have failed to reach their inflation targets despite new “unconventional” monetary policies.
- Have central banks got the ammunition to get inflation back to their desired levels?
- My (two handed ...) answer:
 - 1 Yes but current conventions (and current conditions) constrain them from taking the necessary actions.
 - 2 But this doesn't matter because we can use fiscal policy instead.

Roadmap for the Talk

- 1 Micro price theory versus macro price theory
- 2 Why central banks?
 - ▶ Monetarism
 - ▶ The Phillips curve
 - ▶ Central bank independence
- 3 The current situation
 - ▶ Low equilibrium real interest rates and unconventional policies.
 - ▶ Helicopter drops?
 - ▶ Fiscal policy options

Micro Pricing Evidence versus Macro Confusion

- The price level is just an aggregation of loads of individual prices.
- Empirical microeconomics is an extremely successful discipline and is very good at explaining prices.
- Study after study confirms that prices are a function of
 - 1 Demand
 - 2 Supply
 - 3 Market structure
- Changing market structures may play some role in determining the aggregate price level but for the economy of the whole, it is reasonable to assert that the dominant factor driving prices is the demand for goods and services and the capacity to supply them.
- Macroeconomic policy can clearly influence aggregate demand and through this, policy-makers can control the price level.
- Raises an important question: Why are central banks and the macroeconomics profession so confused about inflation being so low for so long?

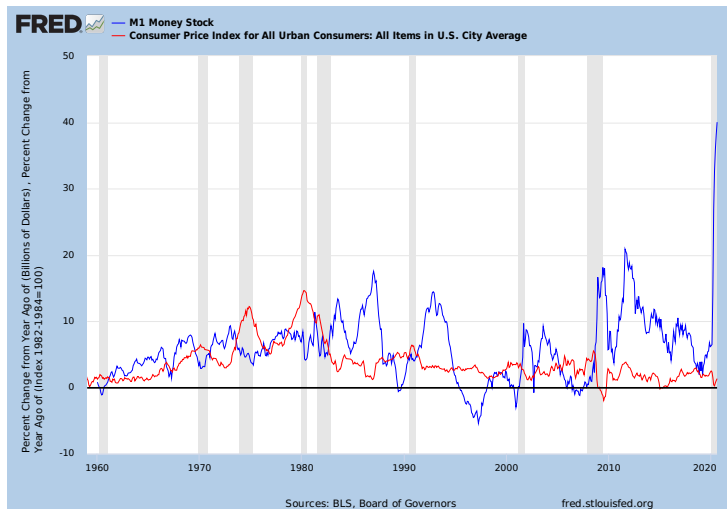
Why Central Banks?

- So why is it central banks rather than the fiscal authorities (or both) that are now charged with controlling the price level?
- I'll give a very short summary of my interpretation of the modern history of this idea.
- In particular, I will highlight two key contributions from Milton Friedman.

Monetarism

- Friedman (1970): *“Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output.”*
- Why? The price level tells us “the value of money”. Increases in the supply of money relative to demand will reduce its value and raise the price.
- Friedman also stressed a form “hot potato” balance sheet adjustment mechanism: *“An increased rate of monetary growth, whether produced through open-market operations or in other ways, raises the amount of cash that people and businesses have relative to other assets. The holders of the now excess cash will try to adjust their portfolios by buying other assets. But one man’s spending is another man’s receipts. All the people together cannot change the amount. of cash all hold—only the monetary authorities can do that. However, as people attempt to change their cash balances, the effect spreads from one asset to another. This tends to raise the prices of assets and to reduce interest rates, which encourages spending”*
- Hugely influential ideas but history has not been kind to them. Cross-country relationships between money growth and inflation are weak and within-country time series relationships are basically non-existent, particularly post-QE.

US Inflation and M1 Growth



The Expectations-Augmented Phillips Curve

- Monetarism may have waned in influence but another Friedman idea, the expectations-augmented Phillips curve, has dominated thinking in macroeconomic policy circles for the past 40 years.
- Friedman argued for an expectations-augmented Phillips curve of the form

$$\pi_t = \pi_t^e - \gamma(U_t - U^*)$$

where π_t^e was the public's inflation expectations and U^* was the “natural” rate of unemployment.

- Friedman pointed out if policy-makers tried to exploit an apparent Phillips curve tradeoff, then the public would get used to high inflation and come to expect it: π_t^e would drift up and the tradeoff between inflation and output would worsen.
- He argued that you couldn't fool the public ($\pi_t^e \approx \pi_t$) so you can't keep unemployment away from its “natural rate” $U_t \approx U^*$.
- Instead, best to focus on anchoring inflation expectations at a low value, thus delivering a low average rate of inflation.

The Failure of the Original Phillips Curve

US Inflation and Unemployment, 1955-2019

Inflation is the Four-Quarter Percentage Change in GDP Deflator



The Adaptive-Expectations Phillips Curve

- What determines inflation expectations?
- Friedman argued they are determined adaptively. For example, this could mean $\pi_t^e = \pi_{t-1}$, so the expectations-augmented Phillips curve becomes

$$\pi_t = \pi_{t-1} - \gamma(U_t - U^*)$$

- This relates the **change** in inflation to the gap between unemployment and its natural rate. When unemployment is below its natural rate, inflation will be increasing; when it is above it, it will be decreasing.
- This model actually fitted the data pretty well for a long time.

The Success of the Adaptive Expectations Phillips Curve

Changes in US Inflation and Unemployment, 1955-2009

Change in Inflation is Four-Quarter Inflation Relative to a Year Earlier



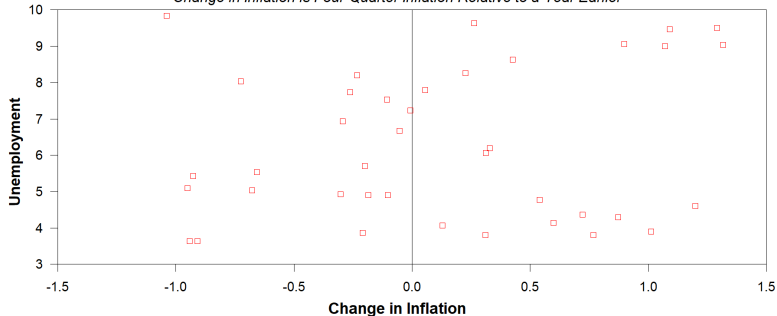
Implications for Macroeconomic Policy Design

- ➊ **Outsourcing of Macroeconomic Stabilisation:** Politicians under electoral pressure may try to exploit the short-term trade-off between inflation and unemployment, so it is better to outsource macroeconomic stabilisation to central banks.
- ➋ **Central Bank Independence:** Ensure that central banks are independent of political control so they focus on the long-term target of price stability.
- ➌ **Inflation Targeting:** Increase the credibility of central banks and anchor inflation expectations by giving CBs explicit low inflation targets.
- ➍ **De-Emphasising Fiscal Policies:** During this era, the use of fiscal policy as an active stabilisation tool (apart from automatic stabilisers) was generally discouraged. Fiscal policy was considered slow, cumbersome and dangerous.
- ➎ **Monetary Financing:** Important to keep monetary and fiscal policies separate and thus outlaw the use of central bank money creation powers to finance government spending.

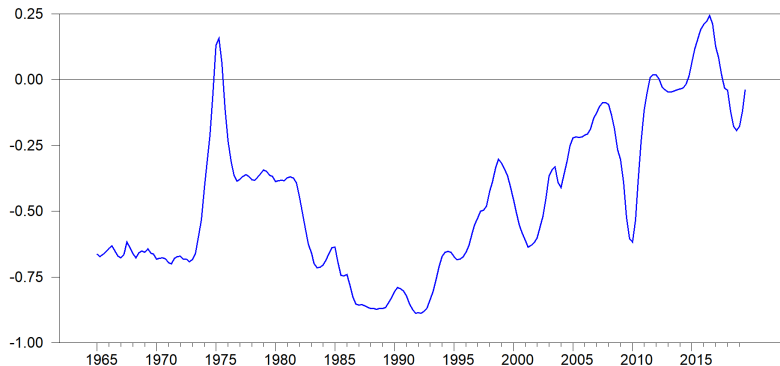
A Bad Decade for the Adaptive Expectations Phillips Curve

Changes in US Inflation and Unemployment, 2010-2019

Change in Inflation is Four-Quarter Inflation Relative to a Year Earlier



Rolling 10-Year Correlations Between Unemployment and the Change in Inflation



Explanations for the Failure of the Phillips Curve

- Macroeconomists tend to point to two “*will-o-the-wisps*”:
- ① **Anchored Inflation Expectations:** Some researchers stress that central banks have become almost “too successful” in anchoring the public’s inflation expectations at a low level.
- ② **Falling Natural Rate of Unemployment:** On a number of occasions in the past few decades when inflation fails to take off despite low unemployment, central bankers tend to point to a falling natural rate. But there is usually little in the way of structural change in the labour market to justify this.
- Are we so sure the real reason isn’t that the model is just too simplistic and has persistently failed to capture the true balance between demand and supply in the economy?
- Whatever the reason, the Fed has now effectively abandoned the Phillips curve (and the Taylor rule) as a way of setting policy.

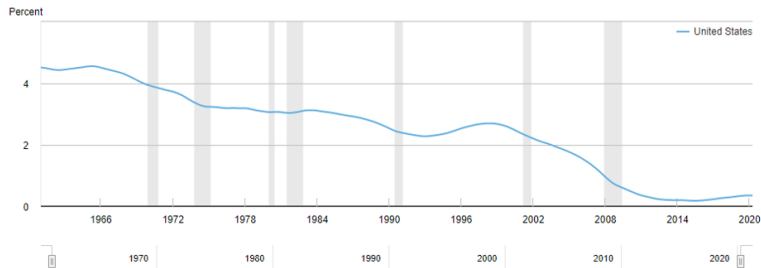
A Falling Equilibrium Real Interest Rate?

- The failure of the Phillips curve isn't the only thing perplexing modern central bankers.
- They are also surprised that the huge monetary stimulus they have provided (zero interest rates, forward guidance, asset purchases) have failed to stimulate the economy enough to raise inflation.
- Enter another *will-o-the-wisp*. Macroeconomists now agree that equilibrium real interest rates are lower than the used to be with various explanations offered (demographics, weak productivity growth).
- See the current estimates of the equilibrium real rates from the New York Fed's implementation of the Laubach-Williams model.
- The FOMC agrees: In January 2012, their median estimate of the long-run real federal funds rate was 2.25 percent. In June 2020, this estimate was 0.4 percent.

Laubach-Williams Model Estimate of Equilibrium Real Rate

The Natural Rate of Interest, or R-star

From Jan 1, 1961 To Apr 1, 2020



Central Banks Out of Ammunition?

These developments seem to have convinced central bankers that they are largely out of ammunition:

- Some are willing to introduce negative rates but are only willing to go so far and others (Fed, Bank of England) are unwilling to go negative.
- Asset purchase programmes reduce bond yields and stimulate asset prices but it takes enormous balance sheet expansion to get modest impacts. Bernanke joked that “QE works in practice but not in theory.” Well the theory is only slightly wrong and the practical effects are small.
- Forward guidance is hardly mattering much now: The public surely knows policy rates will be low for a long time without needing central banks to confirm it.
- “Open mouth operations” to talk up inflation expectations don’t seem very effective. Why would we believe the Fed is going to achieve a 2 percent average inflation rate when it hasn’t been able to get inflation up to 2 percent and isn’t promising new policies?

But Policy Options **Are** Available

- Central banks could clearly create sufficient demand to raise inflation if they were to provide sustained “**helicopter drops**” of money to the public.
- But these drops would likely have to be organised via co-operation with government, so would look too much like “monetary financing.” It is this convention, rather than actual limits on policy, that prevents this.
- So central banks can control the price level but have placed restrictions on themselves that amount to a form of “learned helplessness.”
- But there are other options for macroeconomic policy: With low interest rates on long-term sovereign bonds likely to be in place for a long-time, the capacity of governments to run very large debts is much higher than in the past. Sustained fiscal stimulus would raise inflation.
- This point applies even to those countries who don't control their own currency issuance such as those in the Euro Area, many of whom are now issuing at negative rates. However, the Euro Area will need to scrap its nonsensical fiscal rules.