In the long run we are all unemployed?\(^\d\)

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**Abstract**

In this paper a brief history of the Phillips curve is sketched. Empirical evidence from France, Germany, the United Kingdom and the United States during the latter half of the 20th century in support of a positive long-run relationship between price inflation and unemployment is presented. In order to reconcile the predominant theoretical view, which holds that inflation is neutral in the long run, with the observed data, two arguments are outlined, both of which build on unintended consequences of monetary expansion: (1) redistributional effects on incomes and wealth, and (2) business cycle fluctuations. The analysis hinges on further political interventions in response to these consequences, which tend to increase unemployment as they render labor markets less flexible. In this sense the relationship between price inflation and unemployment over the past 60 years can in part be interpreted as the outcome of an interventionist spiral.

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1. Introduction

The term “neutrality of money”\(^1\) captures the idea that, no matter how large the stock of money, the economy can work equally well. In a somewhat cruder version it holds that changes in the supply of money, on an aggregated macroeconomic level, only affect nominal variables such as prices, but not real variables like output and unemployment. This latter interpretation would of course imply that central bank policies – more precisely, the expansion and contraction of the money supply – are also neutral with respect to real economic variables. However, upon closer inspection one can say that it is generally accepted among economists today that there is at best a long-run dichotomy between real and nominal economy, and that monetary policy can indeed affect real variables, at least in the short run.

A case in point is the much discussed relationship between price inflation and unemployment, known as the Phillips curve. We will present a brief sketch of its history in Section 2 of this paper.

Over several decades, the voluminous literature on the Phillips curve has come to the consensus view that policy induced price inflation can help stabilize output and employment over the short run, but is largely neutral in the long run. This view has, probably more than any other idea in economics, shaped monetary policy from the 1960s to the present. For this reason alone it would be important to reconsider its validity.

Yet, as shown in Section 3, there is also strong empirical evidence for the importance of rethinking long-run neutrality of inflation. We analyze data on price inflation and unemployment from France, Germany, the United Kingdom and the United States over the second half of the 20th century. The data show positive correlations between present price inflation and future unemployment, which goes completely against the predominant theoretical view of an inverse short-run link and long-run neutrality. The purpose of this paper is to reconcile the economic theory behind the Phillips curve with the experience of recent history.

There are strands of economic thought that have been neglected in the literature on the Phillips curve so far and can potentially make a valuable contribution to improve our understanding of the underlying dynamics. In the main part of the paper, Section 4, some of the elements of non-neutral monetary theory are integrated into the theoretical considerations on the relationship between price inflation and unemployment. They can explain a positive link between the two variables with a considerable time lag.

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\(^1\) According to von Hayek (2008, p. 301) it was neoclassical economist Knut Wicksell who introduced the phrase “neutral money” into monetary theory. More precisely, Wicksell wrote about neutral interest rates, which are given when the money rate of interest (the actual interest rates paid on the financial markets) coincides with the natural rate of interest (Wicksell, 1962, ch. 8). For a more detailed investigation into the origins of terms, see Lutz (1969) and Patinkin and Steiger (1989).

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An important aspect of the causal analysis presented in Section 4 is the distinction between price inflation, defined as an increase in the consumer price index, and inflation in the traditional sense of the word, defined as an expansion of money and credit. Inflation in the traditional sense is considered to be a causal factor for both price inflation and unemployment.

Thus, the proposed explanation does not attempt to draw a direct causal relationship between price inflation and unemployment, but rather an indirect one that hinges on public opinion and political responses to unintended consequences of monetary expansion. These consequences include business cycle fluctuations, and redistributional effects on incomes and wealth that increase inequality. Both economic recessions and rising inequality are factors that have induced political responses that tend to increase the level of unemployment.

As long-run unemployment is mostly determined by the institutional environment, which to a large extent is shaped by politics, long-run inflation-unemployment dynamics can only be understood properly if we incorporate the extra layer of political interventions into the analysis. In Section 5, we conclude that the relationship between price inflation and unemployment from the 1960s to the present can in part be interpreted as the outcome of an interventionist spiral.

2. A brief history of the Phillips curve

In 1926, economist Irving Fisher published a brief theoretical and empirical investigation of the link between inflation and unemployment, and went even so far as to postulate a causal relationship. Fisher ([1926] 1973, p. 502) analyzed data from the United States at the beginning of the 20th century and concluded:

But as the economic analysis already cited certainly indicates a causal relationship between inflation and employment or deflation and unemployment, it seems reasonable to conclude that what the charts show is largely, if not mostly, a genuine and straightforward causal relationship; that the ups and downs of employment are the effects, in large measure, of the rises and falls of prices, due in turn to the inflation and deflation of money and credit.

If this conclusion be sound, we have in our power, as a means of substantially preventing unemployment, the stabilization of the purchasing power of the dollar, pound, franc, lira, mark, crown, and any other monetary units.

Notice that Fisher here still uses the terms inflation and deflation in the traditional sense, meaning expansion and contraction of the supply of money and credit, respectively (von Mises, 1990a, p. 115). Instead of mere increases or decreases of some price index, which would be the commonly accepted definition today (Salerno, 2010, p. 424). Although it might be considered a useful shortcut, as price inflation has become the primary monetary policy target and monetary inflation, if only large enough, ultimately leads to price inflation, this shift in the definition amounts to a conflation of the aim sought and the means applied. Fisher proposed inflation and deflation of the money supply as the means to counterbalance decreases or increases in the price level, and hence to attain a stable purchasing power. In order to avoid semantic confusion, throughout the paper rises and falls in the price level will be referred to as price inflation and price deflation, respectively.

Fisher’s finding seems to be of utmost importance. John Maynard Keynes probably had some relationship of this kind in mind when he formulated his policy recommendations in response to the Great Depression in the 1930s, although he always resolutely emphasized the complementary role of fiscal policy in order to stabilize and improve macroeconomic conditions. Yet, Fisher’s article remained widely unrecognized, and the relationship was not named after him, but more than 30 years later after statistician Alban W. Phillips.

In 1958, Alban W. Phillips of the London School of Economics published an empirical study on the relationship between the rate at which nominal wages change and the rate of unemployment for the United Kingdom from 1861 to 1957. The statistical evidence collected in his study suggests an inverse relationship, that is, unemployment tended to be relatively low during periods in which wages rose quickly. Phillips did not draw any political conclusions from his finding and merely hinted at an unemployment–price inflation relationship. By subtracting the long-term productivity growth from the rate of change of nominal wages, which is assumed to correspond to the rate of price inflation, Phillips (1958, p. 299) concluded that for “a stable level of product prices the associated level of unemployment would be a little under 2 ½ per cent.”

Two years later Samuelson and Solow replaced the rate of change of money wages by the rate of price inflation with lasting impact (Samuelson & Solow, 1960). They popularized the empirical finding and explored its political implications. Assuming a causal relationship, just like Fisher did back in the 1920s, they argued that expansionary monetary policy would lead to lower unemployment rates. With their contribution the idea and the term of the Phillips curve was born and encouraged a lively intellectual debate. Gordon (2011, p. 13) describes its immense influence as follows:

So widely read and discussed was the Samuelson–Solow article that the term “PC” [Phillips curve] entered the language of macroeconomics almost immediately and soon became a lynchpin of the large-scale macroeconomicometric models which were the focus of research activity in the 1960s.

Samuelson and Solow investigated data for the U.S. from the turn of the century to the 1950s and found that the relationship did not hold during the two world wars and the Great Depression in the 1930s. During the three remaining periods, namely, before World War I, from the end of World War I until the end of the 1920s, and after World War II, they identified an empirical relationship between price inflation and unemployment that very much resembles Phillips’ results. In addition, they point to the possibility of a shift of the Phillips curve:

What is most interesting is the strong suggestion that the relation, such as it is, has shifted upward slightly but noticeably in the forties and fifties. On the one hand, the first decade of the century and the twenties seem to fit the same pattern, [...] [W]age increases equal to the productivity increase of 2 to 3 per cent per year is the normal pattern at about 3 per cent unemployment. This is not so terribly different from Phillips’ results for the U.K. [...] On the other hand, from 1946 to the present [1960] [...] it would take more like 8 per cent unemployment to keep money wages from rising. And they would rise at 2 to 3 per cent per year with 5 or 6 per cent of the labor force unemployed. (Samuelson & Solow, 1960, p. 189)

The authors assume a long-run productivity growth of 2–3 per cent. Hence, under the further assumption that the rate of price inflation corresponds to the rate of change of nominal wages minus productivity growth, we would have stable prices if wages rise at

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2 See for example Keynes (1933, 1936), in particular chapter 15 entitled The psychological and business incentives to liquidity. In the Keynesian framework monetary expansion can increase employment and output through investments stimulated by lower interest rates and increased aggregate demand. Increased demand, according to his rationale, will push production and the use of resources, including labor, to its full societal potential.
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