

Finding Phillips

Economists' models of inflation are letting them down

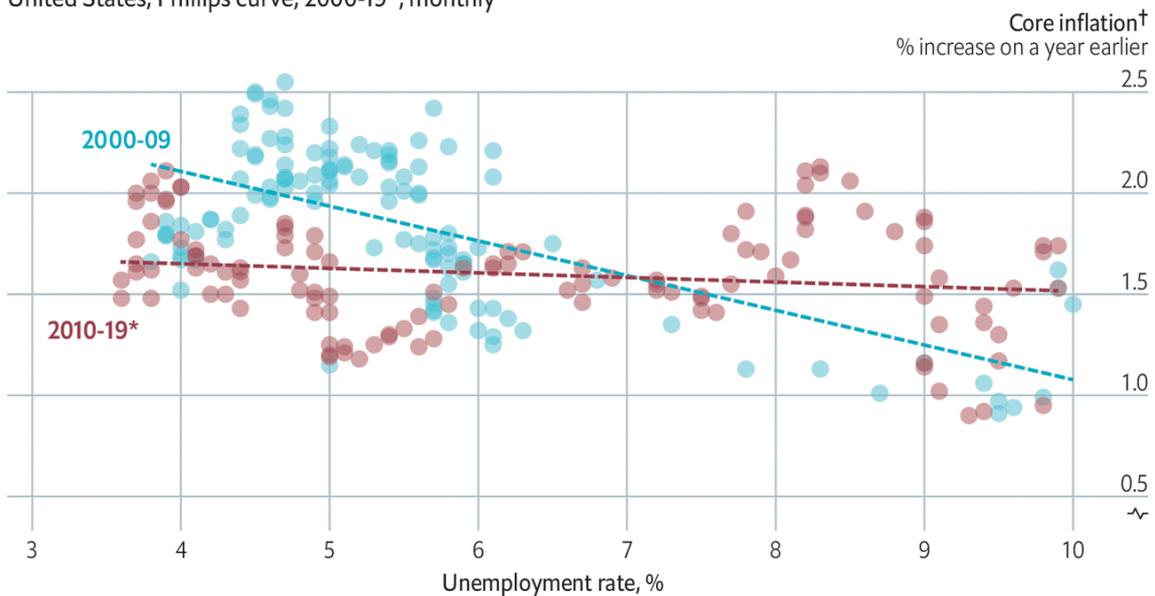
Why has the “Phillips curve” failed at both ends?

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Flattening up

United States, Phillips curve, 2000-19*, monthly



Source: Datastream from Refinitiv
The Economist

*To August †Personal consumption expenditures, excl. food and energy

One of the economic models named after William Phillips is physical. The Phillips hydraulic computer uses flows of water to simulate flows of money in the economy; its success helped earn Phillips a job at the London School of Economics in 1950. Today economists can bring the full power of modern computing to their calculations. But they still depend utterly on another Phillips eponym: the curve tracing the relationship between inflation and unemployment (see chart). It comes in various flavours, but the basics underpin central banking. If unemployment falls too low, inflation will rise; too high, and it will fall.

Over the past decade the “Phillips curve” has failed at both ends. First came the so-called “missing deflation”. The financial crisis sent rich-world unemployment soaring to 8.5% by the start of 2010. Both theory and experience suggested that this should have caused a prolonged slump in inflation. But it did not. The IMF wrote of “the dog that didn’t bark”; some economists argued that unemployment had become structurally higher (meaning it would not affect prices). It was only once oil prices collapsed in late 2014 that the rich world faced serious disinflationary pressure, with the euro zone falling temporarily into deflation in 2015 and 2016.

By then, however, labour markets were recovering. Unemployment fell and then fell some more. Today the proportion of 15- to 64-year-olds with a job is at a record high in two-

thirds of OECD countries. Pockets of continued high joblessness remain in places such as Spain and Italy but, for the most part, missing deflation has become missing inflation. The Phillips curve you can still find in the data is extraordinarily flat. Economists at Goldman Sachs estimate that a one-percentage-point fall in American unemployment, for example, is associated with a 0.1-0.2-percentage-point rise in inflation—so small as to be difficult to perceive. Some economists argue that it is increasingly viable to forecast inflation without any regard to unemployment at all.

There are three potential explanations for a flat Phillips curve, none of them entirely satisfactory. The first is that it is a statistical artefact. In a recent working paper, Michael McLeay and Silvana Tenreyro of the Bank of England argue that the relationship between inflation and unemployment is subject to “Goodhart’s law”: that observed statistical relationships collapse once they are exploited by policymakers (not to be confused with the “Lucas critique”, which says that some relationships cannot be exploited at all). Suppose a central bank cares about both unemployment and inflation. In a downturn it will ignore higher inflation if it needs to get unemployment back down. Yet when unemployment is low, central banks will react hawkishly to any sign of fast price rises. Over time those preferences will create an artificial positive correlation between inflation and unemployment, offsetting the underlying causal relationship running in the other direction.

This argument has some traction. In 2011, for example, a spike in commodities prices pushed inflation up but most central banks ignored it to focus on healing their scarred economies. Later in the decade, amid low unemployment rates, monetary policymakers became more attuned to the risk of overheating. It would be odd, however, to explain low inflation by appealing solely to deliberate choices on the part of central banks, when they themselves profess to be confused by inflation’s quiescence. Moreover, the argument does not suppose that unemployment can fall for ever without inflation surging. Even if a flat Phillips curve over time is no surprise statistically, today’s particular combination of low inflation and ultra-low unemployment still can be.

What to expect when you’re expecting

The second potential explanation concerns inflation expectations. The public’s ability to anticipate an overheating economy, or at least to notice prices rising faster and adjust their expectations accordingly, is supposed to be a driving force behind the Phillips curve. Firms should raise prices and workers should demand higher wages as soon as they see a boom coming.

Such expectations seem to be getting stickier. Canada, New Zealand and Britain have barely reacted to short-term changes in inflation since 2000, according to the World Bank. Benoît Cœuré, a rate-setter at the ECB, has studied the sensitivity of households’ fears that inflation might spiral out of control to perceptions of current price rises. Before the euro the two were closely linked; in the era of the single currency the link has been severed. In America, too, inflation expectations react more slowly to economic data than in the past, according to research by Damjan Pfajfar and John Roberts of the Federal Reserve. It might be that prices now rise so slowly that it is no longer worth paying attention to economic news.

There is little doubt that without the amplifying effect of inflation expectations the Phillips curve should be flatter. But although expectations are supposed to be important, they are not supposed to be everything. Eventually, economies must find that rising demand runs up against supply constraints. Hence the third, and most credible, explanation: that the Phillips curve still exists, but is “non-linear”. Prices and wages could

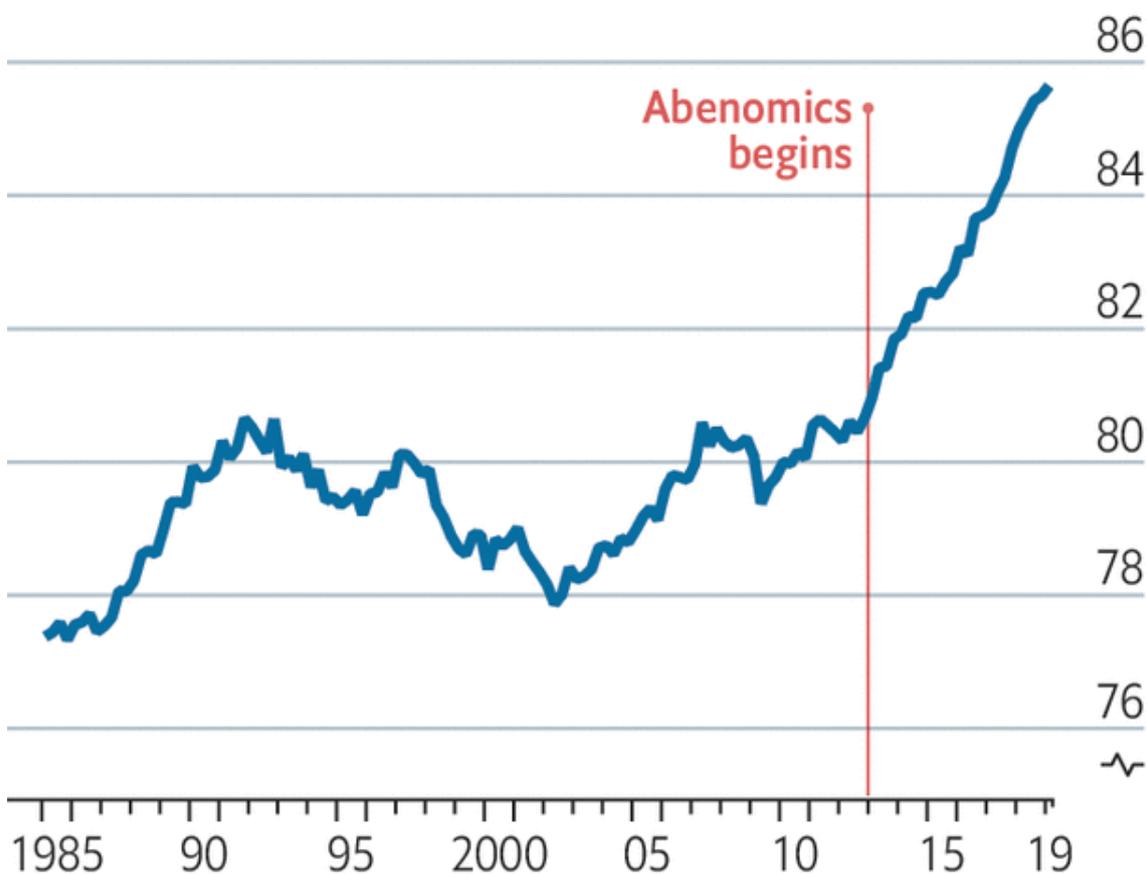
suddenly and quickly accelerate should unemployment fall beneath some threshold at which everything becomes unanchored.

Where might such a threshold lie? Answering that question requires breaking the inflation puzzle into its constituent parts. First, to what extent are firms' costs—most importantly, wages—rising? Second, are firms passing on those costs by raising prices?

The link between unemployment and wages has loosened but remains intact. In America and the euro zone wage growth has risen gradually in recent years as labour markets have tightened. America is further ahead, but in both cases the figures remain underwhelming by historical standards: 2.7% and 3.2% respectively, as this report went to press. Only in Britain has wage growth really taken off, reaching 4%, its highest since 2008, in July. Still, in most places the link between employment and wages remains discernible. The only real exception is Japan, where wage growth is flat despite monetary policy under the “Abenomics” programme driving a remarkable jobs boom (see chart). Japan’s culture of lifelong employment, in which some workers find it hard to move companies for higher wages without losing social status, is probably part of the explanation.

Money is power

Japan, employment rate*, %



Source: OECD

*25- to 54-year-olds

The Economist

Elsewhere it is the second link, between wages and prices, that seems to have vanished. On neither side of the Atlantic has core inflation displayed the same gradual upward trend as wages. Britain is an exception, but it has also had an inflationary devaluation of its currency since its vote to leave the European Union in 2016.

There are two ways to have wage inflation without price inflation. The first is a productivity boom, hitherto absent. The second is if firms' profit margins fall. There is clear scope for lower margins in America, where since the mid-2000s firms have enjoyed profits, as a share of GDP, that have been historically high. Profits have begun to come down in recent years as wage growth has risen. The question is how much further they might yet fall, given that America's high profit margins also reflect a lower level of competition in the economy. Outside America margins are lower and so profits provide less of a buffer between costs and prices.

In summary, if you wanted to tell a story about when inflation might take off in the rich world, it would go something like this. Wage growth is strongest in America, but so are profits. Once margins fall, firms will have no choice but to raise prices. In Europe profits are lower, but so is wage growth, because Europe's labour market has not boomed as much as America's. If it ever does, inflation will budge. The Phillips curve is non-linear, meaning that prices will suddenly rise sharply only once economies cross the inflationary Rubicon. Central banks will have to fight the subsequent overheating or risk losing control of inflation expectations, as they did in the 1970s. Japan, with its entrenched deflationary mindset and unique labour-market institutions, is a special case.

The problem with this story is that financial markets do not expect it to happen. As this report went to press, the price of swaps implied that America's consumer-price index between 2024 and 2029 will rise by an average of just 1.9% per year. Because the Fed targets an index that tends to undershoot the CPI by about a third of a percentage point, this implies missing the central bank's 2% target by a long way. In Europe the same measure of inflation expectations languished around 1.2%. Sometimes policymakers try to explain away markets' low inflation expectations by saying that they are driven by a lower risk of very high inflation, rather than a change to traders' central expectations. But this does not sit well with the idea of an inflection point in the Phillips curve lurking, ready to catch central banks off-guard.

Perhaps markets expect that recession, or at least an end to the jobs boom, will render the argument moot. But the puzzle has been enough to prompt a search for disinflationary forces beyond monetary policy and labour markets. One is technological progress.