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POINT of VIEW
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THE *REAL* MOST INTERESTING MAN IN THE WORLD: BILL PHILLIPS AND THE "PHILLIPS CURVE"

His name was Bill. Alban William Housego "A.W." Phillips, to be exact. Born in New Zealand, he was a crocodile hunter, cinema manager, member of the Royal Air Force, prisoner of war, and later, Member of the Order of the British Empire (MBE). Oh, and then he became one of history's most cited economists, with the advent of the "Phillips Curve" in a paper published in 1958. We chronicle the rise of a man, the myth propagated based on his work, and the legend that still lingers over markets.

The REAL Most Interesting Man in the World: Bill Phillips and the "Phillips Curve"

He did not always write economic papers, but when he did, they became the most cited papers in history. He was a crocodile hunter, cinema manager, member of the Royal Air Force, prisoner of war, and later, Member of the Order of the British Empire (MBE). We are not speaking of the most interesting man you see in *Dos Equis* beer commercials. We speak here of Bill Phillips, the economist. He was the most interesting man in the world—er, the economics world, that is.

If you are not familiar with his name, you are likely familiar with his namesake, the Phillips Curve. The curve posits that as the unemployment rate falls, wages rise. This curve, taught in economics courses everywhere, has been on the tip of every central banker, investor, and pundit's tongue of late. You will hear a common refrain: "the Phillips curve is broken" or "the Phillips Curve is dead" or "policymakers have lost control of inflation." Often such phrases are uttered by economists in a hushed tone, as if they were physicists who just realized the law of gravity ceased to hold true.

«WE THINK THE "PHILLIPS CURVE IS BROKEN" VIEW IS WRONG.»

We think the "Phillips Curve is broken" view is wrong. To explain why, we look at the man behind the curve, the myth that was propagated based on his work, and the legend that still lingers over markets. Bill Phillips was not your ordinary economist. He did not have much faith in his curve, and the original curve was changed and manipulated as needed by the policymakers and economists who followed him. But, that does not mean the Phillips Curve is dead—yet.

THE MAN BEHIND THE CURVE

Alban William Housego Phillips, simply known as Bill, was born in 1914 in a small town in New Zealand. His family's dairy farm was the first in the town to be electrified, and when he was just 15, he left home for his first job as an electrician's apprentice in the Public Works Department.

During his apprenticeship, Bill worked toward a Certificate of Electric Wiring and in his free time operated projectors in the local cinema. However, Bill always had a taste for adventure and yearned to see the world. So, the dairy farmer's boy took a boat to Australia, worked as a maintenance shift engineer for a gold mine, and enrolled in a correspondence course for an electrical engineering degree. After a brief stint as a crocodile and buffalo hunter, he moved to the U.K. in 1938, travelling through China, Soviet Russia, and Nazi Germany on his way. Upon his arrival in London, he enrolled at the London School of Economics (LSE), but his studies were soon interrupted by World War II.

He joined the Royal Air Force (RAF) as an electrical engineer stationed in Singapore and developed a reputation for being a savvy mechanic, often working with planes that were not battle ready. As Japanese forces closed in on Singapore, Bill fled to Java. En route, Japanese aircraft fired on his boat, prompting Phillips to build a machine gun mount and fire back. Bill made it to Java but was soon captured; the Japanese had already overrun the island. Bill spent more than three years imprisoned until the war ended.[1]

BILL PHILLIPS…SOCIOLOGIST OR ACCIDENTAL ECONOMIST?

After the war, Bill returned to London and enrolled in the London School of Economics to study sociology. He quickly soured on the subject, commenting that it was "a combination of ethics, social statistics and pseudoscience."[2] At the time he was also taking economics courses without much success. Bill's tutor commented that he "works hard, tries to think, but is distrustful of economic ideas."[3]

As Bill lost interest in sociology, he befriended an economics student at LSE named Walter Newmyn. Through their discussions, Bill soon realized that he could use his engineering background to better understand economics. Bill thought he could model the stocks and flows of the economy using pumps, tubes, and liquids. The experience Bill had tinkering in and out of war and his background in electrical engineering allowed him to build a contraption called the MONIAC – Monetary National Income Analog Computer, a play on ENIAC, the Electronic Numerical Integrator and Computer (the world's first electronic computer). The MONIAC was a six foot tall device with *actual* water running through it as money flows through an economy.

Amazingly, a dozen MONIACs were built and sent to central banks, treasury departments and corporations around the world. Even Paul Volcker, later Chairman of the Federal Reserve, worked with a MONIAC while at the U.S. Treasury earlier in his career.

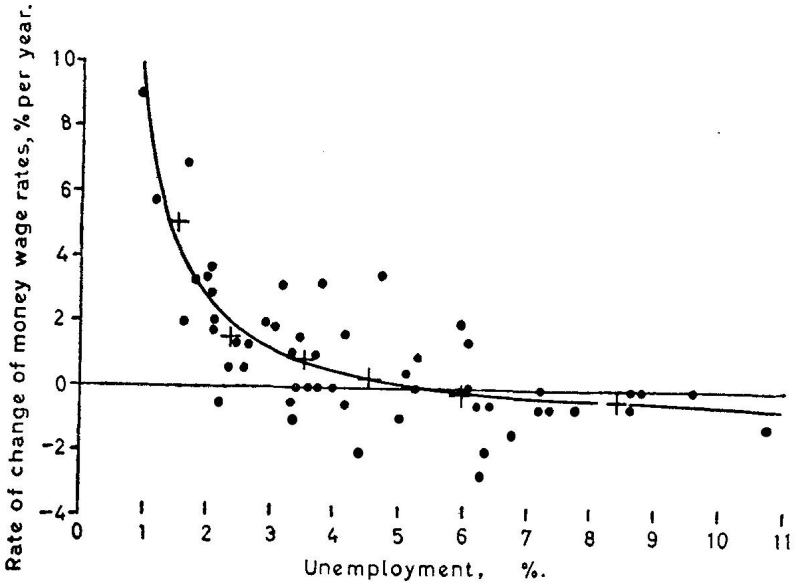
LSE figures loved the MONIAC and Bill, thinking he was on the cutting edge of the profession. They wanted to keep him around. In fact, after submitting just one paper, he received tenure. Before appointing him to the prestigious Tooke Chair at the London School of Economics, his colleagues were pressuring him to publish more.

A CURVE IS DRAWN

A labor economist at LSE, Prof. Phelps Brown, asked Bill to take a look at a new series of wage data. Meanwhile, an historical series of British unemployment data had also become available, covering almost 100 years, from 1861-1957. Bill "went home over the weekend to plot wage changes against unemployment."[4] The data was a mess. After tinkering, Bill found a relationship that "fit." The haphazard data mining exercise would become the legendary Phillips Curve (*see Figure 1*).

In his original paper, Bill tried many "out-of-sample" plots where he overlaid other data on the 1861-1913 curve. Some periods fit the curve well, others did not; and some displayed a relationship in the opposite direction! Bill even lagged unemployment by seven months to fit the curve in one period. And he did so without a fancy software package to do this; he attempted to find an optimum lag *by hand*. Phillips' paper was one of the first to use regression analysis, and he found the formula by trial and error.[5]

fig. 1 THE ORIGINAL CURVE FROM PHILLIPS' 1958 PAPER: 1861-1913 DATA



Source: Phillips, A. W. H. 1958. "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957." Economica, 25(100): 283–99.

Phillips initially plotted the data and put the chart in a drawer, not even wanting it published. His advisor and other prominent professors sent the work to the editor of *Economica*, the LSE's in-house journal. The editor accepted the paper "within a day of receiving it."[6] At the time, the normal process of publishing could take years.

The paper itself—perhaps not surprisingly given the haste with which it was assembled—was met almost immediately with criticism.

Just two years later, in 1960, Richard Lipsey reexamined this relationship and found that the functional form changed and the curve shifted higher.[7] Bill was irked by his own paper. In fact, for the rest of his life, he never discussed it. He said it was "a very crude attempt," a "quick and dirty job," something "just done in a weekend," and a "rushed job."[8] Phillips abandoned the idea and moved on to other things.

Others felt differently.

THE CURVE GOES VIRAL

Often it is said that "ideas develop a life of their own." The most viral ideas are often the ones that others can pilfer and use for their own purposes. Enter Paul Samuelson and Robert Solow. Samuelson authored the most popular economics textbook in human history. Solow is famous for his theory of economic growth and also studied sociology. They both won Nobel Prizes in Economics. What's more, they both found Bill's "curve" tantalizingly useful for purposes beyond the labor market.

First, in the words of Solow, "The language of graphical analysis has an immediacy which has proven potent in the dissemination of economic ideas."[9] Just as the MONIAC demonstrated economic concepts, Bill's plots helped demonstrate an intuitively pleasing relationship between unemployment and wage rates. Together Samuelson and Solow deemed Bill Phillips the progenitor of the "Phillips Curve" (a term of course never used by Phillips himself).

Beyond being a pedagogical tool, the newly-ordained Phillips Curve created a menu of options for policymakers. Pick an inflation rate and, *voila*, you have an unemployment rate. Willing to tolerate more inflation? Then you can also enjoy low unemployment! In the 1960s such a policy curve bolstered policymakers' wishes to pursue fiscal stimulus. They exploited the Phillips Curve to their advantage.

THE CURVE IS DEAD?

The problem? Our friend Bill never intended his 1958 paper to be a *prescriptive* one, but purely a *descriptive* one.

Worse, the curve almost immediately failed to describe the real world in some time periods discussed in the paper itself.

> «THE EXCEPTIONS TO ANY RULE ARE MOST INTERESTING IN THEMSELVES, FOR THEY SHOW US THAT THE OLD RULE IS WRONG.»

When Samuelson and Solow's interpretation of the Phillips curve failed in 1970s (unemployment *and* inflation both moved higher), Edmund Phelps and Milton Friedman questioned it. They said workers were not foolish and knew what to expect with inflation. As a result, the menu of policy options did not work. Eventually, workers learn to demand higher wages to compensate for higher prices. When those wages are unaffordable, firms lay workers off, and unemployment rises. It is the *change* in price inflation—not just the level or nominal wage rates—that impacts unemployment.

Once in the public realm though, the idea proved popular, and its use endured. As of October 2017, the paper has become one of the most widely cited papers of all time.[10] From an exceptional man we have seen the rise of a myth that was promoted to legend.

LONG LIVE THE CURVE!

Today, when you hear commentators lament the breakdown of an iron law of economics, smile, laugh, and nod, knowing that the Phillips Curve was never an inviolable law, and that there's too much worry about its supposed demise.

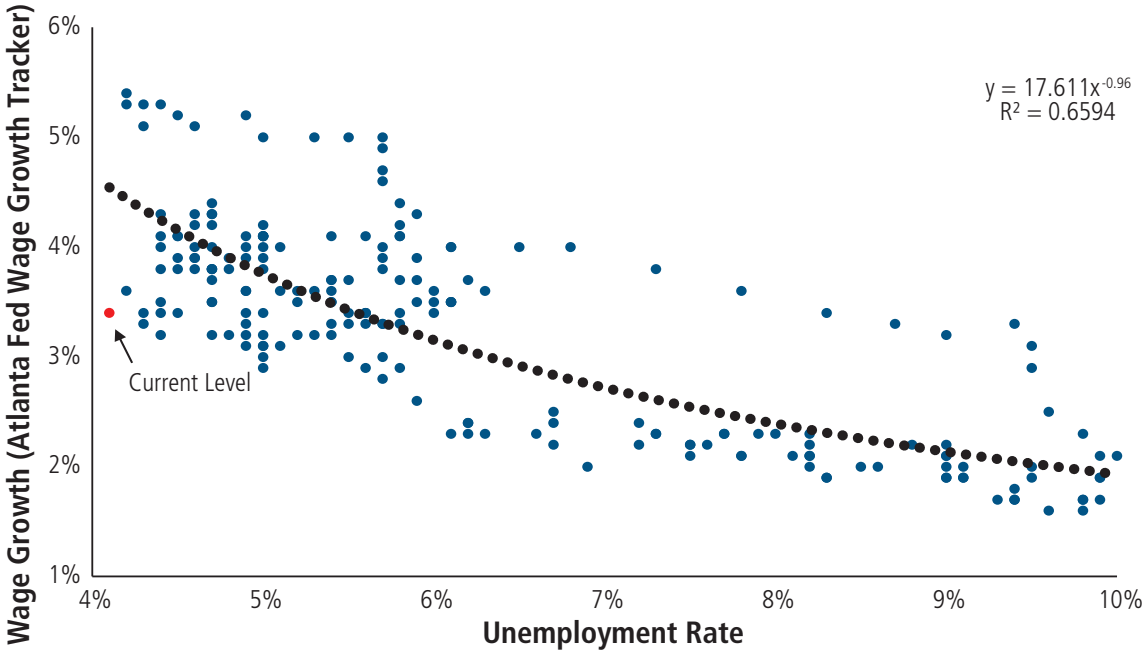
Perhaps the problem lies in economics itself. Bill realized from his work on modeling, the economy is far more complex than most imagine. Bill's modeling work reduced his confidence in the stability of relationships and policymakers' ability to pursue options with precision.

Another great tinkerer and thinker, the physicist Richard Feynman wrote, "The exceptions to any rule are most interesting in themselves, for they show us that the old rule is wrong."[11]

DID YOU KNOW?

Even Today, The Phillips Curve Isn't Dead!

We used our favorite indicator of wage growth, the Atlanta Fed's Wage Growth Tracker, and the U.S. U-3 unemployment rate to create our own version of the Phillips Curve. Turns out, it looks as good, if not better, than Phillip's original relationship scoring an R^2 of 0.66 compared to a 0.64 in the original paper![13]



Source: Bureau of Labor Statistics, Atlanta Fed, Payden Calculations

Instead of seeking a better understanding of inflation, economists continue to cling to the old rule created based on the 1958 paper, adding and augmenting the concept rather than abandoning it. If you studied economics, you might have heard of one permutation: the "Expectations-augmented Phillips Curve."

As the popularity of the Phillips Curve spread, Bill was asked several times by Milton Friedman to join the faculty at the University of Chicago.[12] However, Bill had abandoned the curve and moved on to other things. In fact, he did groundbreaking work that showed the dangers of economic policies that did not take into account policy lags. The Phillips Curve continued to go through many variations and remains, to this day, one of the key forecasting tools of policymakers, central bankers and, of course, investors.

Is it dead? Is it broken? (See *Did You Know* box on previous page) Should policymakers stop discussing it? Well, asking such questions implies the "Phillips Curve" is some inviolable law. Bill abandoned it, at least in part, because he knew it was no such thing. The economy, as he knew from his work on the MONIAC, was much more complex. Policy changes and shocks operate with lags and can not be boiled down to a simple law—much to the chagrin of many economists. Bill accepted the curve's shortcomings; you should, too.

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