

## Chapter 1 : Lecture Notes -- The Phillips Curve

*The Phillips curve is a single-equation econometric model, named after William Phillips, describing a historical inverse relationship between rates of unemployment and corresponding rates of rises in wages that result within an economy.*

Useful Web Resources The Phillips curve is a graph illustrating the relationship between inflation and the unemployment rate. The Phillips curve is a dynamic representation of the economy; it shows how quickly prices are rising through time for a given rate of unemployment. The relationship between inflation and unemployment depends upon the time frame. The short-run Phillips curve, illustrated in the figure titled "The Phillips Curve", shows that the relationship between the inflation rate and unemployment is negative. When inflation rises, unemployment falls and vice versa. This relationship helps to explain the adage "there is no good news in economics. For example, if unemployment is low, inflation tends to be relatively high. Journalists often focus on the parts of the economy doing poorly. Because of the relationship represented in the Phillips curve, economists in the late s and s thought that all the Federal Reserve or government had to do was to pick the point on the short-run Phillips curve that they wanted the economy to be on. If they wanted to have less unemployment and operate, for example, at point B on the graph instead of point A, then they had to live with more inflation. This simplistic notion turned out to be false in the s, forcing economists to rethink the whole notion of the Phillips curve. A significant difference exists between the long-run and short-run Phillips curves. Breakdown of the Short-Run Phillips Curve In the s and early s the short-run relationship between inflation and unemployment seemed to break down. As the figure titled "Phillips Curve, to " illustrates, inflation was often high even while unemployment was high. Between and and again between and , both inflation and unemployment increased. Rather than approximating a straight line, the Phillips curve seemed to spiral clockwise. Standard Keynesian economics could not explain why the Phillips curve had gone haywire. Did the economy fundamentally change or was there something missing from the theory that needed to be incorporated? Economists were able to salvage the Phillips curve by realizing that a significant difference exists between the short-run and long-run relationship between inflation and unemployment. The long-run Phillips curve is vertical, suggesting that there is no tradeoff between unemployment and inflation. The Long-Run Phillips Curve Most economists now agree that in the long run there is no tradeoff between inflation and unemployment. As the figure titled "Long-Run Phillips Curve" illustrates, any level of inflation is consistent with the natural rate of unemployment. No tradeoff exists between inflation and unemployment in the long run. First, let us look at the short-run relationship between inflation and unemployment. Any factor that shifts the Aggregate Demand curve moves the economy along the short-run Phillips curve. Suppose that the Aggregate Demand curve shifts to the right for any reason, say the result of expansionary fiscal or monetary policy. In the Phillips curve plotted in the right-hand figure, the higher price level corresponds with higher inflation, and the higher level of output means that more people are working, so unemployment falls. The economy moves along the Phillips curve in the right-hand chart from point A to point B. This story leads to an important generalization. Any factor that shifts the Aggregate Demand curve, moves the economy along the short-run Phillips curve. When the Aggregate Demand curve shifts to the right, the economy moves up and to the left on the short-run Phillips curve because the price level rises corresponding with a rise in inflation, while the level of output increases, which decreases unemployment. Conversely, when the Aggregate Demand curve shifts to the left, the economy moves down and to the right on the short-run Phillips curve. Point B in both charts cannot be a long-run equilibrium since the economy is not at potential output nor at full employment. The high level of output relative to potential output eventually increases wages as workers become more difficult to find and employ. This increase in input costs shifts to the left the Aggregate Supply curve in the left-hand chart to point C. In the right-hand chart of the Phillips curve, the economy moves from point B to point C, reflecting the higher inflation and the higher unemployment. Point C in both charts is a long-run equilibrium. Observe points A and C in the right-hand chart. The unemployment rate is identical but the rate of inflation at point C is much higher than at point A. This transition demonstrates the principle behind long-run Phillips curve such that in the long-run there is no tradeoff between inflation and unemployment.

Both charts begin at point A, points in which the economy is in a long-run equilibrium. The leftward shift of the Aggregate Demand curve decreases the price level and output, moving the short-run equilibrium to point B in the left-hand chart. As a consequence, the economy experiences lower inflation and higher unemployment, represented by the movement from point A point B in the right-hand chart. In the long run, the Aggregate Supply curve shifts to the left in the left-hand chart as wages decline in response to the excess unemployment. Eventually the economy moves to point C, again a long-run equilibrium. We illustrate this scenario by a move along the Phillips curve from point B to point C in the right-hand chart.

**The Role of Expectations** The short-run tradeoff between inflation and unemployment is thought to work because people have an idea of what inflation expectations are going to be, and those expectations change slowly. When the Aggregate Demand curve shifts to the right, prices and output increase. This shift increases inflation and lowers unemployment. Firms respond to this situation by attempting to hire workers. Workers view the wage offered as "good" since they do not expect that prices will rise also. But in the long-run, workers learn that inflation has risen and they are no longer happy with their wage, so they increase their inflation expectations. Workers demand larger increases in wages which forces firms to lay off some workers until the economy arrives back at the natural rate of unemployment. We can express the Phillips curve as an equation in the following manner: The long-run Phillips curve equation suggests that the inflation rate is entirely determined by inflation expectations. As the figure titled "Inflation Expectations and the Phillips Curve" illustrates, when inflation expectations rise, the Phillips curve shifts upward. In particular, when inflation expectations rise from 3 percent to 6 percent, the short-run Phillips curve shifts upward until the inflation rate is 6 percent when the economy is at the natural rate of unemployment. Now we can understand the differences between the short-run and long-run Phillips curves. In the short run, an increase in Aggregate Demand does move the economy up to the left along the short-run Phillips curve. Output and inflation increase while unemployment decreases. Over the longer term, however, inflation expectations increase and workers no longer work the extra hours because they realize that real wages have not increased with the increase in prices. Output returns to the same level as before but inflation is higher because it is built into the system in terms of higher inflation expectations. The long run Phillips curve, therefore, is vertical. For example, let us take the case of an oil shock. On the Phillips curve plotted in the right-hand chart titled "Phillips Curve Response to an Oil Shock", the oil shock produces a movement to the northeast of point A as both unemployment and inflation increase. Often in response to a severe negative supply shock such as an oil shock, inflation expectations rise quickly and the short-run Phillips curve shifts upward. If policy is contractionary to lower inflation, unemployment will rise even further. If policy is expansionary to eliminate the excess unemployment, inflation will rise even higher. In the long run the economy will end up back on the long-run Phillips curve with a high rate of inflation. What should the Federal Reserve do with regards to monetary policy in this scenario? In the late s the Federal Reserve faced just this decision. There is no good alternative for the Fed. Either they alleviate unemployment and live with higher inflation, or they cause a large recession and eliminate high inflation. The Fed opted for the latter which led to a deep recession in the United States. Unemployment peaked above 10 percent in the early However, in the long run about six years after the recession, the economy had 3 to 4 percent inflation and was back to the natural rate of unemployment. The overall point is that a leftward shift in the Aggregate Supply curve does not move the economy along the short-run Phillips curve, but it moves the economy to a point that is northeast of its present state. If inflation expectations increase, the Phillips curve shifts upward. Of course, a positive supply shock can shift the Phillips curve down as inflation expectations fall. Once either of these things happens however, the policy makers are still faced with the same short-run tradeoff between inflation and unemployment. Is the Phillips Curve Dead? Despite being reconstructed in the s, the Phillips curve threw economists for a loop again in the s. During much of the s, the Phillips curve relationship was suspiciously absent, as the figure titled "Phillips Curve, to "illustrates. Despite this decline, inflation did not rise much. In fact, in and inflation fell even further relative to previous years. Economists are not exactly sure why this happened, although lower oil and food costs played a significant role. Another important factor explaining the odd behavior of the Phillips curve in the s is labor productivity, or output per labor hour. See Chapter 18, Economic Growth and Productivity. Recall that one reason for the short-run trade-off between

inflation and unemployment is that when unemployment declines, wage pressures increase, driving up prices. If productivity growth is high, however, firms can pay workers higher wages and still keep price increases modest because those workers are more productive. Productivity did begin to increase in the mids, and it has remained high through The surge in productivity is perhaps the key reason why wages and, hence, prices have not risen with the decline in unemployment rates in the s. Similar to the s, many economists are seriously questioning the usefulness of even the modified inflation-expectations version of the Phillips curve. The events of the s indicate that, at the very least, the Phillips curve is not a reliable tool to forecast inflation. Indeed, some economists are discounting the supposed short-run relationship between inflation and unemployment altogether, arguing that the relationship is too volatile to be a reliable guide. No new consensus has emerged as of yet. Although many economists agree that the forecasting power of the Phillips curve is limited at best, they continue to believe that the Phillips curve does a fairly good job at explaining economic behavior after the fact. Can the Phillips curve help forecast inflation? Research by economists Andrew Atkeson and Lee E.

*Phillips Curve What is the 'Phillips Curve' The Phillips curve is an economic concept developed by A. W. Phillips stating that inflation and unemployment have a stable and inverse relationship.*

Sylvain Leduc and Daniel J. Wilson Although the labor market has steadily strengthened, wage growth has remained slow in recent years. This raises the question of whether the wage Phillips curve—the traditional relationship between labor market slack and wage growth—has weakened. Estimating a causal link from slack to wage growth using national data is difficult. However, using city-level data over the past 25 years shows that the cross-city relationship has weakened since the Great Recession. Explanations consistent with this timing suggest that the Phillips curve may return to a steeper curve in the future. One puzzling fact in recent years is that wage growth has remained subdued while the unemployment rate has fully recovered from the Great Recession see Federal Open Market Committee A traditional textbook theory by A. Phillips explains that labor market strengthening pushes up wage growth, a relationship that is known as the wage Phillips curve. Hence, the recent U. In this Economic Letter, we use city-level data to examine whether the sensitivity of wage growth to labor market tightness or slack has changed over time. Between and , we find a clear negative relationship on average between wage growth and labor market slack across cities, meaning declining slack tends to push up wage growth. However, we uncover a significant weakening of the direct effect of slack on wage growth since , suggesting a flattening of the wage Phillips curve. There are many potential explanations for this weaker relationship, but its timing suggests cyclical factors may play a role, and thus that the recent flattening of the wage Phillips curve may be short-lived. Correlations between wage growth and the unemployment rate One way to study the link between the labor market and wage growth is to focus on the aggregate level. However, this approach can be problematic because other important macroeconomic factors that are hard to measure affect national wage growth and slack over time. For example, global oil price shocks such as those in the s can boost inflation and overall business costs, leading to higher unemployment. To avoid this complication, researchers have increasingly turned to city- and state-level data to examine the effect of slack on wage growth. These data can be useful because such studies hold national and global factors fixed when comparing wage growth and slack across places in the United States. Also, wage growth and unemployment conditions often vary substantially across areas. All of that variation is useful for statistically estimating the average relationship between the two. For example, Smith uses state data to find that wage growth tends to move in the opposite direction as labor market slack; similarly, Fitzgerald and Nicolini find a stable negative relationship using city-level data. We follow a similar approach to these studies, but we examine more recent data from the recovery and whether the relationship has changed in recent years. We measure wage growth against the unemployment rate for 27 metropolitan statistical areas MSAs each year from to Figure 1 City-level relationship between wage growth, unemployment Note: Annual data by MSA. Two unemployment rate outliers, one each from and , are not shown. In Figure 1, we split the observations between pre- and post-recession periods—to green dots and to blue dots. An estimate of the linear relationship based on a statistical method known as an ordinary least squares regression for each period is shown by solid lines. During the - period there is a clear negative and statistically significant relationship between wage growth and the unemployment rate. However, the correlation in the - period is close to zero, shown by the nearly horizontal line. This pattern suggests that the wage Phillips curve may have flattened recently—that is, falling unemployment has not signaled faster wage growth during these years. Has the cross-city wage Phillips curve flattened? These simple correlations do not account for a number of factors that could be correlated with the local unemployment rate and also independently affect wage growth. Hence, they may not reflect the causal link from labor market slack to wage growth. Prior theoretical work on the underpinnings of the wage Phillips curve provides guidance on how best to estimate this causal relationship. There are three main factors that need to be accounted for. The natural rate of unemployment captures differences in unemployment across places and over time due to the composition of the workforce or institutional changes such as adjustments to state unemployment insurance. Third, labor productivity growth

should affect wage growth and can also affect the unemployment gap. We assume that productivity growth varies both over time due to national factors like technological change, and over cities due to time-invariant factors like industry composition. Our estimation allows for such time-invariant factors by using a different constant term for each city. We estimate a cross-city wage Phillips curve regression using city-level data on wage growth, the unemployment gap, and lagged inflation. We first estimate this wage Phillips curve specification over the full sample period, to , and find a slope of  $\hat{\alpha} = 0$ . However, these full sample results mask considerable variations across subperiods. For instance, the estimated cross-city wage Phillips curve slope is  $\hat{\alpha} = 0$ . The difference between these slope estimates is statistically significant. Using an alternative regression specification, we also estimated a separate short- and long-run slope for each period, which accounts for the possibility that wage growth responds with a lag to slack. Both the short- and long-run slopes are significantly closer to zero in the later period than in the earlier period. Specifically, we first estimate the Phillips curve as described above for the seven-year city-level data set covering to . We then estimate it using the seven-year data set covering to . We continue this process through the latest seven-year data set, covering to . The resulting slope coefficients and confidence intervals in Figure 2 show a steady flattening of the cross-city wage Phillips curve slope starting with the  $\hat{\alpha} = 0$  sample and continuing through the latest  $\hat{\alpha} = 0$  sample. Figure 2 Flattening of the cross-city wage Phillips curve slope Note: What can we infer about the aggregate wage Phillips curve? The causal link from slack to wage growth is difficult to persuasively estimate using aggregate time series data both because of a limited number of observations and because there can be important unobserved aggregate factors that affect slack and wage growth simultaneously. Hence, the cross-city evidence can be informative regarding whether the true unobserved national Phillips curve slope also has flattened over time. It is possible that the cross-city relationship could have flattened over time without a similar result for the aggregate if labor mobility had increased across cities. Blanchard and Katz document that interstate migration is a key way U. In effect, job seekers migrating to a city in response to a local boom represent a labor supply shock that helps offset the wage pressures stemming from the initial increase in labor demand. This tends to mute the effect of labor market tightness on wage inflation relative to the national level, where workers entering the workforce from foreign countries is much more limited. So has labor mobility within the United States increased over recent years? Recent work by Kaplan and Schulhofer-Wohl find the opposite, that interstate migration rates have fallen over the past 20 years. This suggests that the aggregate Phillips curve is likely to have flattened at least as much as the cross-geographical Phillips curve. City-level regressions are useful for providing a more accurate estimate of the causal relationship between labor market tightness and wages. Therefore, theories that are consistent with a flattening Phillips curve must involve fundamental changes in how local wages are set in response to local labor market tightness. For example, a decline in worker bargaining power could reduce their ability to negotiate higher wages when the labor market is tight. This would be consistent with the rising industry concentration ratios and decline in the labor share documented by Autor et al. If the recent change in the curve is due to such secular trends in worker bargaining power, the flattening is not likely to reverse in the near future. However, many of those trends started before the Phillips curve began to flatten, according to our estimates. Another possibility suggested in Daly, Hobbijn, and Peditke that is better aligned with this timing has to do with the effect of labor market slack on the composition of the workforce, which in turn affects measured wage growth. This compositional drag on wage growth would be expected to move in the same direction as labor slack across cities, leading to a flatter Phillips curve. According to this explanation, the wage Phillips curve should steepen in coming years as this cyclical composition effect dissipates. Thus, monitoring how the cross-geographical curve evolves should help reveal the underlying causes of the recent flattening, thereby helping policymakers better understand the causal mechanisms underlying the wage Phillips curve. Blanchard, Olivier, and Lawrence Katz. Kaplan, Greg, and Sam Schulhofer-Wohl. Evidence from State-level Relationships. This publication is edited by Anita Todd. Permission to reprint must be obtained in writing.

**Chapter 3 : Phillips Curve | Economics Help**

*The Phillips curve represents the relationship between the rate of inflation and the unemployment rate. Although he had precursors, A. W. H. Phillips's study of wage inflation and unemployment in the United Kingdom from 1946 to 1957 is a milestone in the development of macroeconomics.*

They could tolerate a reasonably high rate of inflation as this would lead to lower unemployment. There would be a trade-off between inflation and unemployment. Moving along the Phillips curve, this would lead to a higher inflation rate, the cost of enjoying lower unemployment rates. Mundell, Robert E. Lucas, Milton Friedman, and F. Theories based on the Phillips curve suggested that this could not happen, and the curve came under a concerted attack from a group of economists headed by Milton Friedman. In this he followed eight years after Samuelson and Solow [1] who wrote "All of our discussion has been phrased in short-run terms, dealing with what might happen in the next few years. It would be wrong, though, to think that our Figure 2 menu that related obtainable price and unemployment behavior will maintain its same shape in the longer run. What we do in a policy way during the next few years might cause it to shift in a definite way. Unemployment would then begin to rise back to its previous level, but now with higher inflation rates. This result implies that over the longer-run there is no trade-off between inflation and unemployment. This implication is significant for practical reasons because it implies that central banks should not set unemployment targets below the natural rate. Work by George Akerlof, William Dickens, and George Perry, [13] implies that if inflation is reduced from two to zero percent, unemployment will be permanently increased by 1. This is because workers generally have a higher tolerance for real wage cuts than nominal ones. For example, a worker will more likely accept a wage increase of two percent when inflation is three percent, than a wage cut of one percent when the inflation rate is zero. Today [edit] U. There is no single curve that will fit the data, but there are three rough aggregations of 1971, 1984, and 1992 each of which shows a general, downwards slope, but at three very different levels with the shifts occurring abruptly. The theory goes under several names, with some variation in its details, but all modern versions distinguish between short-run and long-run effects on unemployment. This is because in the short run, there is generally an inverse relationship between inflation and the unemployment rate; as illustrated in the downward sloping short-run Phillips curve. In the long run, that relationship breaks down and the economy eventually returns to the natural rate of unemployment regardless of the inflation rate. In the long run, this implies that monetary policy cannot affect unemployment, which adjusts back to its "natural rate", also called the "NAIRU" or "long-run Phillips curve". However, this long-run "neutrality" of monetary policy does allow for short run fluctuations and the ability of the monetary authority to temporarily decrease unemployment by increasing permanent inflation, and vice versa. The popular textbook of Blanchard gives a textbook presentation of the expectations-augmented Phillips curve. In these macroeconomic models with sticky prices, there is a positive relation between the rate of inflation and the level of demand, and therefore a negative relation between the rate of inflation and the rate of unemployment. This relationship is often called the "New Keynesian Phillips curve". Like the expectations-augmented Phillips curve, the New Keynesian Phillips curve implies that increased inflation can lower unemployment temporarily, but cannot lower it permanently. First, there is the traditional or Keynesian version. Then, there is the new Classical version associated with Robert E. The traditional Phillips curve [edit] The original Phillips curve literature was not based on the unaided application of economic theory. Instead, it was based on empirical generalizations. After that, economists tried to develop theories that fit the data. Money wage determination [edit] The traditional Phillips curve story starts with a wage Phillips Curve, of the sort described by Phillips himself. This describes the rate of growth of money wages  $g_W$ . Here and below, the operator  $g$  is the equivalent of "the percentage rate of growth of" the variable that follows.

**Chapter 4 : Phillips Curve | Definition of Phillips Curve by Merriam-Webster**

*The Phillips curve. The Phillips curve shows the relationship between unemployment and inflation in an economy. Since its 'discovery' by British economist AW Phillips, it has become an essential tool to analyse macro-economic policy.*

**Summary of Phillips Curve** The Phillips curve suggests there is an inverse relationship between inflation and unemployment. This suggests policymakers have a choice between prioritising inflation or unemployment. During the 1950s and 1960s, Phillips curve analysis suggested there was a trade-off, and policymakers could use demand management fiscal and monetary policy to try and influence the rate of economic growth and inflation. For example, if unemployment was high and inflation low, policymakers could stimulate aggregate demand. This would help to reduce unemployment, but cause a higher rate of inflation. In the 1970s, there seemed to be a breakdown in the Phillips curve as we experienced stagflation higher unemployment and higher inflation. The Phillips Curve was criticised by monetarist economists who argued there was no trade-off between unemployment and inflation in the long run. However, some feel that the Phillips Curve has still some relevance and policymakers still need to consider the potential trade-off between unemployment and inflation.

**Origins of the Phillips Curve** The Phillips curve originated out of analysis comparing money wage growth with unemployment. The findings of A. Phillips in *The Relationship between Unemployment and the Rate of Change of Money Wages in the United Kingdom* suggested there was an inverse correlation between the rate of change in money wages and unemployment. For example, a rise in unemployment was associated with declining wage growth and vice versa.

**Original Phillips Curve Diagram** This analysis was later extended to look at the relationship between inflation and unemployment. Again the 1950s and 1960s showed there was evidence of this inverse trade-off between unemployment and inflation.

**US Unemployment and Inflation** There are occasions when you can see a trade-off between unemployment and inflation. In 2003, the recession caused a sharp rise in unemployment and inflation became negative. Why is there a trade-off between unemployment and inflation? Therefore firms employ more workers and unemployment falls. However, as the economy gets closer to full capacity, we see an increase in inflationary pressures. With lower unemployment, workers can demand higher money wages, which causes wage inflation. Also, firms can put up prices due to rising demand. Therefore, in this situation, we see falling unemployment, but higher inflation. They argue that in the long run there is no trade-off as Long Run AS is inelastic. Monetarists argue that if there is an increase in aggregate demand, then workers demand higher nominal wages. When they receive higher nominal wages, they work longer hours because they feel real wages have increased. When they realise real wages are the same as last year, they change their price expectations, and no longer supply extra labour and the real output returns to its original level. Therefore, unemployment remains unchanged, but we have a higher inflation rate.

**Adaptive expectation monetarists** argue there is only a short-term trade-off between unemployment and inflation. **Rational expectation monetarists** argue there is no trade-off, even in the short term. The rational expectation model suggests that workers see an increase in AD as inflationary and so predict real wages will stay the same.

**Summary of Monetarist v Keynesian view** A monetarist would argue unemployment is a supply side phenomena. Monetarists argue using demand-side policies can only temporarily reduce unemployment by an ever-accelerating inflation rate. Monetarists argue that unemployment is determined by the natural rate of unemployment. Keynesians argue there can be demand deficient unemployment, and during a recession, demand-side policies can reduce unemployment in the long term with perhaps some inflation.

**The Phillips Curve Breakdown** Evidence from the 1970s suggested the trade-off between unemployment and inflation had broken down. The 1980s witnessed a rise in stagflation – rising unemployment and inflation. Monetarists argued that increasing the money supply just led to a wage inflation spiral and did not help to reduce unemployment. They advocated reducing the money supply and achieving low inflation – any unemployment would just prove temporary. However, others argued there was still a trade-off – the Phillips curve had just shifted to the right giving a worse trade-off because of cost-push inflation.

**Shift in Phillips Curve to the right the 1970s** In the early 1970s, the trade-off seemed to improve. Helped by low global inflation, unemployment in the UK fell without any rise in inflation. Some argued this period of stability had ended the boom and bust cycles with the classic

trade-off between inflation and unemployment. This was due to the recession and falling oil prices. However, in , the UK experienced higher unemployment and higher inflation because of cost-push inflationary pressures. This was another period of stagflation

**Conclusion on Phillips Curve** If the economy is operating below full capacity, a significant increase in aggregate demand is likely to cause a reduction in unemployment and higher inflation. Most economists would agree that in the short term, there can be a trade-off between unemployment and inflation. However, there is a disagreement whether this policy is valid for the long-term. Monetarists would tend to argue the trade-off will prove short-term, and we will just get inflation. Monetarists place greater stress on the supply side of the economy. However, Keynesians argue that demand deficient unemployment could persist in the long-term. If there is a significant negative output gap, boosting AD could lead to lower unemployment and a modest increase in inflation. In a deep recession, this fall in unemployment will not just be temporary because there will be no crowding out. In an ideal world policymakers will aim for low inflation and low unemployment. To achieve this, we need economic growth that is sustainable close to long-run trend rate and supply-side policies to reduce cost-push inflation and structural unemployment. If these criteria are met then it becomes easier to achieve this goal of lower inflation and lower unemployment.

**Relevance of Phillips Curve Today** In the current economic climate, many Central Banks and policymakers are weighing up how much importance they should give to reducing unemployment and inflation. For example, the Federal Reserve is considering using monetary policy to achieve an unemployment target and a willingness to accept higher inflation. This willingness to consider a higher inflation rate, suggest policy makers feel that the trade off of higher inflation is worth the benefit of lower unemployment. However, not all economists agree we should be allowing the inflation target to increase. If we allow inflation to increase, inflationary pressures will become engrained, and monetary policy will lose credibility. The ECB would be unwilling to tolerate higher inflation “ even as a measure to reduce unemployment in Europe.

Chapter 5 : Phillips curve (video) | The Phillips curve | Khan Academy

*If you're behind a web filter, please make sure that the domains \*calendrierdelascience.com and \*calendrierdelascience.com are unblocked.*

The Phillips curve given by A. Phillips shows that there exist an inverse relationship between the rate of unemployment and the rate of increase in nominal wages. A lower rate of unemployment is associated with higher wage rate or inflation, and vice versa. In other words, there is a tradeoff between wage inflation and unemployment. Due to greater bargaining power of the trade union, wage increases. Thus, decrease in unemployment leads to increase in the wage Fig. But when wage increases, the firms cost of production increases which leads to increase in price. Therefore it is also called wage inflation, that is, decrease in unemployment leads to wage inflation. The Phillips Curve shows that wages and prices adjust slowly to changes in AD due to imperfections in the labour market. This will cause the wage rate to increase, but when wage increases, prices will also increase and eventually the economy will return back to the full-employment level of output and unemployment. Similarly, any attempt to decrease unemployment will aggravate inflation. Thus, the negative sloped Phillips Curve suggested that the policy makers in the short run could choose different combinations of unemployment and inflation rates. In the long run, however, permanent unemployment  $\hat{\pi}$  inflation trade off is not possible because in the long run Phillips curve is vertical. Since in the short run AS curve Phillips Curve is quite flat, therefore, a trade off between unemployment and inflation rate is possible. It offers the policy makers to chose a combination of appropriate rate of unemployment and inflation. Wage  $\hat{\pi}$  Unemployment Relationship: Relationship between  $g_w$  and the level of employment Why are wages sticky? Or Why nominal wages adjust slowly to changes in demand? According to the Neo-Classical theory of supply, wages respond and adjust quickly to ensure that output is always at full-employment level. This is because wages and prices are completely flexible. Therefore, the economy will always produce full employment output but the Phillips curve suggests that wages adjust slowly in response to changes in unemployment to ensure that output is at full employment level. The wages are sticky and therefore they move slowly over the time. They are not fully and immediately flexible, to ensure full employment at every point in time. To understand wage stickiness, the Phillips curve relationship is translated into a relationship between the rate of change of wages  $g_w$  and the level of employment. Wage employment relation shows that: There exists positive relationship between wages and employment because according to Phillips curve any attempt to decrease unemployment will lead to increase in wages. Decrease in unemployment means increase in employment. Therefore, when employment increases wages increase. Thus, the positively sloped WN curve shows that the wage rate paid by firms is higher when more hours are worked. Joint points A,  $e_0$ , and C, we get the wage employment line which is positively sloped. However, the extent to which wage responds to employment depends on  $e$  response of money wage growth to change in unemployment. The Phillips curve, therefore, also implies that WN relationship shifts over the time if actual employment differs from full employment level. The changes in AD which alter the rate of unemployment in this period will affect wages in subsequent periods. The adjustment to changes in employment is dynamic, i.

### Chapter 6 : Federal Reserve Bank of San Francisco | Has the Wage Phillips Curve Gone Dormant?

*Summary of Phillips Curve The Phillips curve suggests there is an inverse relationship between inflation and unemployment. This suggests policymakers have a choice between prioritising inflation or unemployment.*

In other words, higher rates of inflation imply lower rates of unemployment. The relationship is named after the British economist A. Phillips, who wrote an influential article about it. That inverse relationship held true during the s. During the s, however, the U. Unexpected rises in the inflation rate decrease the "real" wages of workers operating under long-term employment contracts. This stimulates employment as real-wage costs to employers are reduced. Underestimates of inflation induce job seekers to take job offers they may not otherwise take. The job offer given may seem very good if inflation is not taken into account and it will be quickly taken. A worker who understands that inflation is eroding his or her real wages would not be so quick to take the job offer. Once works begins to anticipate inflation, there is no long-term reduction in the unemployment rate. In the short-term, if inflation is higher than expected, there will temporarily be a reduction in unemployment. If inflation is lower than expected, unemployment will be higher than normal. When integrating expectations and the Phillips curve, we find that: Expansionary fiscal and monetary policy leads to inflation, without a permanent reduction in unemployment below the natural rate. If inflation is greater less than anticipated, unemployment will be below above the natural unemployment rate If the inflation rate remains the same does not increase or decrease , then the actual rate of unemployment will move towards the natural rate of unemployment. The following lessons were learned from the work with Phillips curves: Expansionary macro policy does not reduce the rate of unemployment, at least in the long run. Stable prices help keep unemployment low - stable prices are low unemployment are not conflicting goals. Impacts of Inflation on the Nominal Interest Rate The nominal interest rate of a bond or loan is simply the stated or named interest rate. The real interest rate is the nominal interest less current or expected inflation. If economic participants expect higher inflation, they will alter their economic behavior. Lenders will be less willing to make loans or will demand higher nominal rates of interest in order to compensate for the perceived risk of inflation. Borrowers will seek more loanable funds in anticipation of higher prices. The net result will be higher nominal interest rates. Increases in the money supply will lead to higher price levels, unless there is a corresponding increase in real output. Lenders will demand higher nominal interest rates so as to compensate for the expected inflation.

### Chapter 7 : The Phillips Curve (Explained With Diagram)

*The Phillips curve given by A.W. Phillips shows that there exist an inverse relationship between the rate of unemployment and the rate of increase in nominal wages. A lower rate of unemployment is associated with higher wage rate or inflation, and vice versa.*

### Chapter 8 : Phillips curve - Wikipedia

*In this video I explain the Phillips Curve and the relationship between inflation and unemploymet. Remeber that there are two curves the long run curve and the short run curve.*

### Chapter 9 : Dr. Ed's Blog: Will Robots Bend the Phillips Curve? (excerpt)

*What is Phillips Curve? The Phillips Curve is the graphical representation of the short-term relationship between unemployment and inflation Fiscal Policy Fiscal Policy refers to the budgetary policy of the government, which involves the government manipulating its level of spending and tax rates within the economy.*