

How does stagflation affect the phillips curve?

[Economics](#), [Macroeconomics](#)



Introduction

During the Great Depression which was a severe worldwide economic depression in the decade preceding World War I, western countries experienced the high unemployment rate. In 1936, Keynes who is a British economist published the famous "The general theory of employment, interest and money". The theory was helpful for policy makers to tackle unemployment. (Mankiw, G and Taylor, M)

However, after 1950s, inflation became the most concerned economic issue around the world in replace of unemployment. Due to the price rigidity, inflation couldn't be explained by Keynesian economics.

The Phillips curve is named after a New Zealand-born economist A. W. Phillips. In 1958, he published an article "The Relationship between Unemployment and the Rate of Change of Money Wages in the United Kingdom 1861-1957" in the quarterly economic journal *Economica*. Phillips observed the data of unemployment rate and the rate of wage inflation and concluded an inverse relationship between money wage changes and unemployment in United Kingdom during the period time examined. In the following years, Phillips curve was successfully demonstrated to be found in many countries.

The IS-LM model is a macroeconomic tool that demonstrates the relationship between interest rates and real output in the goods and services market and the money market (Wikipedia). It can explain the aggregate demand and determine the employment. And the Phillips curve can express the aggregate supply of macroeconomics and explain the inflation. Thus, main <https://assignbuster.com/how-does-stagflation-affect-the-phillips-curve/>

Keynes's theory consists of IS-LM model and Phillips Curve from two aspects of aggregate demand and supply. The Phillips Curve also has the significant meaning for economy policy: that is, macroeconomic policy can be trade-off between inflation and unemployment. The government can use higher inflation rate to achieve lower unemployment and vice versa. Therefore, the Phillips curve was considered as the main economic tool to make policy.

However, when people thought IS-LM model and Phillips curve could explain major macroeconomic issues, some economists began to doubt the accuracy of Phillips curve, one typical representative is Edmund Phelps, who is the winner of Nobel Prize for Economics in 2006. He suggested that inflation is not only related with unemployment but also related with the growth of prices and wages expected by employers and workers. His research contributed important insights in the Phillips curve which include adaptive expectation and imperfect information in the setting of prices and wages. Additionally, he presented the concept of the natural rate of unemployment and he thinks that there is no long run trade-off between inflation and unemployment. (Edmund S Phelps, 1968). It can be seen from Figure 1, assume that at the beginning, the expected inflation rate is 0 and the natural rate of unemployment is 6%, under this situation, the economy is at point A and the Phillips curve is P1. If the economy is intervened by government, that is the government wants to use 4% inflation rate to achieve 3% unemployment rate, that means reaching point B; assume that the government achieves the goal, workers expect their real wages to decline, thus the nominal wages are required to increase to maintain their purchasing power. On the other hand, employers hire fewer workers due to the

increases in wages, therefore, the unemployment rate return to the natural rate of unemployment. At this moment, the economy is at point C. The Phillips curve shifts upwards to P2. As a result, government's economic policies do not work, that means inflation rate increases, however, unemployment rate does not go down. This is so-called "Phillips Curve with expectation".

Figure 1 Phillips Curve with expectation

At present, the widely accepted view about Phillips curve is that "because people adjust their expectations of inflation over time, the tradeoff between inflation and unemployment holds only in short run." (Mankiw, G and Taylor, M) New Keynesian economists modify the Phillips curve from two aspects: firstly, considering expectation; secondly, considering the supply shock.

The purpose of research

The reason why I am planning to focus my research on this topic is that with the development of economic globalization, the proportion of trade between countries or economies increase rapidly. For example, in 2005, the world merchandise trade and services trade account for world GDP respectively 47% and 11%, however, in 1990, those figures are respectively 32% and 8%. During the period of 1990 to 2005, the aggregate amount of world exports has increased annually by 9%, however, the average growth rate of world GDP was only 3%. Thus, under economic globalization, when modifying Phillips curve, the openness should be considered. My dissertation is aimed to analyze how Phillips curve shifts and changes under economic globalization.

The outline and methodology

At present, the major researches about this issue are focusing on NKPC model and put the model into small open economies to do empirical analysis. Then the New Keynesian Phillips Curve can be obtained. There are two methods can be used to modify the NKPC model: the first one is extended model of difference between domestic and foreign prices (Sbordone, 2002; Gali and Monacelli, 2005); second one is extended model of foreign exchange rate (Temple, 2002; Reinhart and Rogoff, 2004).

The outline of my dissertation is that firstly, presenting the theory and general New Keynesian Phillips curve model, then modify it from two aspects of international trade and international finance.

Secondly, analyzing the influences of domestic inflation and employment which are from international factors. The New Keynesian Phillips Curve model is generally written in the form: $\pi_t = \alpha \pi_{t-1} + (1-\alpha) E_t(\pi_{t+1}) + \mu \text{cost}_t$. Assume that π_t is inflation rate at time t , π_{t-1} is inflation rate at time $(t-1)$, $E_t(\pi_{t+1})$ is expected inflation rate of time $t+1$ according to that at time t , cost_t is cost of production per unit at time t , $\alpha \in (0, 1)$, $\mu \in (0, 1)$. My research mainly focus on four aspects: 1) inflation effect on unit product cost, considering the formula above, the third part on the right is the changes of unit product cost under economy globalization. 2) inflation effect on international capital flow, the second part on the right of the formula above is expected inflation which makes individuals expect domestic real interest rates to change, people choose to invest in foreign. 3) lagged effect of inflation, the first part on the right of the formula above is adaptive

expectation. 4) effect of inflation on employment, overall, whether unemployment rate increases or decreases depend on other factors, for instance, domestic employment rate and trade policy.

Thirdly, choosing two developed countries which are U. S and UK and one developing country which is Brazil and using OECD database or other databases to obtain figures about CPI, GDP implicit deflator, import price index and unemployment rate. The time period selected is 1992 to 2010. Then using these data to do empirical analysis about NKPC model under economic globalization.

Finally, getting the conclusion. The expected results I want to get are that under economic globalization, in the short run, inflation rate and prices of imports shift in the same direction. The lower the prices of imports are, the smaller the slope of Phillips curve is and vice versa. As Figure 2 indicates,

I also expect that Phillips curves with different slopes adjust to different countries. The line ? with flatter slope is suited for developed countries due to the lower imports prices. However, the line ? with steeper slope is suited for developing countries because of its higher imports prices.

The framework of this dissertation consists of four parts:

The theory of Phillips curve

Shifts and changes of NKPC model under economic globalization

Empirical analysis about NKPC model under economic globalization

The significance of the theory and conclusion.

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