

Theories of unemployment and growth economics essay



**ASSIGN
BUSTER**

There is an extensive literature that examines the relation between institutional labour market arrangements and their impact on labour market and economic situation of an economy. Studies that focused upon labour market institutions and their impact on unemployment across Europe and OECD use ordinal indexes of the quality of labour market institutions and the use of macroeconomic framework which make an intense use of the NAIRU theory of unemployment. According to these theories, labour market rigidities are perceived as a factor that has a negative impact on the frictionless operation of the labour market, ultimately it contributes to the raising of the unemployment rate. A number of empirical studies have been done on demand shocks and rigidities in labour market institutions that affect unemployment rate, such as Brubb and Wells 1993, Scarpetta 1996, Nickell 1997/1998, Elmeskov et al 1998, Nickell and Layard 1999, Belot and Van Ours 2000. Even though their findings are not uniform, a general outcome seems to prevail: institutional rigidities such as long duration of unemployment benefits, rigid employment protection legislation, are significant in explaining the patterns of persistent unemployment in European countries, especially in the British economy.

Stockhammer (2004)[1] made an attempt of an analysis which differentiates itself from the standard one that is based on NAIRU and he jointly examined the role of price adjustments, accumulation patterns and labour market rigidities. The role of accumulation is revealed as it deflects from the Neoclassical and New Keynesian theories of unemployment; instead it relates on a Post-Keynesian view of the economy, where unemployment is regarded as a disequilibrium condition which results from the difference

between capital growth and the rate of growth of the workforce.

Stockhammer's findings suggest that labour market rigidities have a poor effect on unemployment and that the accumulation slowdown in Europe is the most relevant in determining unemployment.

Even if there are differences in their policy prescriptions, the theories mentioned above have a number of limitations. Firstly, they rely almost fully on subjective measures of quality or on the strictness of the labour market institutions. Nickell et al (2002) and Nunziata (2002) find contradicting evidence which suggest that labour market rigidities impact more the structural than the cyclical element of unemployment. Secondly, such studies are based on the assumption that the unemployment relationship is the same across all sample countries (OECD Economies). Countries differ not only in labour market institutions but also in the way that key macroeconomic and microeconomic policies are being performed. Such differences can have high implications in the way labour market institutions and other macroeconomic variables impact the economy. Finally, these studies tend to omit differences within country in unemployment performance and labour market flexibility. These differences are usually large and more pronounced than cross country differences.

Unemployment and growth – general

In the long run, there is a negative relationship between GDP growth rates and unemployment changes. This relationship has been best captured by Okun's Law in the 1960s, becoming a base framework for the study of the relationship between the two variables. The theory states that real GDP

growth, which is approximately equal to the potential output growth, most of the times, is required to sustain a stable unemployment rate[2].

In the short run, it has been discovered that the relationship between the rate of unemployment and economic growth might be a weak one. There have been previous cases when unemployment rate start decreasing sometime after economic activity has turned positive on an extensive scale[3]. The reason why unemployment rate does not pick up once the recession has finished is that some firms tend to hoard labour; because to lay off workers when product demand decreases and rehire them when product demand increases back is costly. As a result of this, firms may be able to increase output to meet demand on the short run, without hiring additional workers and this is done by increasing hours and productivity of the current employees. This phenomena result in a temporary boom in labour productivity growth, which reaches levels above its long run rate.

With fully utilised labour, output cannot grow faster than the rate of labour productivity growth, until firms start to hire new workers. If growth in GDP exceeds growth in labour productivity, employment will increase; if employment growth is more rapid than growth of labour force, then the unemployment rate will decrease.

Thus, one of the most important factors underlying the long-run relationship between GDP growth and unemployment is the growth rate in potential output. Potential output is represented by the measure of an economy's capacity to produce goods and services when available resources are fully utilised. Potential output rate of growth is a function of the growth in

potential output and labour supply, provided the economy is at full employment. As it happens in the current recession which started in 2008, unemployment increased, as a result of the fall in the actual GDP compared to the potential GDP (output gap).[4]

If any addition to the labour force goes straight in employment, output growth will equal the labour supply, provided there is no productivity growth. If it is the case that GDP growth falls below labour force growth rate, then there will be a shortage in the new job creation needed to cover all job seekers; as a result, unemployment rate will increase. If the output growth rate exceeds labour force growth rate, new jobs will be created by the firms in order to satisfy the rise in demand of goods and services, leading to an increase of employment as new positions will be filled from the pool of unemployed workers.[5] It has been estimated, by the Congressional Budget Office, that the rate of NAIRU (non-accelerating inflation rate of unemployment) is around 5% [6]. If GDP growth is equal to labour force growth in the presence of productivity growth, more people will be on the labour force market than the number that is actual needed to produce a certain amount of goods and services. The unemployment rate will fall in the long run, only if GDP growth will exceed the combined labour force growth rate.

Measurement of unemployment

Measuring unemployment has always been a matter of debate, as it encountered a problem of international comparison, while countries measure unemployment differently. Early measures of unemployment were compiled

from data of those who receive benefits and social assistance. This measure was affected by the fact that it was difficult to estimate the number of all people who are unemployed as benefits are allocated under special circumstances. Benefit eligibility and regulations differences across countries may reflect disparities in the availability of benefits rather than people out of work. This method distinguishes between “voluntary” and “involuntary” unemployment, as the circumstances under which benefits are granted differ.

In order to overcome these irregularities, governments, international institutions and economists agreed that the best measure of unemployment is by the International Labour Organisation (ILO) definition. According to this, unemployment is measured by the number of people out of work, looking for work and available for work as a proportion of the total labour force. ILO and OECD encouraged the usage of surveys for the labour force, which measure unemployment as described above and in a way that is consistent across countries. ILO measure does not take into consideration the reason why a person is out of employment, nevertheless it distinguishes between “unemployment” and “being out of labour force”, by the criterion of having searched for work in the near past.

The main difference between these measures is the question of what are they trying to measure and why unemployment should be regarded as an issue. Only few of those who are not working are classified as unemployed, as it is a matter of choice if to participate to the labour market or to dedicate to family, studies or other activities that do not place someone as part of labour market. Unemployment is seen as a greater concern than non-
<https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

participation because it is considered to be involuntary and represents a failure of the labour market. The difference between unemployment and non-participation is far from being clarified in practice and neither the ILO nor the “ claimer count” methods fully distinguish between the two.

Review of Models

Simple structural models

Simple structural models have been inspired from the notion of “ natural” rate of unemployment introduced by Milton Friedman (1968)[7]. “ Natural” rate of unemployment is grounded in labour market institutions, as there are imperfections that characterise the labour markets.

The imperfections that characterise the natural rate of unemployment include factors such as labour market legislation, benefits, taxes and the role of trade unions; these being the same variables included in the Keynesian models and which are responsible for “ wage pressure”.

Hysteresis

Hysteresis is built on the idea that a system can be changed permanently or for a long period of time after experiencing a shock. In his writing, Keynes[8] (1920) gives the example of a ship on the sea that is caught in a storm. As a consequence the ship is sunk and sailors drowned. He explains that even though the storm is temporary; the damages it caused are permanent, with the ship and sailors never to come back to the surface. In the economic environment, the notion of a shock can be compared with the event of a

bankruptcy, in which a firm closes down and its employees are dismissed; for <https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

some it might take long to get back into employment or this might not happen at all. The notion that labour market is subjected to hysteresis was introduced in the 1980s when long term unemployment rates increased in some European and Western economies.

The main idea is that not labour market institutions cause high rates of unemployment, but rather macroeconomic downturns such as the OPEC shocks, which cause the nations to get stuck in a situation of high rates of unemployment.

This concept of hysteresis can be merged with the simple Keynesian or the simple structural theories. For example, in the structural case, it will be a long run equilibrium natural rate, nevertheless in the short run the equilibrium rate will be given by:

$$U_t = \hat{\lambda} U^* + (1 - \hat{\lambda}) U_{t-1} \text{ Eq. (5)}$$

- U_{t-1} - unemployment rate in the previous period

- $\hat{\lambda}$ - rate of decline

If there is a sharp increase in unemployment due to an unexpected shock, the equilibrium rate of unemployment will rise and eventually decline ($\hat{\lambda}$) slowly back to its long-run equilibrium. Taking the example of oil market shocks and monetary deflation from the end of 1970s and beginning of 1980s, hysteresis model have the property that sharp increases in unemployment would last for some years after the shock. Nevertheless, how many years the anomalies will last, depends on other factors which characterise the speed of adjustment.

<https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

One theme came in the attention of economists with the work of Layard and Nickell on the UK economy in the 1980s and had as main interest long-term unemployment.[9]The main idea was that once unemployment rose, there would be a rise in the number of people who experience long duration unemployment; this phenomenon could lead to discouragement in pursuing job search, weaken motivation and ultimately a depreciation of skills. Because of this situation, employers are reluctant to employing people who have been for a long time out of work, leading to some people fading out of the labour force.

One of the most important disruptions in the Western Europe economy and with the highest impact since World War II is the rise in unemployment following OPEC decision of rising prices during the 1970s. Other shocks can be also mentioned, such as the decline in productivity growth from the 1970s[10]and the sudden rise in real interest rates all over the world in the 1980s[11].

Interactive models

Interactive modes are characterised by a static structure and unlike simple structural models, these assume that the economy is hit by a permanent shock, whose impact depends on the structure of the nation's economy. One good example is the technology shift hypothesis, which states that an increase in use of technology has shifted the demand for unskilled labour to skilled labour, leading to wage inequality and higher unemployment. According to Krugman (1994)[12]" the shift in demand towards more highly

skilled labour has created persistent unemployment in countries where relative wages have not been able to adjust”.

Theories of unemployment and growth

Pissarides and the job-search theory – a basic framework

The first and most complete set of work on Job-search model was developed by Charles Pissarides (1990). The model is an extension to the neoclassical growth model with exogenous technological progress.

Search-theory is based on the assumption that labour market activity is uncoordinated, time consuming and costly. A matching function has been developed and it includes unemployed workers and the number of vacancies available on the market at a certain point in time.

It is assumed that m function is concave so it can represent an accumulation of externalities on the labour market. If there are more vacancies opened by employers, the smaller the search effort of workers looking for a job; and vice-versa, the more workers on-search on labour market, the faster matching process for firms.

It has been observed that growth rate is negatively correlated with the unemployment rate from the supply side perspective. From the demand side it is observed that an increase in growth rate leads to a decrease in capital ratio per unit of efficient labour, resulting in an increase in the interest rate. This affects the labour market tightness and the effect can be either positive or negative, depending on the difference between interest rate and growth rate.

<https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

Endogenous growth and unemployment: Neoclassical and Keynesian features

A further development of the basic model of job-search has been made by Bean and Pissarides (1993)[13]. They built a model where both unemployment and growth are endogenous variables, this will allow analysing a new kind of feedback effect that unemployment generates on growth. The base framework is the model of Diamond (1965)[14], to which it is added technology that displays decreasing returns to capital on the firm level, but constant returns at the aggregate level, according to benchmark model of Romer (1986)[15].

Another assumption is the introduction of a costly process of matching workers and firms. Firstly, the model represents in steady state endogenous growth with a positive unemployment rate. Secondly, there are introduced Keynesian features, assuming imperfect competition on the goods market. The model is completed with other parameters which can represent policy intervention.

Authors argue that unemployment reduces savings pool and ultimately the investments necessary to impel accumulation of capital. Starting from this theory, Bean and Pissarides (1993) use their model to investigate on how different policy interventions have an effect on the endogenous variable. [16]According to the model, a reduction in the hiring cost results in an increase in the number of vacancies a firm creates. This stimulates employment and generates an increase in the pool of savings, stimulation accumulation of capital and ultimately growth.

In the case, if an intervention is directed to the labour market it determines a positive effect on both growth and unemployment. When the intervention is directed to increase the bargaining power of workers, the outcome is ambiguous. High wages can discourage firms from opening new positions, increasing unemployment, on the other side, high income can stimulate increase in the pool of savings for employees.[17]

Assuming imperfect competition in the goods market, and a high mark-up margin, it can be observed that any increase in the marginal propensity to consume will increase the pool of savings and stimulate growth rate; despite what is predicted with Classical assumptions. Dean and Pissarides (1993) assume that hiring costs are expressed in terms of consumption; if the price for goods rise, hiring costs increase along with unemployment. A reduction in the trend to save raises employment level. In this case it is generated an increase in the pool of savings, increasing growth through accumulation of capital.

The framework developed by Bean and Pissarides (1993) can be used to investigate the effect of new policies on both endogenous variables.

The neo-Schumpeterian approach to growth and unemployment

Aghion and Howitt (1994)[18] have a different response to Pissarides' (1990) model, trying to express growth and unemployment in a joint way. The basic model of creative destruction has been extended to include the problem of labour reallocation across the firm. Aghion's and Howitt's (1994) model is based on the assumption that each household is endowed with a flow of one unit of labour service which is supplied to the firm. Also the household is <https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

endowed with a stock of h units of human capital. As all households display the same patterns and the same intertemporal utility function, this can be expressed as:

$$U(c) = E_0 \int_0^{\infty} \beta^t c_t e^{-\rho t} dt \quad \text{Eq. (18)}$$

Aghion and Howitt define the firm as being “an institutional embodiment of knowledge; research facilities for producing new knowledge, for generating new ideas” (Aghion and Howitt 1994). The production of a final good is made by combining a specific technology with an appropriate worker and a variable amount of human capital.

$$y_t = A_t f(h_t - h_{\min}) \quad \text{Eq. (19)}$$

The function $f(\cdot)$ is the representation of all neoclassical features and also is taken into consideration the Inada conditions. In the basic model the productivity (A_t) is exogenously determined and follows the basic exponential rule: $A_t = A_0 e^{\lambda t}$. According to the Poisson effect, if the firm decides to transform innovation in new technology, it will incur an implementation cost and the new process will be available at a specific point in time.

Due to labour reallocation across firms, there is generated a certain level of unemployment; if a firm does not innovate it will not be able to cover its fixed costs, leading to potential closure which will force workers into unemployment. At this point it starts a new process of matching the worker with another firm; this process is described by Diamond and Blanchard (1989)[19] and Pissarides (1990)[20]. The matching function displays all

neoclassical standard features: the recruitment rate $q(V)$ is a decreasing function of the vacancies number in the economy; the job finding rate $\dot{I}...$ is an increasing function of all vacancies number. Assuming that the duration of every match takes specific units of time (S); a worker who is forced into unemployment will wait $1/\dot{I}...(V)$ units of time until finding a new job; on the other hand, a firm who is trying to find a new employee will wait $1/q(V)$ units of time until finding a proper match.

If it is assumed S as constant and technologically determined, the equation above can be re-written as:

$$u = 1 - S \dot{I}...(V) \text{ Eq. (20)}$$

Aghion and Howitt tried to express the Beveridge curve in the function of technological change (equation (20)) when a firm decides to innovate at a specific point in time (t_0), it start looking for a specialized worker. A match is predicted to be obtained at time $t_0 + 1/q(V)$ and the production process can start.

Aghion and Howitt also take into consideration other effects of growth on unemployment; these affect unemployment indirectly through the dynamics of new firm entrants into the economy and through the clearing equation on the human capital market.

Stylized facts of Unemployment and growth in UK

Unemployment in UK often has a tendency to last a very long period of time.

As it can be seen in the table below, the rate of unemployment recovers

during a long period after the Recession from the beginning of the 1990s, the rate stabilizing only at the beginning of 2000s.

There are multiple causes of unemployment depending on the state of the economy and the policies that are in effect. Medium causes of unemployment can be identified as influences that tend to reduce the actual supply of labour from the total labour market (unemployment benefits and social security, a problem in matching the unemployed with available vacancies and employment protection legislation).[21]

Before 2000 in UK unemployment rates tend to follow the same patterns during economic changes; rising during recessions, decreasing during non-recession and with steady low rates during booms. In the 1980s and 1990s recessions, unemployment in UK tends to rise and persist for a long period of time after shocks have occurred. The figures registered returned to their low rates of pre 1980s only after the recession in the 1990s, demonstrating that it took a long time for unemployment rates to recover after a major shock.

During the 2000s, UK did not suffer from the recession that hit US and other European countries at the beginning of this period. In 2008 a global financial crisis developed and with it a severe recession which has led many to refer to it as the “ great Recession”. It developed as a result of government incapability and/or inaction to correct old economic imbalances and from a continuous misperception of risk by most who were involved in the financial sector.

British economy also entered this downturn in 2008, experiencing its first recession in fifteen years; with figures rising from 5. 1% in early 2008 to 8%
<https://assignbuster.com/theories-of-unemployment-and-growth-economics-essay/>

in early 2010 (OECD). Even if it is a significant increase, this is overshadowed by the figures registered during the 1980s, with increases of 6.5% (OECD). Unlike other developed countries which have been affected by the recession, such as Germany, UK did not push forward labour market policies aimed to temper the effects of the recession on the labour market. Austerity package which includes public spending cuts and tax increases further exacerbated increases in unemployment.

This can be denoted from the contraction in output during this period, this is shown in Figure 2 with a relationship between unemployment and GDP in UK since the early 1970s (Okun's Law).

Even though there was slow increase in unemployment, GDP has fallen by 6% compared to the trend over 2008-2009 recession; this drop is similar to the one registered in the 1980s recession[22]. As a conclusion derived from the table it can be said that the rise in unemployment in UK has been mild despite the amplitude of the recession.

The diagram below shows the fluctuations in unemployment[23] and GDP growth since 1960 until 2011[24]. It can be seen that in the early 1990s, GDP rate dramatically decrease, while unemployment rose illustrating a clear negative relationship between the two variables. Also it can be seen that recovery of unemployment rate is extended over a long period in order to reach previous levels; with peak points in 1984 and 1993, so it can decrease during a period of eight years (from 1993 to 2001) to reach its nadir of 4.7%. The same pattern is observed after 2008, with important decrease in GDP levels and increases in unemployment rate.

Gregg and Wadsworth (2010) have an explanation on why unemployment rate has decreased so little compared to other recession periods. Even if working hours has fallen and part-time employment has risen, the major impact on adjustment was a fall in producer wages more than in previous downturns, fact that maintained firm profitability. Firms were able to survive without any important job losses, even though they registered decline in productivity that has been a consequence of the temperate fall in employment relative to large decline in output.

Layard et al. (2005) and Nickell (2006) included the role of institutions in the explanation of unemployment; and this has been subjected to a broad econometric testing and the validity of empirical results which are meant to support this view have been doubting. It has been found that is difficult to estimate cross country panel unemployment regressions, which have a lagged unemployment rate and a high number of year and country dummies and to prove that any of the labour market rigidity variable work. Also it has been found a similarity between European countries and is that labour market institutions do not tend to cause unemployment. One major exception is changes in the replacement rate which sometimes appear to have a negative correlation with changes in the unemployment rate.

On the other hand, Blanchard and Wolfers (2000) have argued that “ the interaction of shocks and institutions does a good statistical job of fitting the evolution of unemployment both over time and across countries”. Even so it is difficult to interpret as being true as results have been obtained in an over-fitted model; and driven more by the cross-section variation than by any

time series changes. In this model there are only eight time series data points as it is used five year averages between 1960 and 1995.

Okun's Law

In economics, the empirical evidence of observed relationship between unemployment and growth is known as Okun's Law, named after economist Arthur Melvin Okun (1962). He discovered that for every increase of 1% in unemployment rate, a nation's GDP will be approximately 2% lower than its potential GDP[25]. This has been known as "gap version" and another "difference version"[26] is describing the relationship between quarterly changes in unemployment and quarterly changes in GDP.

Friedman and Wachter (1974) state that there is a fixed relationship between unemployment rate movements and the size of the gap. The assumption of Okun's law is that any change in productivity and in the labour force, happen at a steady exogenous trend rate across time. This theory states that from a Cobb Douglas production function all variables should be excluded except unemployment rate and the linear time trend; by assuming that all variables are only functions of unemployment rate and an exponential time trend[27].

The relationship that Okun's Law describes can be represented through a linear regression, where the change in unemployment rate is a function of an intercept, a value of GDP growth and an error term:

$$\Delta \text{UNEMPL} = \hat{\beta}_0 + \hat{\beta}_1 \Delta \text{GDP} + \epsilon$$

For the purpose of this report it will be investigated the “ difference version” which it can produce more relevant outcomes as it includes more observations.

According to the output below, growth has a statistically significant negative effect on unemployment rate. In UK it is shown that with every one percent increase in GDP growth, there will be a decrease of 8.12 percentage points in unemployment rate. Due to the presence of heteroscedasticity problems, the estimation is done with White heteroscedasticity-consistent standard errors and covariance. For an observation period of 51 years (1960-2011), change in GDP growth explain changes in unemployment rate in proportion of 16.17% as reported by the Adjusted R-squares.

Dependent Variable: DUNEMPL

Method: Least Squares

Date: 08/31/12 Time: 14: 44

Sample (adjusted): 2 52

Included observations: 51 after adjustments

White heteroskedasticity-consistent standard errors & covariance

Variable

Coefficient

Std. Error

t-Statistic

Prob.

C

80.64332

32.61138

2.472859

0.0169

DGDP

-8.12E-10

2.11E-10

-3.855035

0.0003

R-squared

0.168753

Mean dependent var

43.08627

Adjusted