Title: Unemployment in Germany
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Date: February 15, 2013
Institution name/journal where submitted: McGill University

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This paper will examine the development of unemployment in the Federal Republic of Germany since its reunification in 1990. Germany’s low unemployment rates have been reminiscent of its success and continuously strong economic growth despite the world economic crisis in 2007, 2008 and despite the general downward trend of European economies such as France, Spain and Italy. This paper will analyze how Germany’s traditionally low wage rates, and the constantly growing productivity rates have allowed Germany’s unemployment rates to stay low even when the world economy and overall trade were in recession and how that positively affected Germany’s crucial balance of payments and GDP growth, while also keeping in mind the repercussions in the consumer sector.

**Dependent Variable:**

The dependent variable this paper is built around is unemployment. Since the Federal Republic of Germany was non-existent until the unification of East and West Germany in the 1990s, the analysis of unemployment growth in decline will begin in 1990.

**Graph 1: Unemployment in the Federal Republic of Germany since from 1990-2010**
As one can see in Graph 1, Germany’s unemployment generally was under the average of the EU except for the period of 2002-2008, which marked the era of Germany’s highest unemployment in recent history as it exceeded %10 of the total labor force. Generally speaking though, Germany’s unemployment in recent history ranged from 6-9%. Unfortunately, the major databases for macroeconomic development indicators such as the World Bank or the OECD databases do not include the unemployment figures for Germany in 2011 and 2012. Graph 1 shows clearly that Germany, contrary to the rising unemployment rates of EU as a whole, had a downward sloping trend of unemployment due to a series of factors that will explained in the course of this paper. According to the ‘Bundesagentur fuer Arbeit’ (Germany’s labor agency) the unemployment rates for the years 2011, 2012, and a projective measure for 2013 are 7,1%, 6,8%, 7,4% respectively generally confirming the exemplified downward trend of the unemployment figures, but also making implications that the load Germany had to carry in light EU bailout might have been too high to sustain this downward trend.

Unemployment in light of German Unification:

The economies of East and West Germany were actually quite similar before unification, both focusing mainly on machinery, occupying a fairly skilled labor force. However, Germany had to engage in a historic challenge to firstly unify a socialist economy with a capitalist one. As graph 1 shows, unemployment figures after unification constantly rose to almost 10% 1997. This is notably due to the policy of ‘Finanzausgleich’ that forced the most prosperous states in the West to give up some of their budget to the newly created East German states. This prevented the West German states to reinvest some of their surplus in better education and innovative machinery technology, two of Germany’s fiscal principles that had allowed it to resurge from World War II destruction so impressively. Additionally, the ‘Bundesbank’ (German Central Bank) was
concerned with money supply growth in Germany, which was created through the unification, an instant growth of aggregate demand in the domestic economy. Considering the Bundesbank’s generally big fear of increasingly high inflation rates the Bundesbank chose a contractionary monetary policy by increasing short-term interest rates, which created a recession that also spurred the growth in unemployment. The Federal German Republic quickly reversed the effects of the ‘Finanzausgleich’ and short-term effects of the Bundesbank’s monetary policy and returned to the well-known picture of constant economic growth and fairly low unemployment.

Unemployment since the 2008 economic crisis and during the EU era crisis:
The 2008 world economic crisis naturally had implications for Germany, a country that is highly dependent on the world market since a considerable part of its GDP stems from its surplus in the trade gap with the rest of the world. Government bailouts were necessary to secure a considerable amount of jobs but although Germany’s economy contracted by 3.9%\(^1\) in 2009 Germany’s unemployment remained low. In light of EU crisis, Germany along with the Nordic nations, Netherlands and Luxembourg is one of the only nations in the EU that has constantly kept low unemployment over the last 5 years. When countries such as Spain reached record highs of youth unemployment of 48.7% in 2012/2013, as indicated by the orange line in graph 2, Germany’s youth unemployment kept slowly declining to 7.8% in 2012/2013, as indicated by the red line in

\(^1\) Trading economics
After elaborating on the economic theory behind the dependent variable, unemployment, of this paper, this paper will argue which variables had a decisive impact in the just described development of Germany’s unemployment figures.

**Theoretical Analysis**: 

Unemployment is defined as:

\[ U = L - n \]

The variable ‘L’ represents the Labor force while ‘n’ represents the natural rate of unemployment, which is mainly determined by the economy’s aggregate supply, being consistent with the aggregate production of the particular economy. This concept was developed by the Neo-classical economists Milton Freedman and Edmund Phelps and is therefore also in some ways ideologically determined. It is argued that the natural rate of unemployment stems from

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2 EUJ Database

3 The frame work for the theoretical analysis comes from ‘Jagdish Handa Macroeconomics’
institutional errors of governance but one could argue that if these errors involve permanent flaws in the labor market and in the real wage rate, it could include involuntary unemployment a cornerstone of Keynesian economics that this paper will touch on later. According to classical economists, the natural rate of unemployment corresponds to the Long-Run rate of unemployment.

**Labor Market:**

\[ P \times MPL = W \]

This means that Demand for labor is determined by the real value of its marginal product equaling its nominal wage rate.

In practice this means that a firm maximizes its profit if the marginal productivity of labor equals the nominal wage rate. An important implication of this concept is that wage rate and demand of labor are negatively related and that the marginal productivity of labor has to stay above this wage rate in order to make it profitable for a firm to hire additional workers.

**Diminishing Marginal Returns of Labor:**

![Graph showing diminishing marginal returns of labor]
Ineffectiveness of monetary policy on LR equilibrium:

Changes in aggregate demand; prices and inflation do not alter the LR equilibrium, the production function and the work-leisure preferences, concluding that monetary policy cannot effect long-run employment and output.

Supply of Labor:

Higher wage rates have a definite effect in increasing the opportunity cost of leisure, motivating workers to work longer hours, go into pension later, and motivating discouraged workers that are not in the labor force to join it.

The components of unemployment:

Voluntary unemployment $U(\text{voluntary}) = L(\text{max}) - L$

- Workers that want a higher wage than the market provides for their given skill set. This component is usually neglected in the macroeconomic analysis of unemployment

Structural Unemployment $U(\text{structural}) = L - n(s)$

- Workers, part of the labor force, that do not possess the required skills, or are not and the right location, to get jobs with a productivity that would encompass the going wage
- This also includes seasonal unemployment. Seasonal unemployment can be caused by sectors in the industry that only work seasonally such as fisheries or for instance Canada’s construction sector that has to cut many jobs over the winter season

Frictional Unemployment $U(\text{frictional}) = n(s,\text{matched}) - n(d,\text{matched})$

- Workers that do match the required skills for a job in the economy but are in search for the fitting one

Involuntary unemployment $U(\text{inv}) = n(s, \text{matched}) - n(d,\text{matched})$
• These are the workers who do have the appropriate skills to have a job in the economy but for whom the economy does not provide jobs.

Involuntary unemployment in detail:

Involuntary unemployment is a much debated about part of the unemployment analysis in macroeconomics. While the classical and modern classical school of economic thought rejects the premise that the economy sometimes is not in full employment and therefore the concept of involuntary unemployment can be neglected has too much intervention of the government in the private market, Keynesian economics regards involuntary unemployment and its implications as a major part of its labor market economics.

It is to be noted that involuntary unemployment does not occur if labor supply equal labor demand at the current wage.

Involuntary unemployment by definition occurs either if there is ‘high real wage’, which means that it is above the Long-Run Equilibrium level, or due to an aggregate demand deficiency. These factors can occur simultaneously.

In cases where involuntary unemployment is induced by a demand deficiency, the economy meets the fall in aggregate demand with an effective labor demand. \((n, d\text{ effective})\). Involuntary unemployment could then be measured by \(n(f) – n(d,\text{effective})\). It is much more difficult to predict the effect that involuntary unemployment has on the wage rate of the labor force. Though the marginal productivity of labor after such a demand deficiency exceeds the real wage \(w\) and therefore firms could increase their workers real wage, one has to keep in mind that the greater and the longer-lasting the rise in unemployment, the higher will be the probability for the real wage to fall as workers do not have the chance to bargain for higher wages because the firm has an excess of labor supply at their disposal. This problem can be depicted in South Africa’s
mining sector that shows high numbers of unemployment and therefore cannot overcome the constantly low wages.

Involuntary unemployment can also induced by a credit crisis such as the 2008 world economic crisis. This would theoretically not affect the long-run equilibrium but could affect the economy for several quarters. Credit deficiency will cause output and employment to fall in some cases.

Fiscal and Monetary policies to reduce involuntary unemployment

Expansionary monetary and fiscal policies can drive up the money supply and therefore try counter a demand deficiency while sudden decreases in the money supply; a contractionary money supply can cause a recession and even create a demand deficiency. It is important to note however that if involuntary unemployment is due to a high real wage fiscal and monetary policies will have no effect on involuntary unemployment and the structural problems that stand behind that high real wage.

Inflation and unemployment:

A.W. Phillips, the creator of the ‘Philips Curve’ depicted the relationship between inflation (pi) and unemployment (u). The shape of the Philips curve has important policy implications for federal governments as the formula u = g(pi) shows. According to the Philips curve, which was firstly based on empirical figures of unemployment in the UK from 1860-1950, the higher the inflation rate in a given economy, the lower will be its unemployment rate.
In terms of polices, according to this theory the federal government has to balance out inflation and unemployment. It is important to note that the Philips curve is not stable and as the expectations augmented Philips curve by Milton Freedman shows the volatility of the Philipp’s curve in light of the effect of varying expectations in the work force.

The Expectations augmented Philips curve underlines the effect unanticipated inflation on the labor force. According to the Friedman supply rule an expected inflation rate cannot affect the real wage rate but unexpected inflation, defined as $(\pi - \pi \text{ (expected)})$, can. Negative unexpected inflation raises the real wage and therefore increases the production costs for a company and therefore increases unemployment. Positive unexpected inflation has the contrary impact.

This model is important because it implies that Central Bank need to establish a predictable, stable, yearly inflation rate increase so that trade unions and the labor market as a whole does not demand higher real wages just because they fear a very a high rise in inflation that is actually not in place.

**Explainable Variables:**

This paper will use wage rate and labor productivity growth as explainable variables for Germany’s unemployment as both of these factors directly influence Long-Run output and the Long-Run labor market equilibrium and play a decisive role in German politics and economic as
a whole. This paper will also take Germany’s inflation rate in light of the EAPC into consideration and examine trade unions responses on inflation and wage rate negotiations.

**Analysis:**

**Germany’s central bank’s influence on unemployment:**

**Graph 3 Inflation**

![Graph 3 Inflation](image)

As once can depict from Graph 3, inflation in Germany has always been lower than the Eu average. However the 1991-1994 boom of inflation due to re-unification and increasing oil prices was met by a contractionary monetary policy of the Bundesbank which increased unemployment in the short run. It was essential for the Bundesbank to do so because it fundamentally established and underlined its philosophy of low, stable, predictable inflation with its reaction to increase interest rates in response to 1991-1994 inflation hikes. This move was furthermore important in light of the Expectations augmented Philips curve. West Germany, prior to reunification, went through a period of constantly low inflation rates and logically, the labor market started to react in crisis. Germany’s powerful trading unions always expected higher increases in inflation from 1991-1994 and therefore demanded higher wage increases than the real wage. By using the ‘cold turkey’ method that caused a short-term recession due to contractionary monetary policy the...
German ‘Bundesbank’ allowed the German economy to fall back on their cornerstones of its success: low inflation and maximum stability and therefore job security.

**Stability over Excess**

To start the analysis of Germany’s unemployment from 1990-2010, one has to consider the developments in GDP growth in Germany, as they are essential to this study. One can recognize that Germany’s GDP growth has varied significantly over the past 20 years due to its dependency on the world market, as an important exporter and also due to its high government spending in times of economic crisis. As one can see on Graph 4 Germany’s GDP growth patterns do not extraordinarily vary with other developed nations or the EU as a whole. In 2005-2006, 2006-2007 Germany experienced a huge economic boom, but was like the majority of the world economy severely hit by the 2008 economic crisis.

**Graph 4 GDP Growth**

What is unique about Germany’s case is that the economic boom of 2005-2007 did not cause German firms to hire many more workers, as unemployment rates were constant at about 9% during the boom. Germany’s firms did not hire more workers or increase wages excessively as
Graph 5 showed during that period because of the outlook they had for the world economy in the following years but also because of the general philosophy of German firms that encourages firms in Germany to reinvest their profits to increase the productivity of their firms and remain competitive in the world market.

Germany’s wage rate stays constant despite growth-boom cycles induced by the world economy because the German industry, which is also highly influenced by powerful trade unions that exert much influence on it, is molded to promise German skilled workers long-term job security on a slowly increasing salary.

**Graph 5 Wage rate**

For instance, one can depict from the Graphs shown that Germany’s wage rate development has not equaled that of other developed nations such as France and Spain, despite higher GDP growth rates.
Since 2001, average hourly wages have stagnated in real terms. Assuming an ‘off-the-shelf’ estimate of labor-demand elasticity with respect to wages of 0.7 – we show that if wages had continued rising at the pace of the 1990s (1.12 log points per year), employment would have declined much more in the recession – by an amount equal to 20% of the missing employment decline\(^4\)

The repercussions of such a hesitant wage rate policy are that Germany’s domestic consumer sector has always remained fairly weak with regard to its GDP.

In German policymakers have traditionally realized to make structural adjustments that affect worker’s work-leisure patterns and their wage rate.

In 2008 the world economic crisis caused German GDP to fall by 5% without resulting unemployment to fall significantly. Firstly this is due to the firm’s behavior during the previous boom cycle but also due to the fact that Germany’s firms understand what to do with the falling labor productivity rates in times of recession.

**Graph 6 Labor Productivity Growth:**

As one can see in Graph 6, the developments of Germany’s labor productivity growth rate and Germany’s GDP correlate. Despite the fact that wages were not dramatically increased, and firms

\(^4\) Dominik Groll
did not add significantly more workers, there must be another reason that explains how labor productivity growth could go from 3.5% in 2006 to – 2.5% in 2009 without causing a sharp rise in unemployment due to the increased production costs.

**Structural partially economic adjustments**

The above mentioned explainable variables inflation, labor productivity growth and inflation all play a crucial part in Germany’s unemployment function but other variants such as labor market policies undertaken by Germany’s government and the structural nature of Germany’s labor market operations.

For instance during the world economic crisis, but also during the period of instability from 1991 to 1994, German firms effectively kept unemployment numbers lower than their production costs would normally allow by increasing working hours without pay for some workers, or decreasing the number of full-time workers and increasing the number of part-time workers. When the economic situation improved Germany, instead of hiring new workers, motivated workers that already work for the firm part-time to work longer hours, enabling firms to not encounter further training costs for new workers.

The labor market ministry undertook a series of labor market reforms. This famous series of reforms is widely known as ‘Hartz IV’ reforms. Under these reforms

- More experience for unemployment benefits
- Sanctions for refusing job offers were enforced
- Labor agency was reformed to allow more temporary work flexibility

These measures allowed Germany to alter the work-leisure patterns of its workforce, motivating more workers to enter into temporary work in terms of crisis, and motivating to stay in their firms to secure benefits in cases of unemployment.

5 Information from Labor Ministry of Germany
Conclusion:

Unemployment in Germany will always be dependent on how well Germany can keep its labor force competitive. The wage rate, inflation, and constantly high labor productivity growth are therefore crucial for the long-term job security that the German economy currently enjoys. Germany, in terms of the European Union, is in the unique position that it actually needs more skilled labor than its domestic market offers to maximize its output potential. In order to continue this path Germany needs to keep on re-investing profits during boom cycles to ensure long-run competitiveness. The continuation of this development can only be ensured if Germany does not have to neglect the close firm-government relationship that characterizes its economy in further EU integration. International firms should learn from German firms as to predict boom-bust cycles of the world economy better in order to make long-term job security a priority over short-term profit making.
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