

Macroeconomics | Activity 4, Lecture 5

The Labour Market: Unemployment as a Flow

In Class Group Activity

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Lesson of the day. Unemployment is not a fixed shortage of jobs; it is a flow. The natural rate is set by how fast workers lose jobs and how fast they find them, $u^* = s/(s + f)$. Change those flows and you change the rate, which is exactly what one country did.

Phase 1 – Concept checks

ANSWERS

ConceptTest 1. Answer. (b). The natural rate is $u^* = s/(s + f)$: it is set by the flows into and out of unemployment, not by a fixed stock of jobs. This is the central idea of the bathtub model.

ConceptTest 2. Answer. (b), frictional. Short spells while workers and jobs are matched are frictional unemployment. Some frictional unemployment exists even in a healthy economy, because matching takes time.

ConceptTest 3. Answer. (b). This is the lump-of-labour fallacy: the amount of work is not a fixed pie. Over time a growing economy creates new jobs as others disappear, so more workers or more machines need not raise unemployment.

ConceptTest 4. Answer. (b), higher. In $u^* = s/(s + f)$, a smaller f raises u^* . Long durations, not only frequent job loss, drive high unemployment.

Phase 2 – The desk problem

FULL WORKING

(a) **The base case (worked for you).** $u^* = 0.02/(0.02 + 0.38) = 0.02/0.40 = 0.05$, a natural rate of 5 per cent.

(b) **A recession.** With f halved to 0.19 and $s = 0.02$:

$$u^* = \frac{0.02}{0.02 + 0.19} = \frac{0.02}{0.21} \approx 0.095,$$

about **9.5 per cent**. Slower job-finding roughly doubles the natural rate.

(c) **A high-churn economy.** With s doubled to 0.04 and $f = 0.38$:

$$u^* = \frac{0.04}{0.04 + 0.38} = \frac{0.04}{0.42} \approx 0.095,$$

also about **9.5 per cent**.

(d) **Same rate, different disease.** Both give about 9.5 per cent, but for opposite reasons. In (b) unemployment is high because people take a long time to find work: low f , so long spells. In (c) it is high because jobs are destroyed and created rapidly: high s , so short spells but many of them. The cures differ. Case (b) calls for help with matching and job creation, such as training,

search support and stronger demand; case (c) calls for attention to why jobs are being destroyed and for smoothing transitions between them.

The same 9.5 per cent came from two opposite places: slow job-finding in one economy, rapid job loss in the other. The rate hides the flows; good policy looks at the flows.

Phase 3 – The case

WORKED ANSWERS

The country is Germany, and the reforms are the Hartz reforms of 2003–05.

1. They were raising the job-finding rate f . Shorter, less generous benefits and harder placement raise the rate at which the unemployed take jobs, and a higher f lowers the steady-state rate $u^* = s/(s + f)$.
2. Short-time work, which in Germany is called *Kurzarbeit*, holds down the separation rate s . Firms cut hours rather than heads, so few workers flow into unemployment even when output falls.
3. Unemployment barely rose, and then it kept falling. Despite a deeper output fall than in the United States, German unemployment stayed roughly flat through 2008–09, a result widely called the German jobs miracle, and the rate then fell from about 12 per cent in 2005 to about 5 per cent by 2019.
4. Raising f pulls the steady-state rate down (the reforms), and holding s down in the downturn stops the usual crisis spike (short-time work). With a higher f and a contained s , the natural rate $u^* = s/(s + f)$ settles well below where it began. That is what Germany saw: from the sick man of Europe to one of the lowest unemployment rates in the rich world.

Germany did not conjure up a fixed pile of jobs. It changed the two flows, speeding up job-finding and slowing job loss in the slump, and the natural rate fell with them. The bathtub, not a headline jobs total, tells the story.

End of solutions. Sources: Jones, *Macroeconomics* 6e, Ch. 7; accounts of the German Hartz reforms and *Kurzarbeit* (CEPR; IMF). All figures verified.