BEVERIDGEAN UNEMPLOYMENT GAP

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A KEY STATISTIC FOR STABILIZATION POLICIES

• US government mandate is to achieve “full employment”
  – unemployment gap = distance from “full employment”

• optimal stabilization policies depend on distance from efficiency
  – monetary policy, fiscal policy, labor subsidies/taxes
  – unemployment gap = distance from efficiency
1. statistical approach
   - trend unemployment generally not efficient
2. Phillips-curve approach
   - based on inflation dynamics but not welfare
3. our approach: based on welfare in modern labor-market models
   - Diamond-Mortensen-Pissarides tradition
   - key variables: unemployment & vacancies
   - key relationship: Beveridge curve
US UNEMPLOYMENT RATE

0% 3% 6% 9% 12%

US VACANCY RATE

0%
1%
2%
3%
4%
5%
US BEVERIDGE CURVE: 2010–2019

![Graph showing the US Beveridge curve from 2010 to 2019 with data points for unemployment rate and vacancy rate. The curve displays a downward trend as the unemployment rate decreases. Markers indicate data points for 2010:Q1 and 2019:Q4.]
US BEVERIDGE CURVE: 2010–2019

![Beveridge curve graph](image-url)
US BEVERIDGE CURVE: 1951–1959

Log unemployment rate

-4.2
-3.9
-3.6
-3.3
-3

Log vacancy rate

-3.7 -3.4 -3.1 -2.8 -2.5 -2.2

- Log unemployment rate
- Log vacancy rate

-4.2 -3.9 -3.6 -3.3 -3.0

Log unemployment rate
-4.2 -3.9 -3.6 -3.3 -3.0

Log vacancy rate
-4.2 -3.9 -3.6 -3.3 -3.0

Log unemployment rate

Log vacancy rate

Log unemployment rate

Log vacancy rate

- Log unemployment rate
  -4.2
  -3.9
  -3.6
  -3.3
  -3.0

- Log vacancy rate
  -3.7 -3.4 -3.1 -2.8 -2.5 -2.2

US BEVERIDGE CURVE: 1990–1999

Log unemployment rate
-4.2
-3.9
-3.6
-3.3
-3.0

Log vacancy rate
-3.7
-3.4
-3.1
-2.8
-2.5
-2.2

Log unemployment rate vs Log vacancy rate

Log vacancy rate vs. Log unemployment rate

-4.2 -3.9 -3.6 -3.3
-3.7 -3.4 -3.1 -2.8 -2.5 -2.2
US BEVERIDGE CURVE: 2010–2019

Log unemployment rate

Log vacancy rate
MODEL: BEVERIDGE CURVE

Unemployment rate vs. Vacancy rate

Beveridge curve
MODEL: SOCIAL WELFARE

Vacancy rate

Unemployment rate

Beveridge curve

Isowelfare curve
MODEL: SOCIAL WELFARE

Vacancy rate

Unemployment rate

Beveridge curve

Isowelfare curve

Boom

Slump
MODEL: SOCIAL WELFARE

Vacancy rate

Unemployment rate rate

Beveridge curve

Isowelfare curve
MODEL: SOCIALLY EFFICIENT UNEMPLOYMENT

- Unemployment rate
- Vacancy rate
- Beveridge curve
- Best isowelfare curve
MODEL: SOCIALEY EFFICIENT UNEMPLOYMENT

![Graph showing efficiency, unemployment rate, vacancy rate, Beveridge curve, Isowelfare curve, and Beveridge slope]

Beveridge slope = \( \frac{\text{cost of unemployment}}{\text{cost of recruiting}} \)
MODEL: BUSINESS CYCLES

- Unemployment rate
- Vacancy rate
- Beveridge curve
- Isowelfare curve
- Efficient labor market
MODEL: BUSINESS CYCLES

- Beveridge curve
- Boom
- Gap < 0
- Isowelfare curve
MODEL: BUSINESS CYCLES

Slump
Unemployment rate
Vacancy rate
Beveridge curve
0
Gap > 0
Isowelfare curve

Vacancy rate

Isowelfare curve

Unemployment rate

Slump
HIGHER COST OF RECRUITING

Efficiency
Unemployment rate
Vacancy rate

Beveridge curve

Unemployment rate

Vacancy rate

Efficiency
HIGHER COST OF UNEMPLOYMENT

Vaccy rate

Efficiency

Beveridge curve

Unemployment rate
HIGHER COST OF UNEMPLOYMENT

Efficiency

Unemployment rate

Vacancy rate

Beveridge curve

Efficiency

0

Unemployment rate
WORSE MISMATCH

Efficiency
Unemployment rate
Vacancy rate
Beveridge curve

Vacancy rate

0

Unemployment rate
RECRUITING COST & UNEMPLOYMENT COST IN THE US

• recruiting cost: 1997 National Employer Survey (Villena 2010)
  – 4,500 establishments
  – firms spend 2.5% of labor costs on recruiting

• cost of unemployment: military administrative data for 1993–2004 (Borgschulte, Martorell 2018)
  – 420,000 veterans
  – during unemployment, only 25% of earnings loss is offset by home production & recreation

⇝ cost of unemployment ≈ 75%
EFFICIENT UNEMPLOYMENT RATE: US, 2010–2019

Beveridge curve
Isowelfare curve
Efficient Unemployment Rate: US, 2010–2019

Unemployment rate

0.01 0.02 0.03 0.04 0.05

Vacancy rate

Beveridge curve

Efficient unemployment = 3.7%

Isowelfare curve

Unemployment rate

0.02 0.04 0.06 0.08 0.1

Vacancy rate

0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1
BEVERIDGE ELASTICITY: US, 2010–2019

Beveridge elasticity = 0.81

Log unemployment rate
-4.2 -3.9 -3.6 -3.3 -3.0
Log vacancy rate
2010:Q1
2019:Q4
BEVERIDGE ELASTICITY: US, 1951–2019
UNEMPLOYMENT GAP IN THE US

0% 3% 6% 9% 12%

Unemployment rate

Efficient

Actual
OTHER “NATURAL” RATES OF UNEMPLOYMENT

Unemployment rate

- Actual
- Efficient
OTHER “NATURAL” RATES OF UNEMPLOYMENT

Unemployment rate

- Actual
- Trend
- CBO
- Efficient
OTHER “NATURAL” RATES OF UNEMPLOYMENT

Unemployment rate

Efficient
CBO
NAIRU
Trend
Actual

0%
3%
6%
9%
12%
OTHER COSTS OF UNEMPLOYMENT

Efficient unemployment rate

Baseline
Cost = 100%
OTHER COSTS OF UNEMPLOYMENT

Efficient unemployment rate
Baseline
Cost = 50%