BEVERIDGEAN UNEMPLOYMENT GAP

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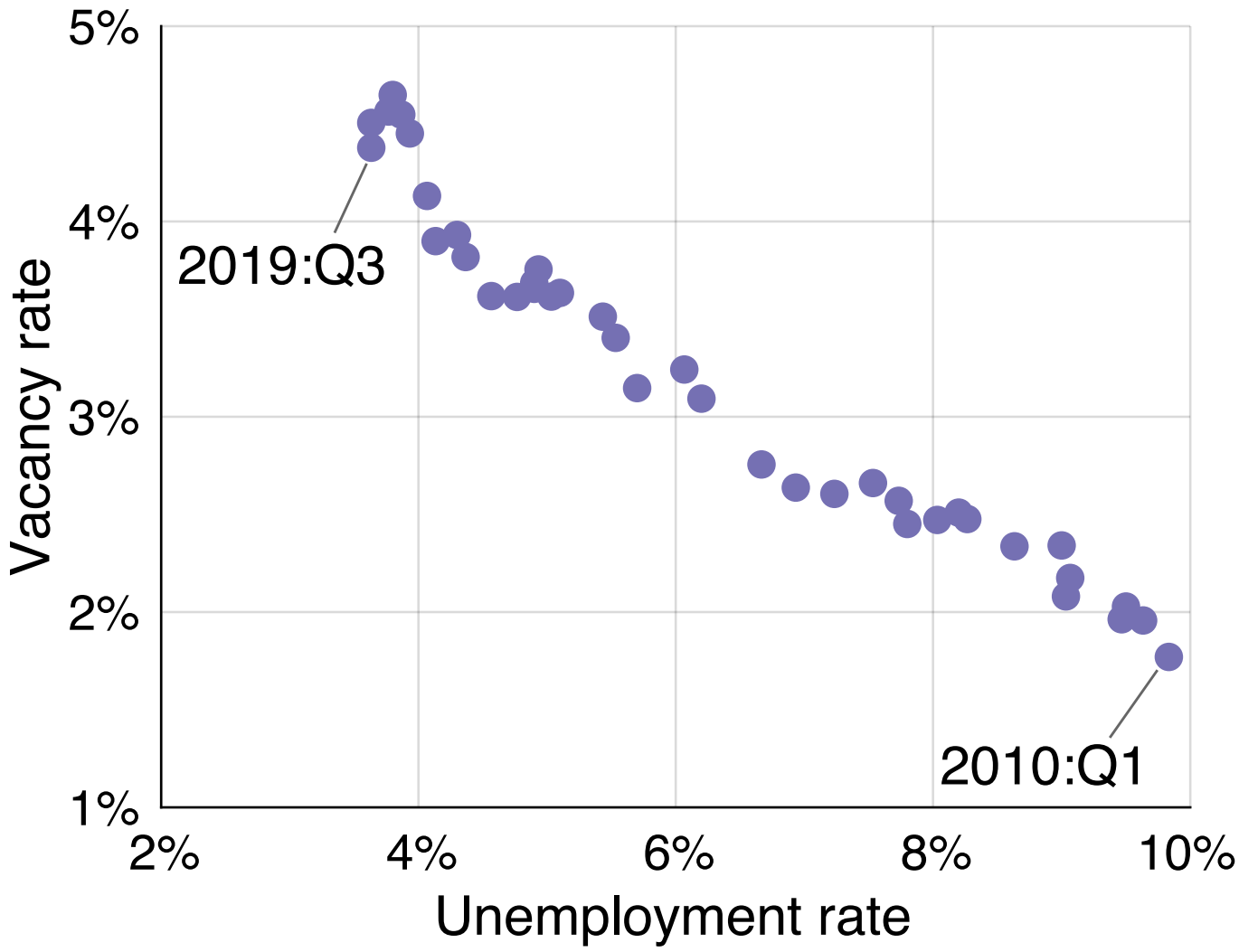
UNEMPLOYMENT GAP: KEY FOR MACRO POLICIES

- US government mandate is to achieve “full employment”
  - Humphrey–Hawkins Full Employment Act of 1978
  - unemployment gap = distance from “full employment”
- optimal macro policies depend on distance from efficiency
  - monetary policy, fiscal policy, labor subsidies/taxes
  - unemployment gap = distance from efficiency

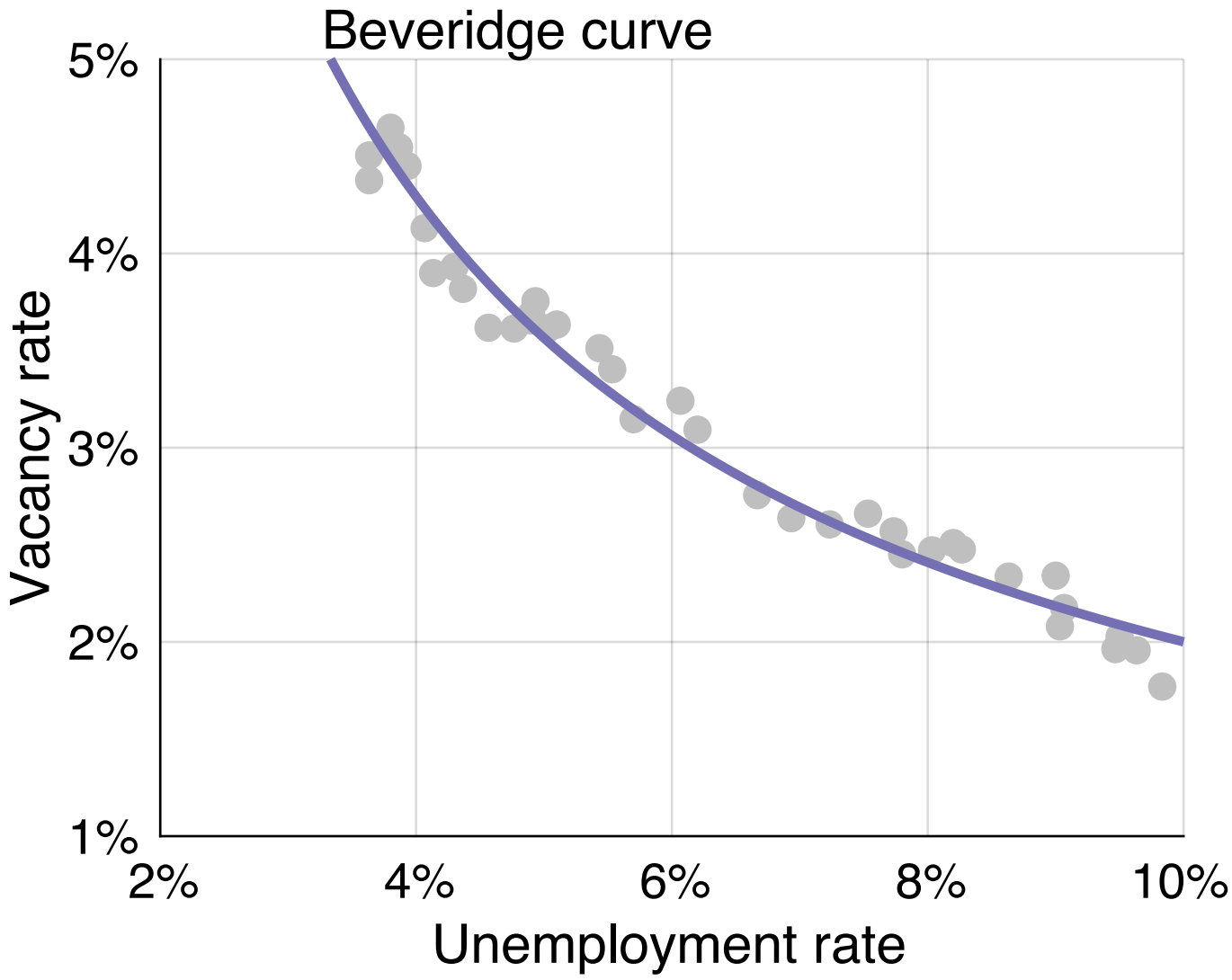
CHALLENGES IN MEASURING UNEMPLOYMENT GAP

1. statistical approach (CBO)
   - trend unemployment generally not efficient
2. Phillips-curve approach
   - based on inflation dynamics but not welfare
3. our approach: based on welfare in matching model
   - same welfare concept as Hosios (1990)
   - but applicable to any matching model
   - and implementable with observable statistics

OVERVIEW OF THE METHOD: 2009–2019



OVERVIEW OF THE METHOD: 2009–2019



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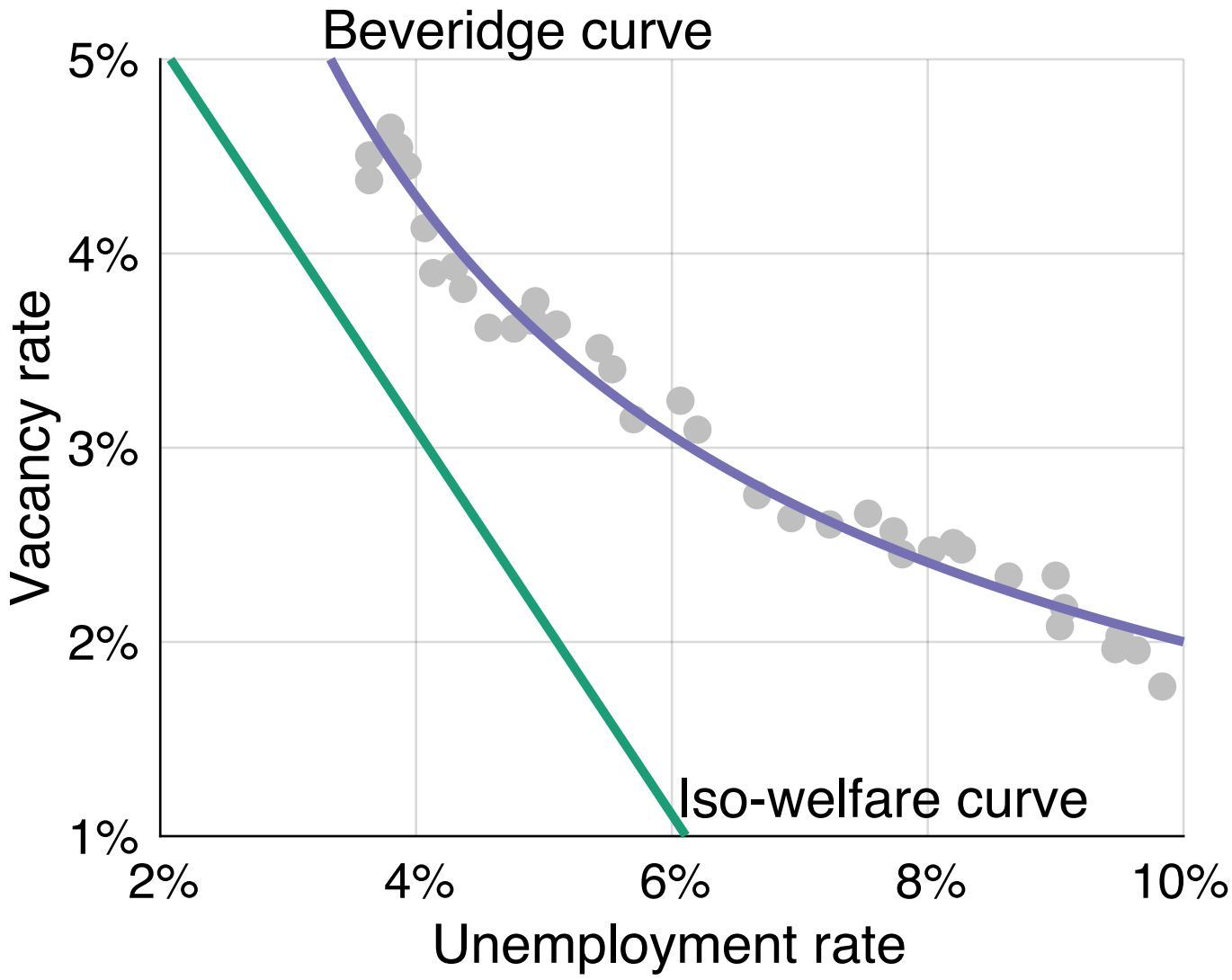

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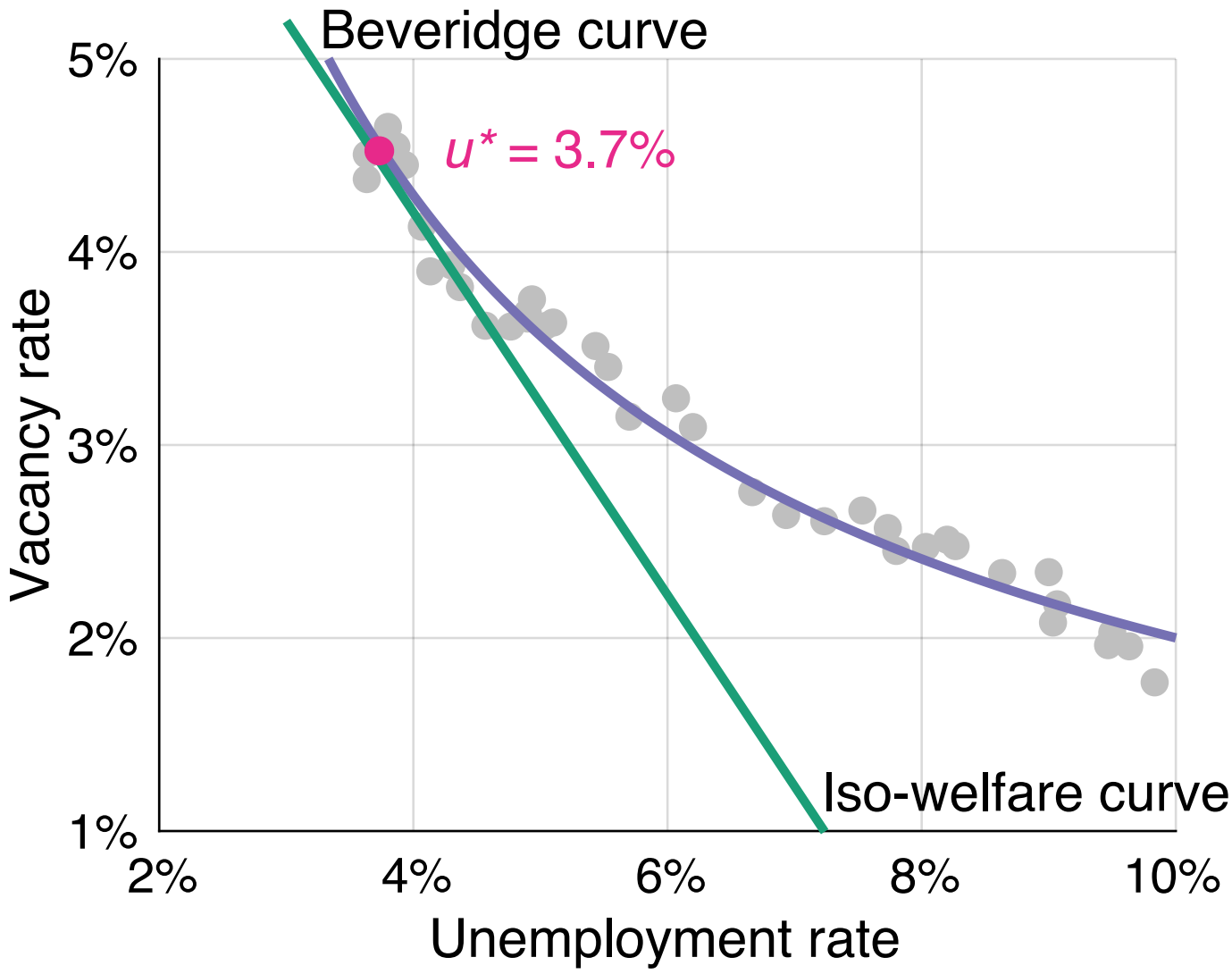


THEORY

BEVERIDGE CURVE

- Beveridge curve: $v(u)$
  - v: vacancy rate
  - u: unemployment rate
  - decreasing, convex
- present in many countries (Elbsy, Michaels, Ratner 2015)
- present in many models
  - matching (Diamond-Mortensen-Pissarides + variants)
  - mismatch (Shimer 2007)
  - stock-flow matching (Ebrahimy, Shimer 2010)

SOCIAL WELFARE

- recruiting cost: ρ workers / vacancy
- social value of unemployment / employment: z
- social welfare (Hosios 1990):

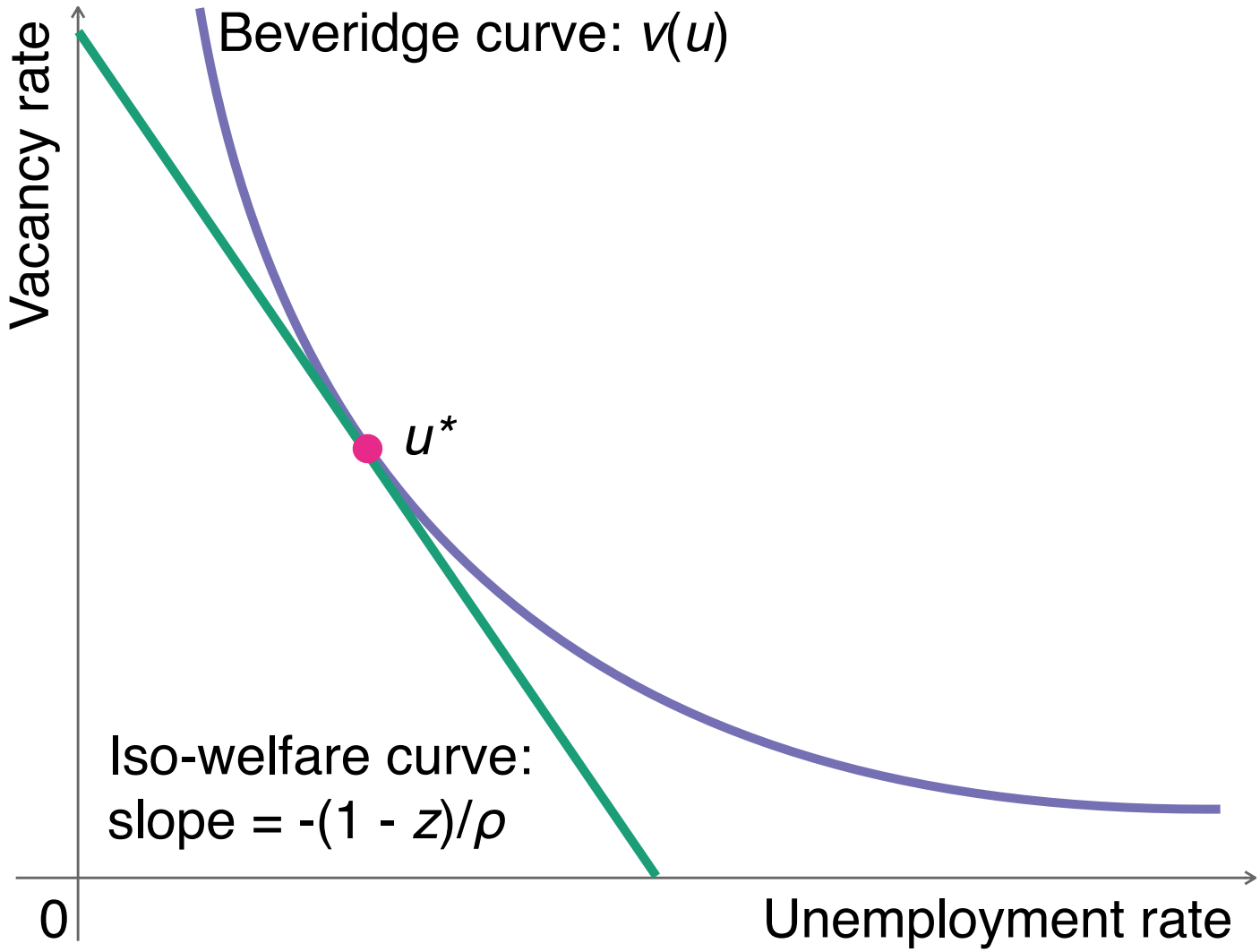
$$(1-u) + u \cdot z - \rho \cdot v(u)$$

- first-order condition wrt u to maximize welfare:

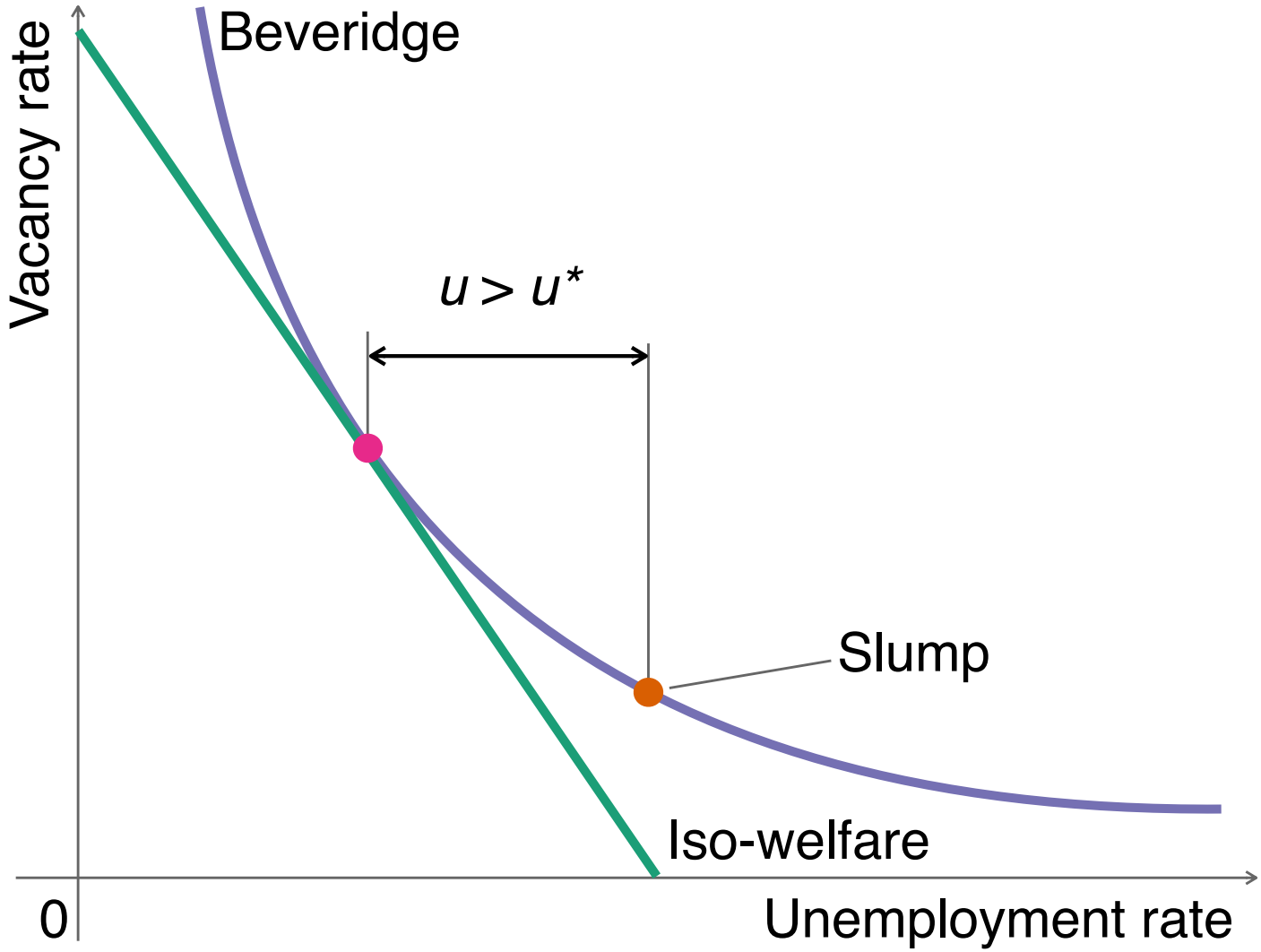
$$-1 + z - \rho \cdot v'(u) = 0$$

$$v'(u) = -\frac{1-z}{\rho}$$

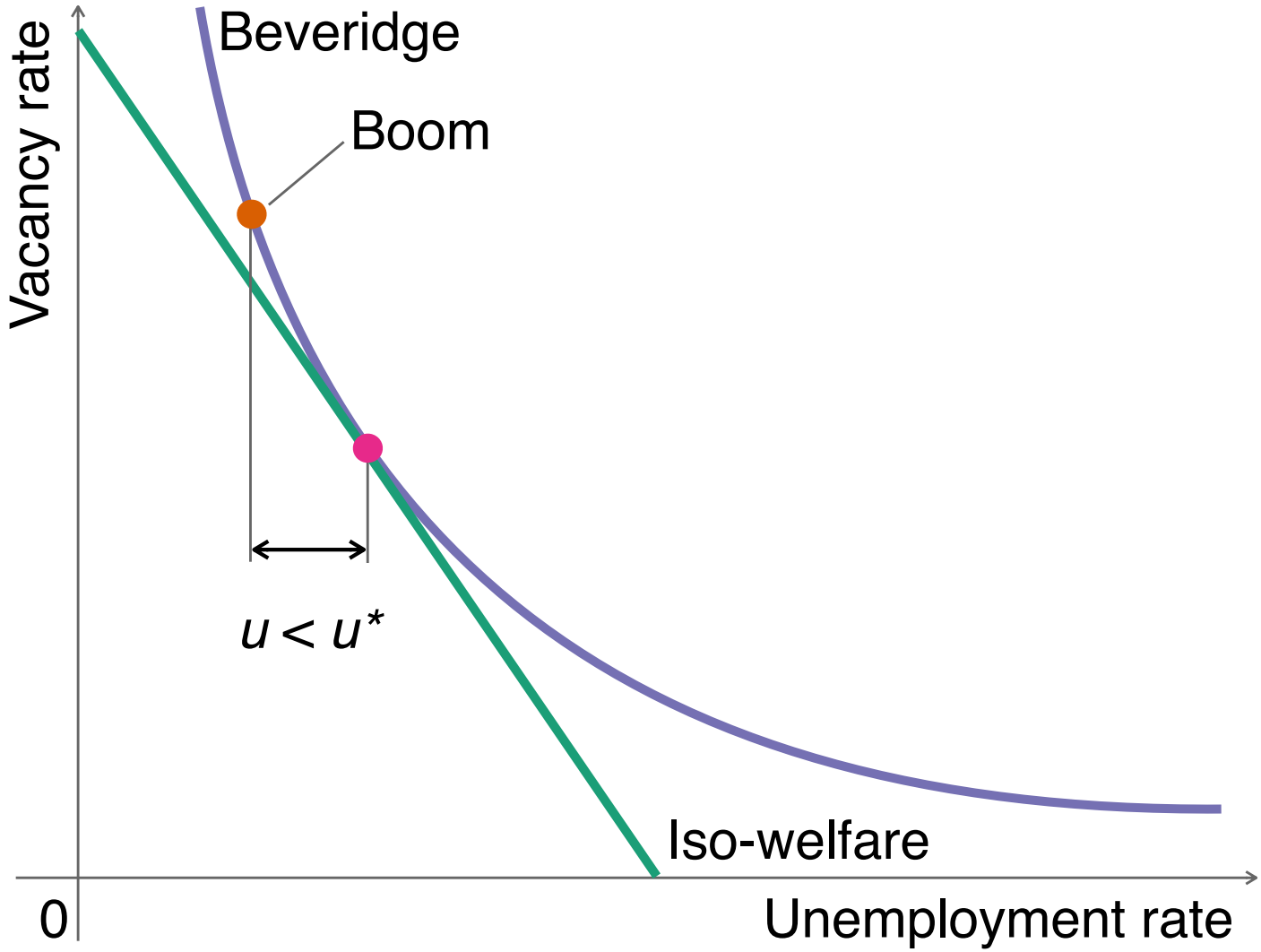
EFFICIENT UNEMPLOYMENT & BUSINESS CYCLES



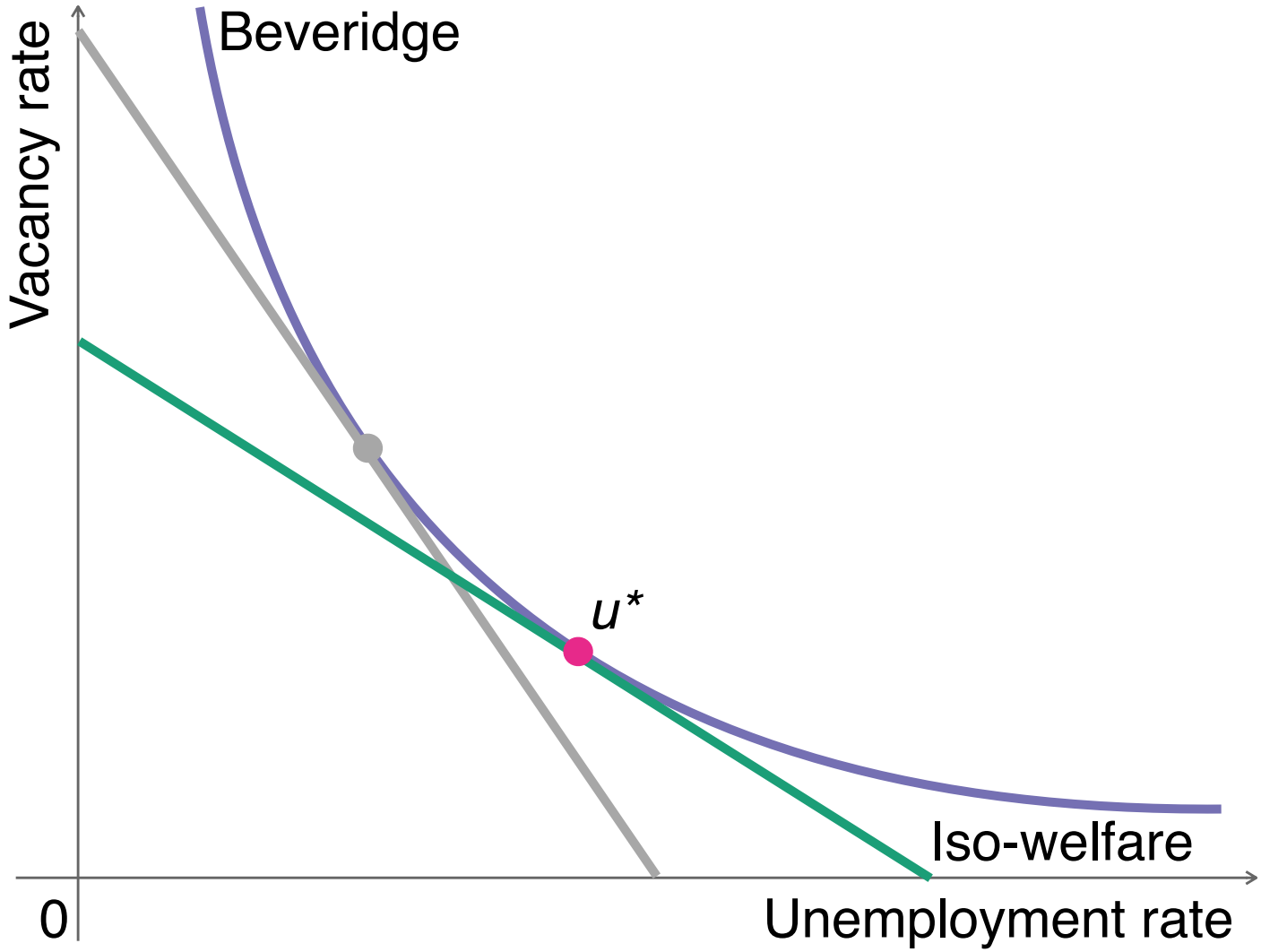
EFFICIENT UNEMPLOYMENT & BUSINESS CYCLES



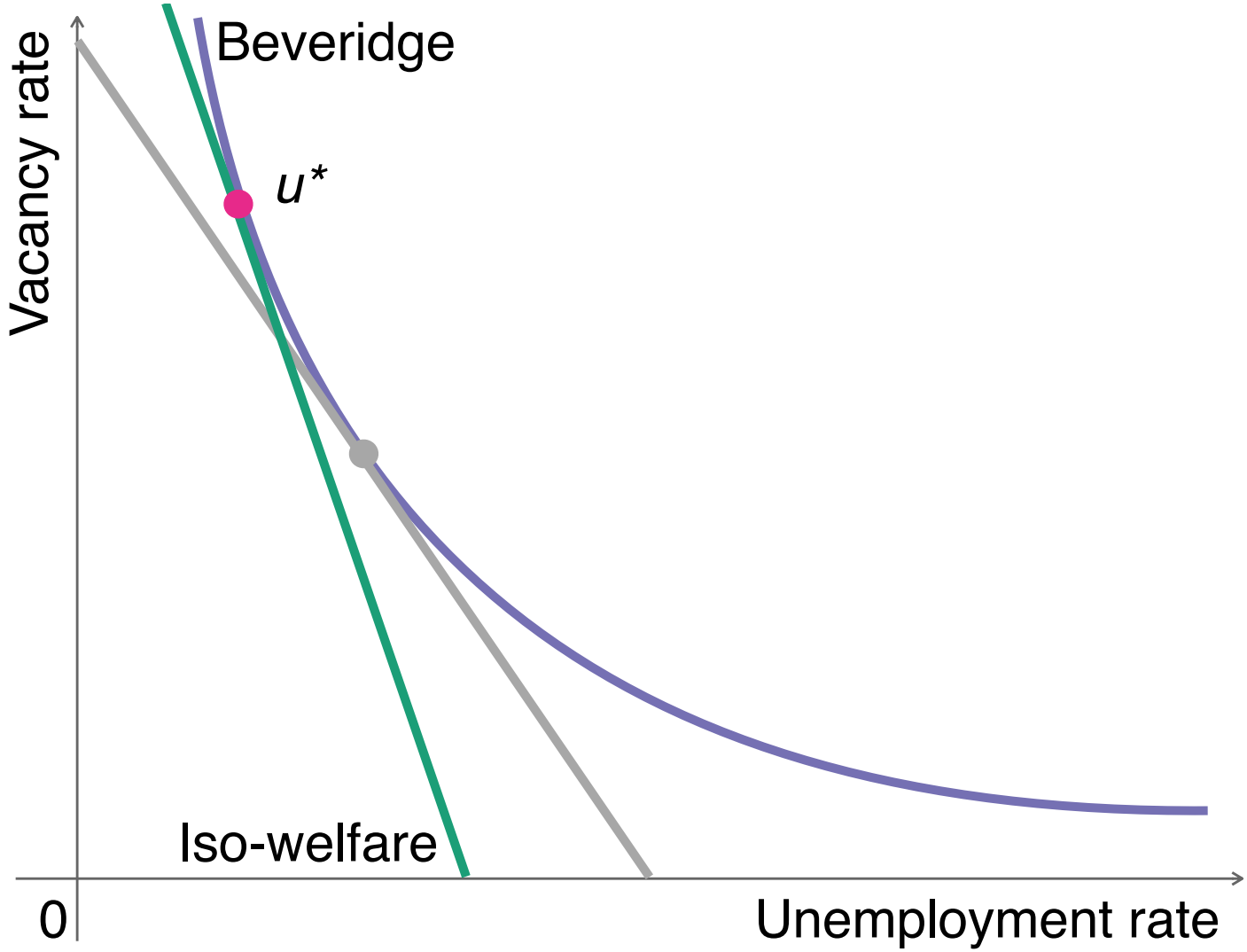
EFFICIENT UNEMPLOYMENT & BUSINESS CYCLES



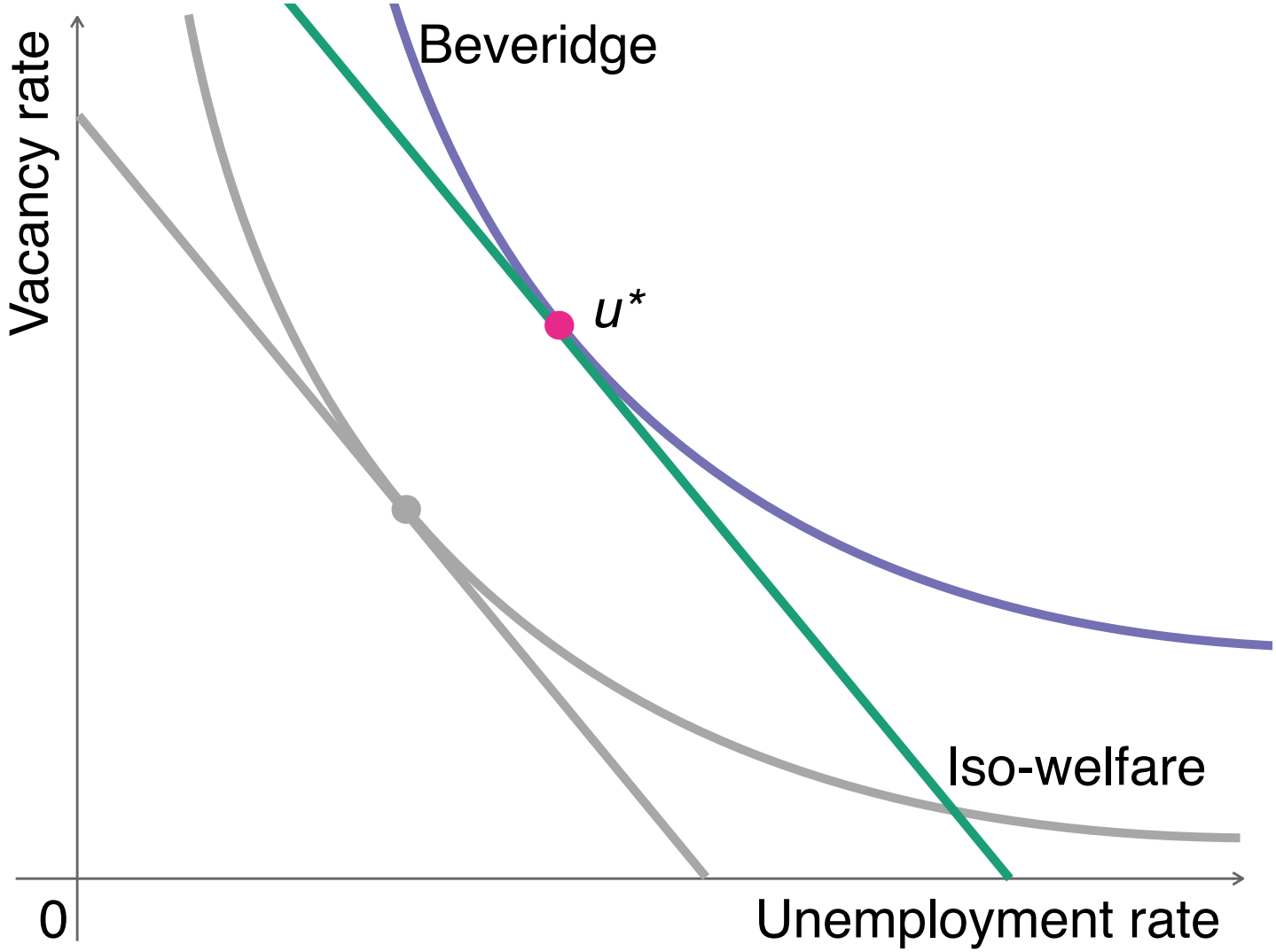
COSTLIER RECRUITING



COSTLIER UNEMPLOYMENT



WORSE MISMATCH



MEASUREMENT

SUFFICIENT-STATISTIC FORMULA

- labor market tightness: $\theta = v/u$
- Beveridge elasticity: $\epsilon = -d\ln(v)/d\ln(u) = -v'(u)/\theta$
- efficient labor market tightness: θ^*

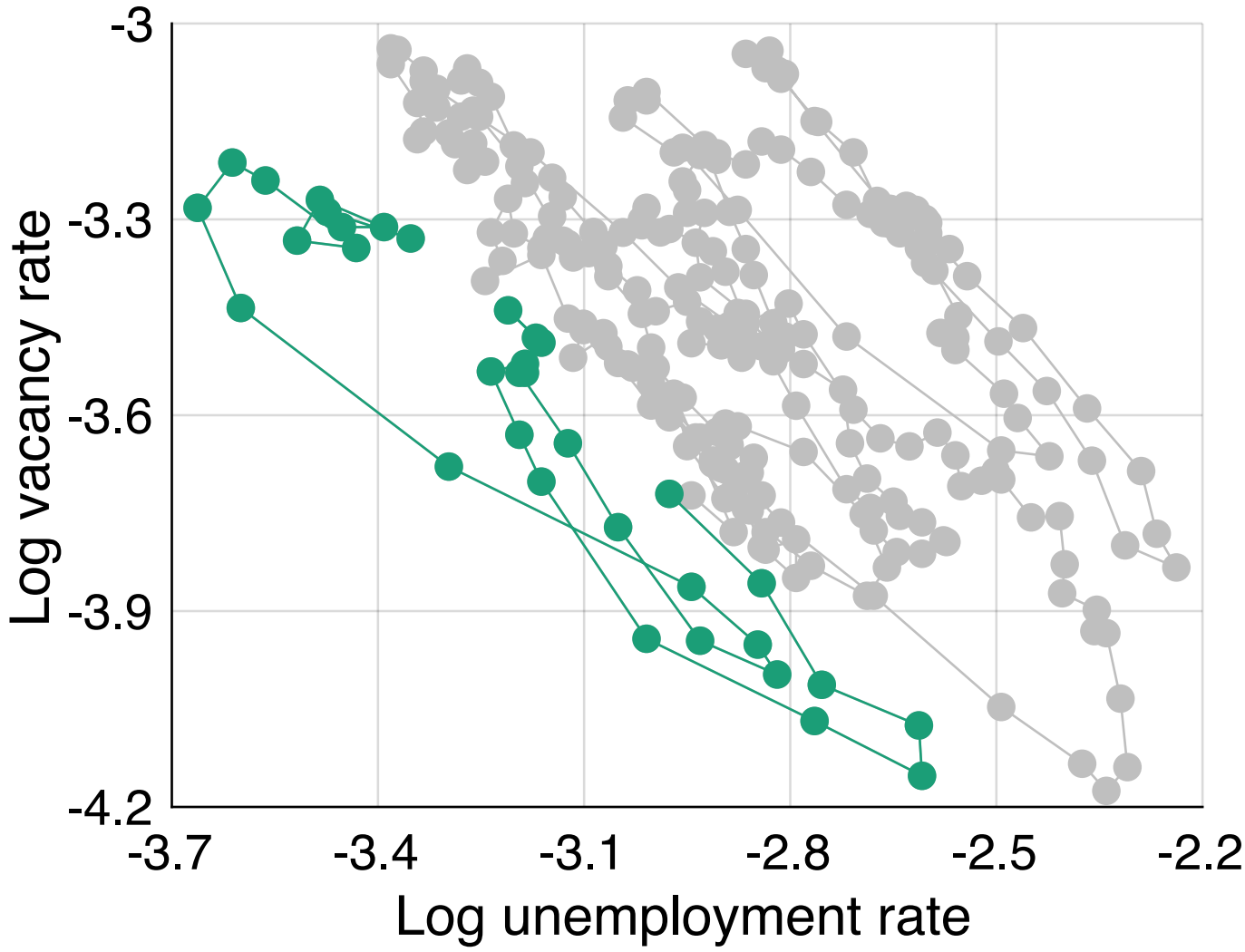
$$v'(u) = -\frac{1-z}{\rho}$$

$$-\frac{v'(u)}{\theta} \cdot \theta = \frac{1-z}{\rho}$$

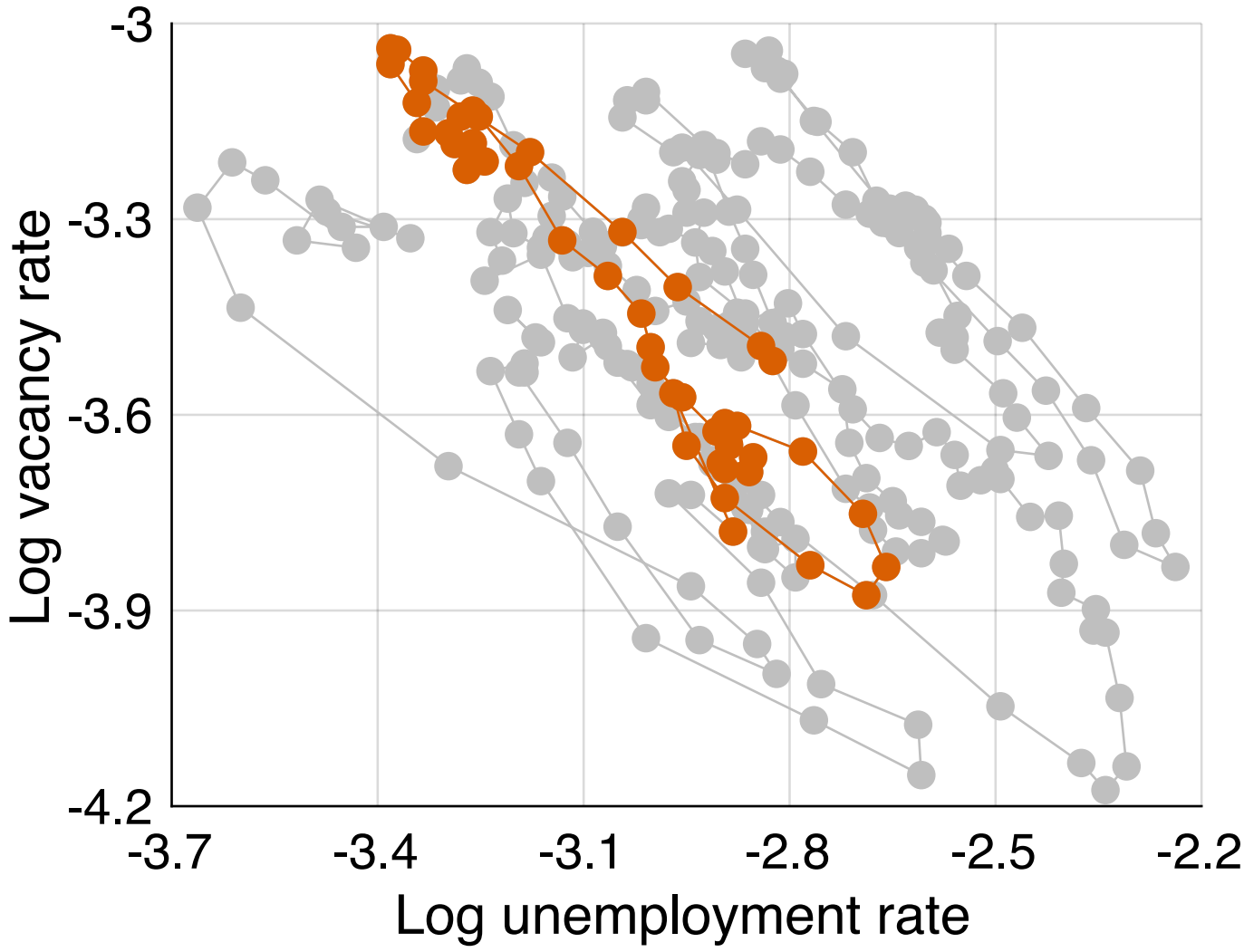
$$\theta^* = \frac{1-z}{\rho\epsilon}$$

- $u - u^*$ obtained from $\theta - \theta^*$ through Beveridge curve

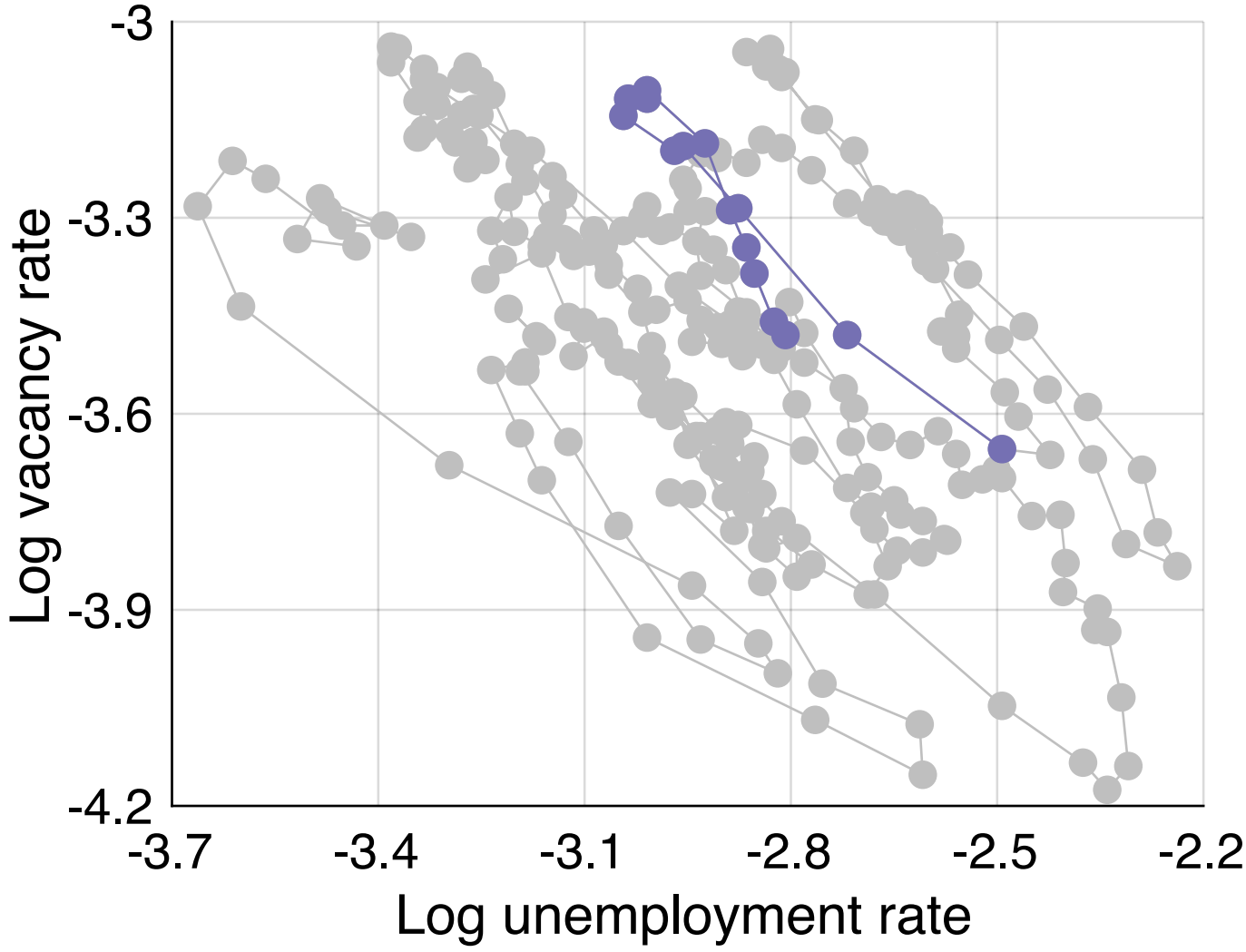
LOG BEVERIDGE CURVE: 1951–1959



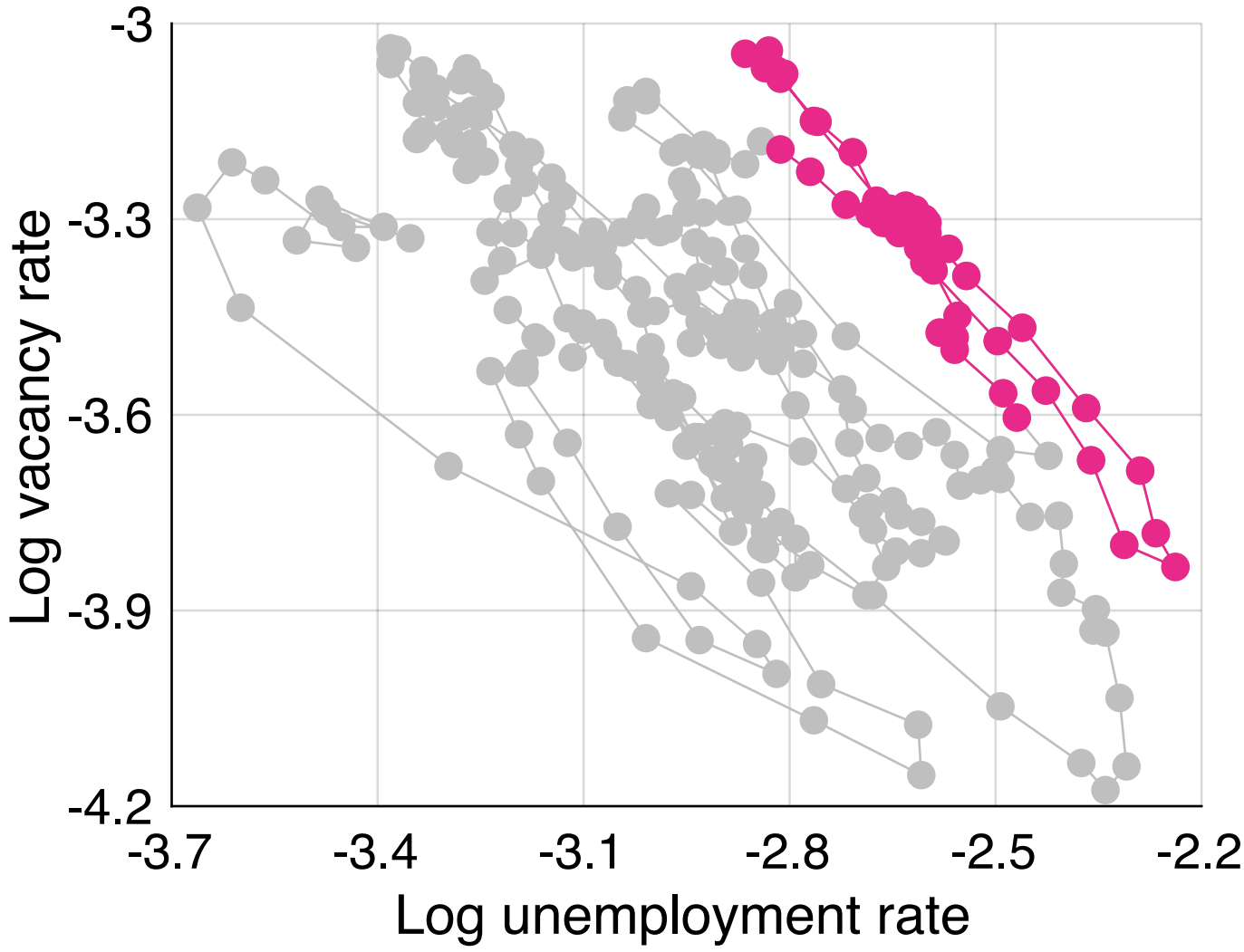
LOG BEVERIDGE CURVE: 1959–1971



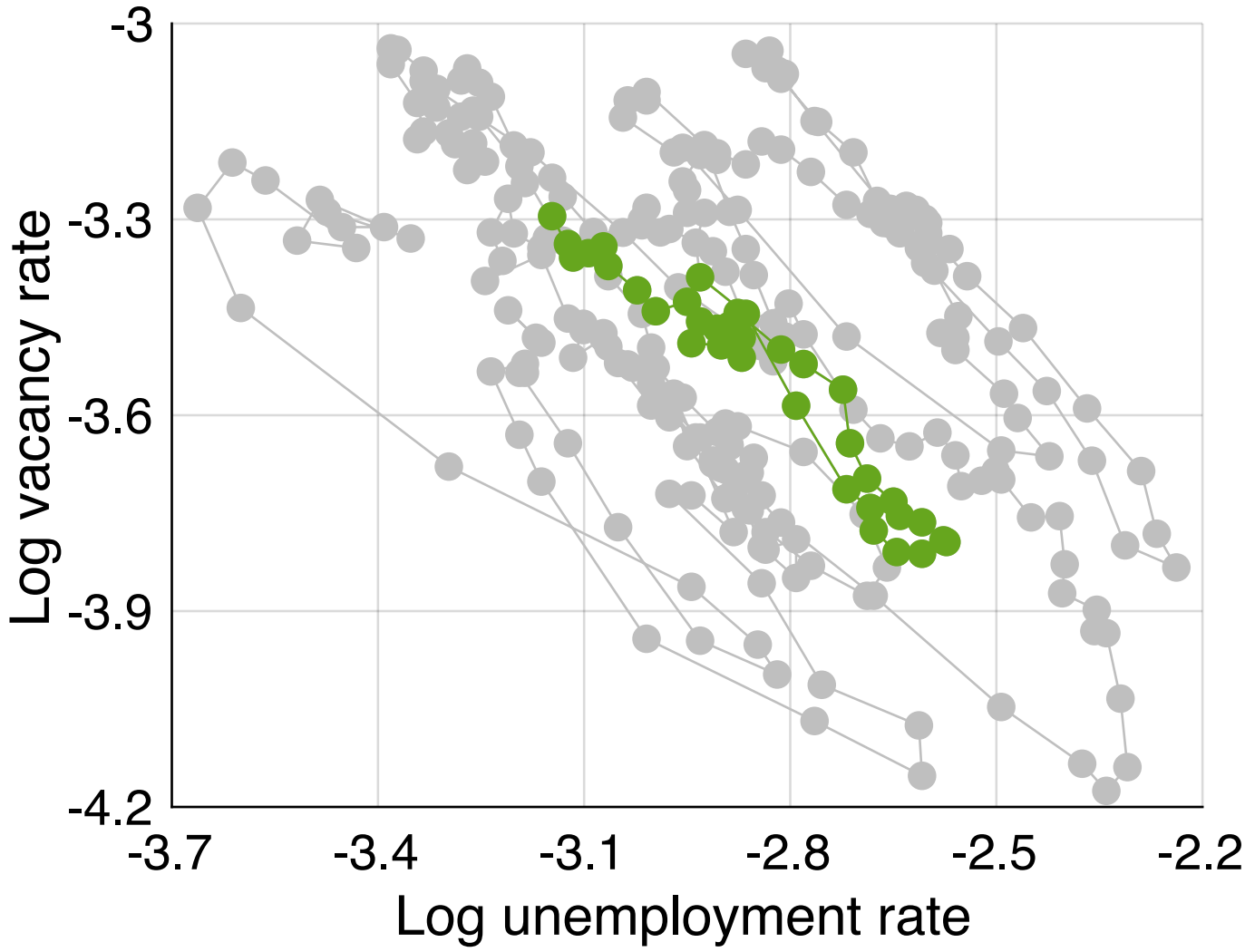
LOG BEVERIDGE CURVE: 1971–1975



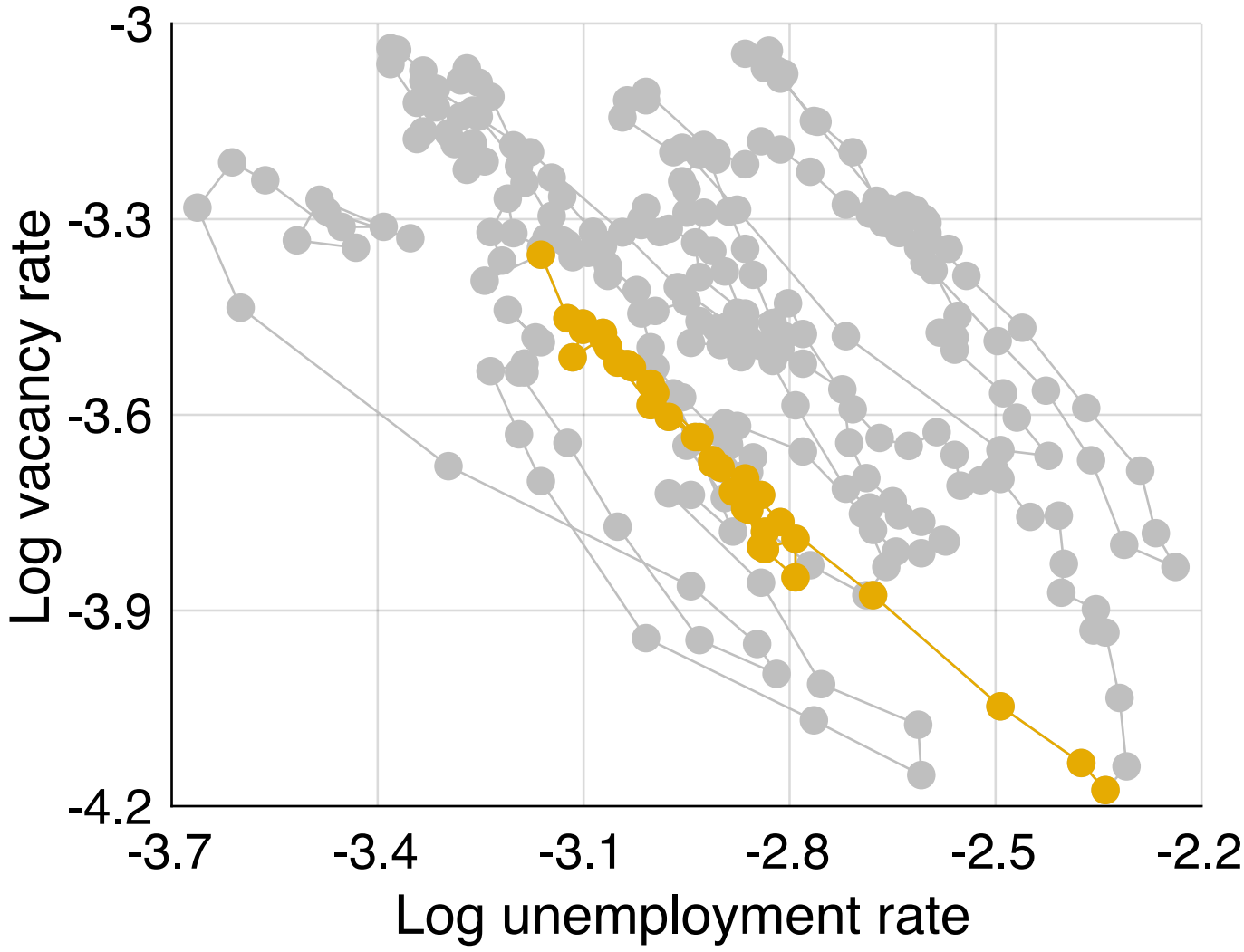
LOG BEVERIDGE CURVE: 1975–1987



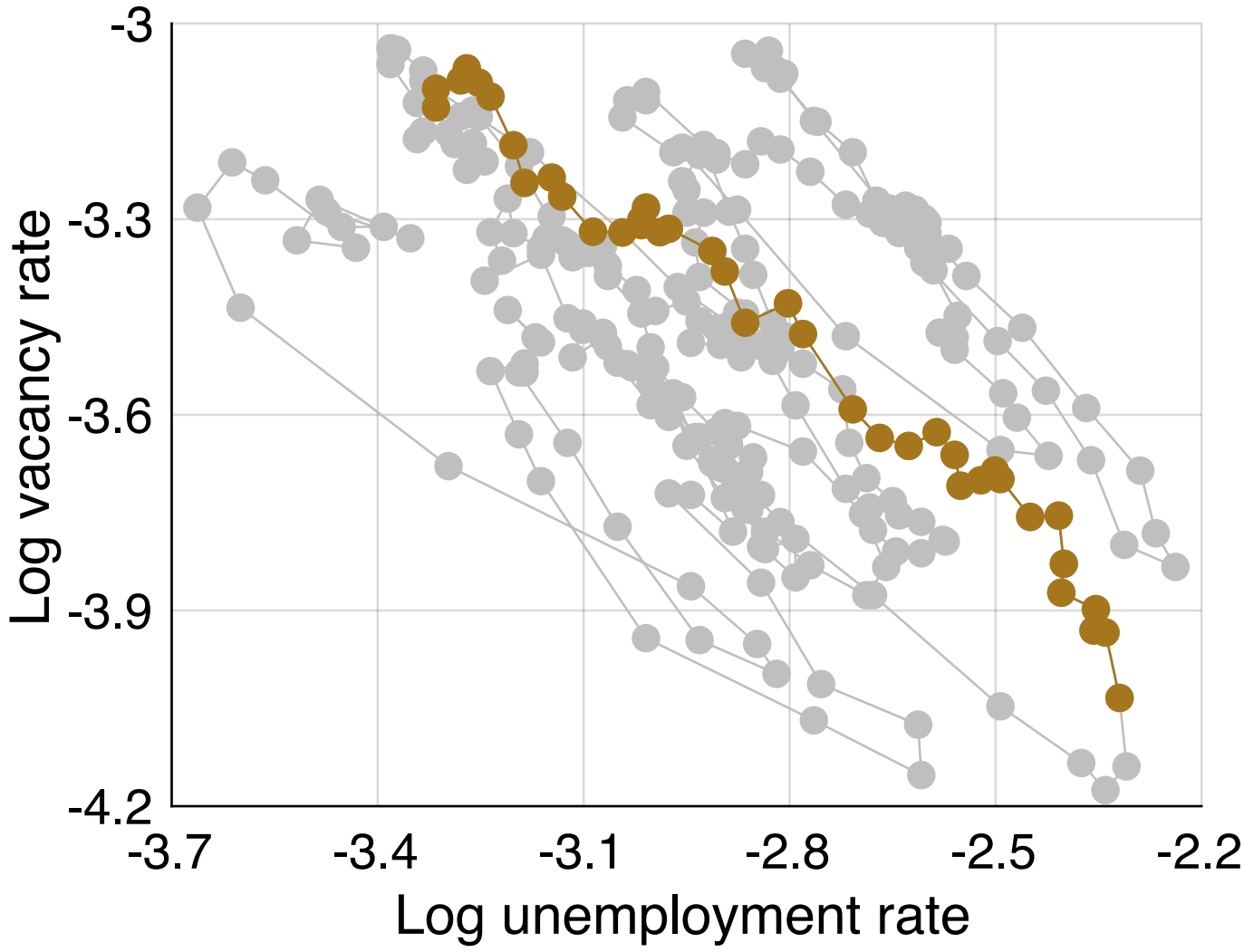
LOG BEVERIDGE CURVE: 1990–1999



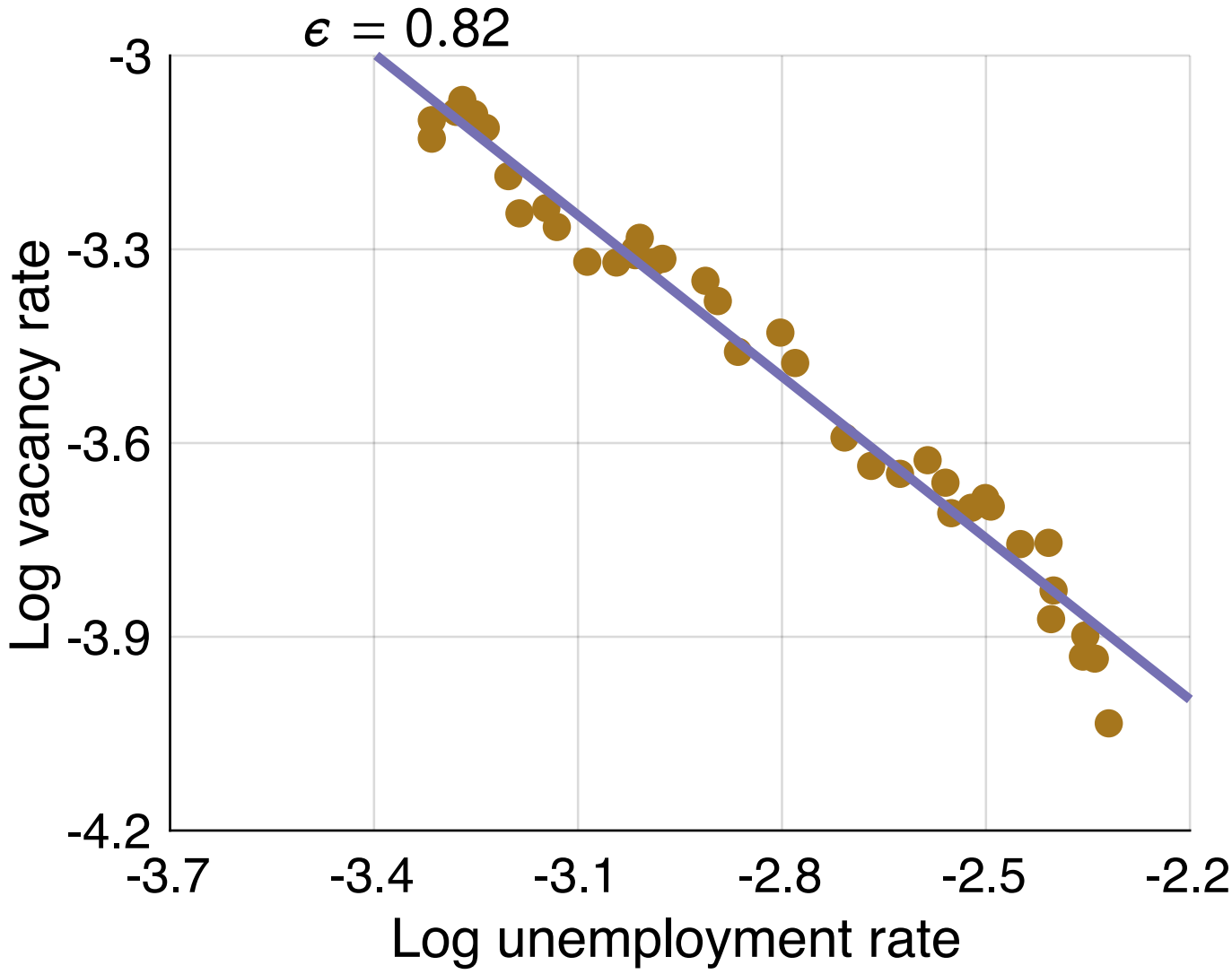
LOG BEVERIDGE CURVE: 2001–2009



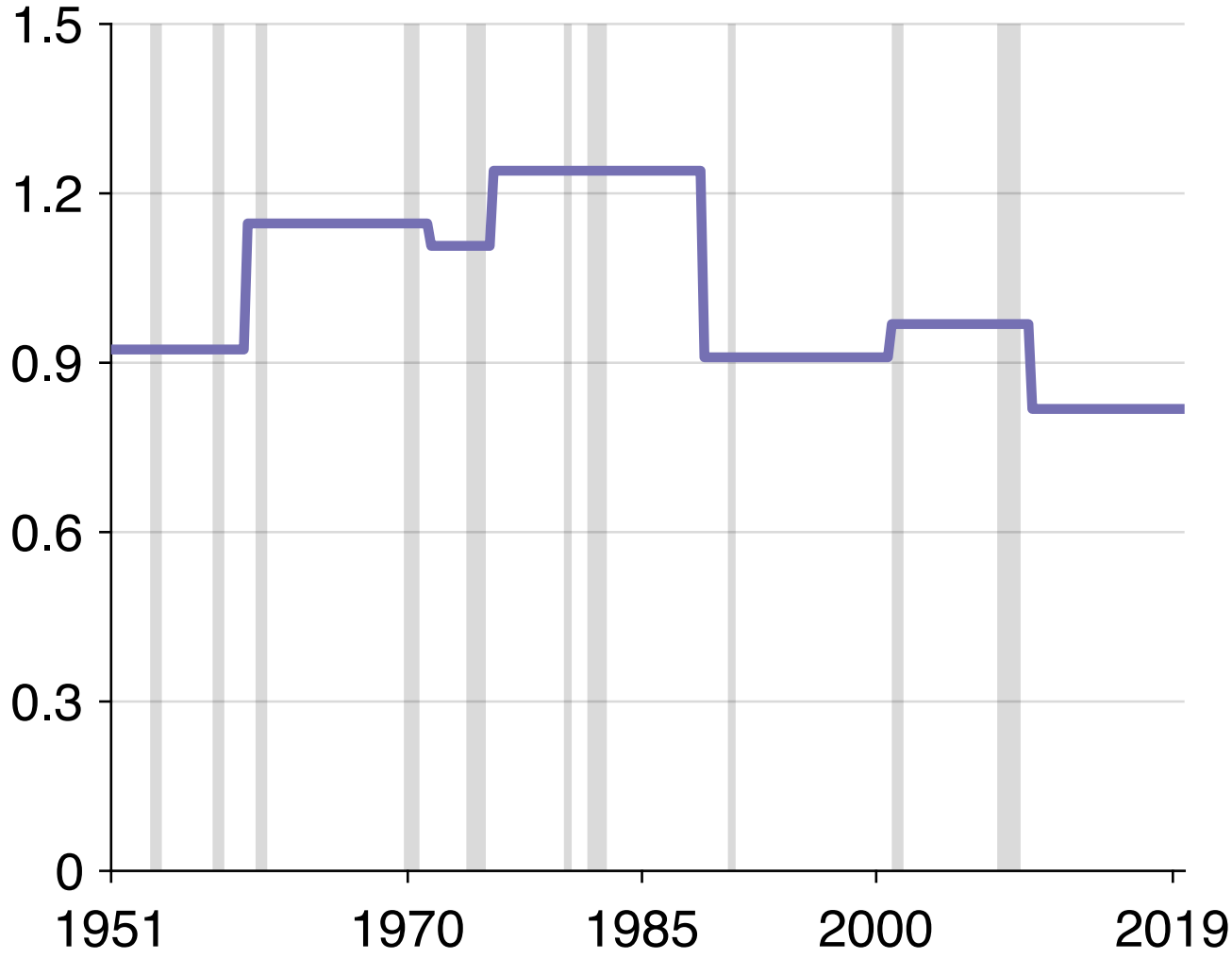
LOG BEVERIDGE CURVE: 2010–2019



LOG BEVERIDGE CURVE: 2010–2019



BEVERIDGE ELASTICITY: 1951–2019



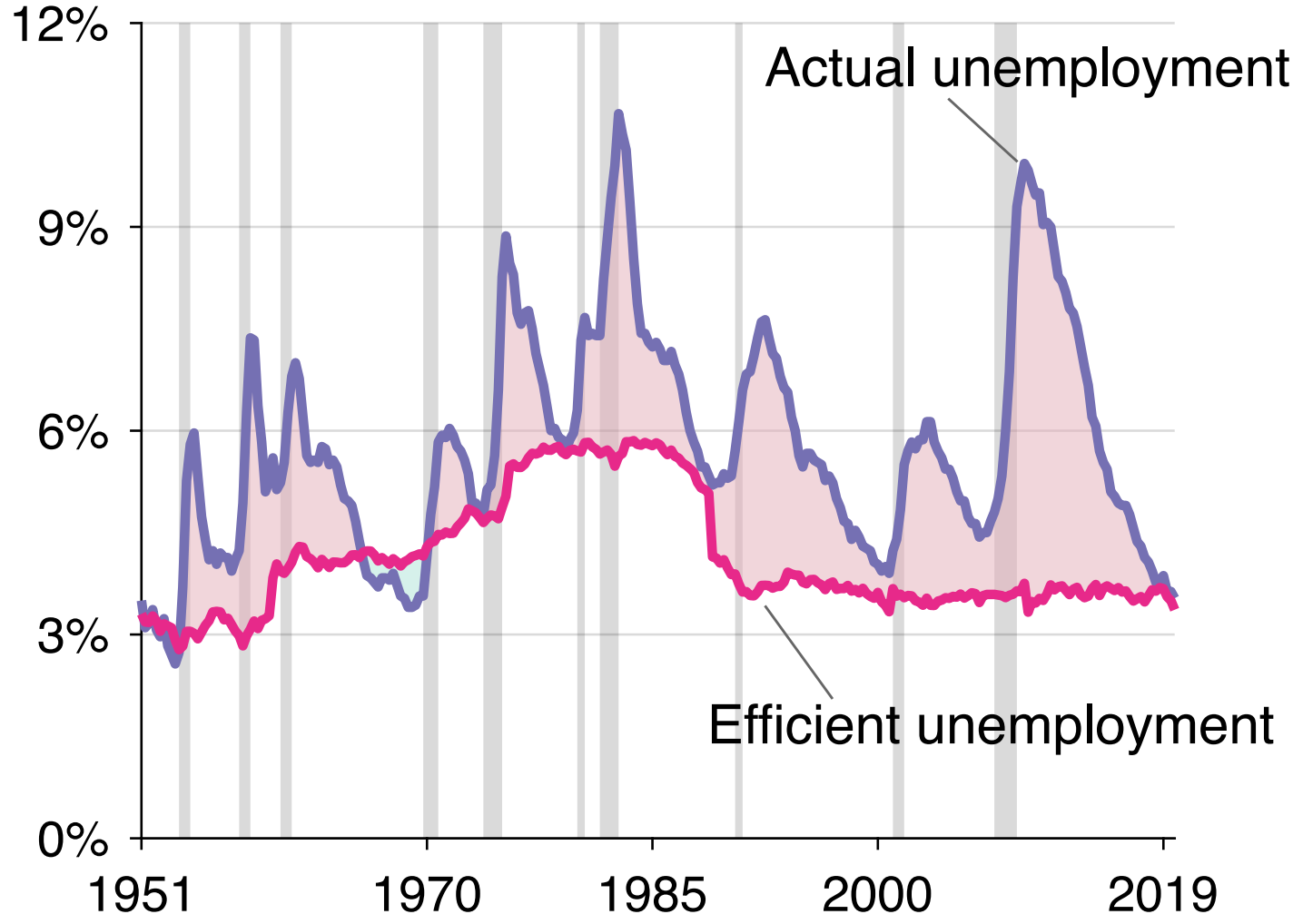
RECRUITING COST & VALUE OF UNEMPLOYMENT

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

  $\rightsquigarrow$ $\rho = 0.72$
- value of unemployment: military administrative data for 1993–2004 (Borgschulte, Martorell 2018)
  - 420,000 veterans
  - during unemployment: 13%–35% of earnings loss is offset by leisure and home production

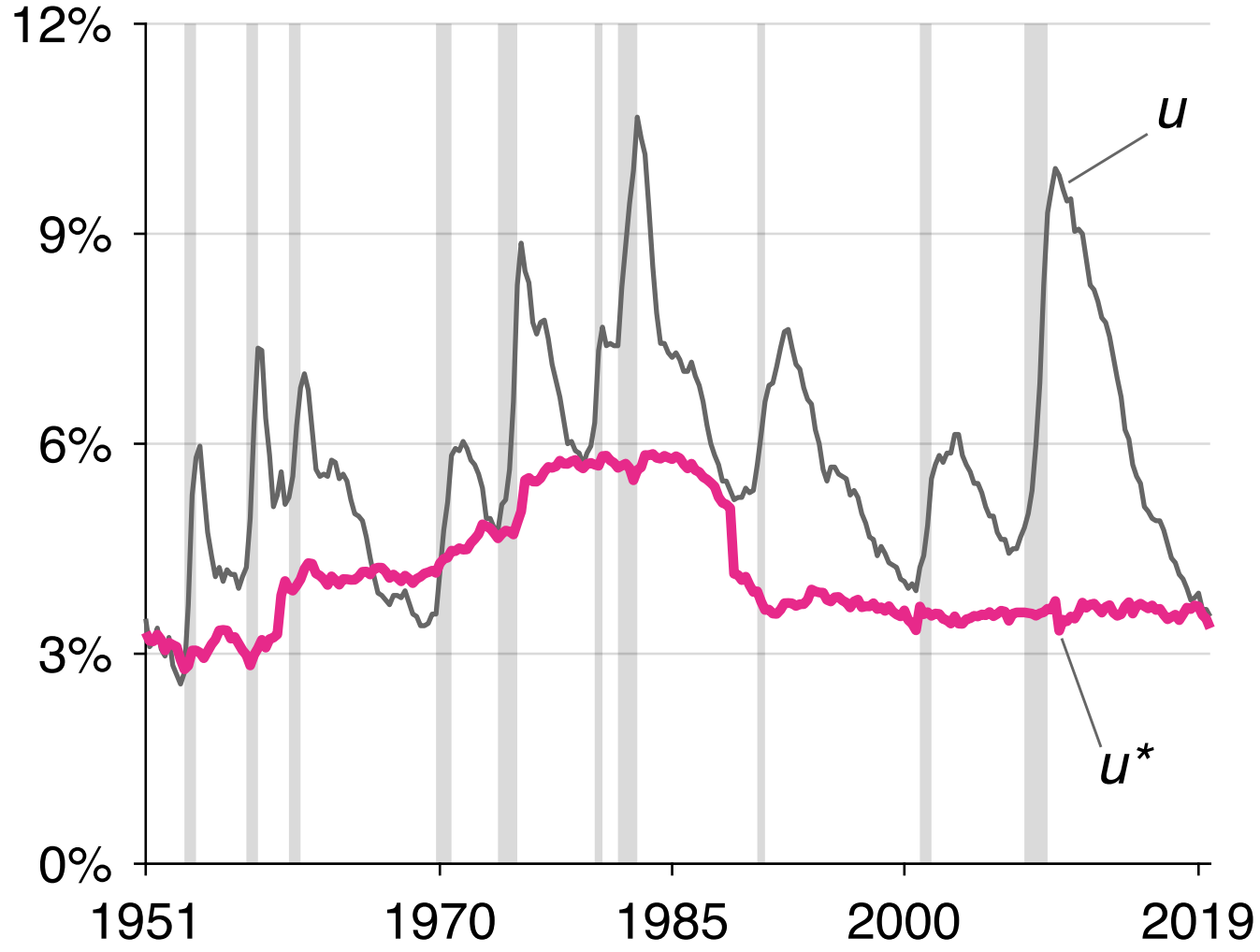
  $\rightsquigarrow$ $z = 0.24$

EFFICIENT UNEMPLOYMENT & UNEMPLOYMENT GAP

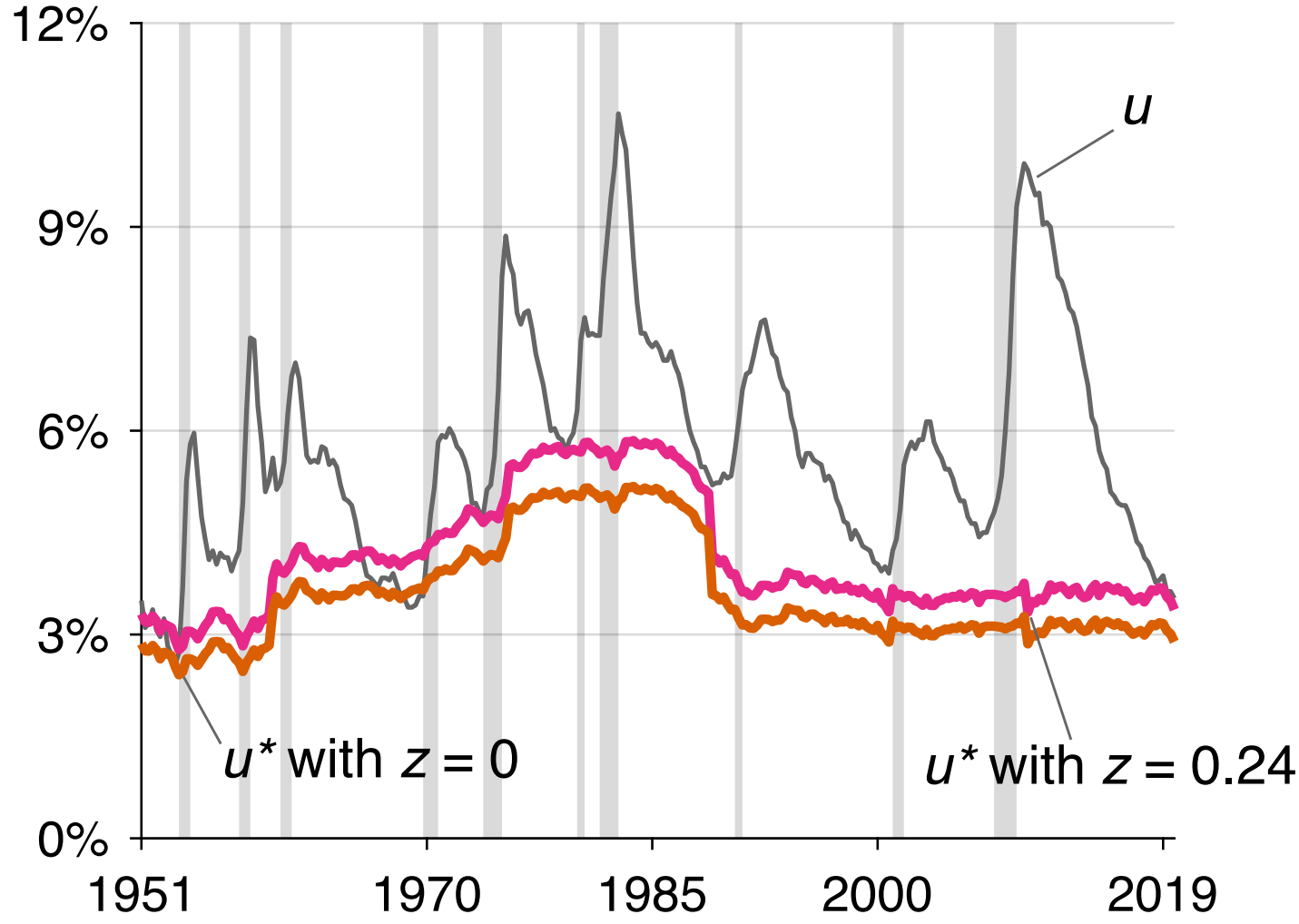


ALTERNATIVE CALIBRATIONS OF Z

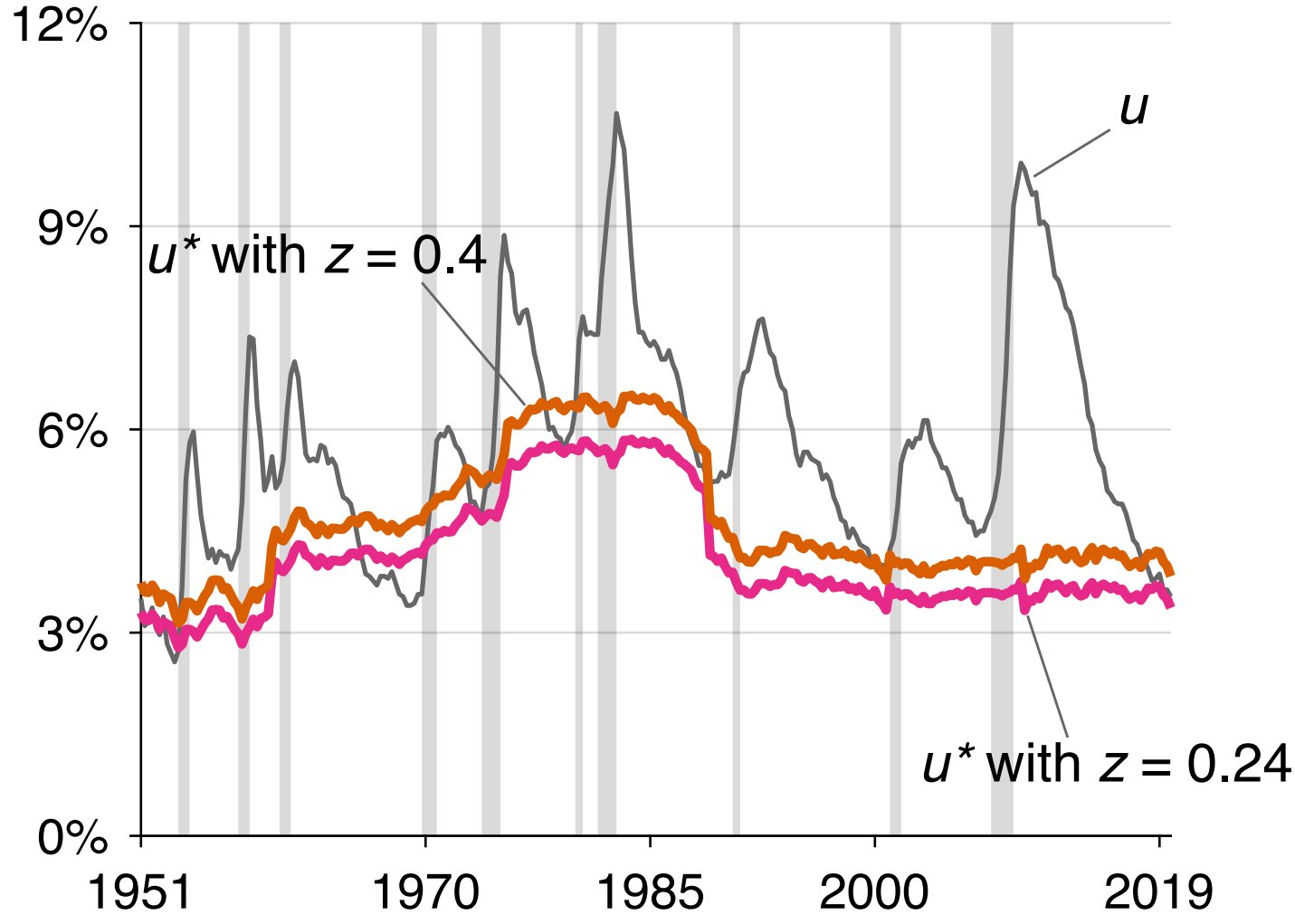
BASELINE EFFICIENT UNEMPLOYMENT RATE



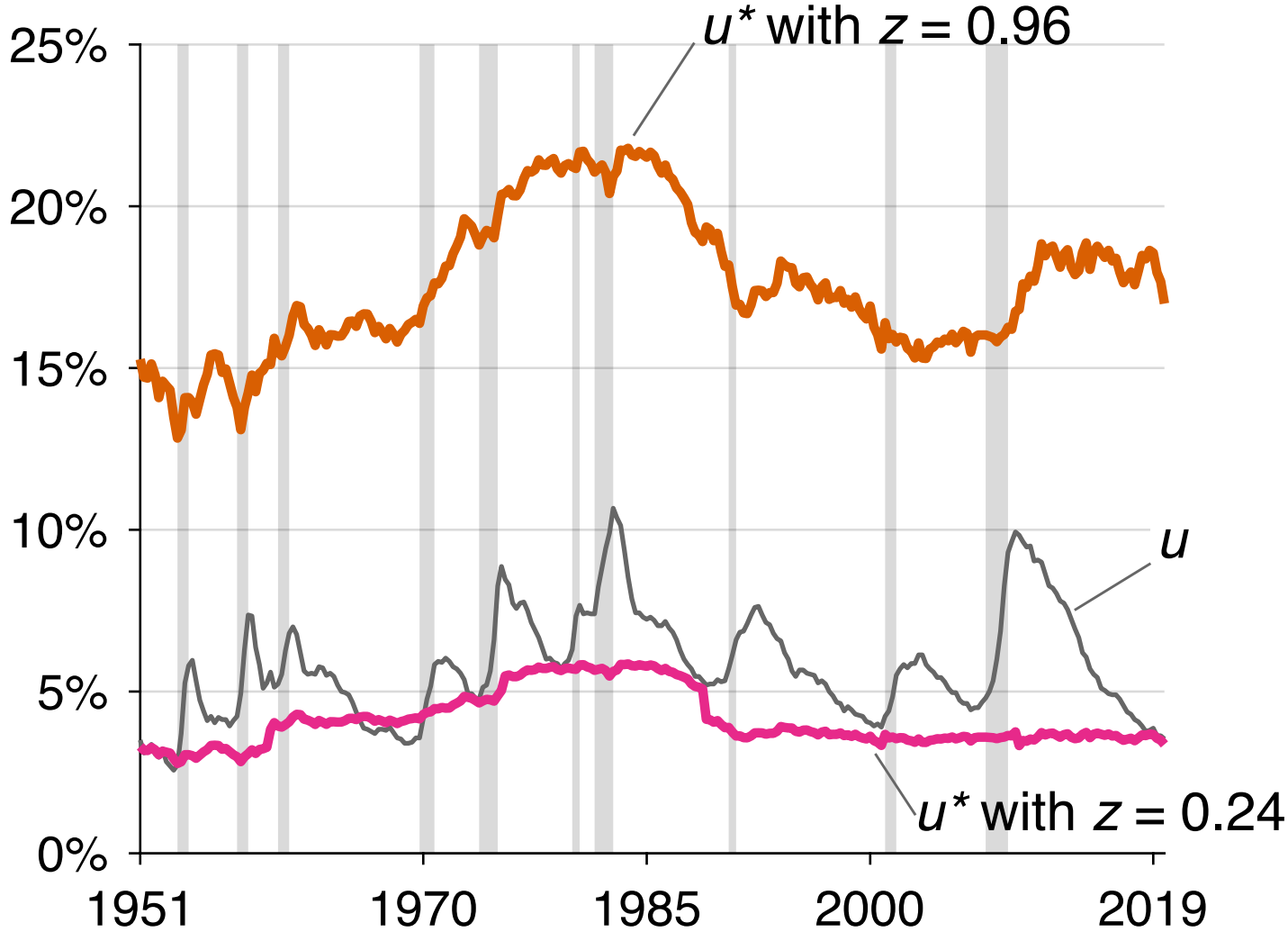
LOWER BOUND: $z = 0$



CHODOROW-REICH, KARABARBOUNIS (2016): $z = 0.4$



HAGEDORN, MANOVSKII (2008): $z = 0.96$



MINNESOTA *Z*: NO UNEMPLOYMENT GAP