The costs of disinflation

- The sacrifice ratio
- Disinflation: an example.
- The role of credibility.
- Staggered contracts

Three key relationships:

- Phillips Curve:

$$\pi_t - \pi_{t-1} = -\alpha(u_t - u_n)$$

- Okun's Law:

$$u_t - u_{t-1} = -\beta(g_{yt} - \bar{g}_y)$$

- AD:

$$g_{yt} = g_{mt} - \pi_t$$

Disinflation

- To reduce inflation in medium run, monetary authority must reduce money growth rate.
- Short run:
    - Reduction in money growth causes reduction in output growth and rise in unemployment.
    - As unemployment rises, inflation falls.
    - Over time expected inflation is reduced. Unemployment falls and output growth increases.
- Medium run: return to natural rate of unemployment, normal rate of output growth and lower inflation.
- Key message: Engineering a disinflation causes a recession – i.e. a temporary reduction in output growth and temporary rise in unemployment.
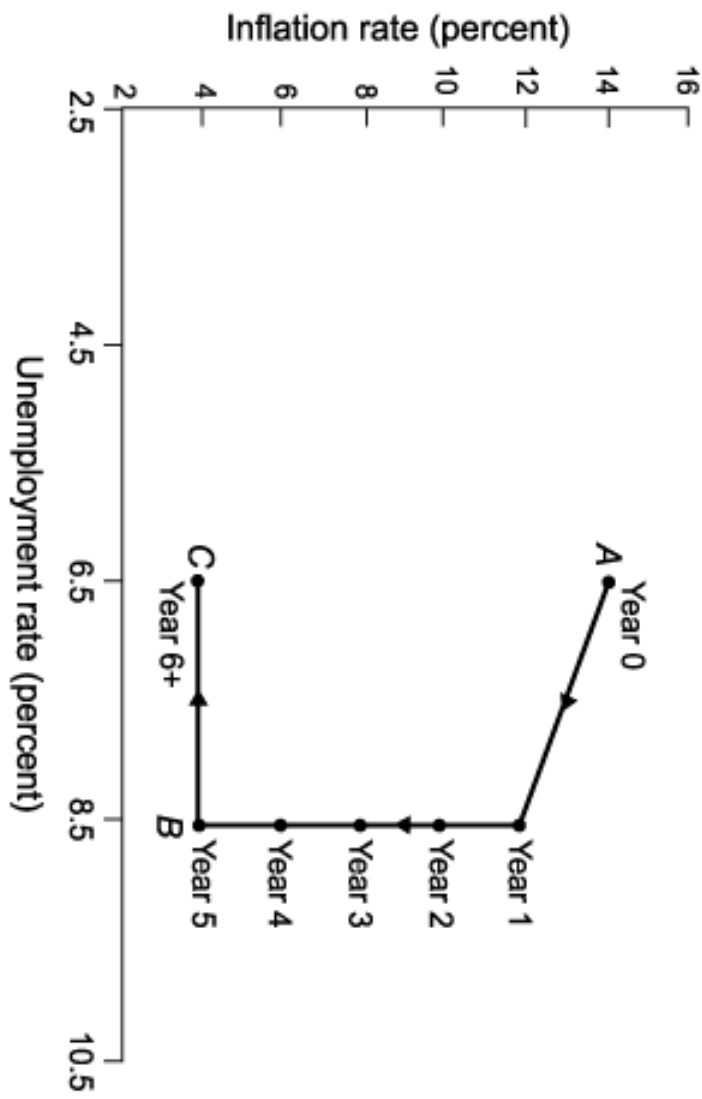
Sacrifice Ratio:

- Point-year of excess unemployment: difference between U and U_n over a year.

- Sacrifice ratio: point-years of excess unemployment required to achieve a 1% reduction in inflation.

- If expected inflation depends on last year's inflation, sacrifice ratio determined by Phillips curve

$$\pi_t - \pi_{t-1} = -\alpha(u_t - u_n)$$

- If alpha=1, a 5% reduction in inflation requires 5 point years of excess unemployment. Sacrifice ratio is one.

Table 9-1 Engineering Disinflation	0	1	2	3	4	5	6	7	8
Inflation (%)	14	12	10	8	6	4	4	4	4
Unemployment rate (%)	6	8	8	8	8	8	6	6	6
Output growth (%)	3	−2	3	3	3	3	8	3	3
Nominal money growth (%)	17	10	13	11	9	7	12	7	7

Implications:

- Our model suggests policy can change timing but not costs of disinflation:
  - Rapid disinflation with short but deep recession vs slow disinflation with less severe but more prolonged recession.
  - Sacrifice ratio is unchanged by how rapidly we disinflate.
- Key assumption here: expectations of future inflation depend on past inflation.

Expectations and Credibility

- Lucas critique: Wage setters should take into account changes in policy when setting inflation expectations.
- If monetary policy makers announce they will reduce inflation in the future and wage setters believe the announcement, inflation expectations should fall more rapidly than lagged inflation. Sacrifice ratio is smaller.
- Key ingredient: policy announcements must be credible.

A costless disinflation:

- Suppose initial inflation equals expected inflation at 8%.

- Fed announces immediate permanent reduction in inflation from 8% to 4%.

- Suppose wage setters believe announcement:
  - Expected inflation equals actual inflation of 4%.
  - Unemployment stays at natural rate.

- In this example, a perfectly credible disinflation is costless.

Staggered nominal contracts

- If nominal contracts are set over multi-year periods then credible disinflation will still cause a recession.

- Intuition: nominal wage growth determined by expectations prior to policy change.

- Disinflation produces reduction in prices greater than reduction in nominal wages.

- Real wages rise and firms layoff workers.

Are rapid disinflations better than slow disinflations?

- Credibility: a rapid disinflation (and resulting sharp rise in unemployment) may be more effective way to gain credibility and reduce inflation expectations. If so, rapid disinflation results in lower sacrifice ratio.

- Staggered contracts: a gradual disinflation allows more time for contracts to be reset before disinflation occurs. In this case, gradual disinflation results in lower sacrifice ratio.

- Evidence suggests that rapid disinflations do have lower sacrifice ratios.