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# The use of models at central banks - a comment

Steinar Holden  
Department of Economics  
<http://folk.uio.no/sholden/>

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# Outline

- . Development in central bank models
- . Can the models account for large and persistent fluctuations?
- . Equilibrating mechanisms
- . Recent development in selected countries
- . Conclusions and questions



# Recent development of central bank models

- . Much stronger focus on theoretical consistency
  - . Well defined steady-state
  - . Optimising behaviour
  - . More explicit forward-looking behaviour
  - . Nominal rigidities in wages and prices
- . Central bank sets nominal interest rate
- . Short run effects of demand
- . Focus on data consistency
  
- . Impressive work and important progress



# Persistent fluctuations

- Most fluctuations probably due to transitory shocks  $\Rightarrow$  economy will return when shock vanishes
  - Investment  $\downarrow \Rightarrow$  GDP  $\downarrow$  ; Investment  $\uparrow \Rightarrow$  GDP  $\uparrow$
- But some shocks are permanent
- Large shocks may affect expected future equilibrium path
  - Investment  $\downarrow \Rightarrow$  GDP  $\downarrow$  &
  - Expected future GDP  $\downarrow \Rightarrow$  Investment  $\downarrow$ , Cons.  $\downarrow$
- Need for
  - Self-correcting (equilibrating) mechanisms
  - Monetary policy



# How powerful are the equilibrating mechanisms ? (I)

- . Forward-looking elements
  - . Consumption smoothing – but what do households know about the future?
  - . If income falls, what happens to consumption?
    - . transitory shock ?  $\Rightarrow$  C falls less
    - . persistent shock ?  $\Rightarrow$  C falls in proportion
    - . persistent shock to the growth rate ?  
 $\Rightarrow$  C falls more
  - . Likewise for investment – firms may postpone investments if significant risk that demand remains sluggish
- . Available resources
  - . Do high unemployment really stimulate investment and job creation?



# How powerful are the equilibrating mechanisms ? (II)

- . Wage and price growth
  - . Pigou-effect is negligible
  - . Usually strong effect of tight labour market
  - . Dampening effect of slack labour market is often weaker
  - . Lower (zero) bound to nominal wage growth
    - . Euro-zone: rigidities + country-spec shock
  - . Weak expansionary effect of lower wage and price growth
  - . Income distribution effect opposite direction
- . International competitiveness
  - . Important, but traded sector only part of overall economy
  - . Low relative costs may be viewed as temporary

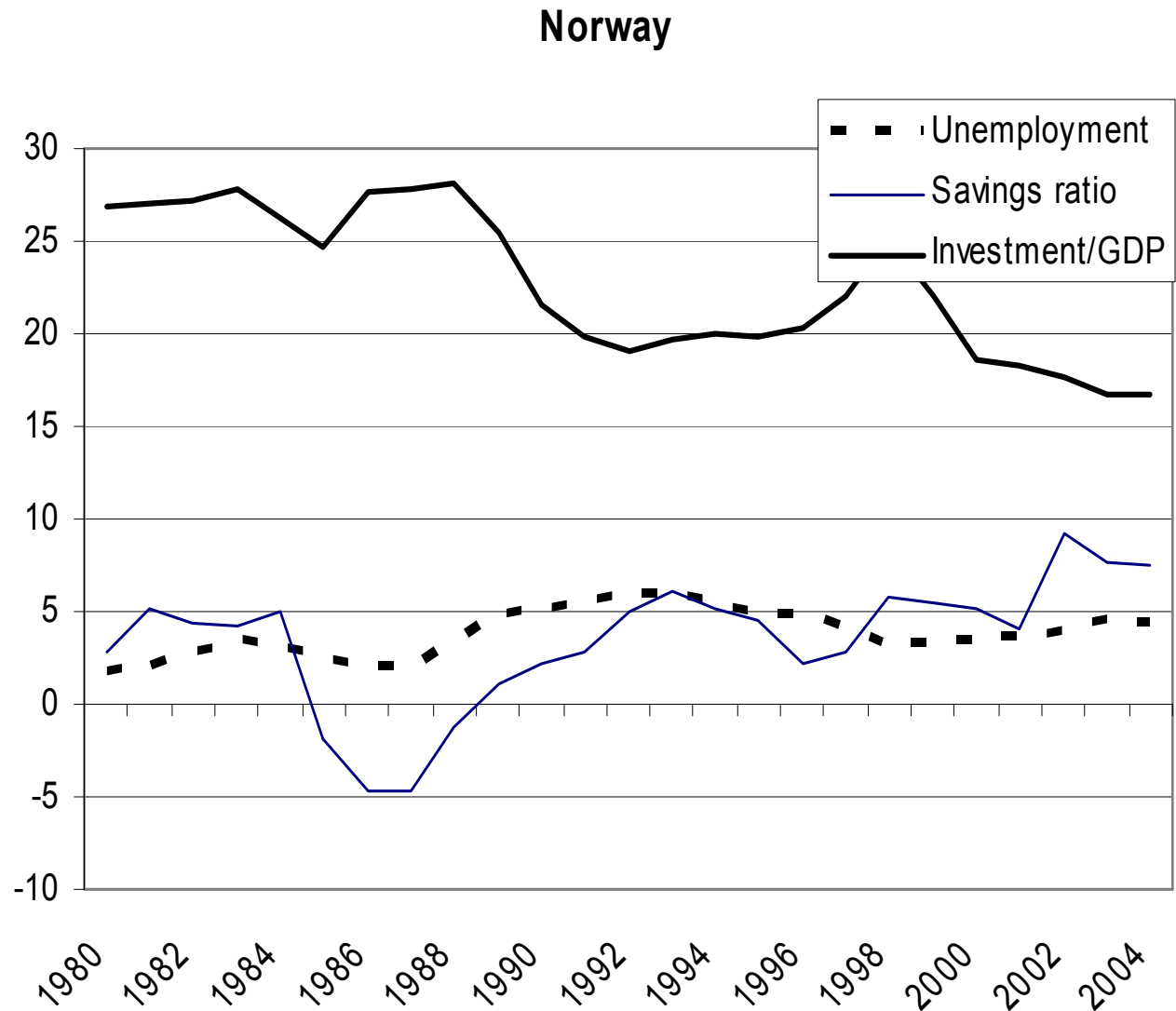


# Equilibrating mechanisms – summing up

- . Most shocks vanish by themselves
- . Equilibrating mechanisms in the economy are not strong
  - . probably stronger down (if activity too high) than up (if activity is too low)
- . Negative, large or persistent shocks may have persistent effects on unemployment
- . Decisive monetary policy may be required



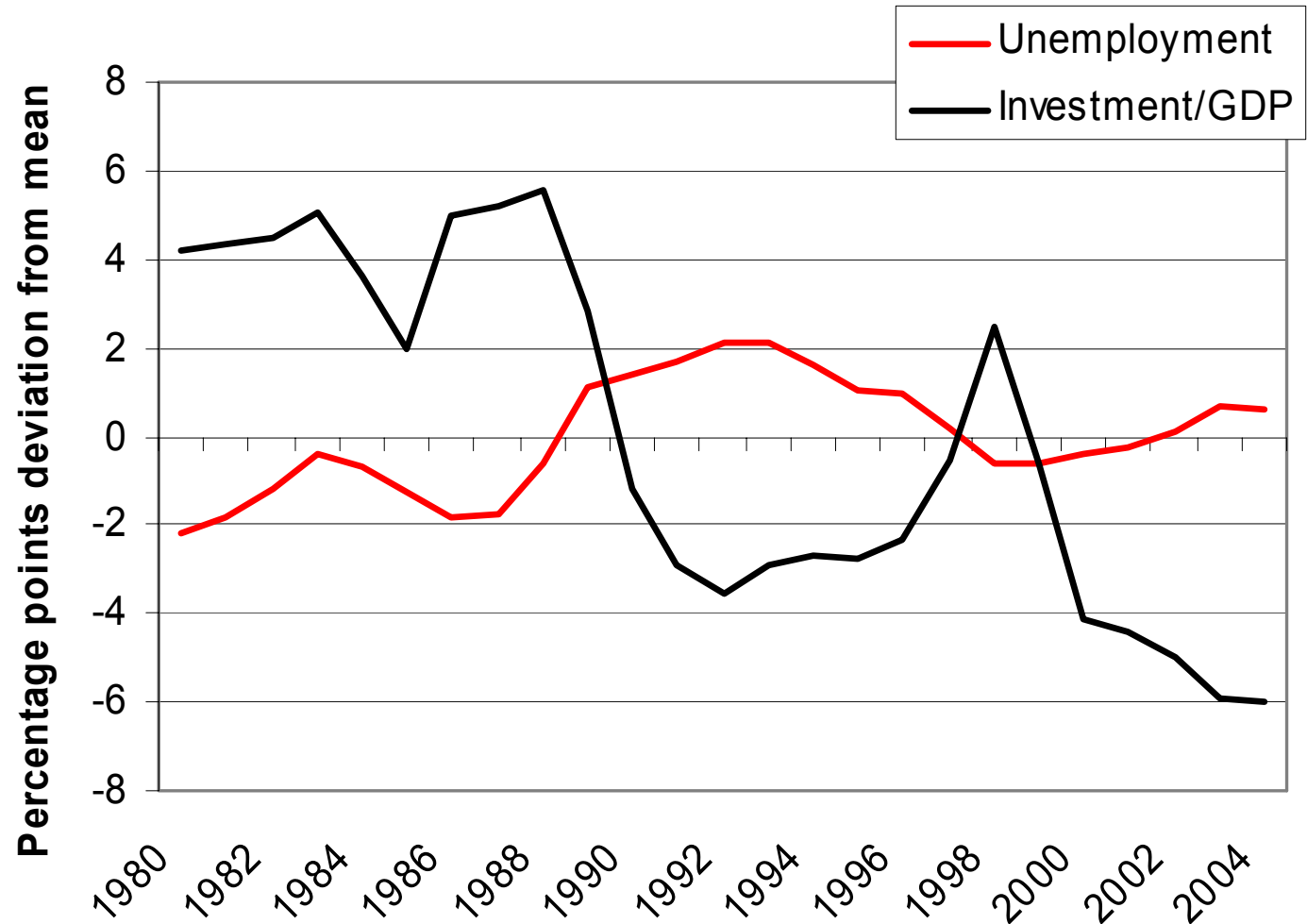
# Persistent fluctuations in investment, saving and unemployment, Norway





# Unemployment & investment/GDP, Norway, deviation from mean

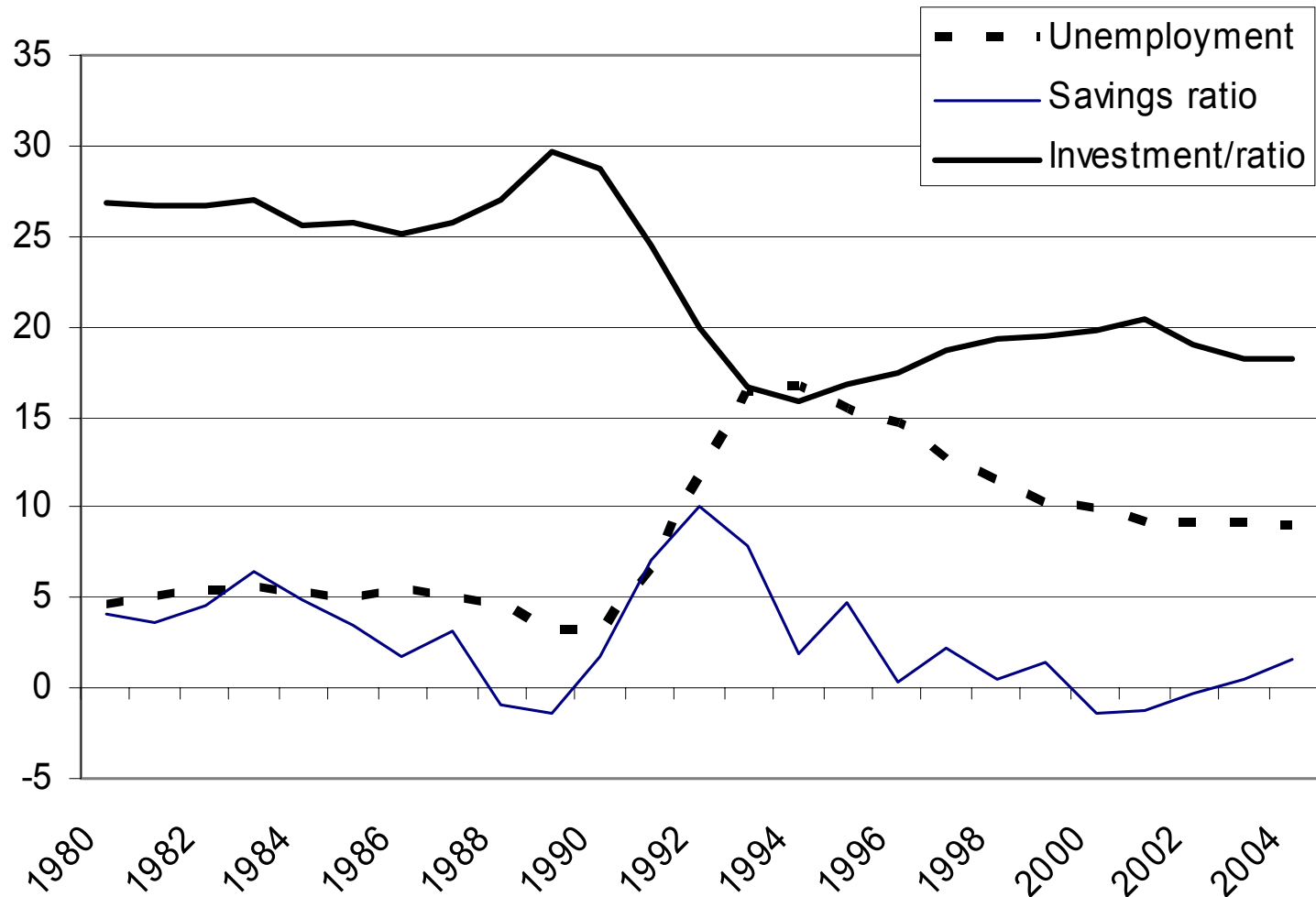
Norway 1980 - 2004





# Persistent effect of downturn in Finland in the early 1990s

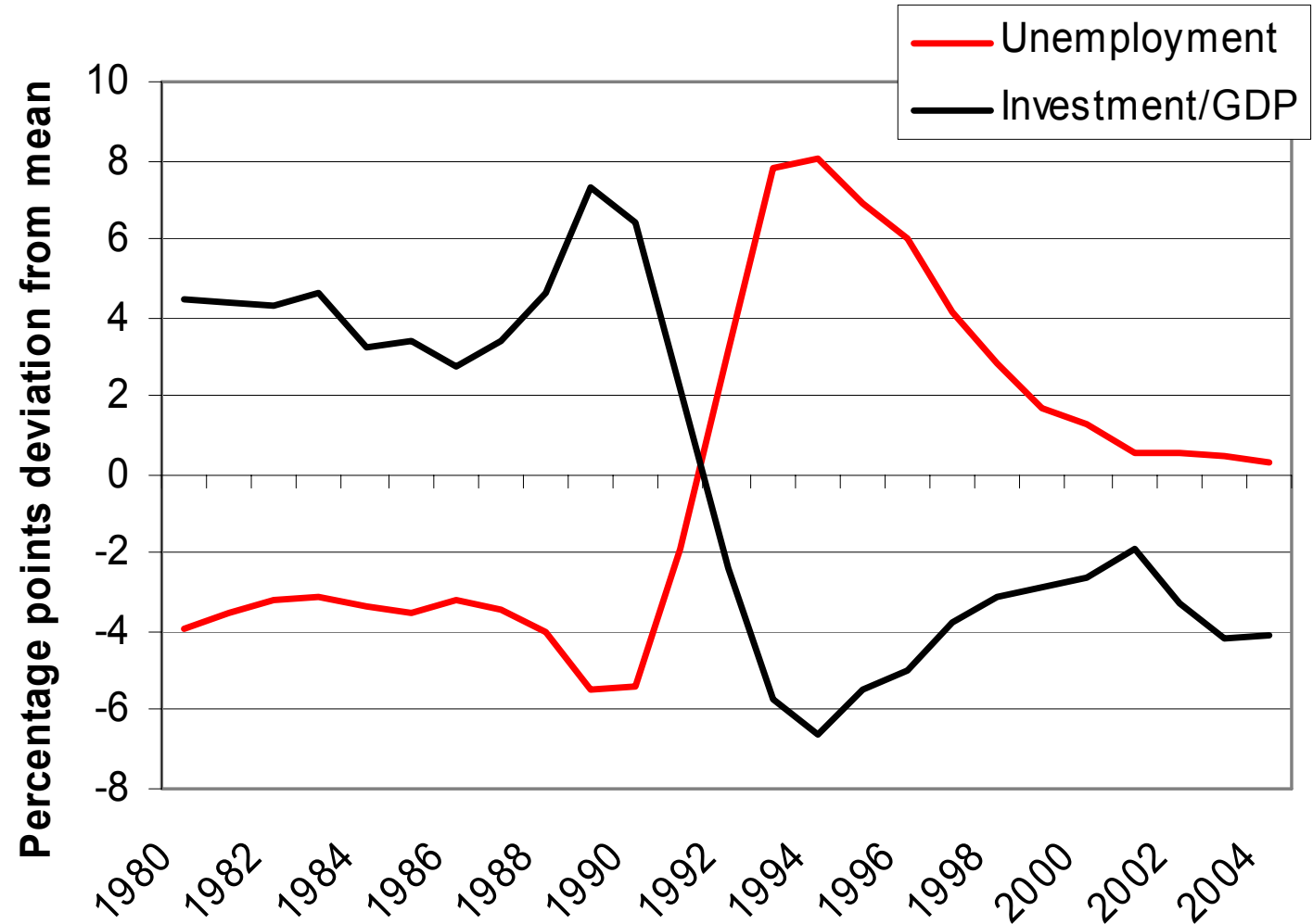
Finland





# Unemployment & investment/GDP, Finland, deviation from mean

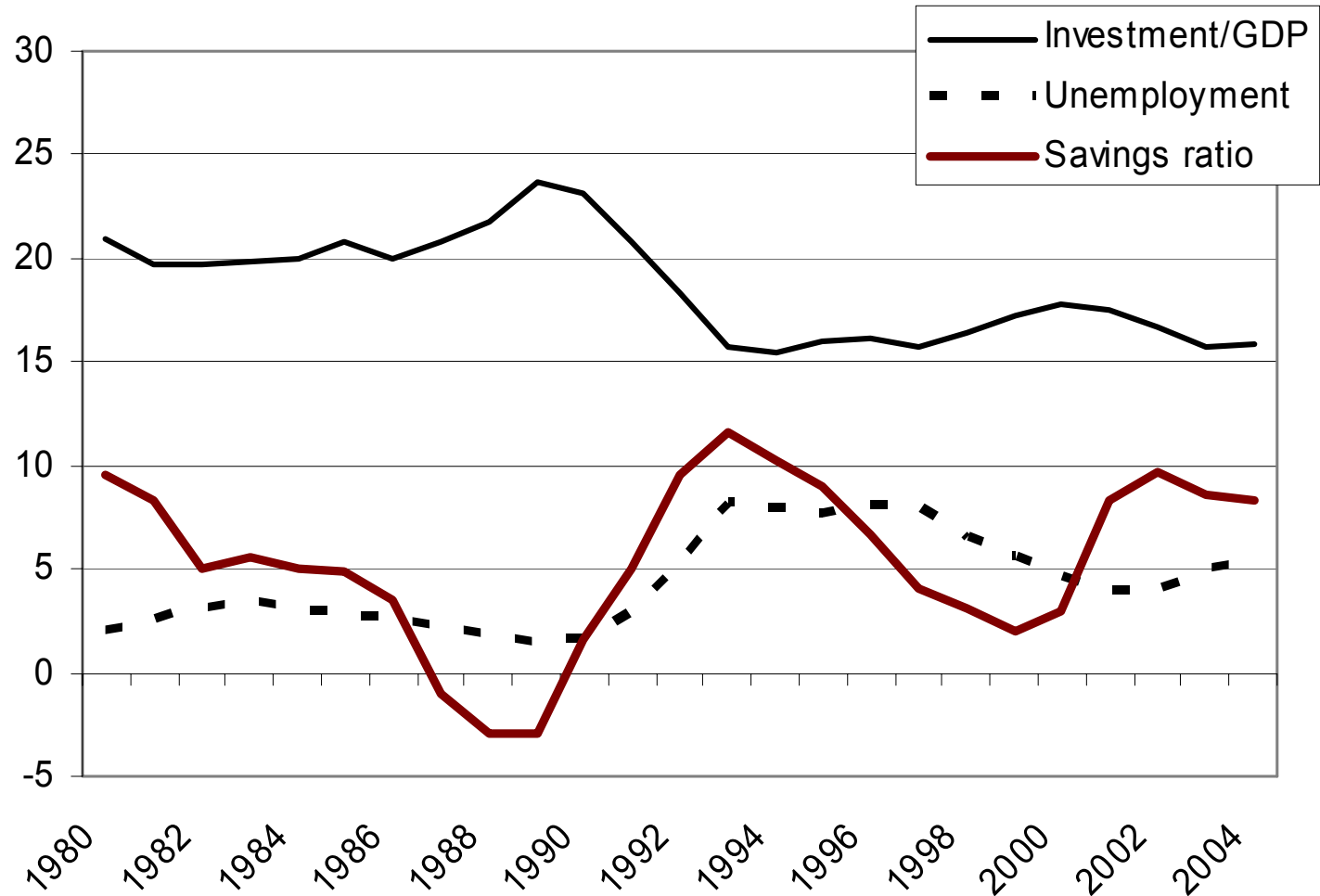
Finland 1980 - 2004





# Persistent effect of downturn in Sweden, too

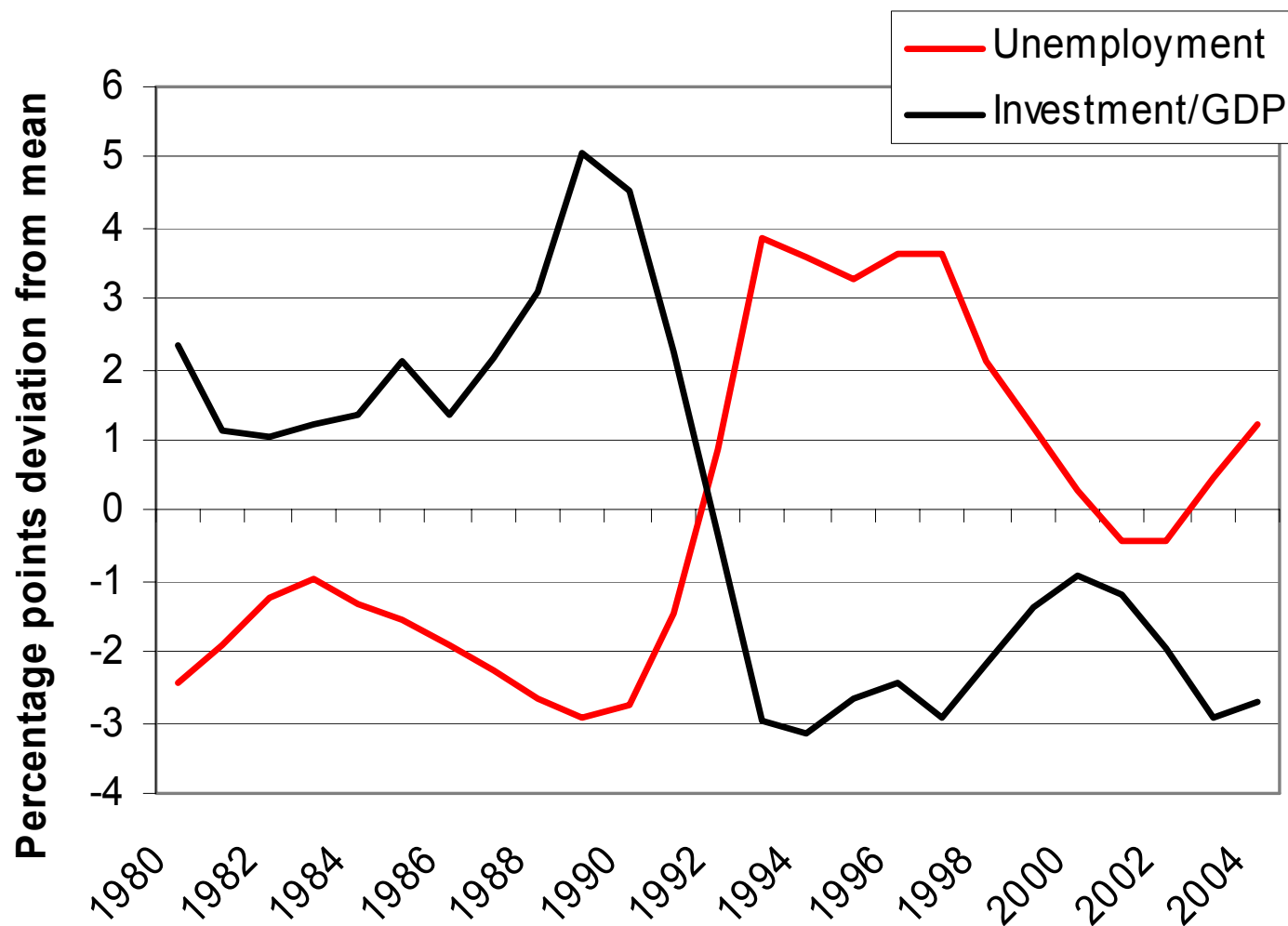
Sweden 1980 - 2004





# Unemployment & investment/GDP, Sweden, deviation from mean

Sweden 1980 - 2004

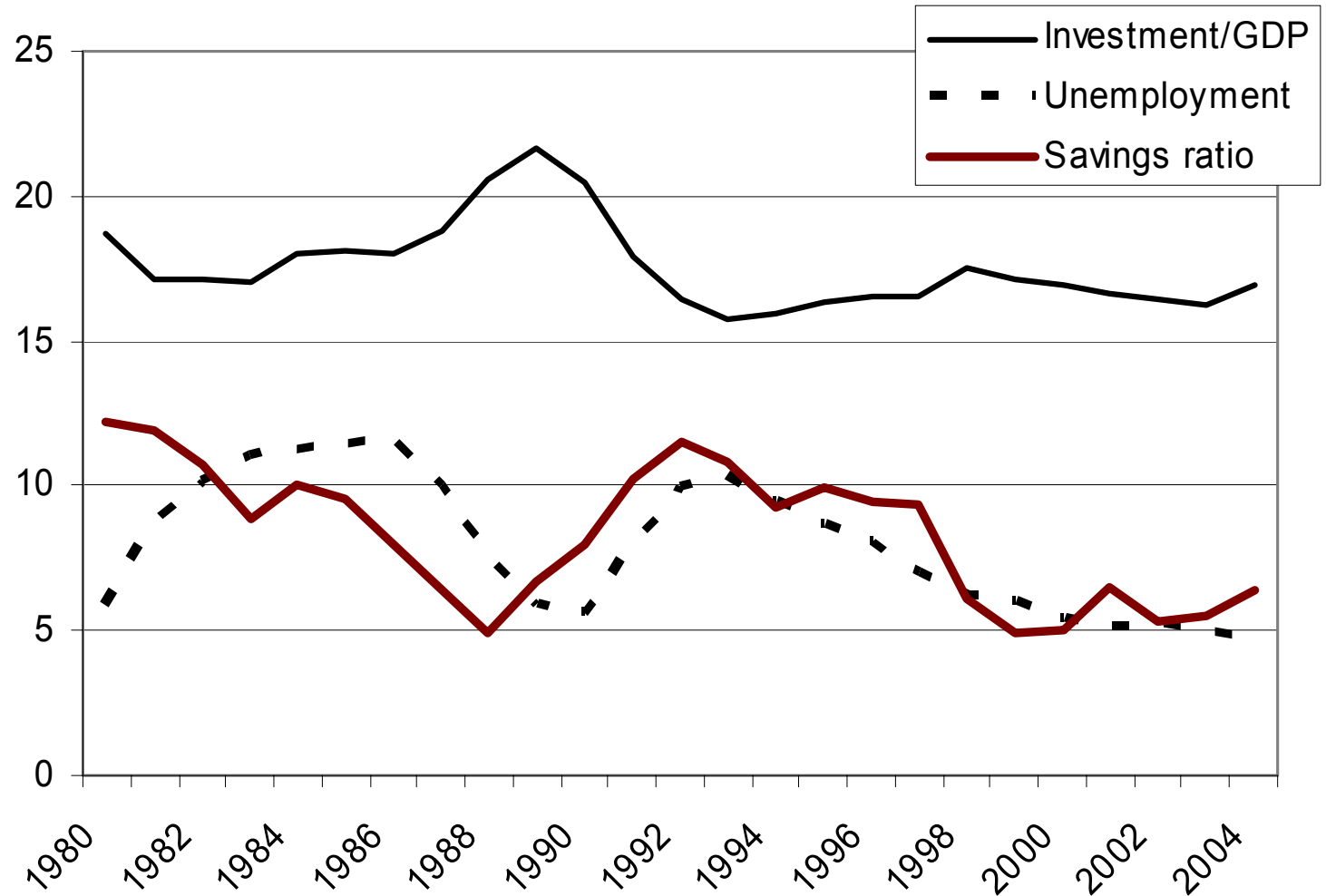


2005



# And the UK

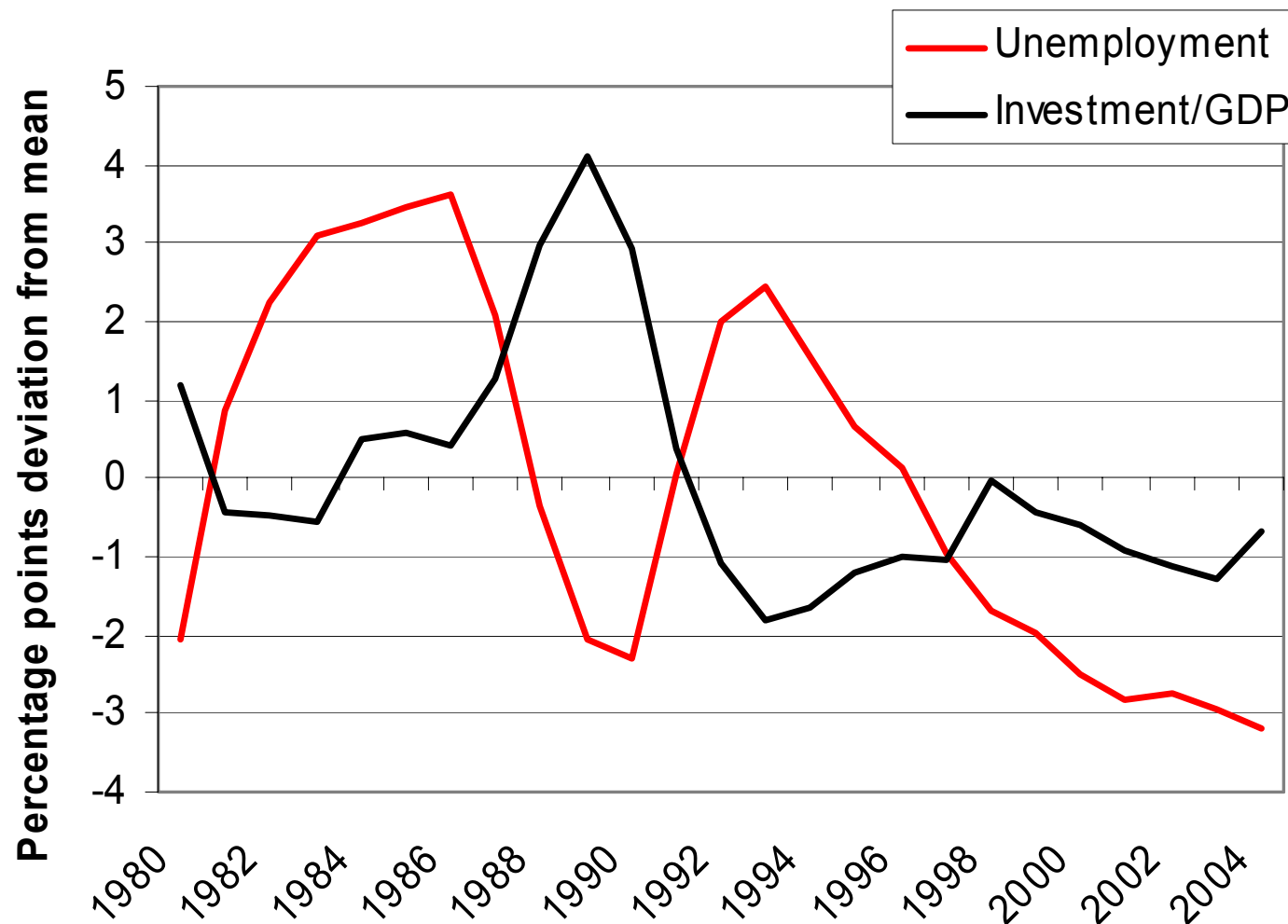
UK 1980 - 2004





# Unemployment & investment/GDP, the UK, deviation from mean

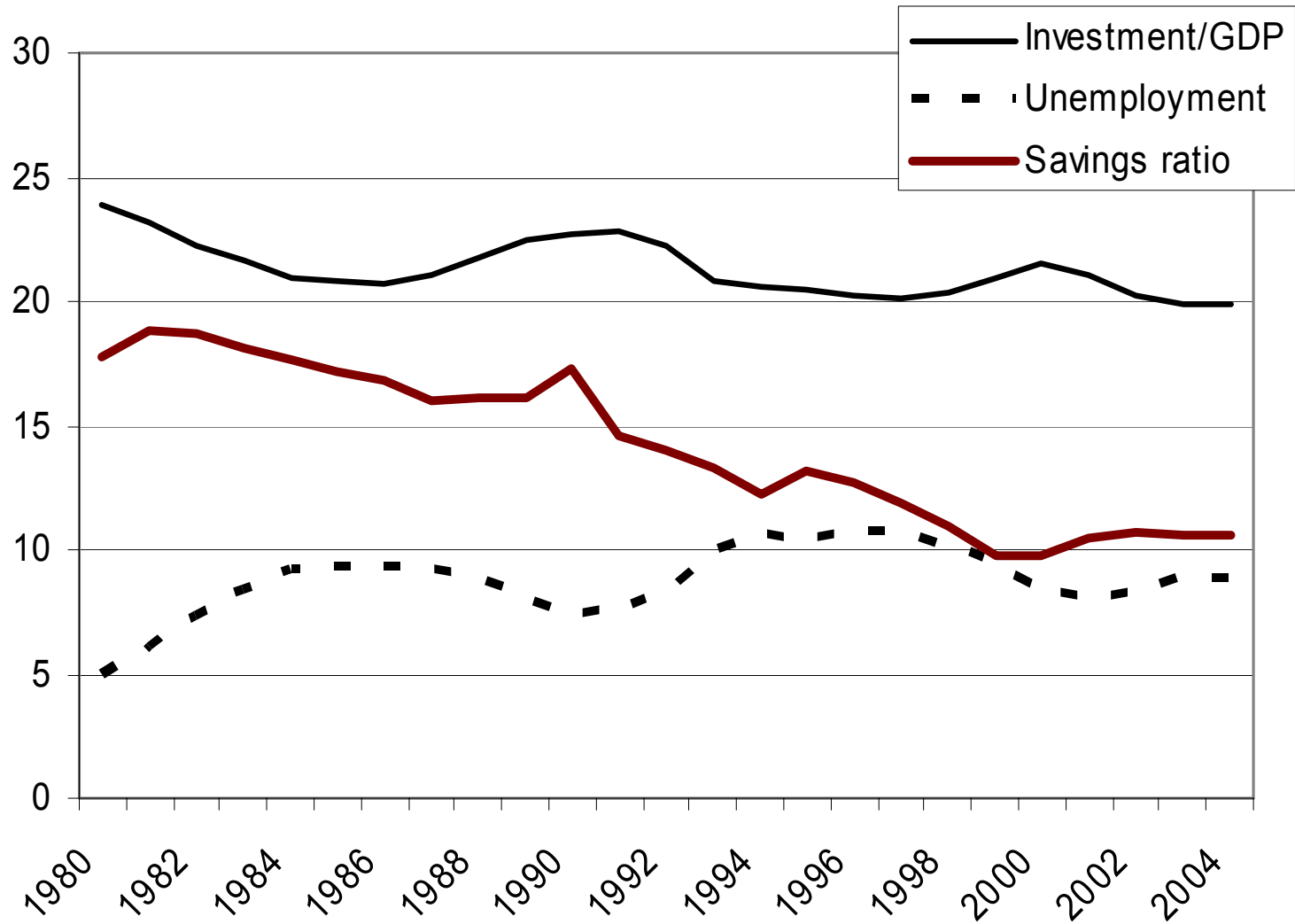
UK 1980 - 2004





# And in Euro 12

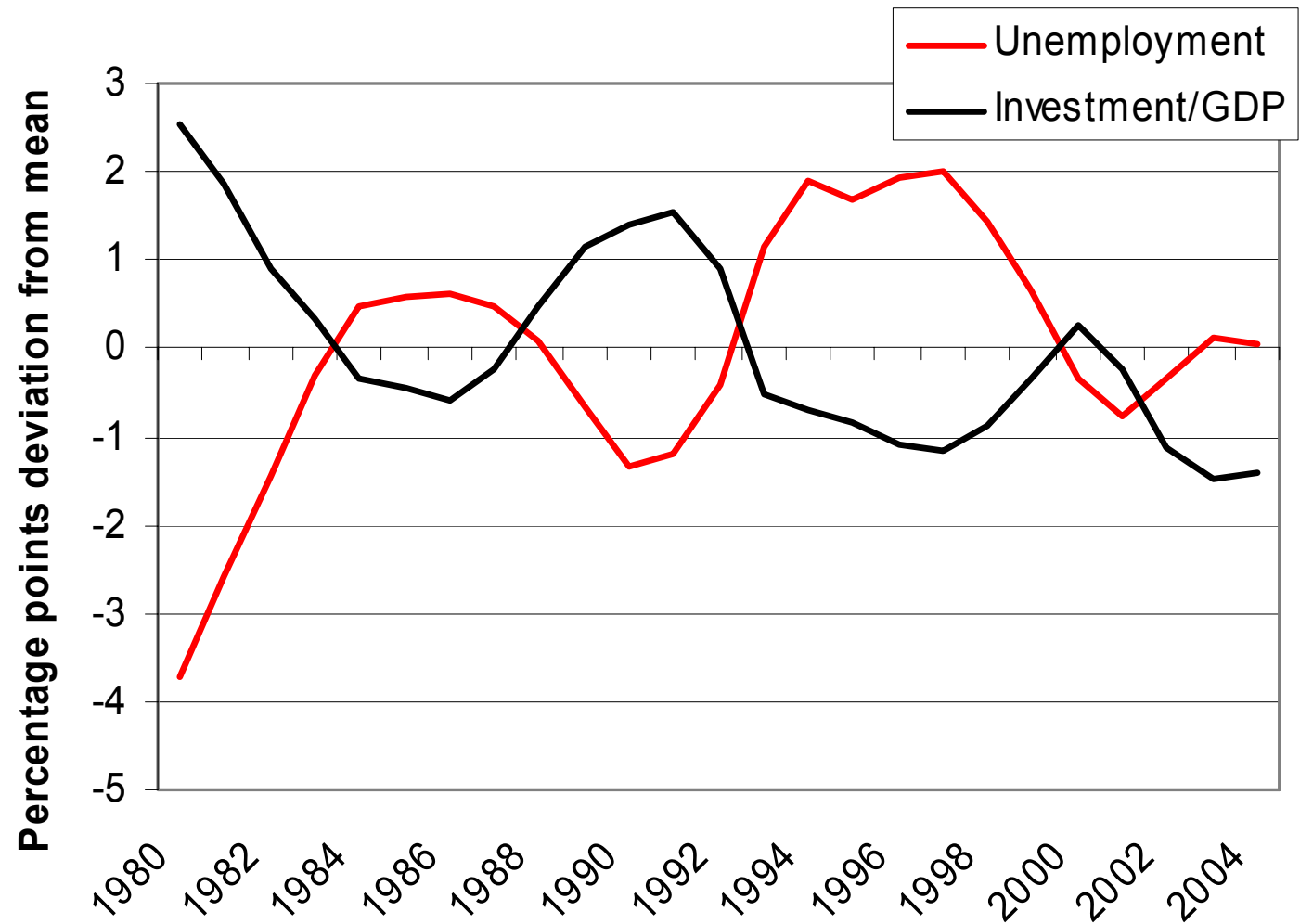
Euro 1980 - 2004





# Unemployment & investment/GDP, Euro area, deviation from mean

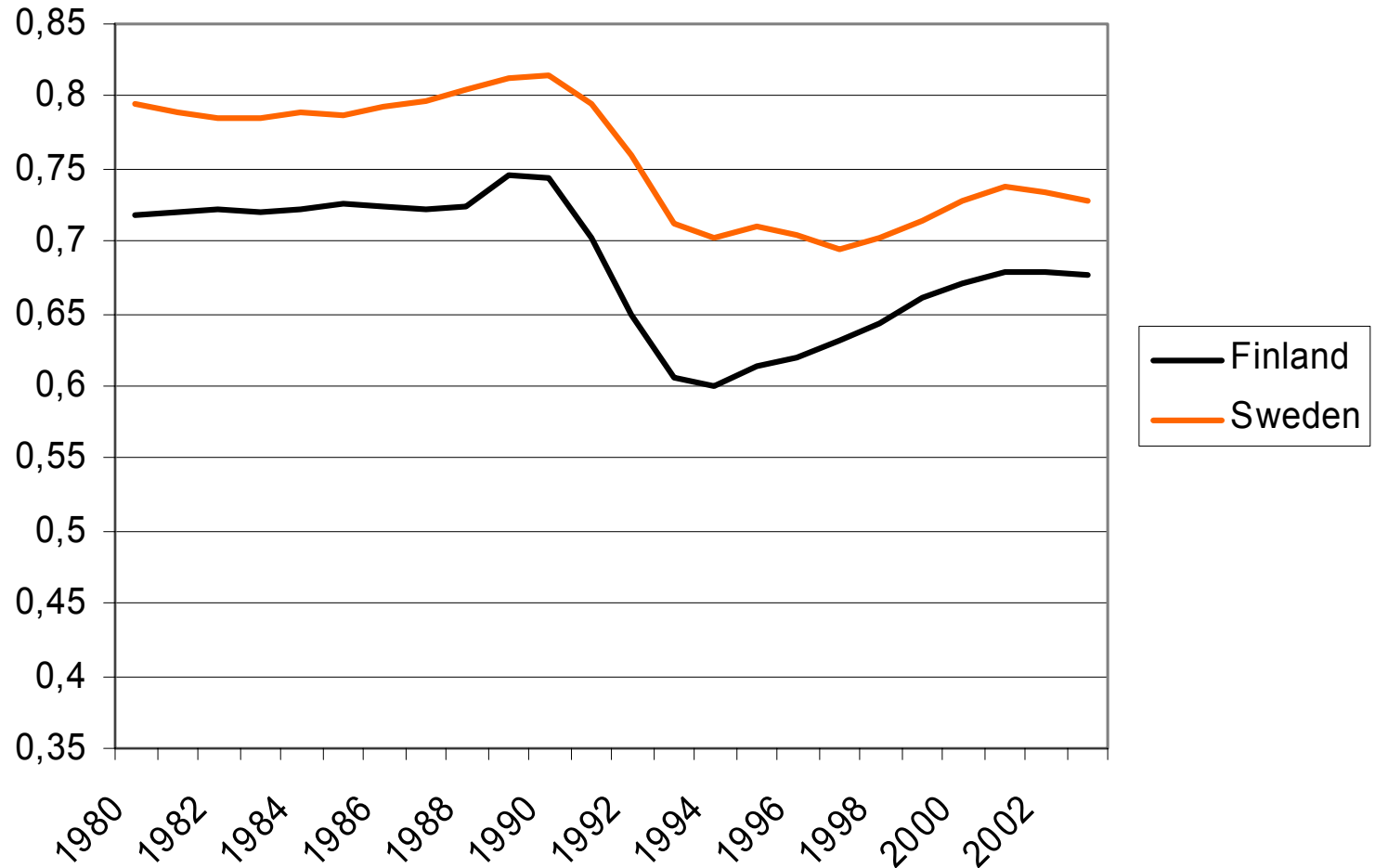
Euro area 1980 - 2004





# Long-lasting effect on employment rates (15-64): Finland and Sweden

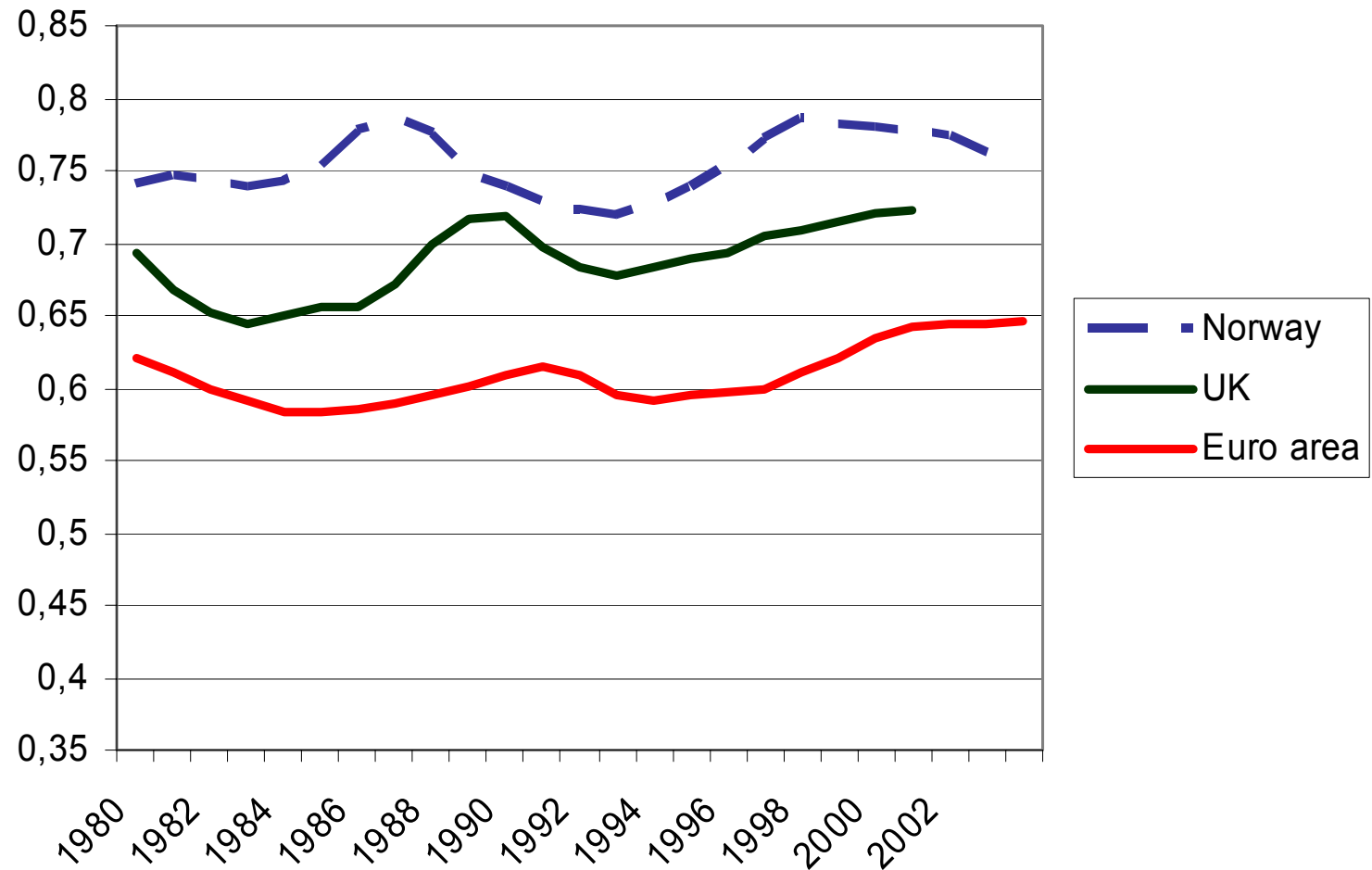
Total employment / Population





# And in Norway, the UK and the Euro Area

Total employment / Population





# Conclusions

- Long-lasting fluctuations in investment, saving and unemployment
- Possible interpretation: persistent effects of aggregate demand
- Explanations based on changes in structural variables (wage setting, labour market institutions, benefits, etc) not persuasive
- Explanations based on shocks and institutions more promising
  - But these explanations allow role of demand



# Questions

- . What are the key equilibrating mechanisms in the banks' models ?
- . Can the models account for persistent co-movements in investment and unemployment?
- . What is the role of monetary policy in such situations?