

The Theory of Optimum Currency Areas: A Critique

1

Reassessment of the OCA-theory

- I. How important are asymmetries between countries, and how do they evolve over time?
- II. Is national monetary policy (including exchange rate policy) effective at countering asymmetric shocks?
- III. Time consistency and credibility of national monetary policies.

2

Reassessment of the OCA-theory

- I. How important are asymmetries between countries, and how do they evolve over time?
 - a) Endogeneity of the OCA criteria
 - b) Asymmetric shocks and the nation-state
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3

I.a. Do asymmetries change when integration increases?

- OCA Theory is static
- Symmetry of shocks may increase/fall because of membership in a common-currency area
- OCA criteria may be *endogenous*
- Optimistic view:
 - Integration leads to greater symmetry of economic developments
- Pessimistic view:
 - Integration causes divergence and asymmetry

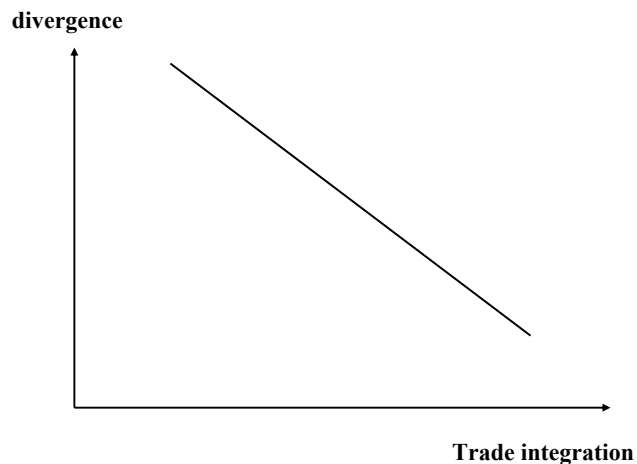
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Optimistic View

- Monetary integration leads to more trade and especially more intra-industry trade
- Intra-industry trade leads to similar production patterns
- Economic structures become more similar and countries become less prone to asymmetric shocks

5

Figure 2.1 Optimistic view



6

Optimistic View: Evidence

- Rose (2000, 2002) and Rose and van Wincoop (2001): common currency doubles trade
- Micco, Stein and Ordonez (2003): EMU membership raised bilateral trade by 4-10% by 2002
- Rose and Glick (2001): leaving a currency union halves trade – but cf. Thom and Walsh (2002) on the effect of abandoning IE pound-sterling parity in 1979
- Frankel and Rose (1998): correlation of shocks increases with bilateral trade

7

Pessimistic View

- Trade allows regions/countries to take advantage of economies of scale
- This leads to agglomeration, clustering and thus to regional specialization
- Integration therefore makes countries/regions more vulnerable to asymmetric shocks

8

Figure 2.2 Pessimistic view



9

Pessimistic View: Evidence

- Krugman (1991, 1993): anecdotal evidence from the US
 - Massachusetts, Detroit/Midwest, Silicon Valley
- US regions tend to be more narrowly specialized than European countries
- But, even if the pessimistic view holds, agglomeration effects should be blind to national borders
- Services account for a lion's share of output in developed countries
- Services are less subject to economies of scale and agglomeration effects

10

I.b. Asymmetric shocks and the nation-state

- National policies cause asymmetric shocks
- In a monetary union, countries give up independent monetary policy but remain free to pursue national fiscal policies
- National legal and labor-market institutions similarly cause asymmetries
- The Stability and Growth Pact seeks to address this issue within the EMU
- This may create a need for further political integration in a monetary union

11

Reassessment of the OCA-theory

- I. How important are asymmetries between countries, and how do they evolve over time?
- II. Is national monetary policy (including exchange rate policy) effective at countering asymmetric shocks?
 - a) Permanent asymmetric demand shock
 - b) Temporary asymmetric demand shock
 - c) Differences in policy preferences
- III. Time consistency and credibility of national monetary policies.

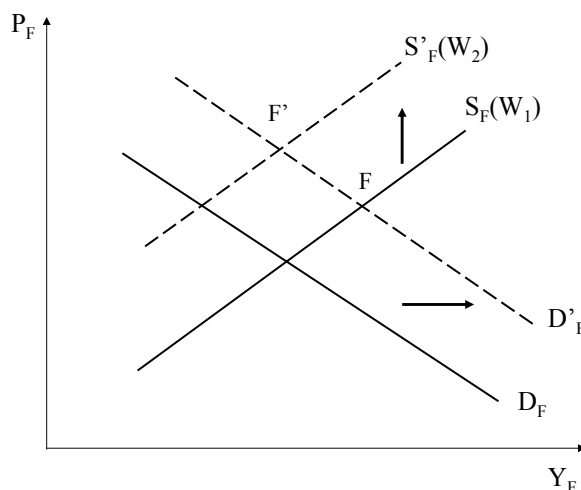
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II.a. Permanent asymmetric shocks

- Permanent asymmetric shocks require a change in relative prices
- Depreciation increases aggregate demand
- Production costs increase because imported goods are more expensive
- Real wages fall and there is pressure for wage increases to compensate for inflation
- Aggregate supply falls
- Depreciation fails to raise output permanently (but price level rises)

13

Figure 2.5 Prices and cost effects of a devaluation

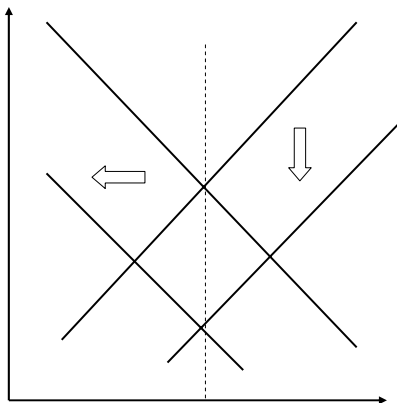


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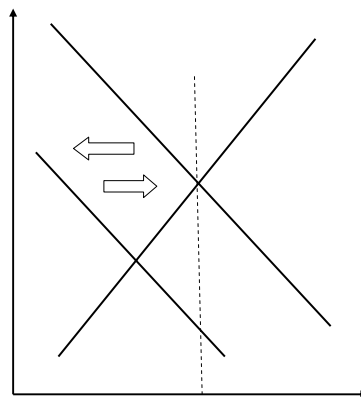
- Nominal depreciation only leads to temporary real depreciation
- However, devaluations can sometimes make the dynamics towards new equilibrium less costly than alternative policy strategies.
- The latter are typically more deflationary and lead to larger output losses
- Devaluation can be effective if workers accept the decline in real wages

15

Adjustment through deflation



Adjustment through devaluation



16

II.b. Temporary asymmetric shocks

- Many demand shocks are temporary, e.g. business cycles
- Since the shocks are temporary, wage flexibility and mobility of labor cannot be invoked to solve this problem
- Monetary policy can be used to counter such temporary shocks
- However, this may come at a cost in terms of inflation

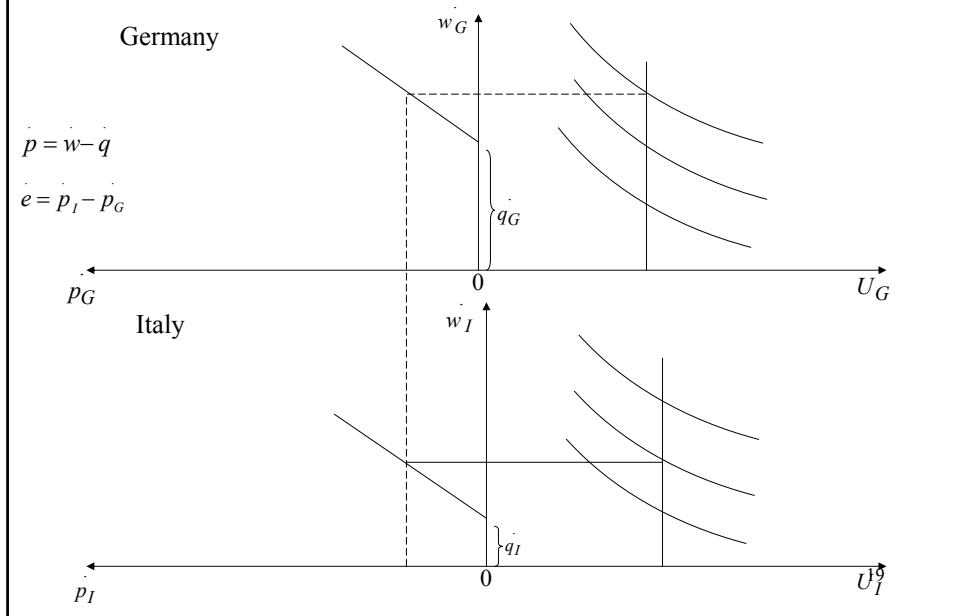
17

II.c. National monetary policy with different policy preferences

- Traditional (Keynesian) view: countries can select any desired inflation-unemployment combination on downward sloping Phillips curve
- Modern (monetarist) view: long-run Phillips curve is vertical

18

Figure 2.7 Monetary Union in a world of vertical Phillips Curves



- Modern view: Phillips curve is downward sloping in the short term but vertical in the long term
- Governments can ‘buy’ lower unemployment in the short term by generating inflation
- In the long term, inflationary expectations adjust, unemployment reverts to its natural level but inflation (and expectations) stay high
- No long-term gain to having an independent monetary policy
- Joining a monetary union may cause short-term unemployment in high-inflation countries

- In monetary union:

$$\dot{e} = \dot{p}_I - \dot{p}_G = 0 \Rightarrow \dot{w}_G - \dot{q}_G = \dot{w}_I - \dot{q}_I$$

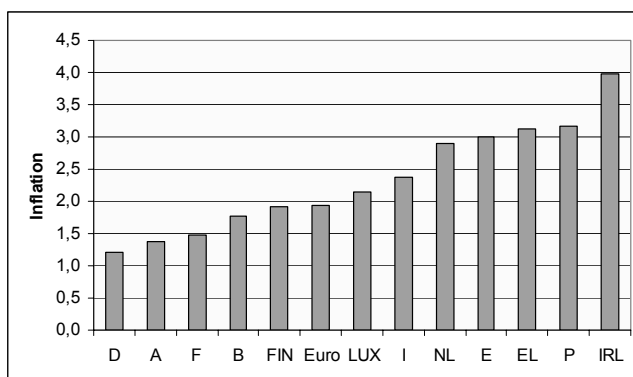
- Equalization of wage growth when there are differences in productivity growth will cause problems in the long term because of the less dynamic region becoming increasingly less competitive over time
 - German reunification
 - EU enlargement

21

Productivity and inflation in monetary union The Balassa-Samuelson effect

- Inflation differentials in monetary union can be significant

Average yearly inflation in Eurozone countries, 1999-2003 (%)



22

Balassa-Samuelson model

- Inflation in France $\dot{p}c_F = \alpha \dot{p}_F + (1-\alpha)\dot{w}_F$
- Inflation in Ireland $\dot{p}c_I = \alpha \dot{p}_I + (1-\alpha)\dot{w}_I$
(we assume that inflation in non-tradables is equal to wage inflation)
- Inflation rates in tradable goods sectors are equal
$$\dot{p}_F = \dot{p}_I$$
- This leads to $\dot{p}c_F - \dot{p}c_I = (1-\alpha)(\dot{w}_F - \dot{w}_I)$
- Assuming that differences in wage increases reflect differences in productivity growth we obtain
$$\dot{p}c_F - \dot{p}c_I = (1-\alpha)(\dot{q}_F - \dot{q}_I)$$
- Inflation in Ireland exceeds inflation in France if Irish productivity increases faster than French productivity

23

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24

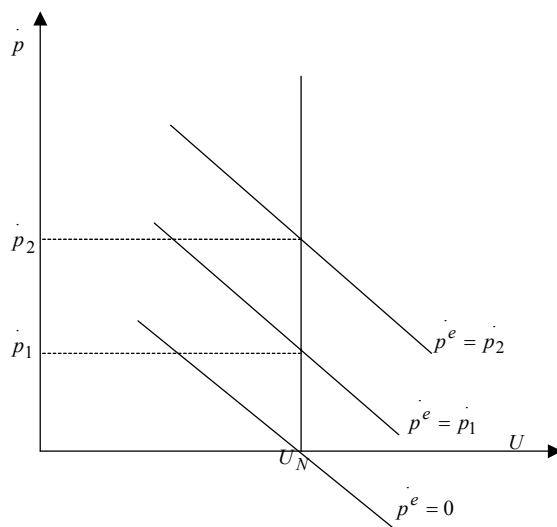
III. Devaluation, time consistency, and credibility

- Government policies are often time-inconsistent and therefore not credible
- This time-inconsistency often leads to inferior outcomes (inflationary bias)
- We use Barro-Gordon (1983) model based on work by Kydland and Prescott (1977)
- We first develop closed-economy version
- Then we develop two-country version

25

Barro-Gordon model

Figure 2.9 The Phillips curve and natural unemployment



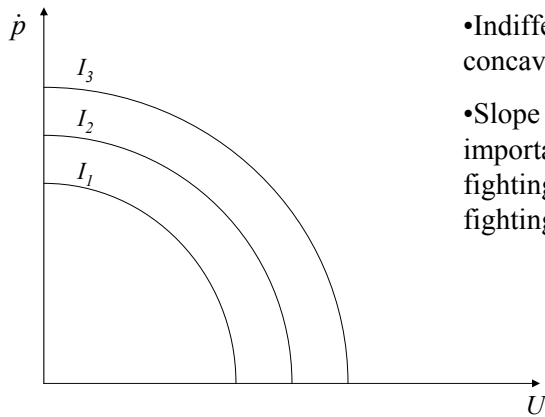
- There is a short-term tradeoff between inflation and unemployment for every level of expected inflation

$$U = U_N + a(\dot{p}^e - \dot{p})$$

- The vertical line represents the 'long-term' vertical Phillips curve. It is the collection of all points for which $\dot{p} = \dot{p}^e$
- This vertical line defines the natural rate of unemployment U_N

26

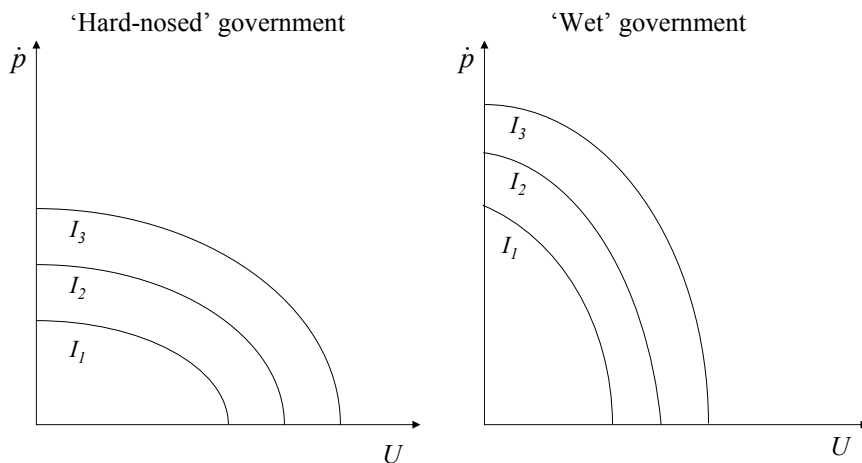
Figure 2.10 The preferences of the authorities



- Indifference curves are concave
- Slope expresses relative importance attached to fighting inflation versus fighting unemployment

27

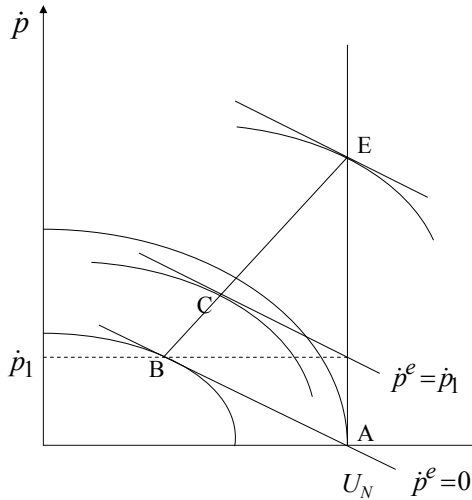
Figure 2.11 The preferences of the authorities



- 'Hard-nosed' government attaches a lot of weight to fighting inflation
- 'Wet' government attaches a lot of weight to fighting unemployment

28

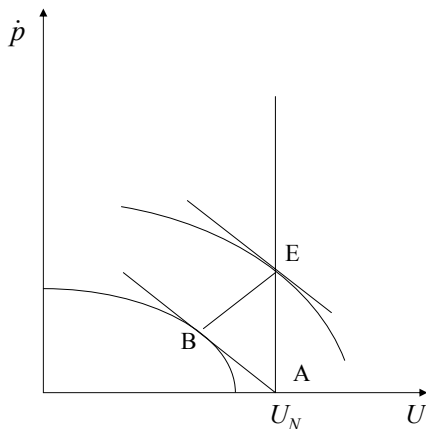
Figure 2.12 The equilibrium inflation rate



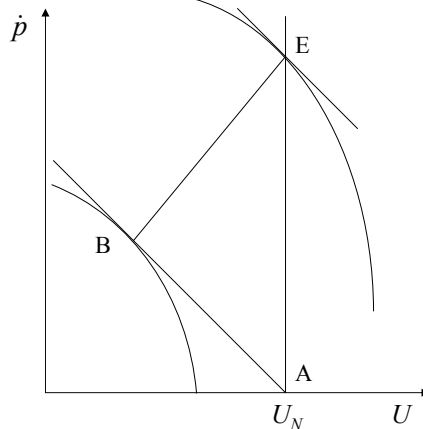
- Announcing a zero inflation policy is not credible because authorities prefer point B to A
- Rational agents know this
- Therefore, they will set their expectations about inflation such that authorities have no incentive to deviate from the announced inflation rate
- This is achieved in point E, which is the rational-expectations time-consistent equilibrium

Figure 2.13 Equilibrium with 'hard-nosed' and 'wet' governments

'Hard-nosed' government

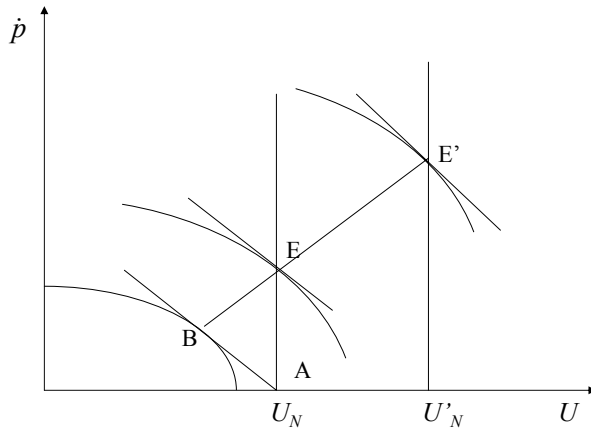


'Wet' government



- 'Hard-nosed' government achieves lower inflation equilibrium than 'wet' government without imposing more unemployment in the long run

Figure 2.14 Equilibrium and the level of natural unemployment



Equilibrium inflation rate also depends on the level of the natural unemployment

31

The Barro-Gordon model in an open economy

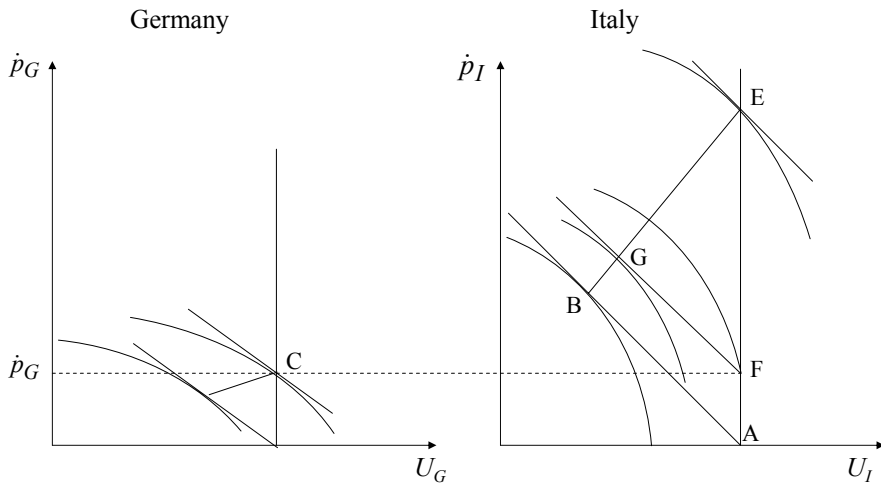
- We add the purchasing power parity condition to link the inflation rates of two countries (Germany and Italy), i.e.

$$\dot{e} = \dot{p}_I - \dot{p}_G$$

- When Italian inflation exceeds the German one the lira depreciates
- Can Italy reach the low-inflation (German) equilibrium?

32

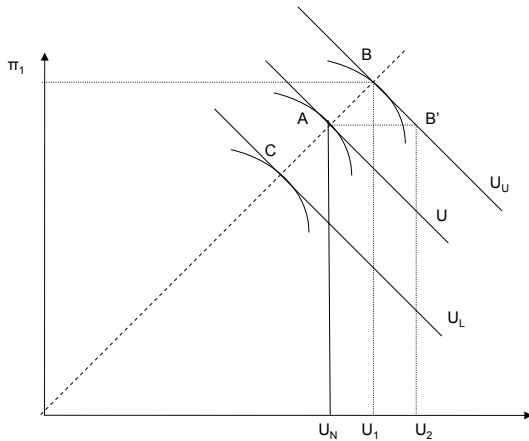
Figure 2.15 Inflation equilibrium in a two-country model



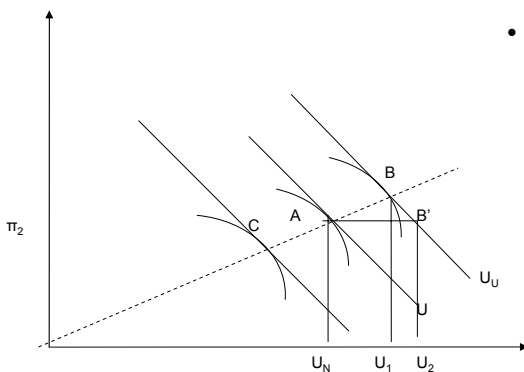
Fixing the exchange rate of the lira with the mark is not credible, because Italian authorities have an incentive to create surprise inflation (devaluation)

- Only by abolishing the Italian central bank and adopting mark can Italy escape from the high inflation equilibrium
- This is also what countries which decide to “dollarize” hope to achieve
- Monetary union is more complicated because both central banks decide jointly and a new currency is created
- This leads to problem in that ECB may not have the same preference for inflation as the German Bundesbank.

Optimal stabilization and monetary union



- Dotted line is the optimal stabilization line
- Temporary shock: short-term Phillips curve shifts
- Without stabilization unemployment would increase to B' after shock
- With stabilization, the increase in unemployment is limited to B
- The price paid is higher inflation
- Inflation increases with the steepness of stabilization line



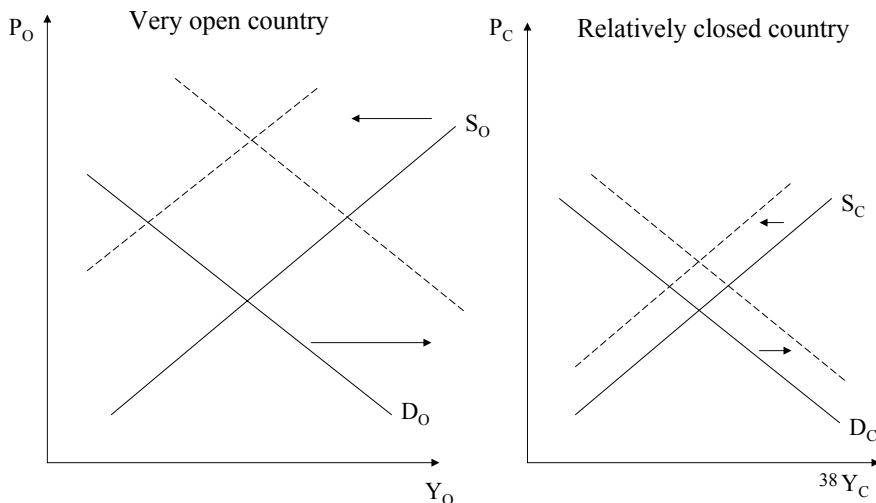
- This country cares less about unemployment
- Same shock will lead to a greater increase in unemployment
- But less inflation

- When countries join a monetary union, they lose an instrument of policy that allows them to better absorb temporary asymmetric shocks.
- However, countries that actively use such stabilization policies also pay a price in terms of higher long-term rate of inflation.
- Therefore, the loss of independent monetary policy need not be very costly.

37

Cost of monetary union and openness

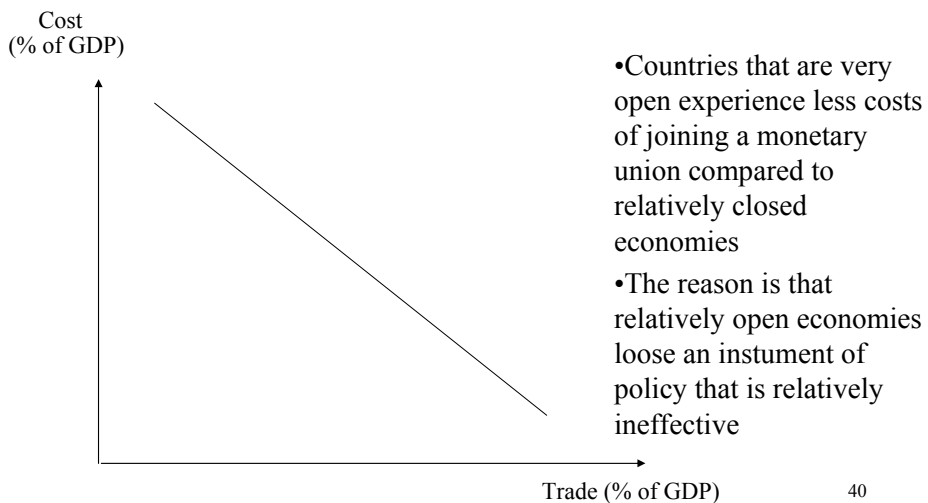
Figure 2.16 Effectiveness of devaluation as a function of openness



- The combined AD/AS effect of the devaluation on output is ambiguous.
- However, the effect on the price level is stronger in the more open economy.
- Hence, using monetary policy to stabilize demand shocks will come at a cost in terms of greater variability in inflation.

39

Figure 2.17 The cost of a monetary union and the openness of a country



40