

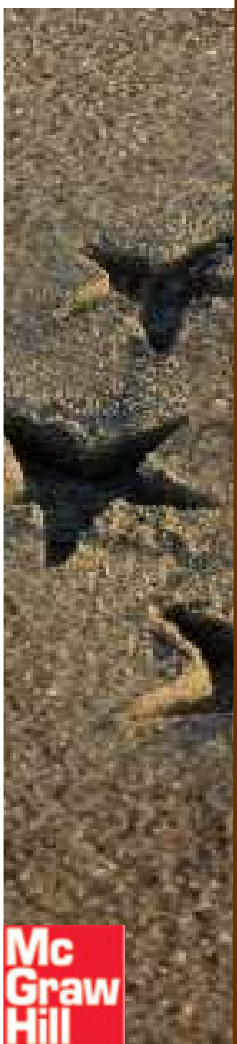
Chapter 9

Essential macroeconomic tools

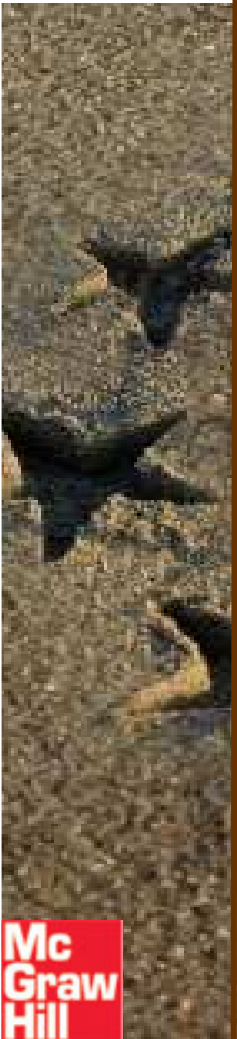
Background theory



- A quick refresher on basic macroeconomic principles
- Application of these principles to the question of exchange rate regimes

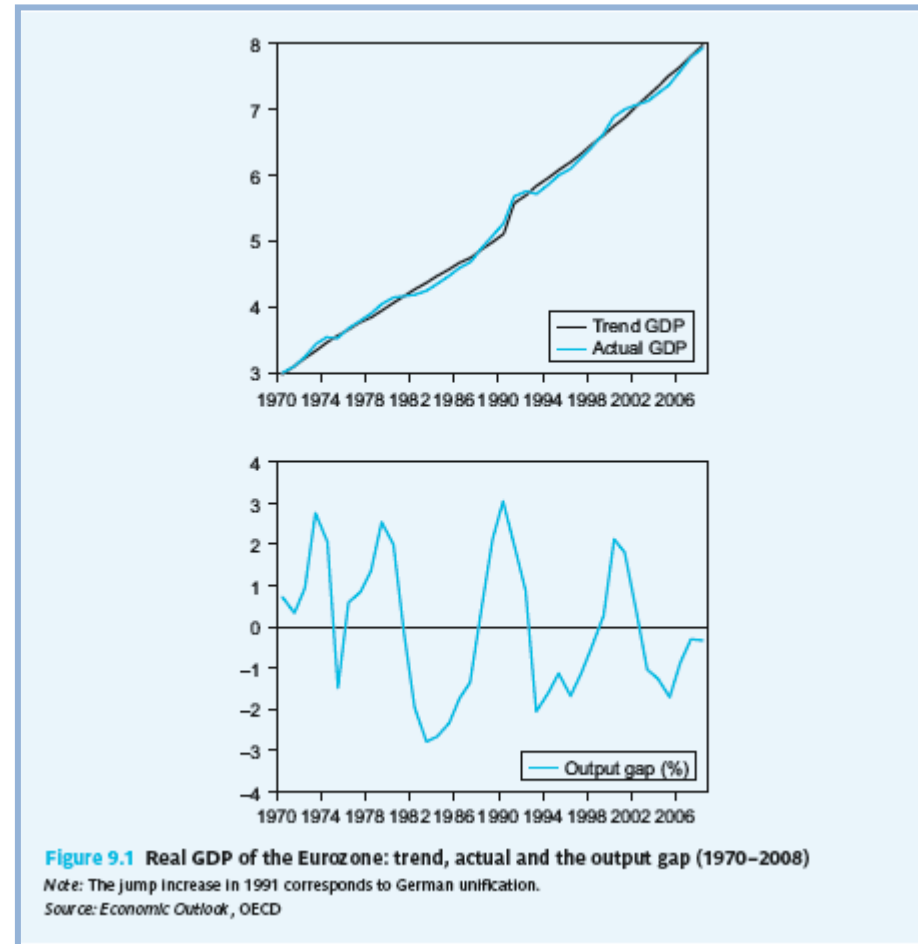
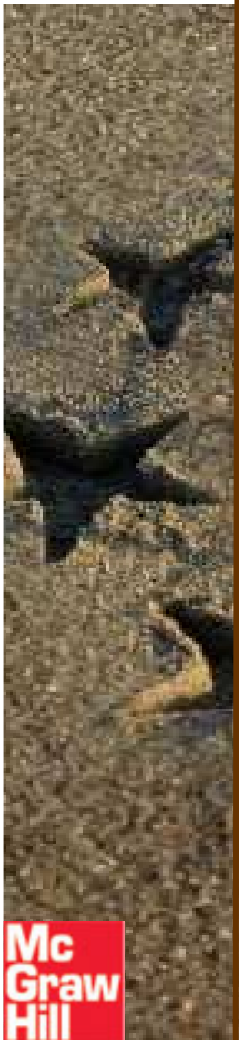


Output and prices

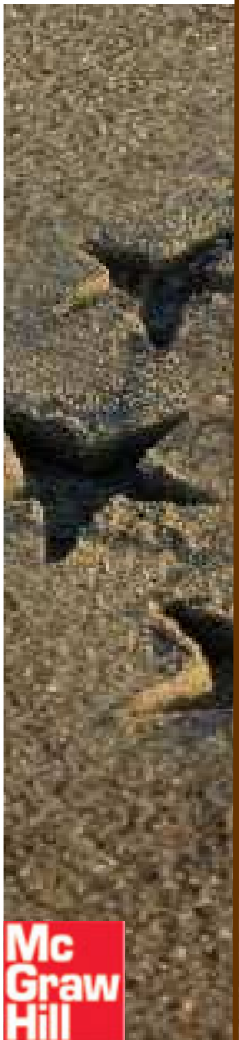


- Economic activity is measured by the GDP (gross domestic product)
- $GDP = \text{sum of all production} = \text{sum of all sales} = \text{sum of all incomes}$
- Nominal GDP (measured) vs. Real GDP (computed taking into account inflation)
- *GDP trend* is increasing
- *Actual GDP* is above or below trend, according to *business cycles*

Output gap: the difference between trend and actual GDP

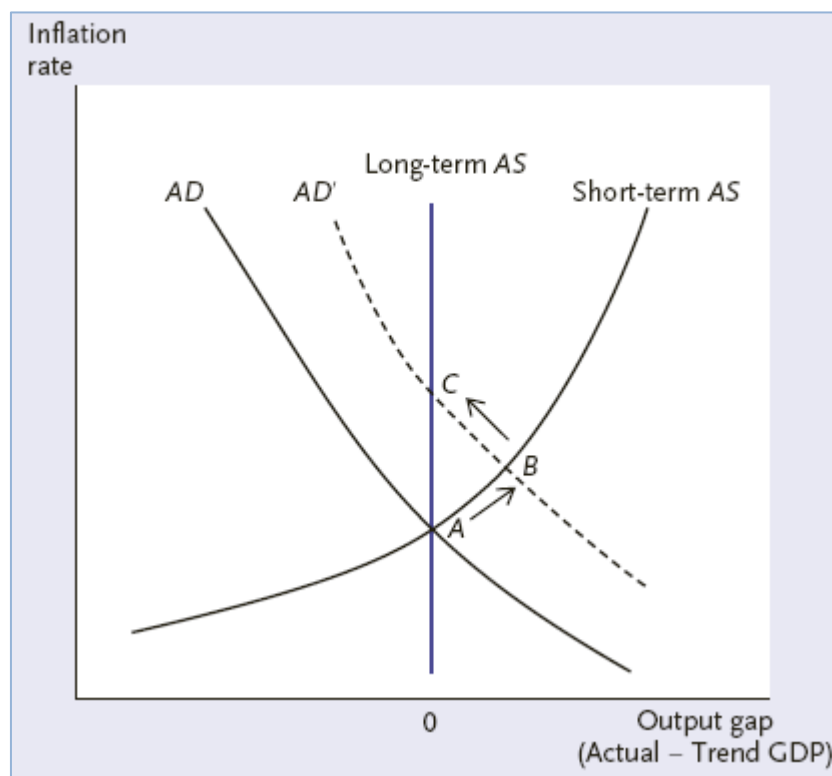
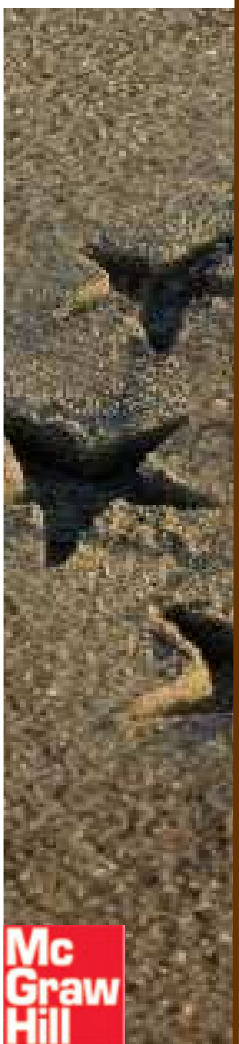


Output gap and aggregate demand and supply: short run



- Aggregate supply (AS): upwards sloping
 - As output gap increases threat of unemployment moderates wages and firms cut price
- Aggregate demand (AD): downward sloping
 - Higher prices erode purchasing power and external competitiveness and output gap decreases
- Changes in aggregate demand, e.g. a boom abroad:
 - shifts aggregate demand up (AD')

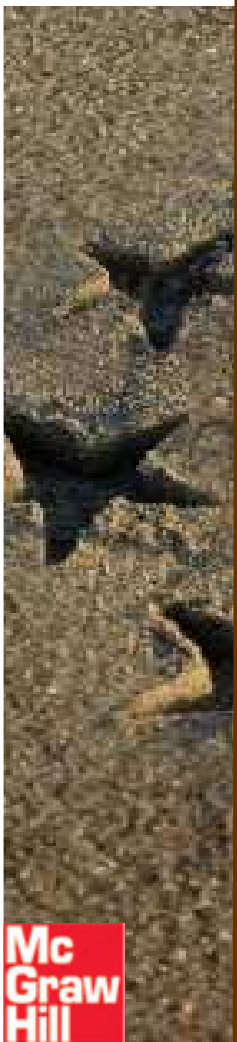
The AD-AS diagram



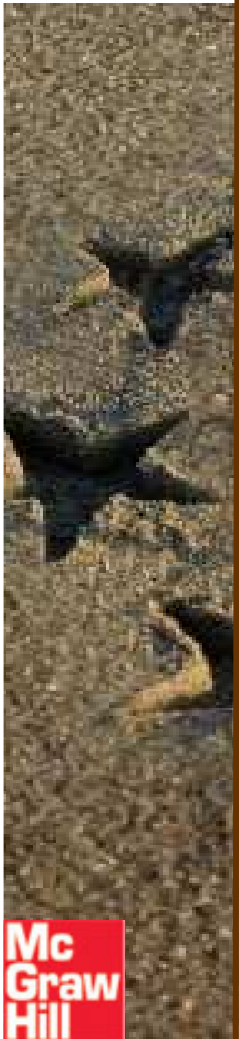
Long run vs short run effects



- Short term: non-neutrality of money (output gap moves to B in diagram)
- Long term: neutrality of money (output gap moves to C in diagram)

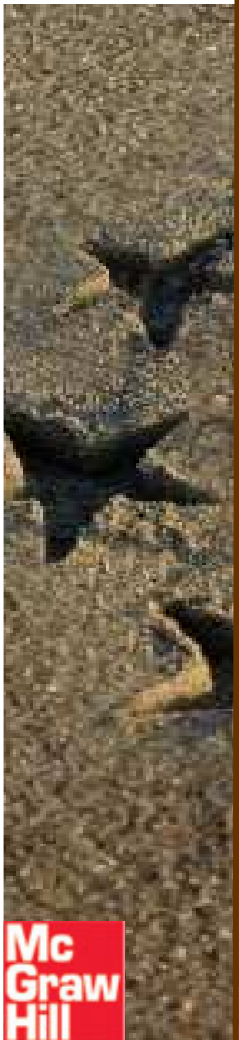


Long Term: Neutrality of Money



- In the long run:
 - Vertical aggregate supply
 - Money, the price level and the exchange rate tend to move proportionately
- Rationale:
 - prices double overnight → public requires double the amount of money to maintain purchasing power → once both double up we are back to start in real terms (see point C on diagram)

PPP: An Implication of Long Term Neutrality

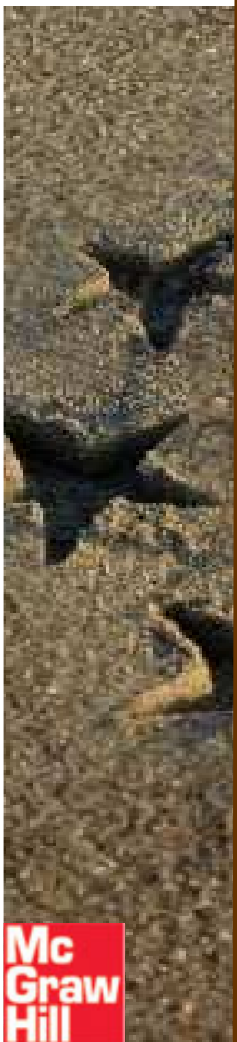


- PPP (purchasing power parity) principle:

$$\begin{aligned} & \text{(Nominal) Exchange rate appreciation} = \\ & = \text{foreign inflation rate} - \text{domestic inflation rate} \end{aligned}$$

- The real exchange rate (measure of competitiveness): $\lambda = E \times P/P^*$
 - Where E is nominal exchange rate; P and P* are prices of basket of goods at home and abroad

The real exchange rate



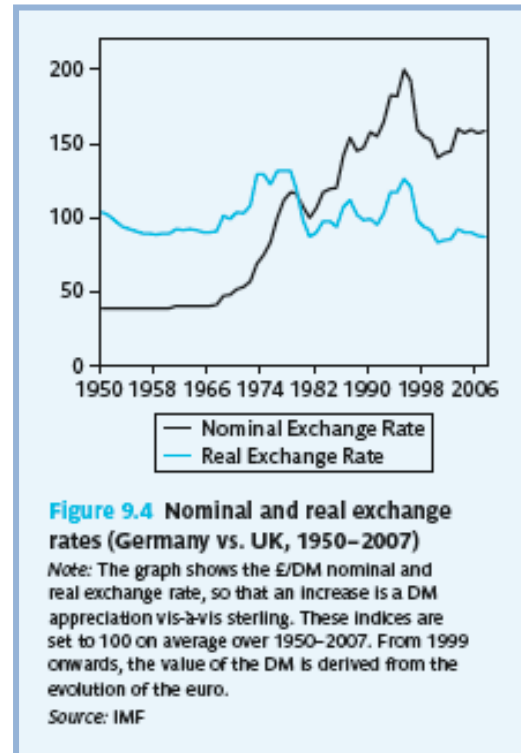
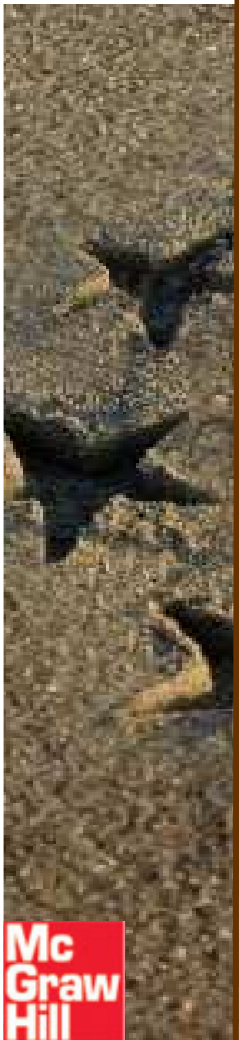
Example: real exchange rate of euro in terms of dollar

- Price of basket of European goods: $P = €100$
- Nominal exchange rate ($\$/€$): $E = 1.3\$/€$
- Price of basket of American goods: $P^* = \$130$

- real exchange rate:
 $= E \times P/P^* = €100 \times 1.3\$/€ : \$130 = 1$ basket of American goods for 1 basket of European goods

NOTE: when real exchange rate appreciates, competitiveness declines as more baskets of goods in the USA would need to be traded for 1 basket of European goods.

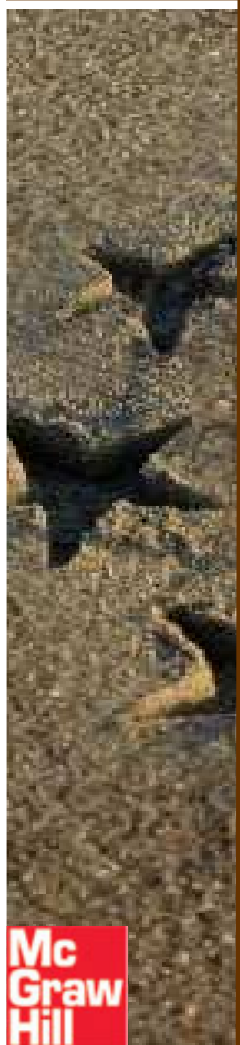
Real versus nominal exchange rate appreciation



The Balassa-Samuelson Effect

Increasing real exchange rates in new EU members
(Annual % change, 1996-2008)

	Bulgaria	Czech R.	Estonia	Latvia	Lithuania
Inflation differential	29.0	1.6	3.2	3.7	1.4
Nominal appreciation	-19.7	2.6	-0.2	0.0	3.2
Real appreciation	9.3	4.2	3.0	3.7	4.6
	Hungary	Poland	Romania	Slovenia	Slovakia
Inflation differential	6.2	3.3	28.3	3.8	4.1
Nominal appreciation	-2.4	-0.2	-20.6	-2.8	1.5
Real appreciation	3.8	3.1	7.7	1.0	5.6



Open economy and interest rate parity condition



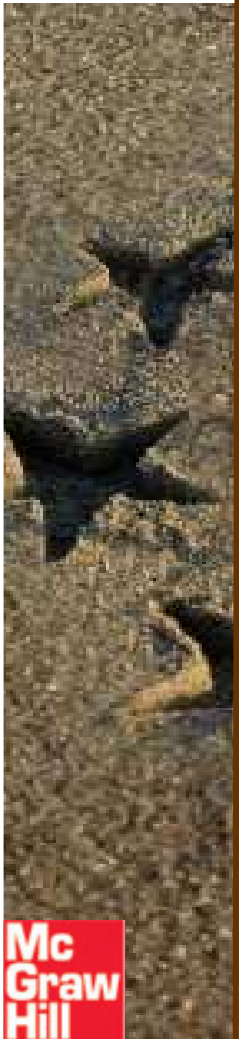
- Financial integration

- Free capital mobility
- Lower interest rates at home than abroad cause financial outflows and nominal exchange rate drops

HENCE,

- Interest rate parity condition:

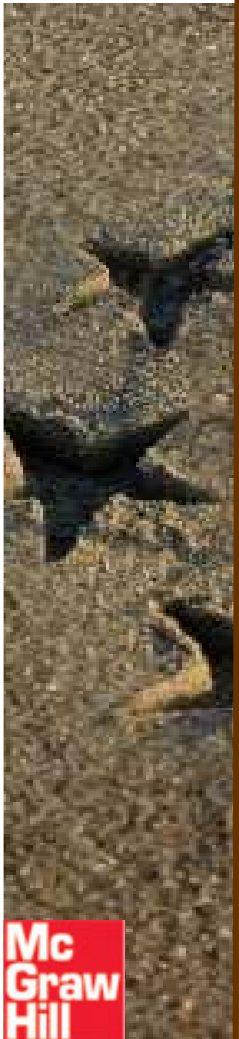
Domestic interest rate = Foreign interest rate + expected exchange rate depreciation

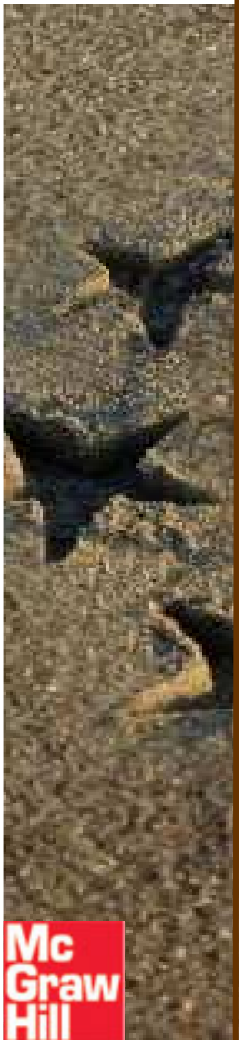


Exchange Rate Regimes and Policy Effectiveness



- *Fixed exchange rate:*
 - government keeps exchange rate fixed through reserves and buying and selling currency
- *Flexible exchange rate:*
 - currencies continuously priced by foreign exchange markets
- *Monetary policy with capital flows*
 - Works with floating exchange rates
 - No autonomy in fixed exchange rate regimes

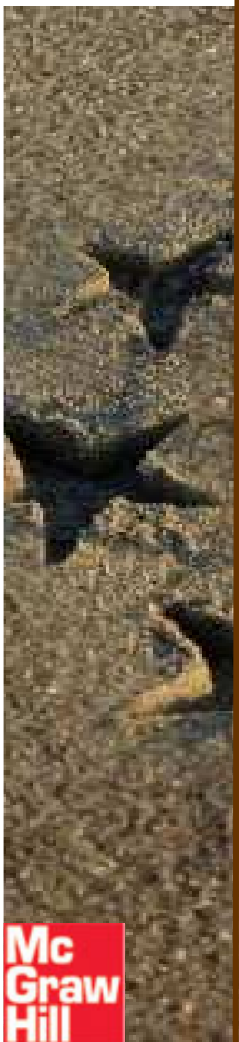




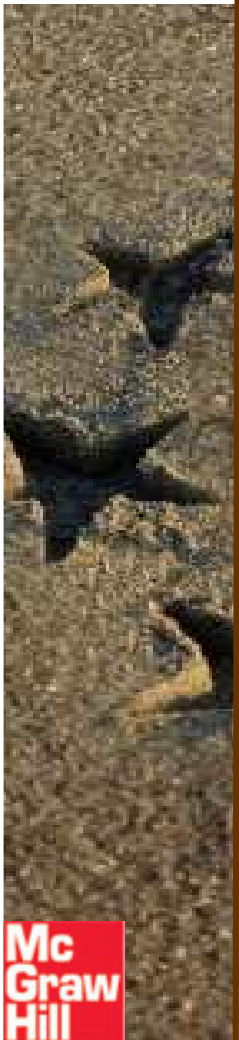
Chapter 10

Europe's exchange rate question

The impossible trinity



- Monetary union implies a choice between exchange rate stability and monetary policy autonomy
- ‘The impossible trinity’, as only 2 of the following can be in place:
 - Full capital mobility
 - Autonomous monetary policy
 - Fixed exchange rates



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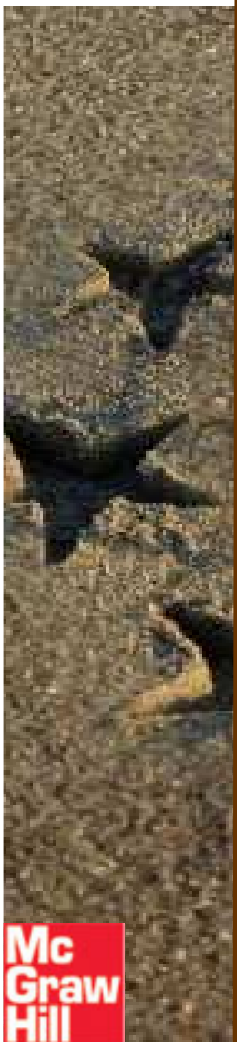
What's On The Menu?

Types of exchange rate regimes

Free floating



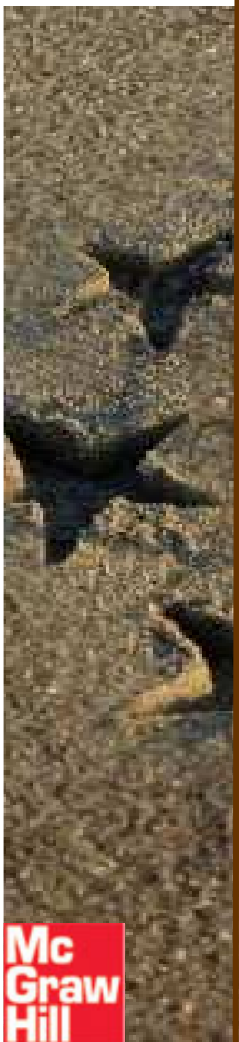
- The case of the Eurozone, the UK currency, etc
- Main Advantages:
 - autonomous monetary policy making
 - protection from foreign disturbances
- Issue: currency can fluctuate widely and have strong impact on exports



Other exchange rate regimes



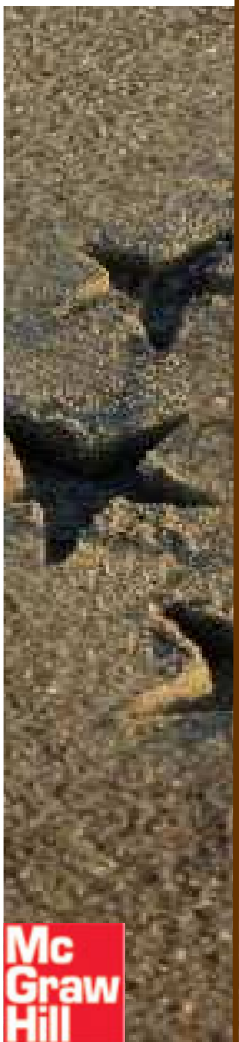
- *Managed floating*: avoiding the ‘fear of floating’ through occasional intervention
- *Target zones*: wide range in which currency is allowed to move vis-à-vis anchor
- *Crawling pegs*: sliding central parity and band of fluctuation



Other exchange rate regimes



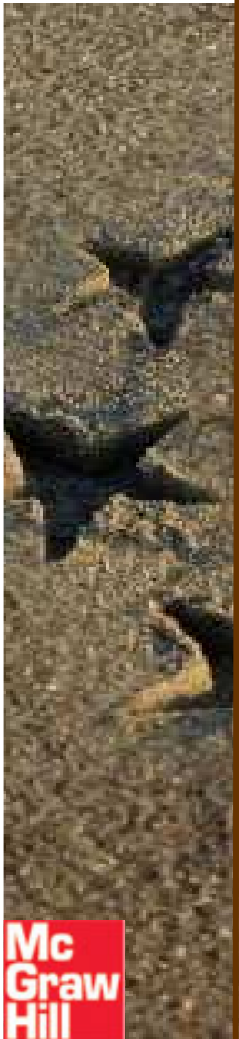
- *Fixed and adjustable*: declared parity vis-à-vis anchor and the realignment option in the face of serious disturbances
- *Currency boards*: fixed exchange rate with monetary policy dedicated entirely to exchange rate target
- *Dollarization/euroization*: adopting a foreign currency with no monetary policy



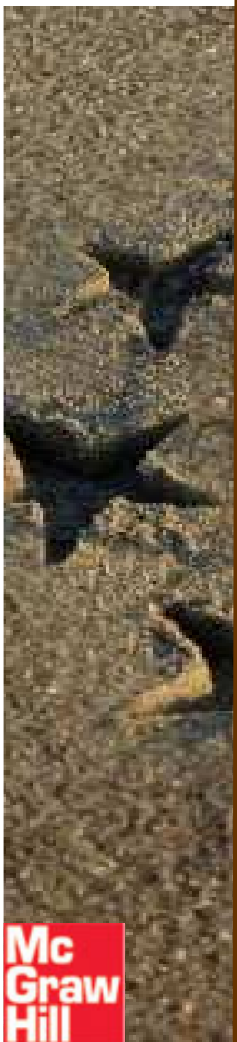
The Choice of an Exchange Rate Regime



- The monetary policy instrument:
 - can be useful to deal with cyclical disturbances
 - can be misused (inflation).
- The fiscal policy instrument:
 - can also deal with cycles but is often politicised
 - can be misused (public debts, political cycles).



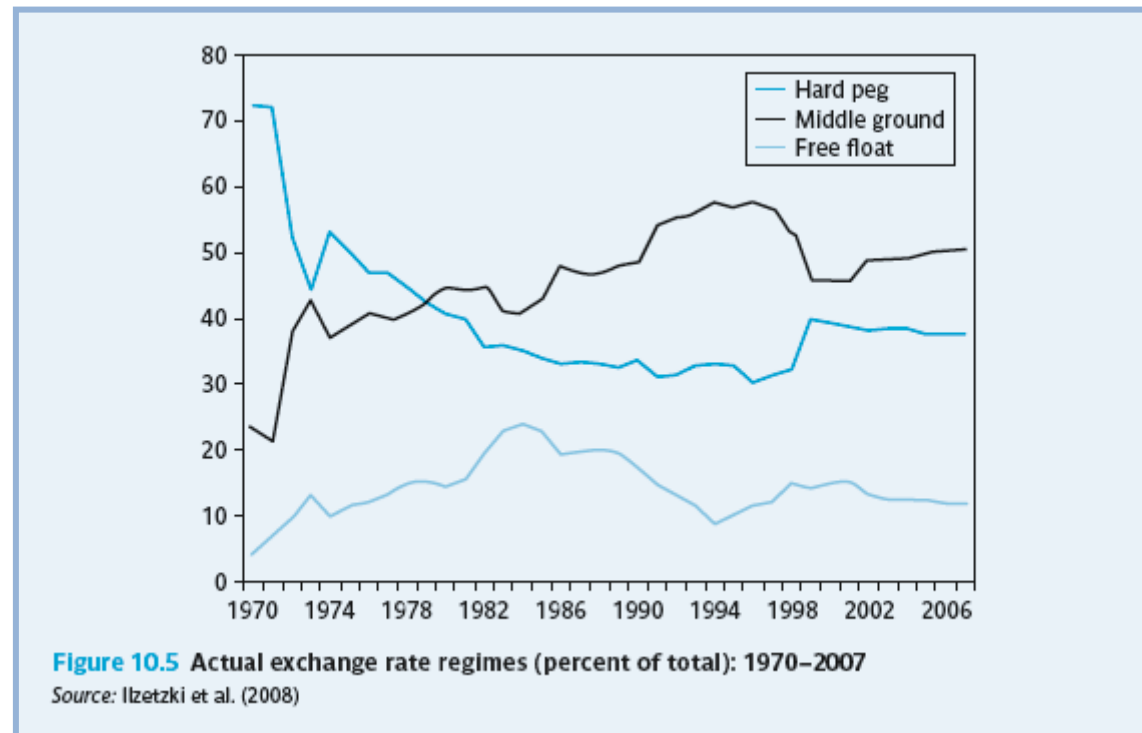
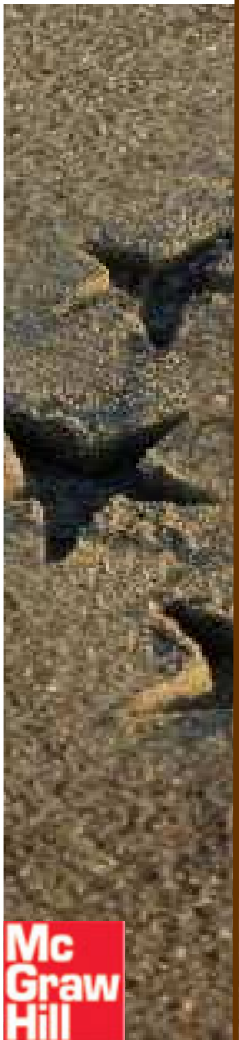
The New Debate: The Two-Corners Solution



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- Only pure floats or hard pegs are robust:
 - intermediate arrangements (soft pegs) invite government manipulations, over or under valuations and speculative attacks
 - pure floats remove the exchange rate from the policy domain
 - hard pegs are unassailable (well, until Argentina's currency board collapsed...).

Actual Exchange Rate Regimes



The New Debate: The Two-Corners Solution



- In line with theory:
 - soft pegs are half-hearted monetary policy commitments, so they ultimately fail.

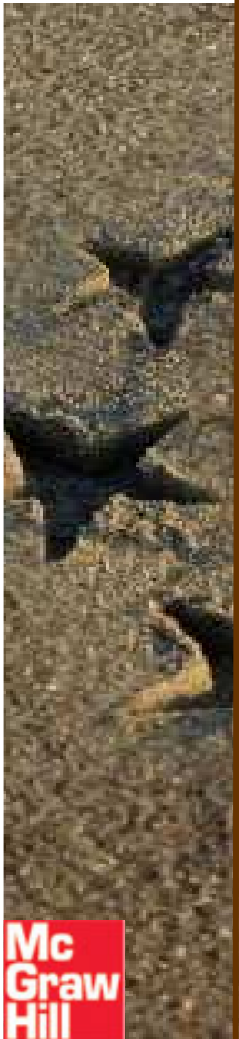
The World as a Monetary Union

- Under metallic money (overlooking the difference between gold and silver) the whole world was really a monetary union.
- Previous explicit unions only agreed on the metal content of coins to simplify everyday trading.

The Interwar Period: The Worst Of All Worlds



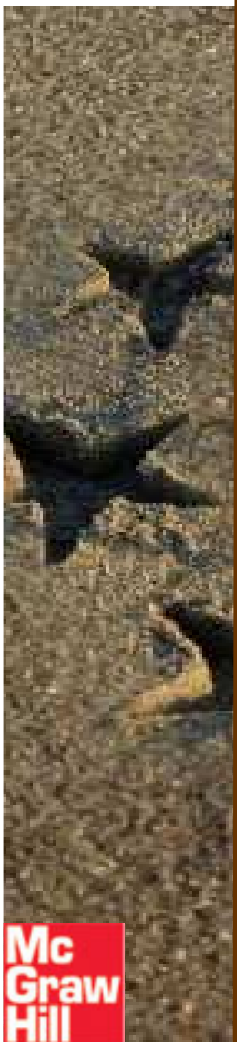
- Paper money starts circulating widely.
- Yet the authorities attempt to carry on with the gold standard but:
 - no agreement on how to set exchange rates between paper monies
 - an imbalanced starting point with war legacies
 - high inflation
 - high public debts.



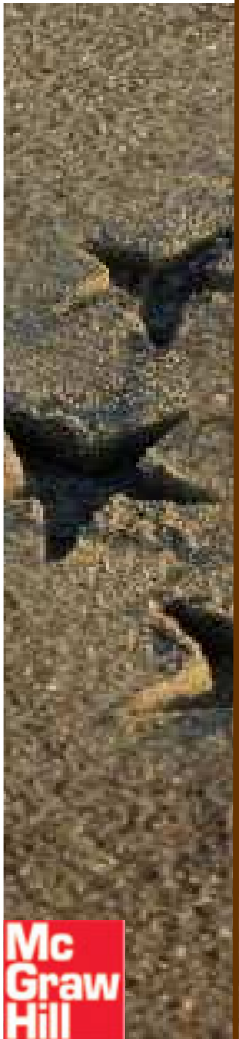
The Interwar Period: Three Case Studies



- The UK: a refusal to devalue an overvalued currency breeds economic decline.
- France: devaluation, under-valuation and beggar-thy-neighbour policies, until others retaliate and the currency becomes overvalued.
- Germany: hyperinflation, devaluation and, finally, evading the choice of an appropriate exchange rate by resorting to ever-widening non-market controls.

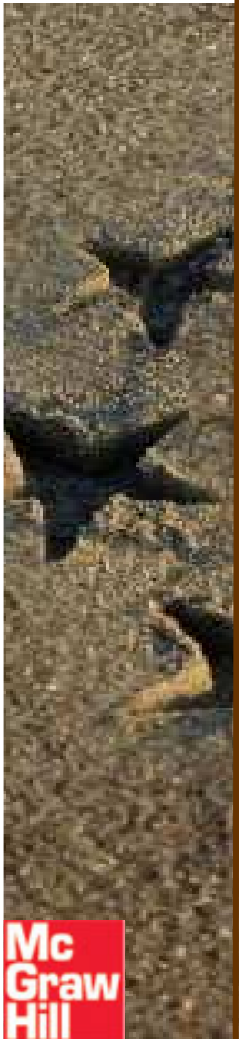


Lessons Learnt



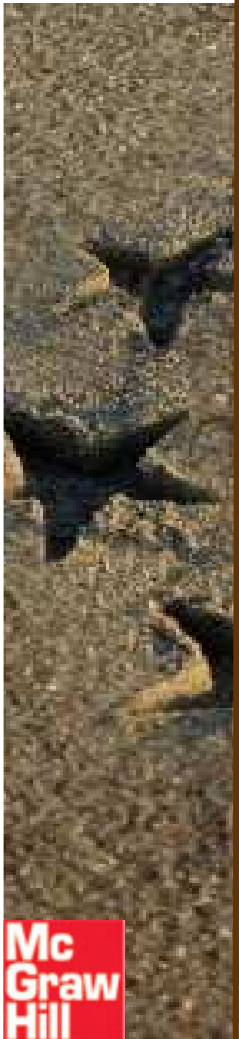
- No agreement leads to misalignments, competitive devaluations and trade wars.
- Management of exchange rates can't be left at each country's discretion: a 'system' is required

European Postwar Arrangements



- An overriding desire for exchange rate stability:
 - initially provided by the Bretton Woods system
 - the US dollar as anchor and the IMF as conductor.
- Once Bretton Woods collapsed, the Europeans were left on their own:
 - the timid Snake arrangement
 - the European Monetary System
 - the Monetary Union.

The European Monetary System: ERM and EMU



- ERM – a system of jointly managed fixed and adjustable exchange rates + mutual support:
 - Fluctuations between +/-2.25% and +/-15%
- German Mark as initial anchor
- Currently: the ERM 2 system, as entry point into the monetary union
- EMU since 1999 and currently with 16 members

ERM Membership

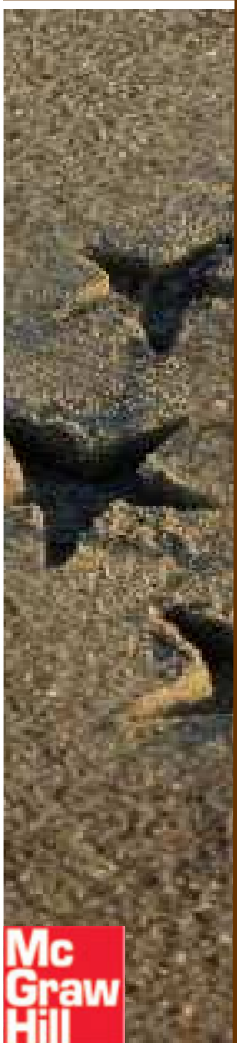


Table 10.1 ERM membership

EU15	Joined	Left	EU12	Joined	Left
Austria	1995	1999	Bulgaria		
Belgium-Luxembourg	1979	1999	Cyprus	2005	2008
Denmark	1979		Czech Rep.		
Finland	1996	1999	Estonia	2004	
France	1979	1999	Hungary		
Germany	1979	1999	Latvia	2005	
Greece	1998	2001	Lithuania	2004	
Ireland	1979	1999	Malta	2005	2008
Italy	1979, 1996	1992, 1999	Poland		
Netherlands	1979	1999	Romania		
Portugal	1992	1999	Slovakia	2005	2009
Spain	1989	1999	Slovenia	2004	2007
Sweden					
UK	1990	1992			

Note: Italy, Portugal and Spain initially operated a wider (± 6 per cent) band of fluctuation around the central parity than the normal (± 2.25 per cent) band. In 1993, the band was widened to ± 15 per cent, but Denmark has retained the narrow (± 2.25 per cent) band. All other current members of the ERM operate the wide (± 15 per cent) band. Luxembourg used the Belgian franc until the euro was created.