Mechanics of a currency crisis/
"speculative attack"

Start with external imbalance -- current account deficit is too large to finance by willing capital inflows.

→ outflow of reserves from central bank

→ when eventually run out of reserves, country must devalue its currency.

→ expectations of a devaluation

→ currency speculators will sell domestic currency to the central bank in exchange for reserves

→ this depletes reserves faster, and forces a devaluation even sooner.

→ speculators then sell the foreign reserves back to the central bank at a profit.
**Suppose external imbalance leads to an expectation of domestic currency depreciation ($E_e^e$) → shifts foreign returns curve right.**

To maintain $E = \bar{E}$ (fixed exchange rate) domestic country must raise the domestic interest rate.

**Question:** Why does it appear that currency crises are worse for developing countries -- large currency depreciation and larger fall in output -- than for developed countries?
EMS crisis of 1992 (European Monetary System)

System of fixed exchange rates in Europe in 1980s and 1990s.

Problematic asymmetric shocks

German reunification

Some macro implications:

↑ C: rise in demand in Germany for consumption goods by Eastern Germans.

↑ G: rise in government spending to develop infrastructure in the East.

Because Germany feared overheating economy and inflation, it imposed tight monetary policy.

→ shifted LM curve left

→ raised German interest rate.
Implications for the U.K.

IS-LM for U.K.

Rise in German interest rate (to $i^3_{DM}$)
This forces U.K. to contract money supply and raise its interest rate.

This induced a recession in U.K. ($\nabla Y$)

The high cost of maintaining the fixed exchange rate $\rightarrow$ expectations of a future devaluation ($\nabla E^e \rightarrow E^{e2}$)
which shifted to foreign returns came upward further, and forced U.K. to contract money supply and raise interest rates further. This further worsened recession and intensified incentive to abandon fixed exchange rate regime.

Lesson: a country can be forced to devalue even if it has sufficient reserves if defending the peg implies high interest rates and a recession.
A currency board is defined as a government organization similar to a central bank that is responsible for maintaining the fixed exchange rate.

A special feature is that it is required to hold sufficient reserves to back 100% of the money base in circulation.

Balance sheet of a currency board

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign reserves</td>
<td>Currency in circulation</td>
</tr>
<tr>
<td>$1,500</td>
<td>$1,500</td>
</tr>
<tr>
<td>Domestic assets</td>
<td></td>
</tr>
<tr>
<td>$0</td>
<td></td>
</tr>
</tbody>
</table>

So it is officially prohibited from acquiring domestic assets.

Implications:
- can never be forced to abandon a peg due to running out of reserves.
- officially removes any ability to conduct monetary policy.

Examples: Hong Kong, Latvia, Argentina (1991–2001)
Argentina Crisis of 2001

Background: history of excessive government spending, financed by printing money, leading to many years of high inflation.

"Convertibility" Plan (1991-2001)
- Currency board with the U.S. dollar, where 1 peso per dollar
- So dollar and peso became interchangeable in contracts -- many business contracts and government bond issues written in dollar terms.
- Imposed constraint on money growth in a transparent way. Did reduce inflation significantly.

Problems in late 1990s
1) Prolonged recession partly due to a loss of competitiveness when Brazil devalued currency.
2) Development of large government debt partly due to recession, partly due to fact that couldn't pay government bills by printing money.
Crisis hit in 2001

Asked IMF for loan; IMF imposed fiscal austerity.

→ this contractionary fiscal policy worsened the recession.

When IMF stopped loans, private markets began to expect devaluation. See capital outflow.

→ government abandoned the currency board and defaulted on part of debt.

Why did output fall after devaluation?

Devaluation of currency → ↑ value of government debt issued in dollars

Also raised peso value of private debt issued in dollars, including banks.

→ bankruptcies of banks -- domestic financial market disrupted.

Also IMF imposed contractionary policies like fiscal austerity.
Some observations about recent crisis in Eurozone:

Greece, along with Spain & Ireland experienced financial crisis with large recessions.

Greece considered leaving eurozone.

The fact it had a large debt denominated in euros makes it resemble Argentina more than UK, so a devaluation might be more negative than EMS crisis of 1992.

Note: Interest rates on Greek debt fell at first when joined eurozone, but rose in 2009 and after.

Fall in rates due to elimination of currency depreciation expectations: \( \frac{E_e - E}{E} < 0 \).

The recent rise is due to a default risk premium, \( RP \).

Can see in UTP: \( i_{GR} = i_{GER} + \frac{E_e - E}{E} + RP \)
Government Bond Yields (percent)
In the red
Government gross debt, % of GDP
2012 forecasts

Ireland 115
Germany 82
France 89
Spain 70
Italy 121
Greece 183*

* Forecast before October 2011 debt deal  Source: IMF
Vicious circle

Risk of default → risk premium raises interest rate
raises risk of default makes debt refinance harder

Exacerbated by recession: high interest rate and austerity worsen recession and unemployment, lower tax revenue.

Contagion: crisis can spread to other countries if investors fear similar problem. Can be self-fulfilling: rise in risk premium raises rates and makes default more likely.