MANAGING SHORT-RUN CRISIS IN AN OPEN ECONOMY

EE 462 Development Macroeconomics

Semester 1/2019

Topics

- Equilibrium in A Small, Open Economy
- Australian Model
- Zones of Imbalance
- Applications of the Australian Model

EQUILIBRIUM IN A SMALL, OPEN ECONOMY

Introduction

- So far, we have seen some evidence of 'unbalanced' economies due to unstable world market conditions (especially in the 1970s and 1980s).
  - Oil price shocks and rising inflation in the 1970s
  - Overvalued exchange rates prior to the Asian financial crisis
  - ➢ IMF's stabilization programs intended to correct these macroeconomic imbalances.
- This lecture is to explain a mechanism for analyzing the macroeconomic policies for LDCs to stabilize its economy and create a climate for faster economic growth.
- Two main policies for correcting macroeconomic imbalances: *reductions in expenditures* and adjustments in *relative prices*.

Small and Open Economy

- Two features of developing countries:
  - Open economy: Trade and capital flows across borders in sufficient volume to influence the domestic economy, particularly prices and money supply.
  - Small economy: Price takers in world markets. Their exports and imports cannot influence world market prices.
- **Australian model:**
  - Exports and imports are *tradables*; all other goods and services are *nontradables*.

Australian Model

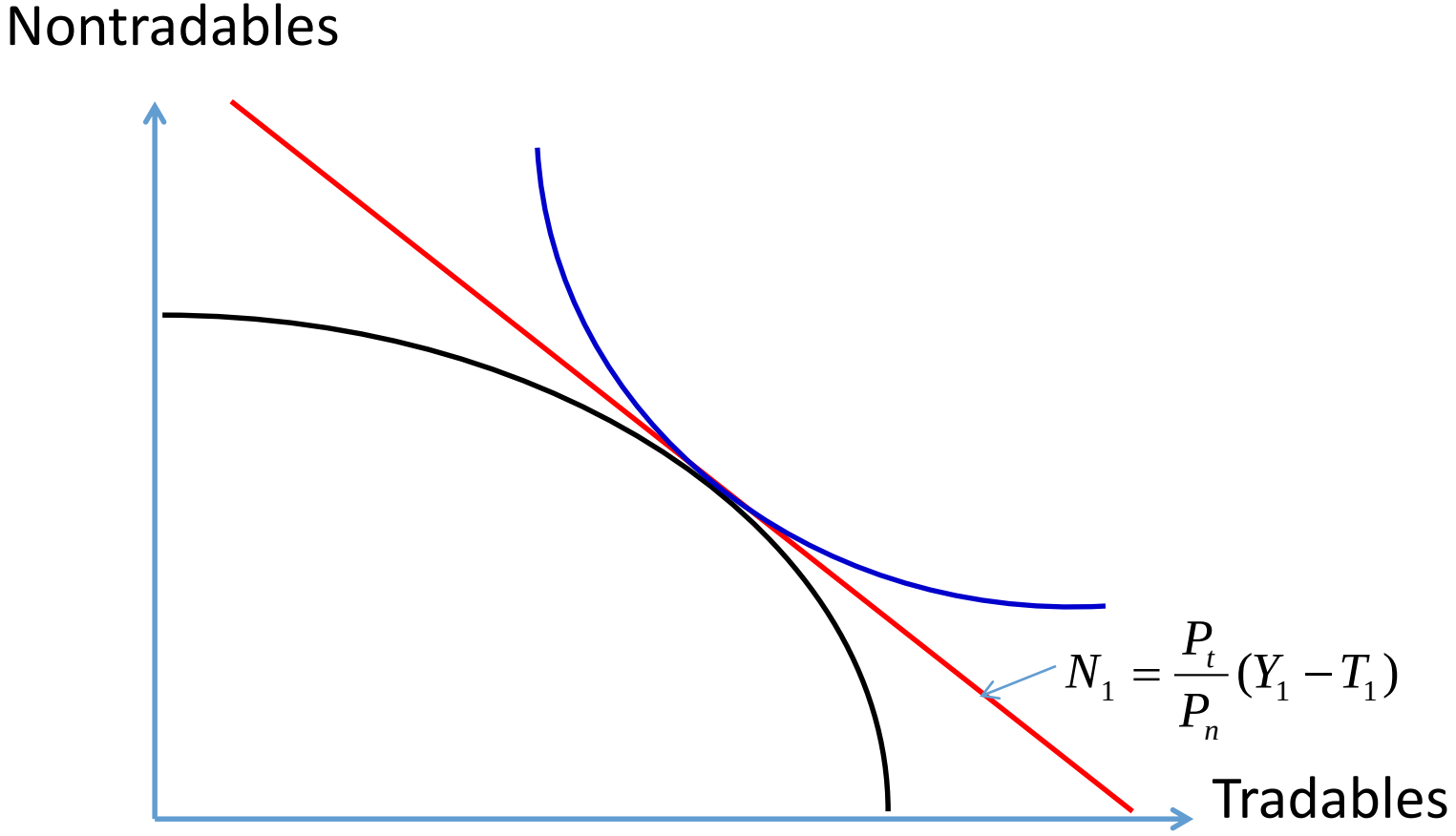
- Tradable goods and services:
  - Prices within the country are determined by supply and demand on world markets, and therefore are exogenous to the model.

$$P_t = eP_t^*$$

where e = nominal exchange rate (baht/$), P_t^* = world market price

  - How does *e* change as a country *devalue* (or *revalue*) its currency?
- Nontradables:
  - Prices (P_n) are determined by market forces within the country and therefore are endogenous to the model.

Equilibrium in the Australian Model



Internal and External Balance

- **Internal balance (IB):** equilibrium in the nontradebles markets
- **External balance (EB):** equilibrium in the tradebles markets
- **Real exchange rate (RER):**

$$P = P_t/P_n \quad \text{where } P_t = eP_t^*$$

- **Trade balance:**

B_t = value of tradable supply – value of tradable demand

$$B_t = P_t(S_t - D_t)$$

- Recall: GDP = Y = C + I + X –M = A + X- M (A= Absorption).

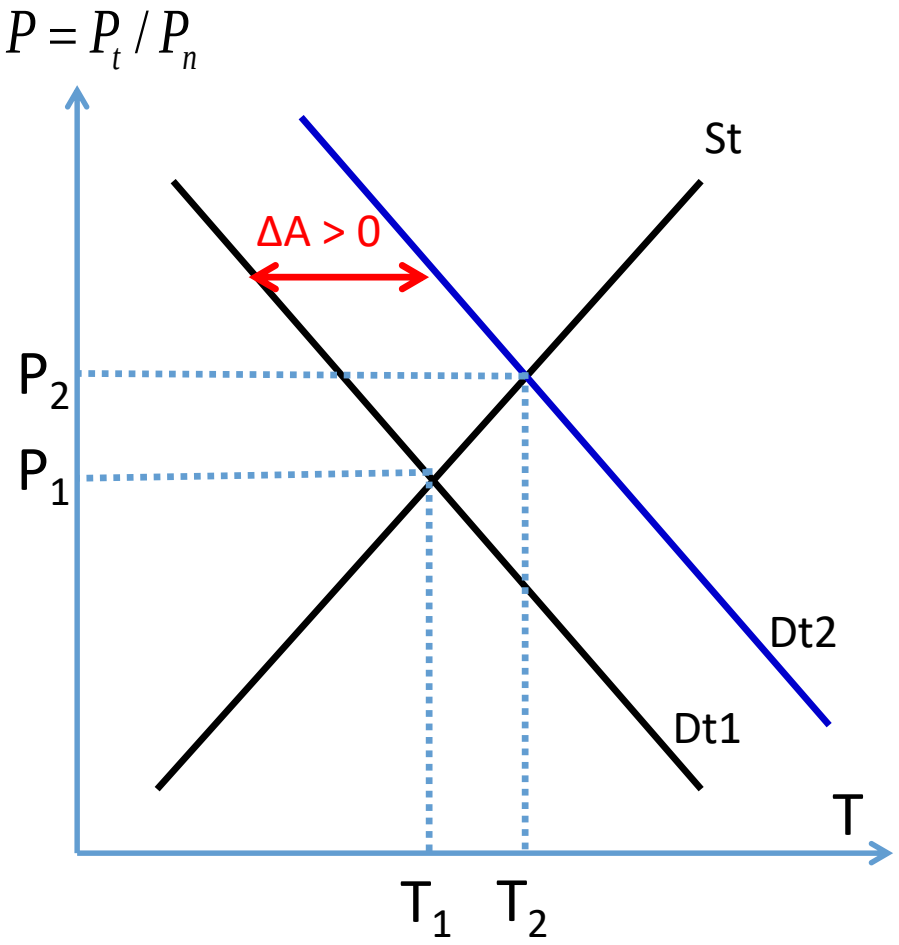
➔ A – GDP = M – X (equilibrium in Australian model).

Results from Australian Model

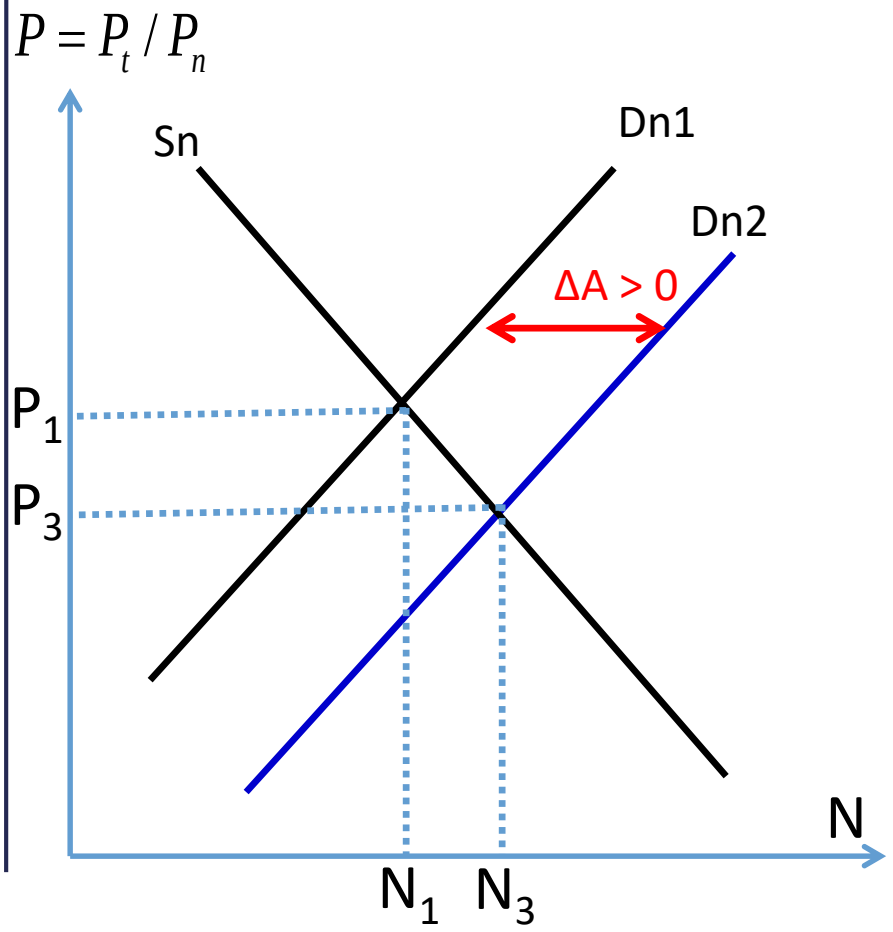
- *Macroeconomic equilibrium* is defined as a balance between supply and demand in two markets, tradables (external balance) and nontradables (internal balance).
- To achieve equilibrium in both markets, two conditions must be satisfied:
  - ✓Expenditure (absorption) = income
  - ✓The relative price of tradables (real exchange rate) must be at a level that equates demand and supply in both markets.
- Two remedies for an economy that is out of balance: adjusting absorption, the nominal exchange rate, or both.

Tradables and Nontradables Markets

Tradables Market

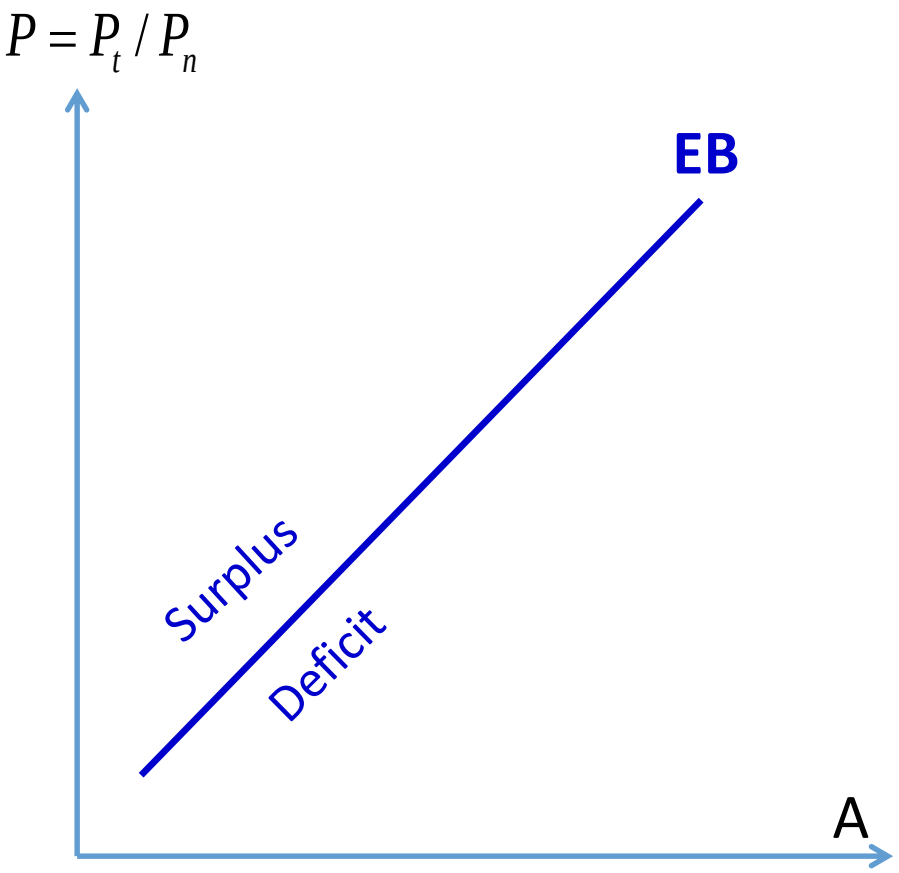


Nontradables Market

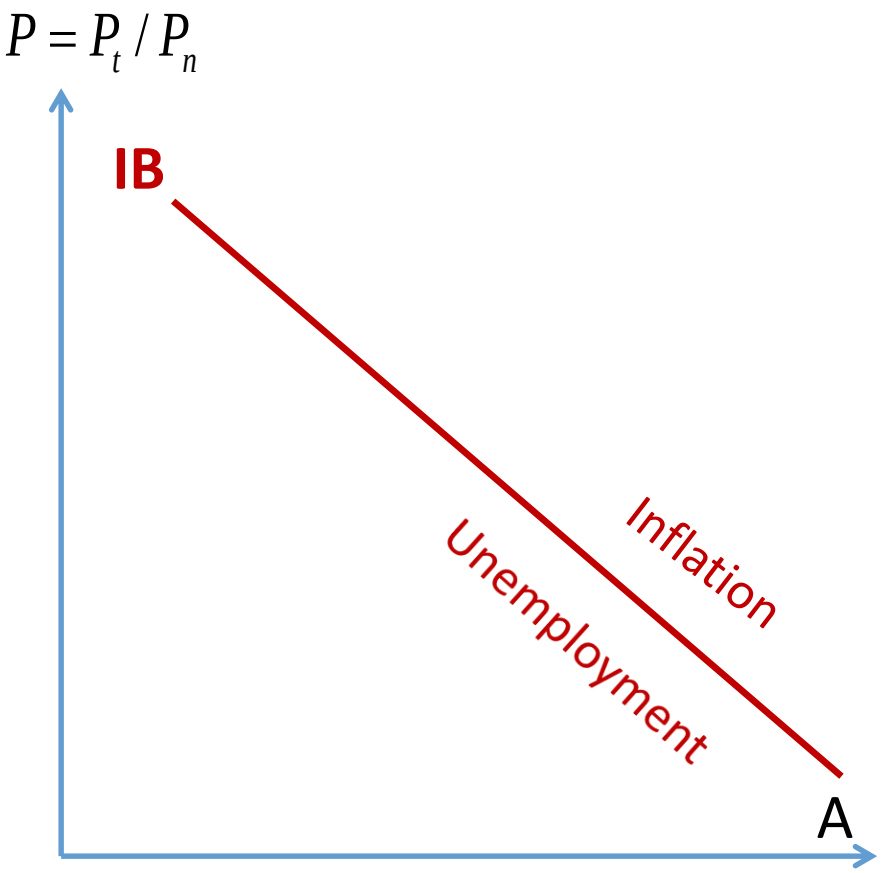


The Phase Diagram

External Balance



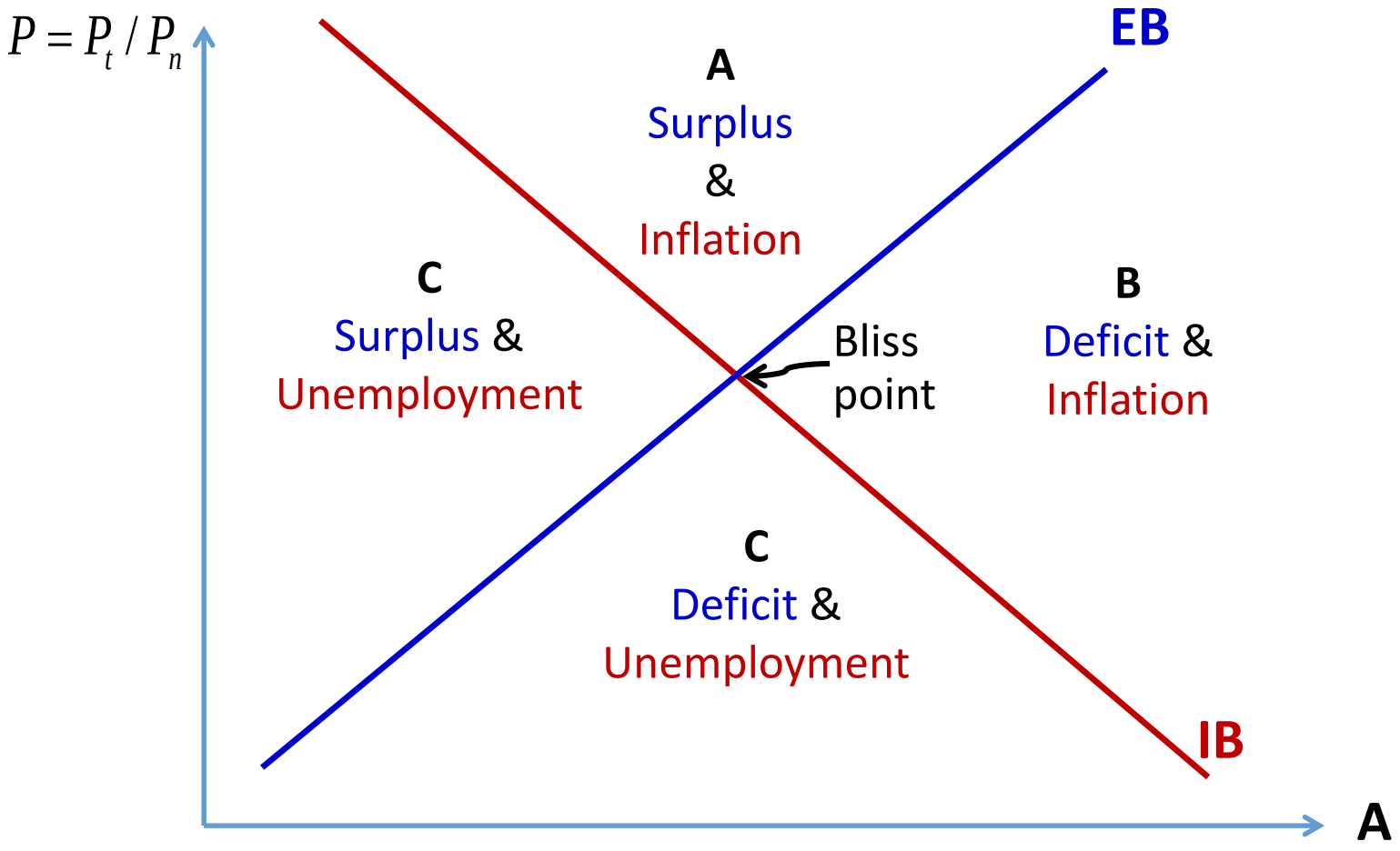
Internal Balance



Zones of Imbalance

- External imbalance:
  - External surplus: X > M, real exchange rate P > equilibrium P, production of tradables exceeds demand ➔ P is more depreciated than required
  - External deficit: X < M, demand > supply of tradables ➔ P is more appreciated
- Internal imbalance:
  - Internal deficit: excess demand for nontradables, absorption is too high ➔ Inflation
  - Internal surplus: excess supply of nontradables, absorption is too low ➔ unemployment

Figure: Zones of Imbalance



Equilibrium vs. Disequilibrium

- Disequilibrium in the tradable markets

  ➔ Either a balance of payments deficits (case of excess demand) or a balance of payments surplus (case of excess supply)

- Disequilibrium in the nontradable markets

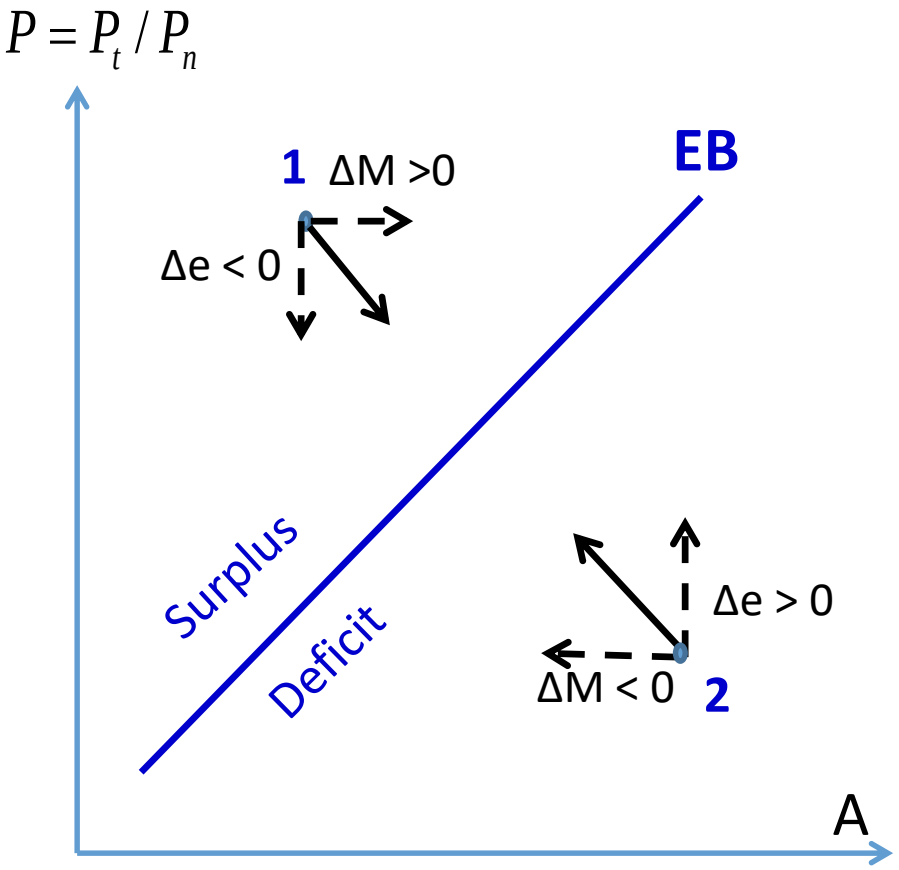
  ➔ Either a higher rate of inflation (case of excess demand) or higher unemployment (case of excess supply)

➢ Four combinations of disequilibrium:

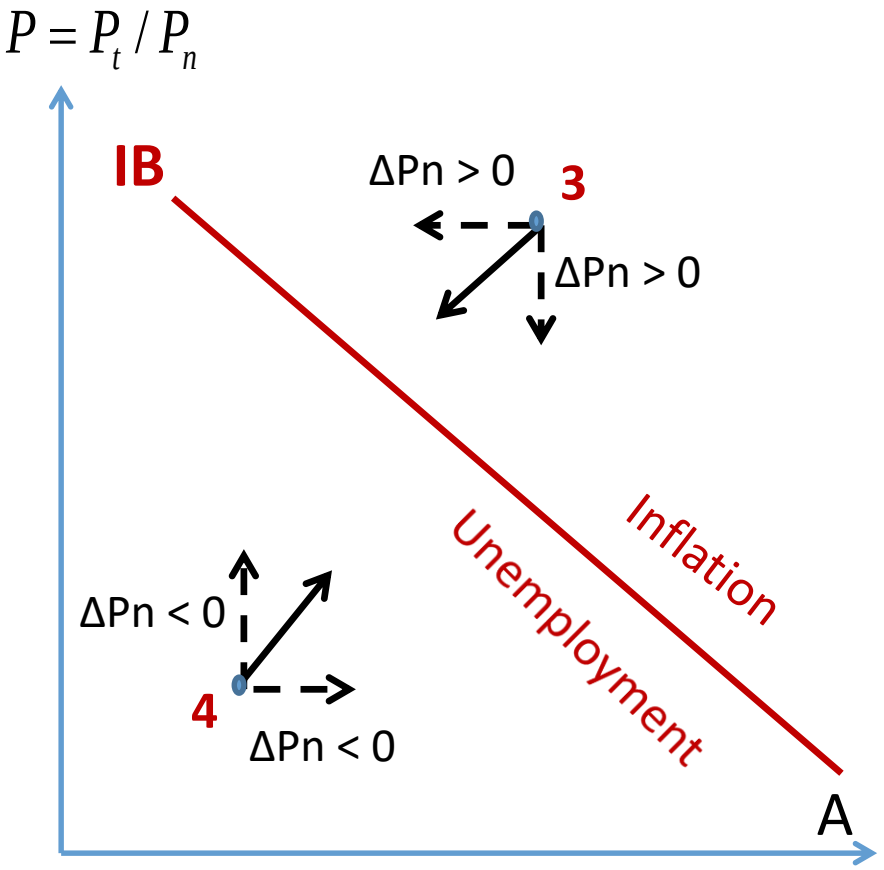
	Nontradables	
Tradables	A: BOP surplus + inflation	D: BOP surplus + unemployment
	B: BOP deficit + inflation	C: BOP deficit + unemployment

Tendencies toward Equilibrium

External Balance



Internal Balance



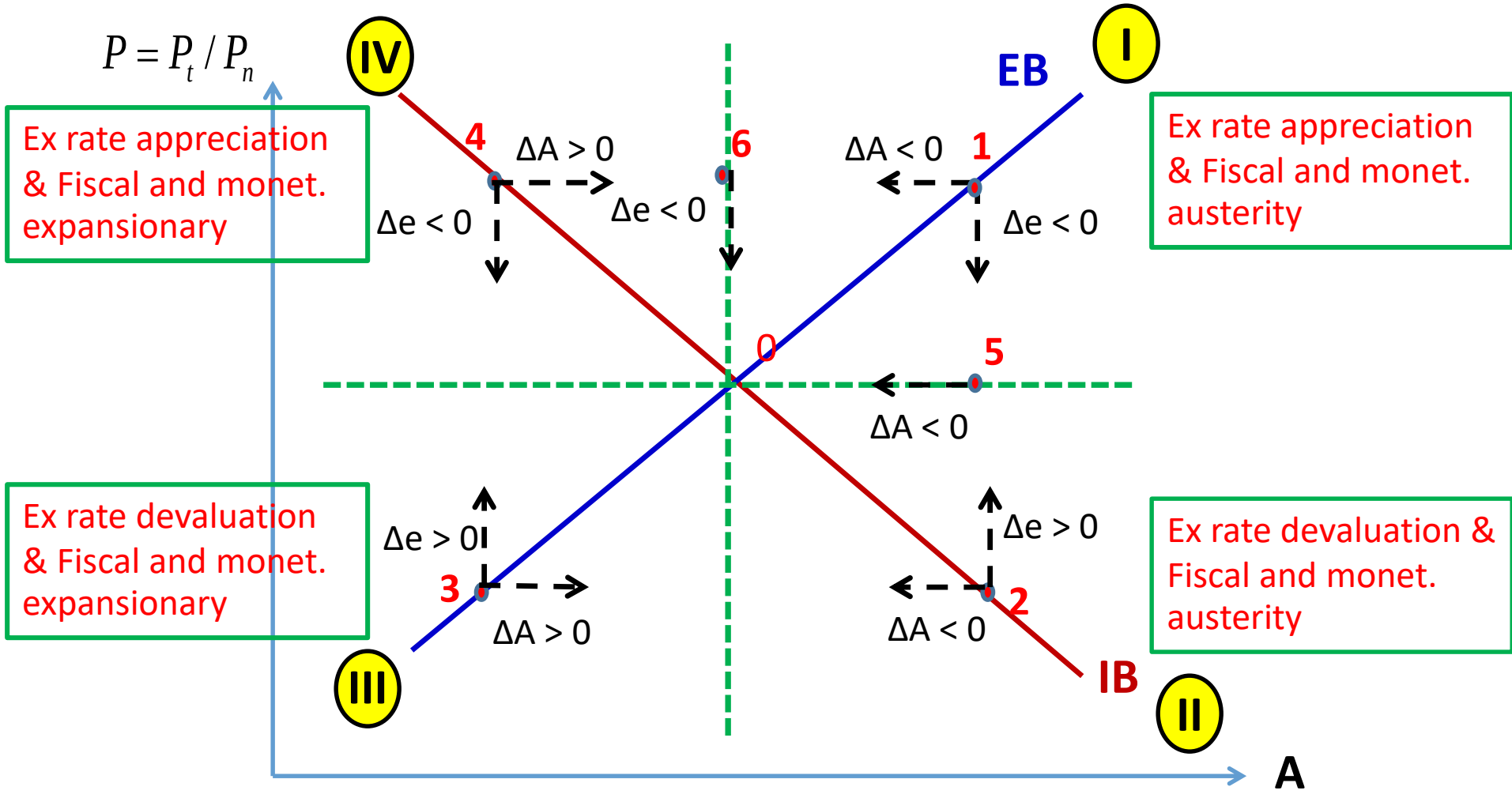
Tendencies toward Equilibrium: Self-Correcting Tendencies

- External surplus (1)
  - International reserves increase ➔ M_S↑ → r ↓ ➔ A ↑
  - Inflow of foreign exchange ➔ M_d↑ → e ↓ (appreciation)
- External deficit (2)
  - International reserves decrease ➔ M_S↓ → r ↑ ➔ A ↓
  - Inflow of foreign exchange ➔ M_d ↓ → e ↑ (depreciation)
- Internal deficit (3)
  - Inflation (rise in NT prices) ➔ → e ↓ (appreciation) & A ↑
- Internal surplus (4)
  - Unemployment would be self-correcting if prices are able to fall as easily as they rise, but this is seldom the case.

Stabilization Policies

- Because of *structural rigidities*, the economy often fails to work smoothly.
  - ✓Exchange rate changes may take time to affect actual imports and exports.
  - ✓Nontradables prices may rise quickly if there is excess demand, but the inflation may persist once it starts.
  - ✓When there is unemployment, unions strike may prevent prices from falling.
- Governments need to take an active role to stabilize their economies. Three instruments: exchange rate management, fiscal policy, and monetary policy.
  - ➢Exchange rate management. From fixed to floating rates.
  - ➢Fiscal policy and monetary policy are two instruments to influence absorption level.

Policy Zones

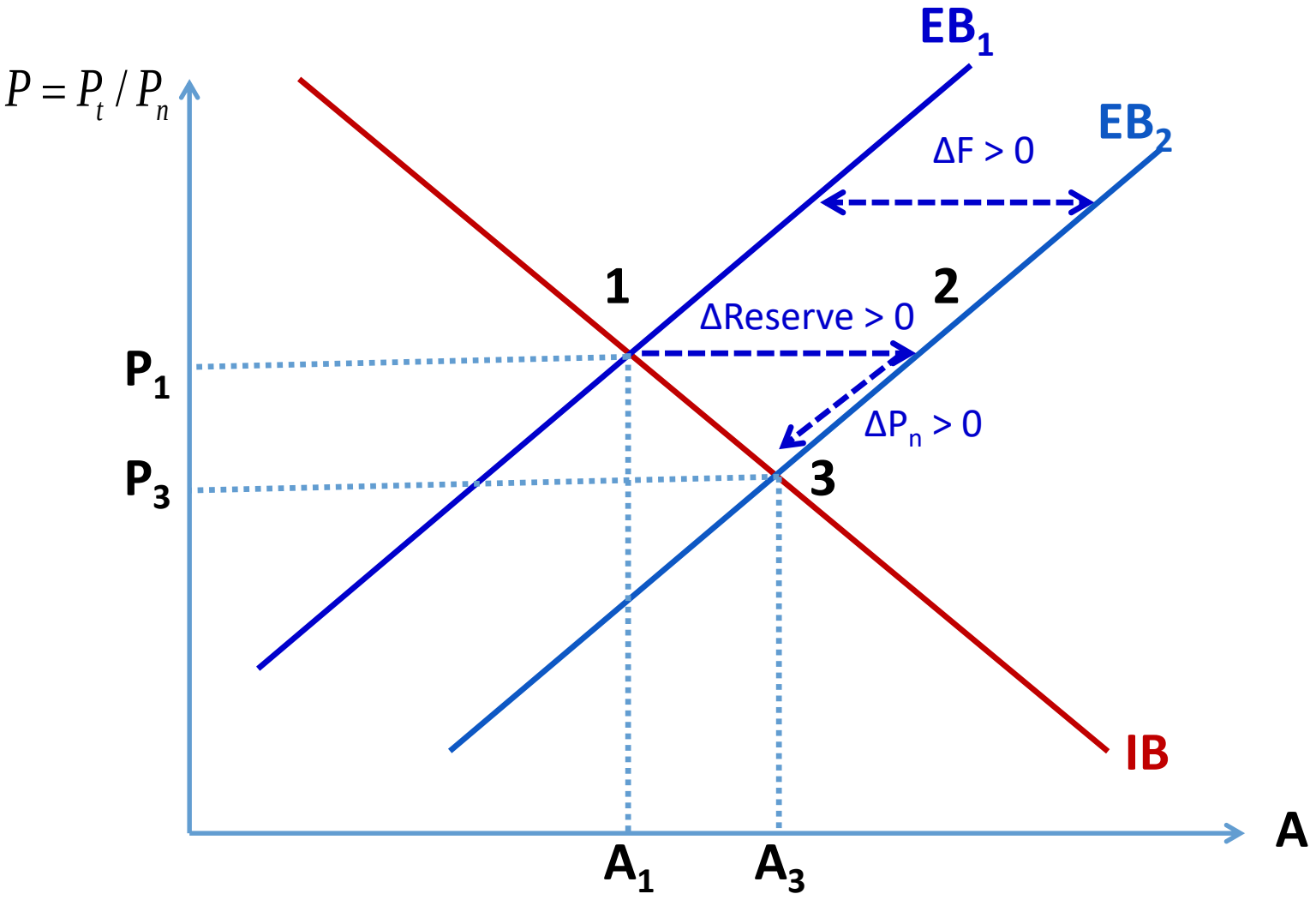


APPLICATIONS OF THE AUSTRALIAN MODEL

Dutch Disease

- A country receives higher export prices or a larger inflow of foreign capital may end up worse off than without the windfall.
- Windfall in foreign reserves occurs:
  - EB shifts rightward, the economy is in surplus, leads to more expenditure.
    - Absorption rises.
    - The economy moves off its internal balance into inflation.
- Effects of a rise in P_N:
  - *Reduction in real absorption* (partially corrects the initial rise in A)
  - *Real appreciation of exchange rate* (assuming official rate is fixed)

Figure: Dutch Disease



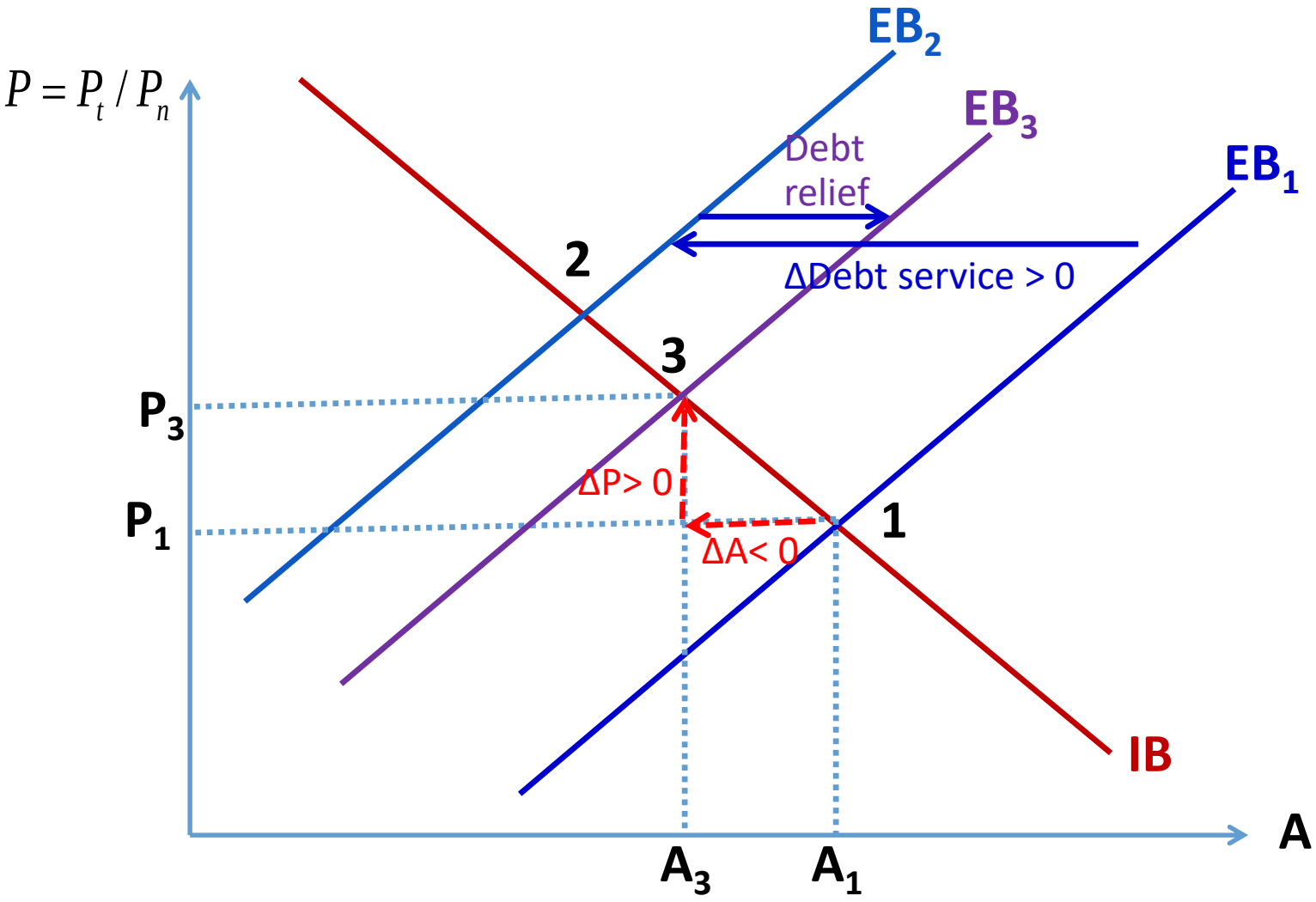
Problems from Dutch Disease

- Such windfalls generally are temporary.
  - When export prices fall or the capital inflow dries up, the EB curve will shift back and a costly adjustment will be necessary.
- In shifting from the old to the new equilibrium, there have to be adjustments in the economy.
  - The *real exchange rate P is lower* (P_n rises), so S_t (tradables supply) has fallen and S_n (nontradables supply) risen.
  - *Unemployment* occurs when workers switch from tradables to nontradables production.
  - *Decline in tradables sector* → "disease"

Debt Repayment Crisis

- It's a reverse of the Dutch Disease, a decline of terms of trade.
- Initially, the economy needs to find additional resources to repay its foreign debt or needs to adjust to falling terms of trade.
- EB curve shifts leftward ($EB_1 \rightarrow EB_2$).
- If there is debt relief, then the curve shift rightward EB3.
  - Absorption is reduced due to falling foreign reserves and reduced expenditure.
  - To gain the new equilibrium at point 3, it is also necessary to devaluate the currency.

Figure: Debt Repayment Crisis



Stabilization Package: Inflation and a Deficit (1)

- An economy has foreign deficit and inflation. Private investors try to invest in nonproductive assets like land or to invest abroad, which deepens the external deficit.
  - IMF is called to make stabilization program loans.
- IMF stabilization programs:
  - Reduction in government's budget deficit
  - Programmed targets for domestic credit to cap the growth of money supply in order to reduce absorption
  - The package may require devaluation of exchange rate, to reach a new equilibrium and avoid unemployment.

Stabilization Package: Inflation and a Deficit (2)

- However, IMF programs usually come with substantial aid attached from IMF, World Bank and bilateral donors.
- The aid package would enable the country to have more foreign reserves to buy tradables.
  - EB shifts to the right → new equilibrium
- Two things happen for the package:
  - It reduces the need for austerity.
  - It reduces the need for devaluation of the exchange rate. But IMF and donors often insist on devaluation.

Figure: Stabilization from Inflation and Deficit

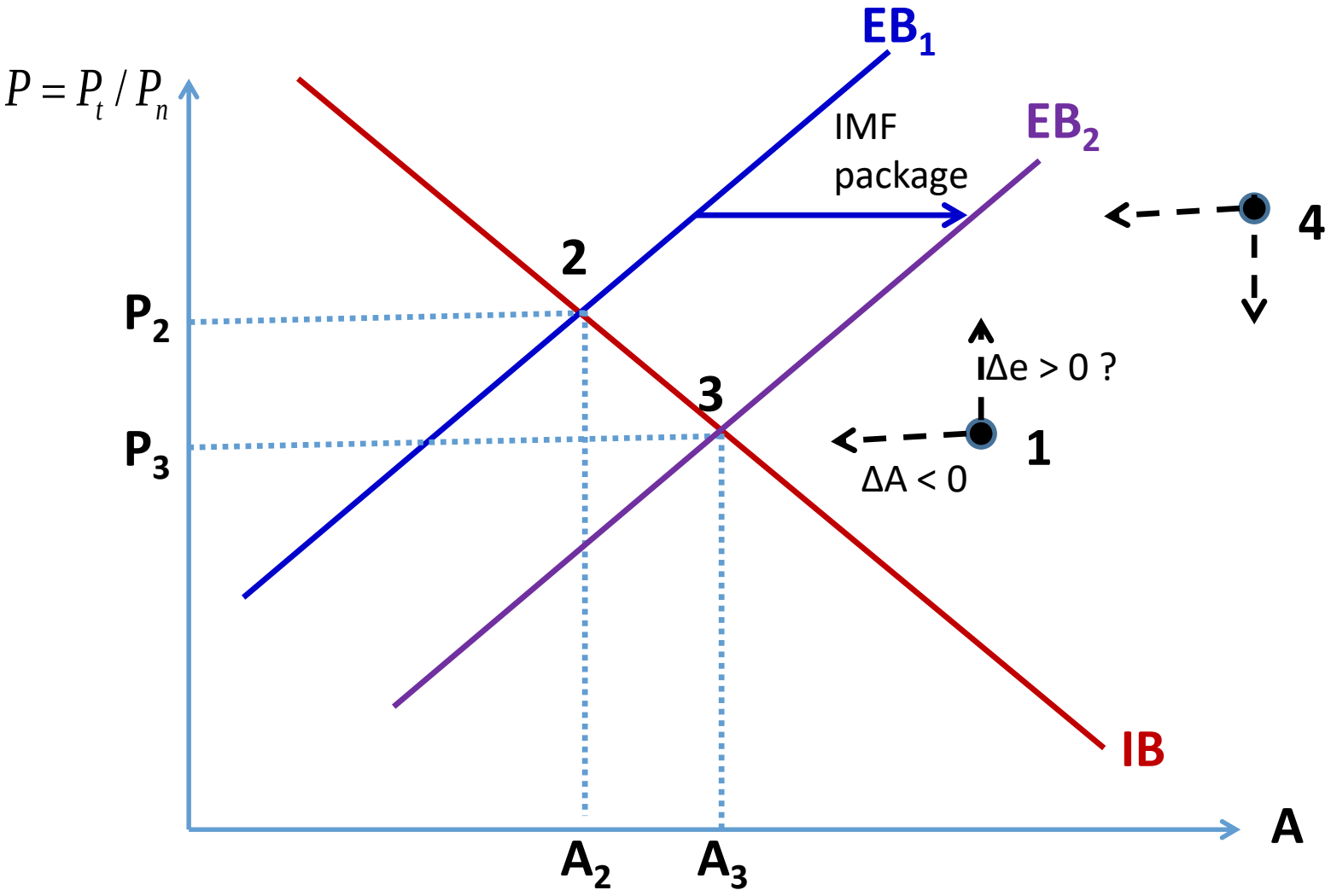
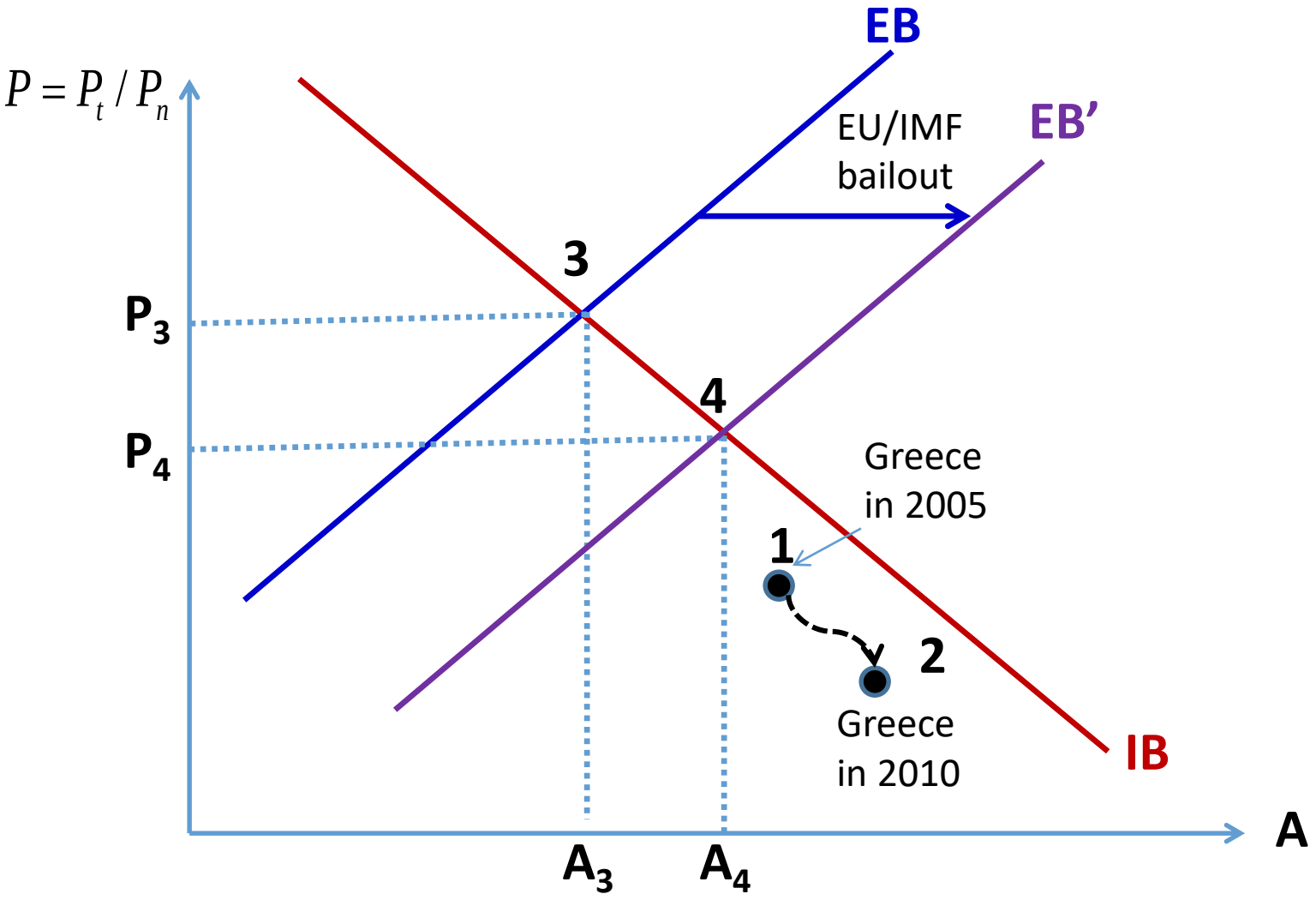


Figure: The Greek Debt Crisis, 2010-2012



Drought, Hurricanes, and Earthquakes

- Starting from point 1, drought or another natural disaster reduces the capacity to produce both N and T, so both IB and EB curves shift to the left.
- Disaster relief from abroad helps by shifting EB to the right → new equilibrium (point 3).
- If the economy remains temporarily at point 1, it is inflationary.
  - The *absorption declines* due to a fall in incomes
  - At the same time government tries to spend more to relieve hunger, disease and other problems.
    - The outcome could be *continued inflation* (somewhere between points 1 and 3).

Figure: Drought