Economic Policy in PNG: 2010 - 2020

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Talk Outline

- Recent shocks and policy responses
- Loan: Sovereign bond issue
- Future policy: capital mobility increase and alteration to policy responses

PNG Economy

- small open developing resource-rich economy (RRDC)
  - challenge of data collection, other information: rely on anecdotal evidence
- Independent, inflation targeting central bank
  - setting interest rates to control inflation, then growth
  - exchange rate: adjustable peg vs managed float
- capital mobility is low
  - inflows or outflows don’t respond to interest rate differentials (BPNG, IMF)
- marginal propensity to import is high
  - government: 0.6 – 0.7
  - private consumers?

PNG Economy: shocks

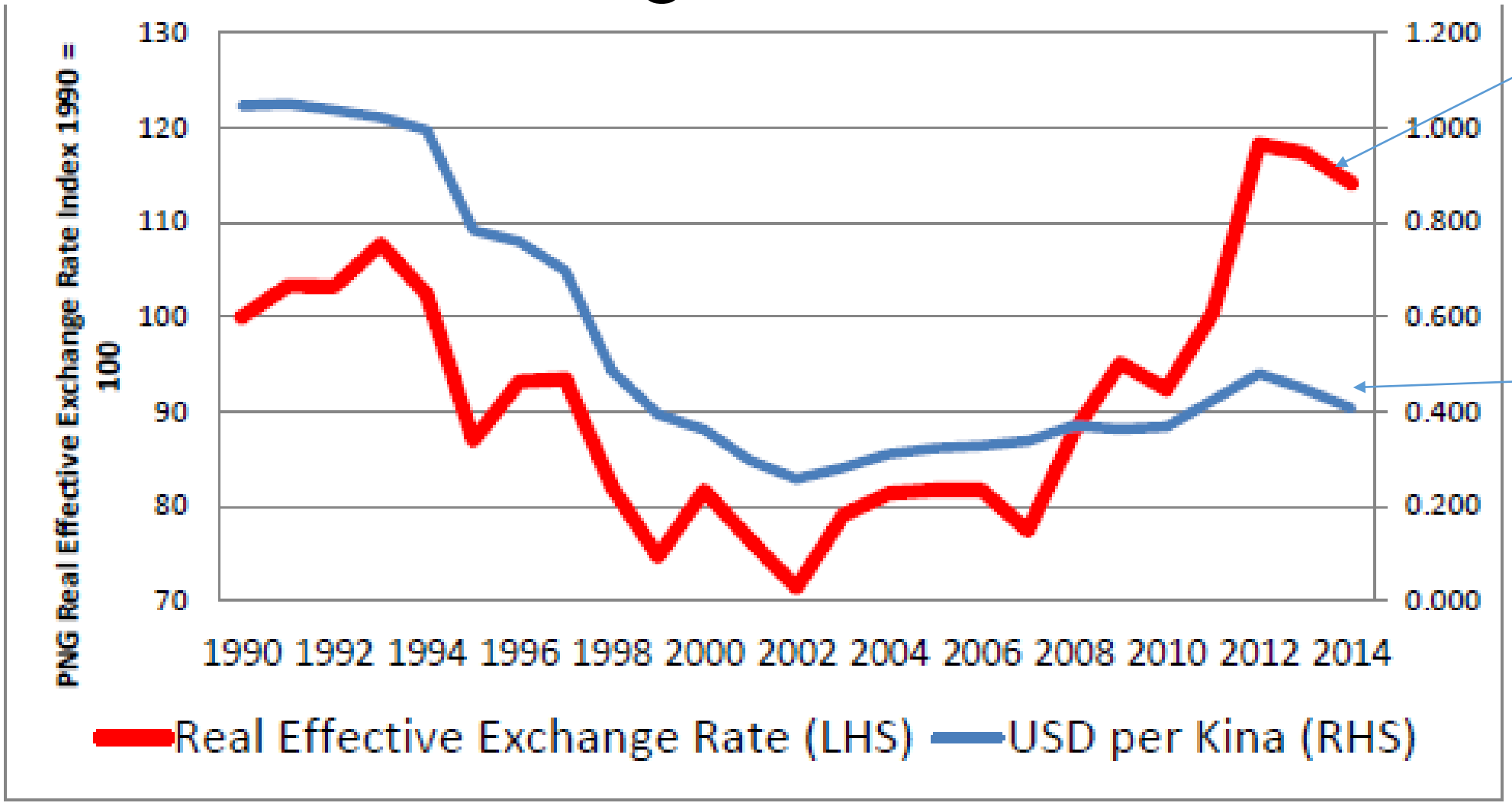
Demand Side

- Investment boom (LNG) then contraction (2011-12 then 2013-14)
- Fiscal expansion (2013-14)
  - offset ↓ I
  - spending ahead of LNG receipts
- Exports boom (2014 - onwards)
- Revaluation (and then subsequent stepwise devaluation) (mid 2014)
- Terms of trade shock (oil/gas price fall) (late 2014)
- Fiscal contraction (2015-16)

Supply side

- Oil price fall (2014)
- Increase in minimum wage (2014)
- El niño (2015-16)

Real exchange rate: 1990 - 2014



$\frac{P}{eP^*}$

$\frac{1}{e}$

Source: P. Flanagan, 18 June 2015

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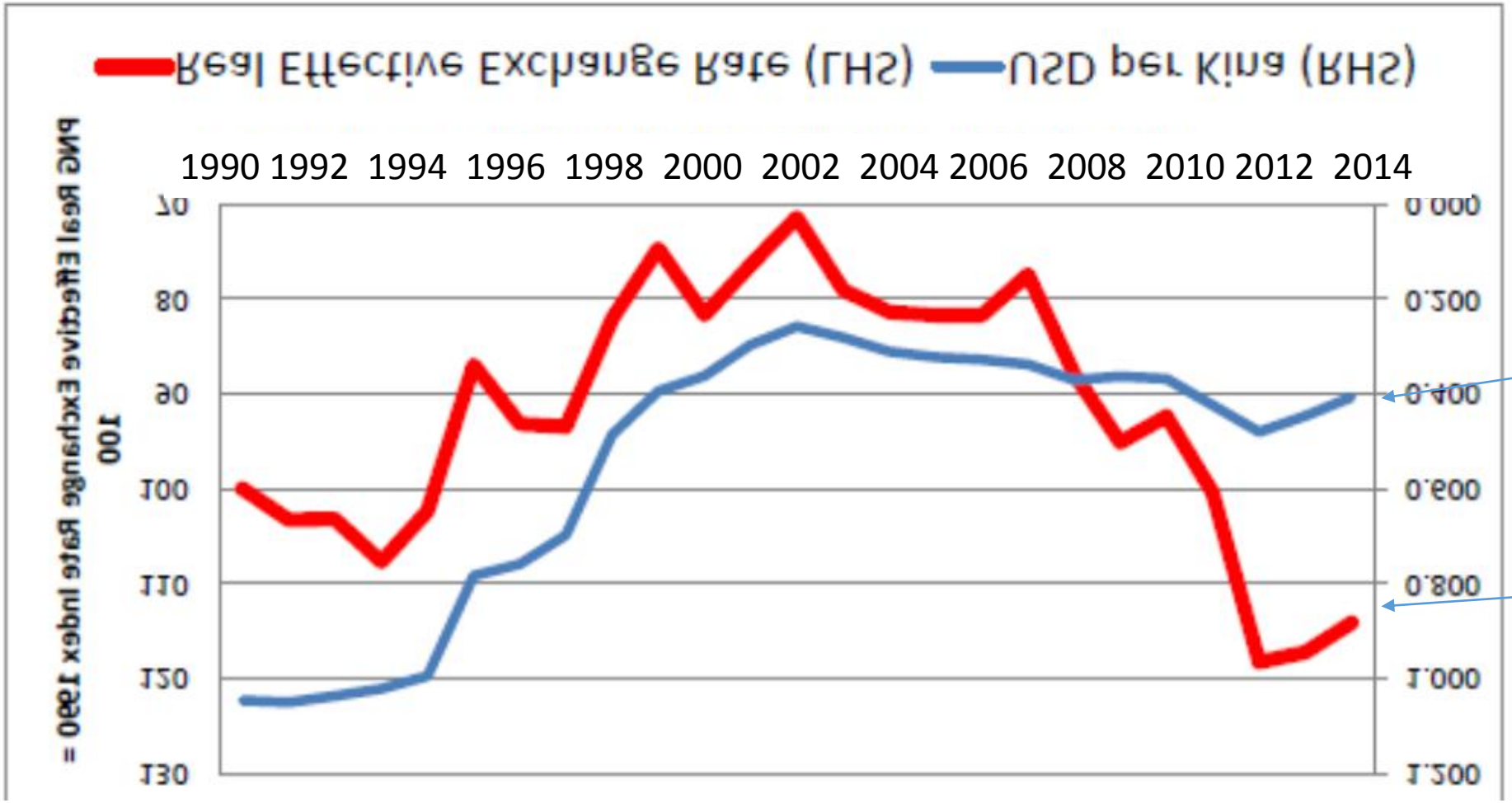
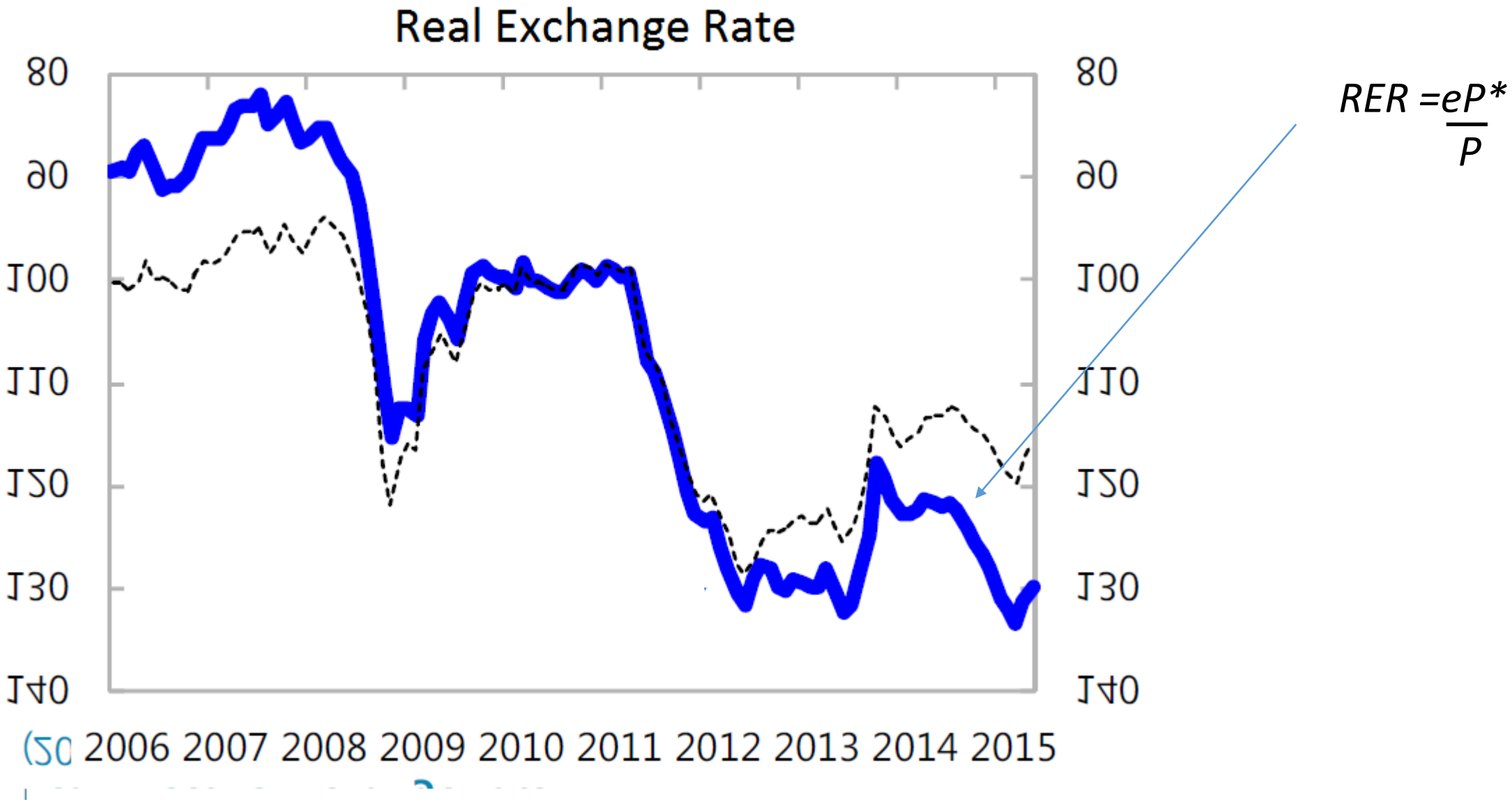


e

$$RER = \frac{eP^*}{P}$$

Source: P. Flanagan, 18 June 2015



$$RER = \frac{eP^*}{P}$$

Source IMF 2015

Macro Policy in PNG

- In an open economy, policy has two goals
  - internal balance: producing at full employment ($Y = Y_f$)
    - over-employment ($Y > Y_f$): increase in inflation
    - underemployment ($Y < Y_f$): decrease in inflation
    - in a very open economy (large share of trade in GDP) Y_f will vary with real exchange rate
  - external balance: current account is near zero: $CA = 0$
    - is large current account *deficit*: foreign investors question ability to repay debt. *Is CA deficit bad?*
    - large current account *surplus:*
      - External balance can also mean **balance of payments equilibrium** (i.e. CA + FA = 0)

External Balance

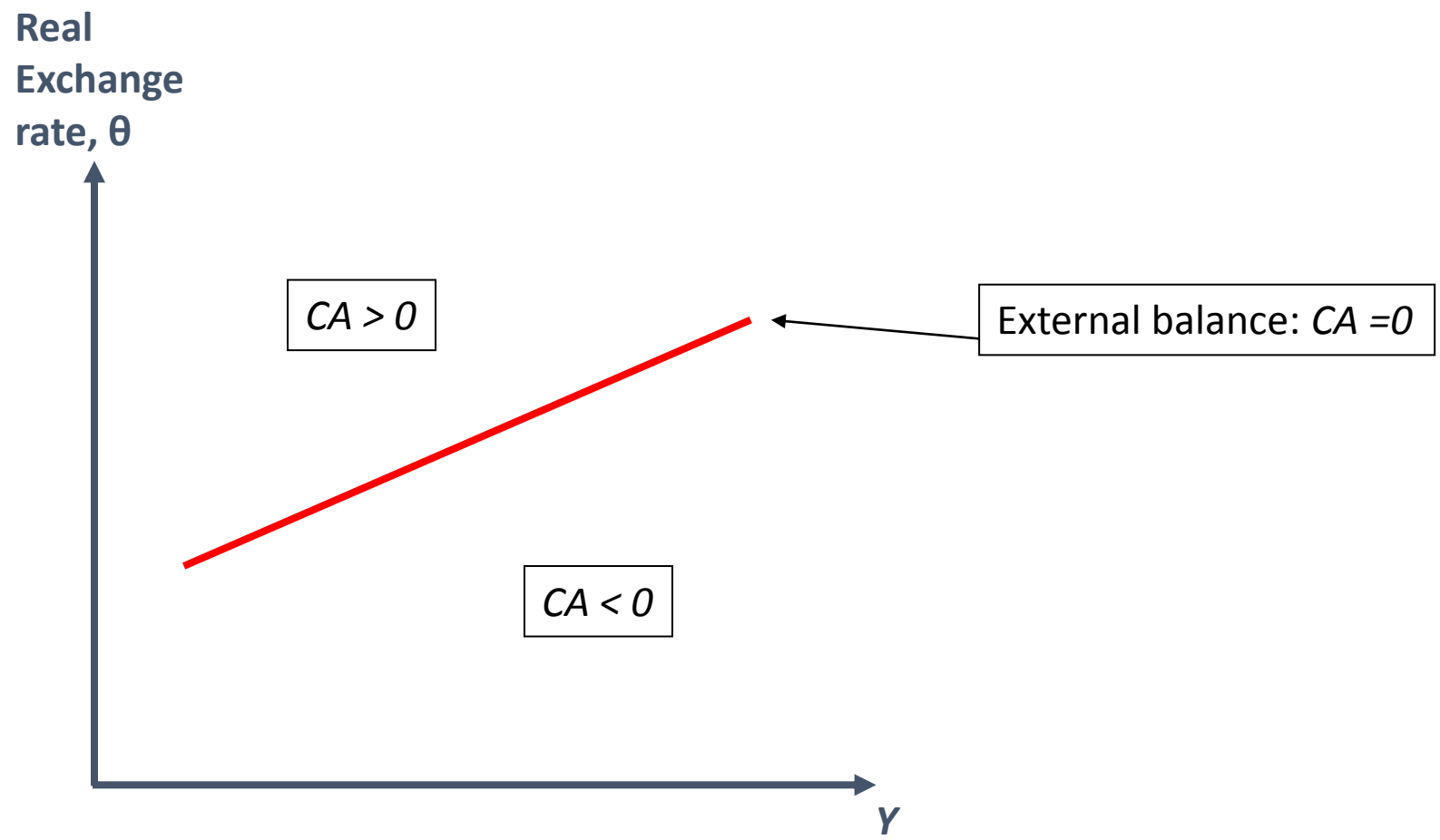
- External balance: Balance of Trade or Current Account (CA = 0):

$$CA = \text{Exports} - \text{Import} = EX(\theta) - IM(Y) = 0$$

- real devaluation ↑θ → our goods cheaper to foreigners → ↑ *exports (EX)* increasing the current account ↑ *CA*

- To restore external balance: CA *income (Y)* → ↑ *imports (IM)* decreasing the current account (↓*CA*)

External balance



Internal Balance

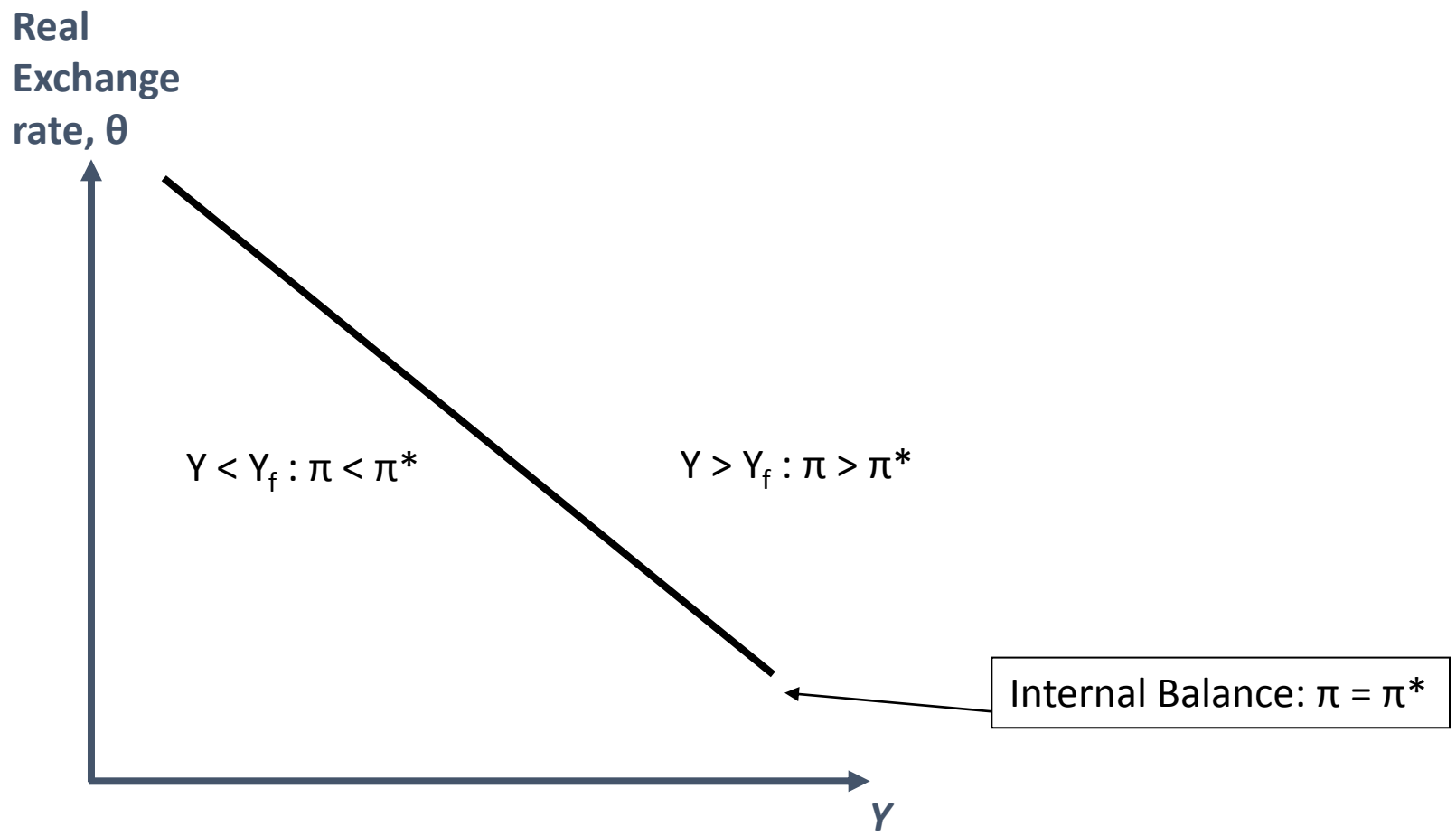
- equilibrium employment determined by a bargain between workers and firms
  - equilibrium: real wage firms offer is equal to real wage that workers demand
    - lower real wage → workers offer less labor

- Firms care about W/P W = nominal wage P = domestic price
- Workers care about W/P_{cpi} W = nominal wage P_{cpi} = cpi
  - P_{cpi} depends on price of domestic and imported goods

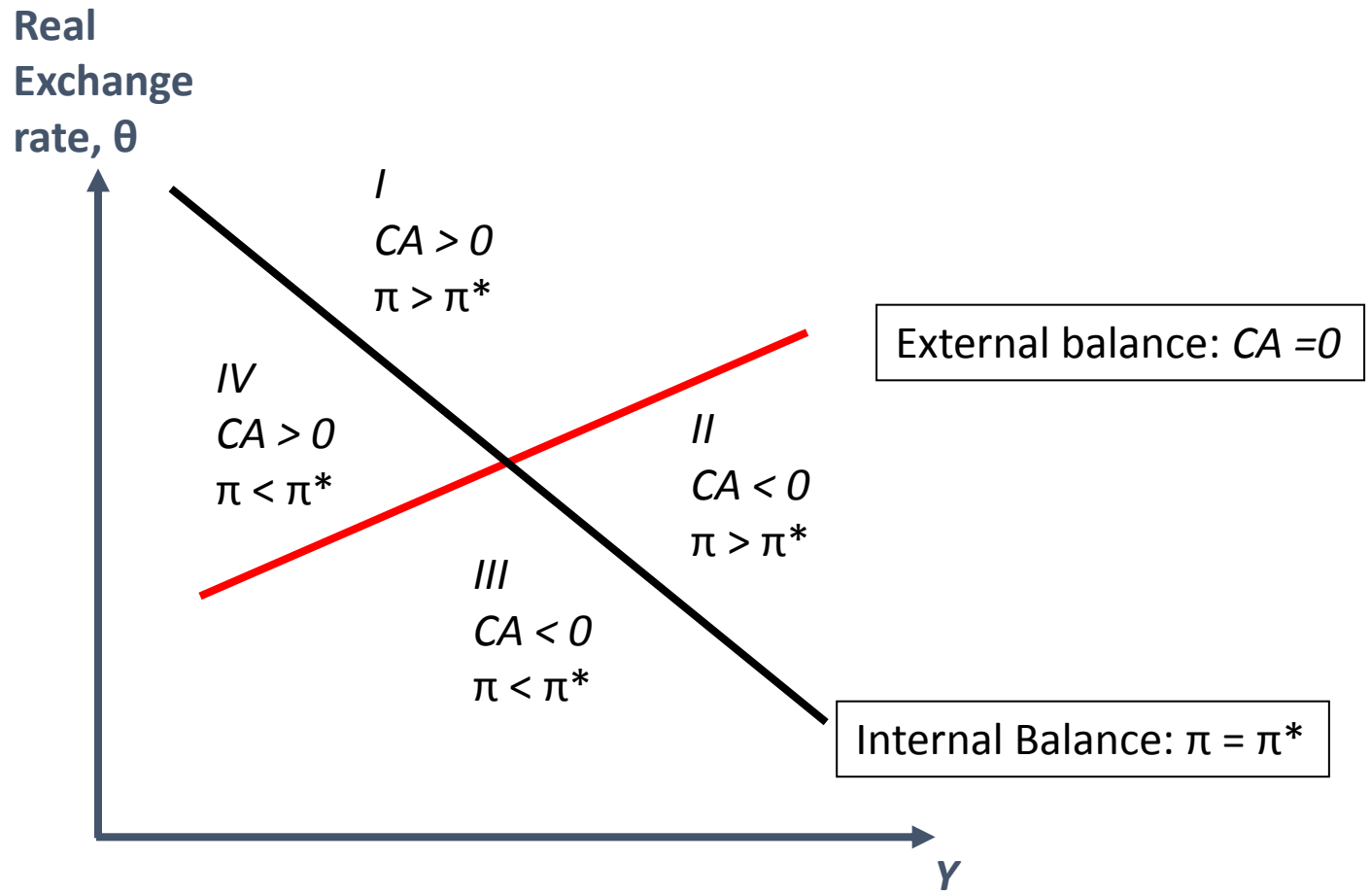
$$P_{cpi} = (1-\alpha).P + \alpha e.P^{*} \qquad \alpha = \text{import share in cpi}$$

- devaluation (↑e) → cost of imported goods (↑*e*P*) → ↑P_{cpi} → ↓ real wage (W/P_{cpi})
- slower inflation at home than abroad (↑P < ↑P*) → ↓real wage (↑*W by less than* ↑P_{cpi}*)*
- *Both effects:* ↑ θ leads to lower employment and output (Y)

Supply Side



Macroeconomic Goals: internal and external balance: 4 zones



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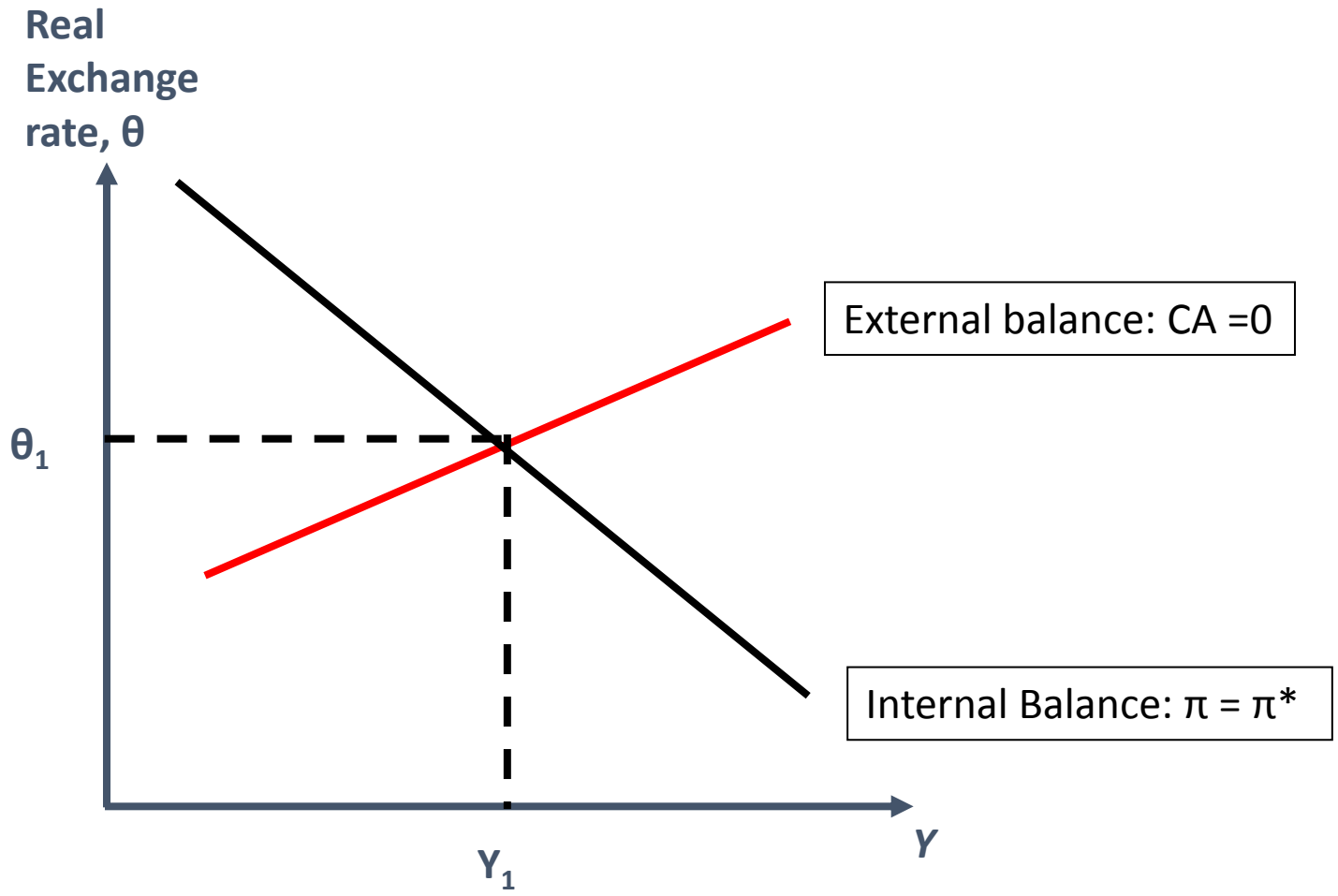


Demand Side of Economy

- $Y = C + I + G + EX(\theta) - IM$

  aggregate expenditure = full employment

  consumption (C) + investment (I) + gov't spending (G) + exports (EX) – imports (IM) $= Y_f$

nominal exchange rate = e

real exchange rate = θ = eP/P* *foreign price level in Kina = eP**; PNG price level = *P*

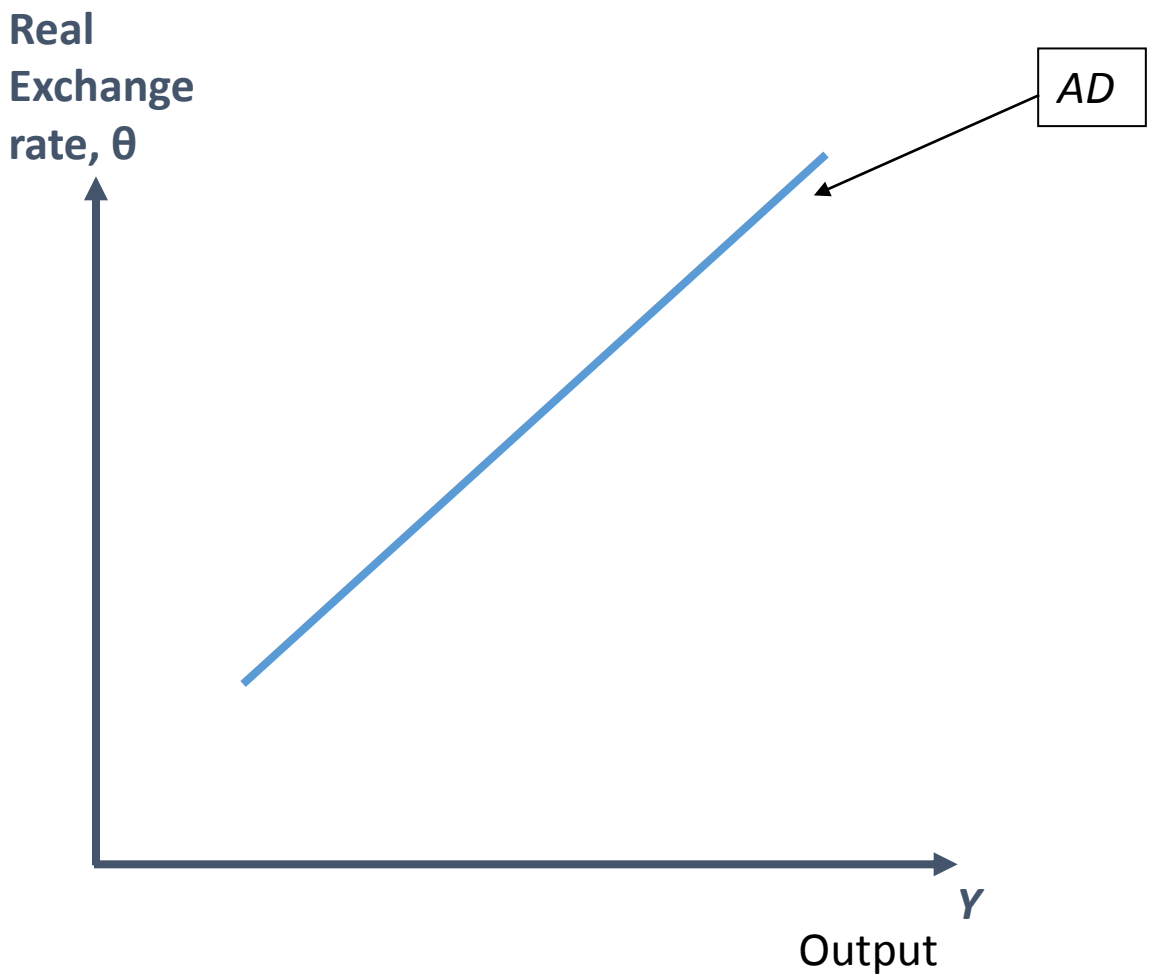
Devaluation ↑*e* → our goods cheaper to foreigners → ↑ θ → ↑*export (EX)*

P rises slower than P (PNG inflation is less than inflation in rest of world)* → ↑ θ → ↑ *export (EX)*

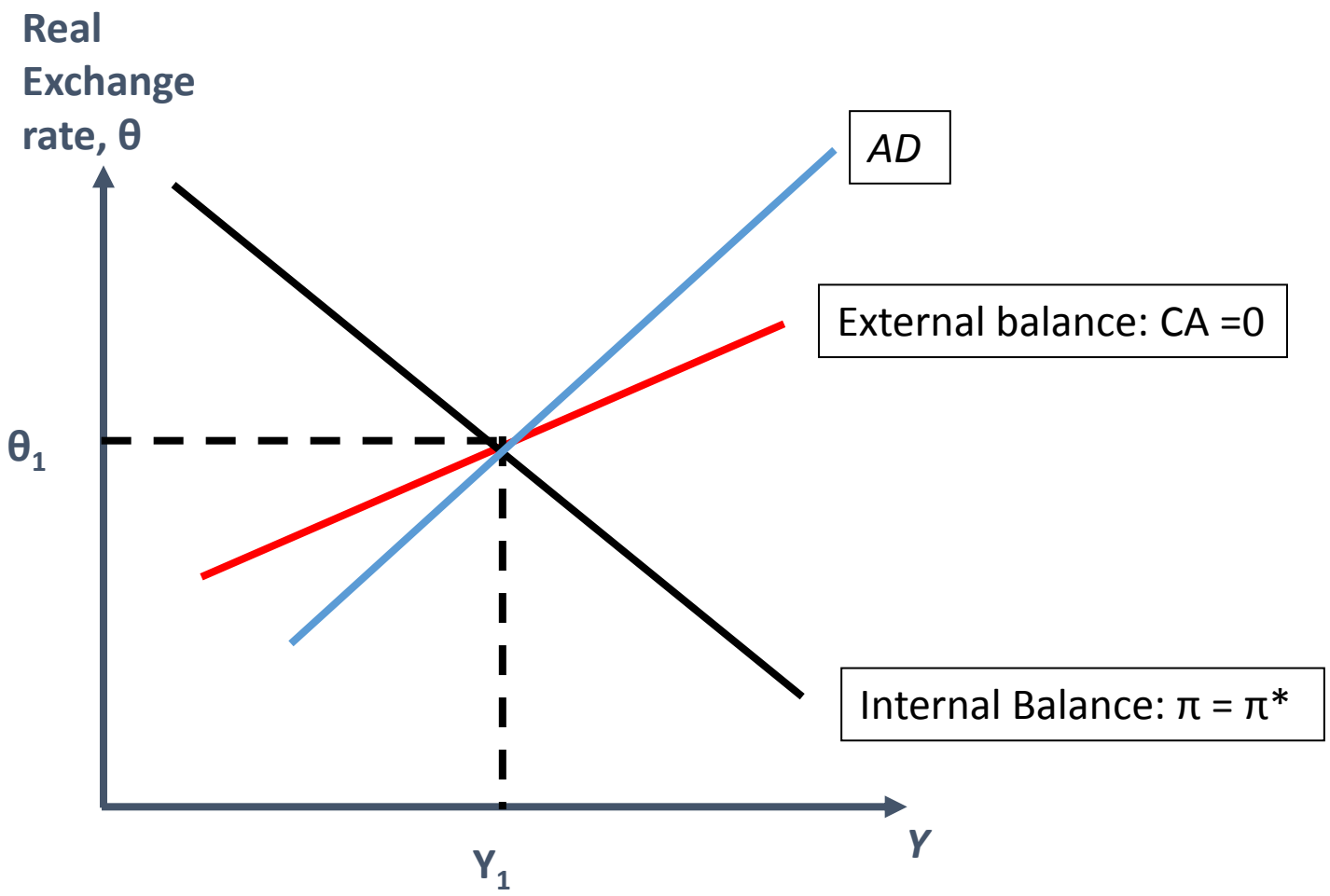
- ↑ θ → ↑EX → ↑ AD → ↑ Y

- why is AD steeper that internal balance: leakages due to savings and taxation

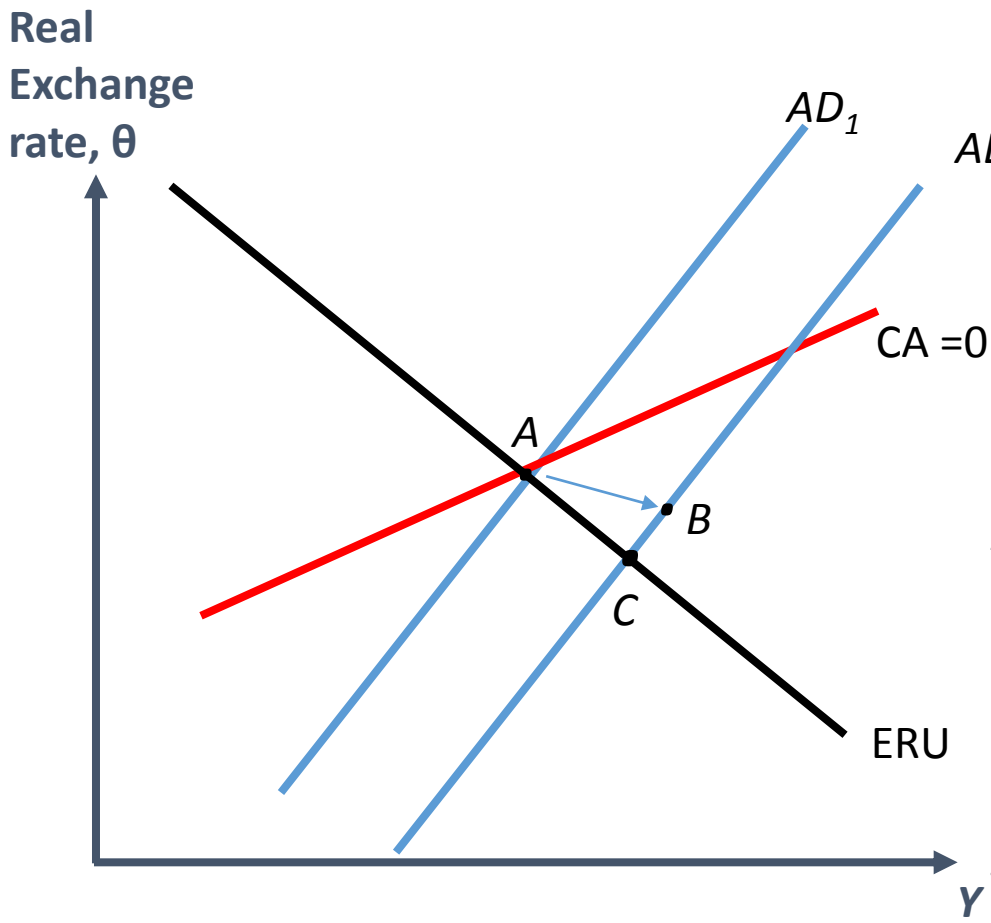
Aggregate Demand (AD)



Model


Real Exchange rate, θ
AD
External balance: CA =0
θ1
Internal Balance: π = π*
Y
Y1

Investment boom: 2010-2012

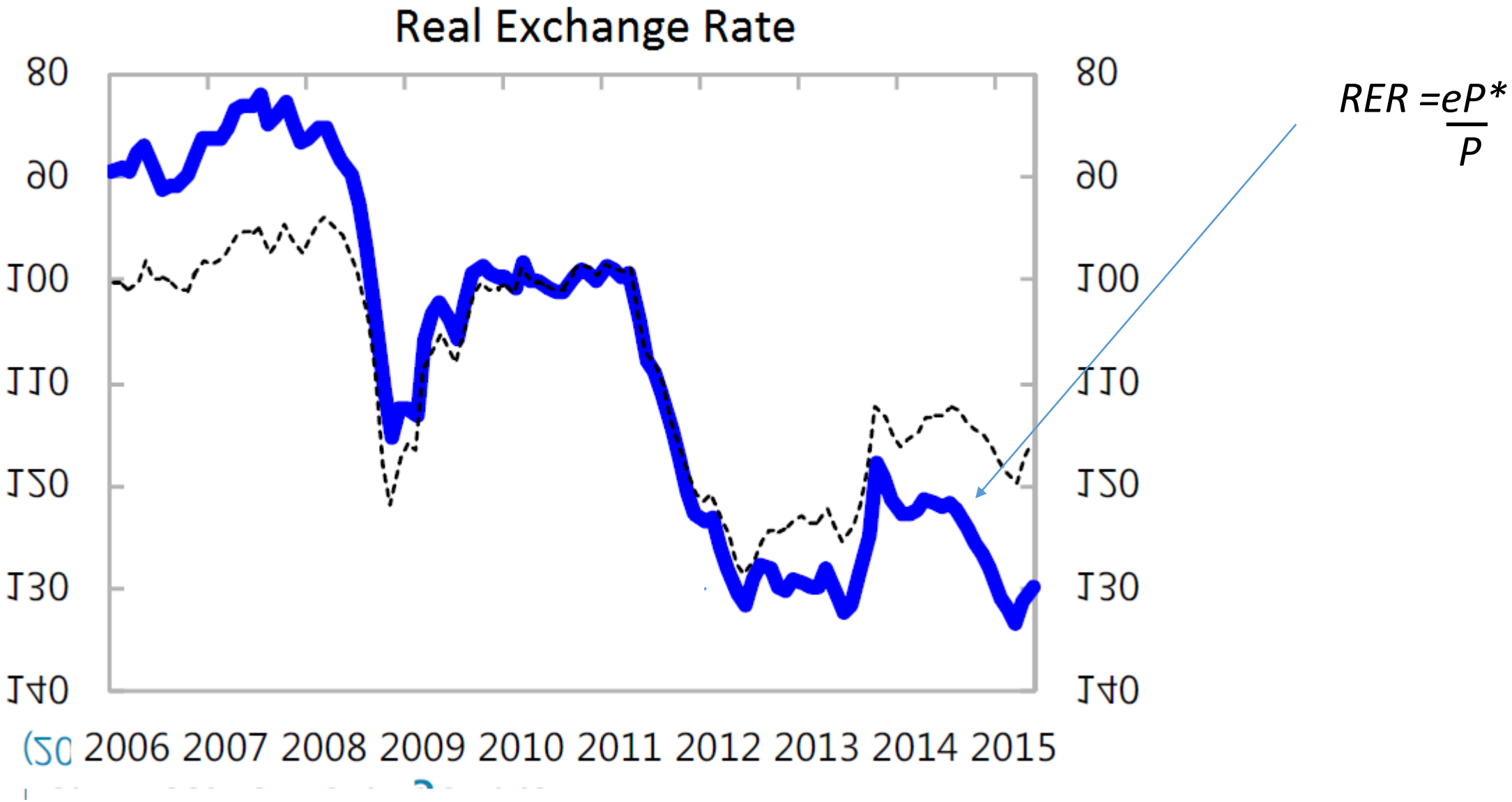


CA < 0 current account deficit

AD > y economy overheats

BOP surplus (FDI increases financial account) → e ↓ nominal appreciation → ↓ θ

π > π* → ↓ θ



$$RER = \frac{eP^*}{P}$$

Source IMF 2015

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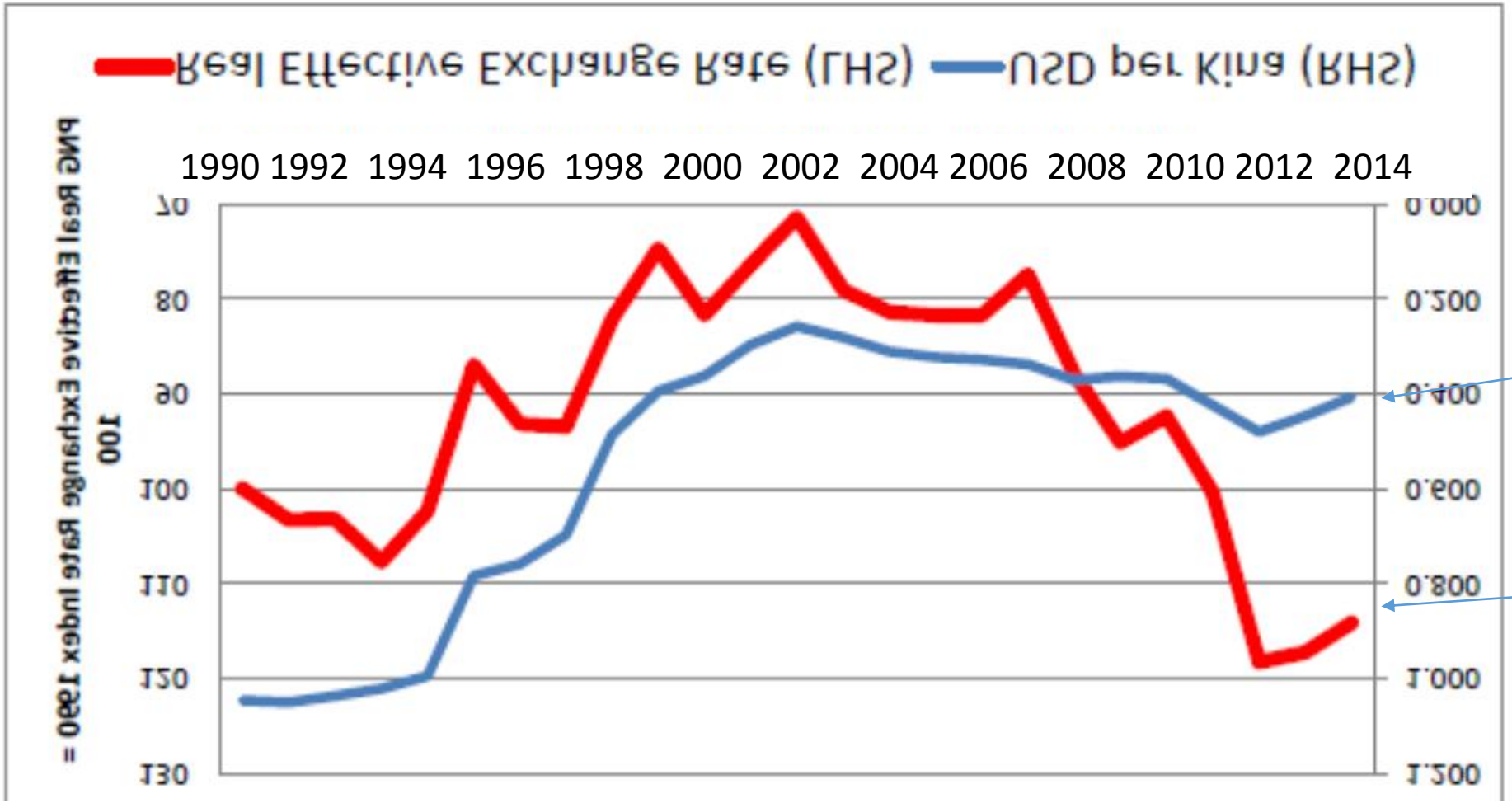

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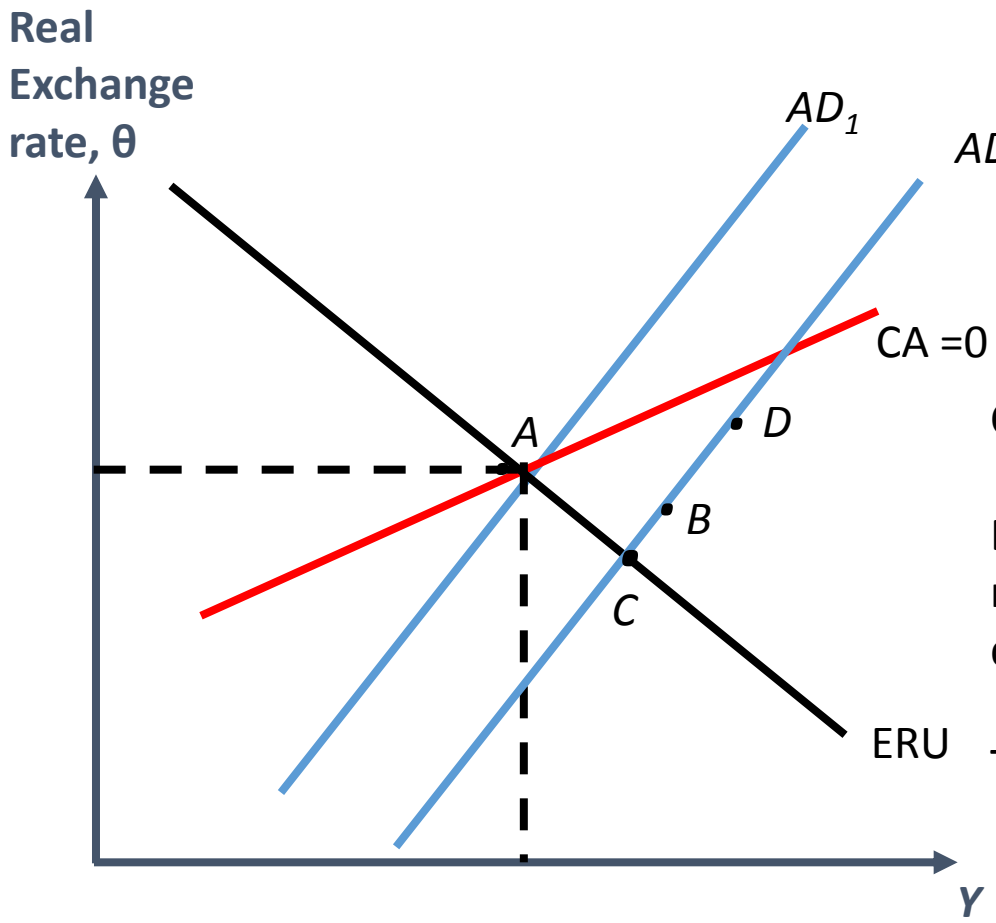
Investment contraction, increase in Government spending

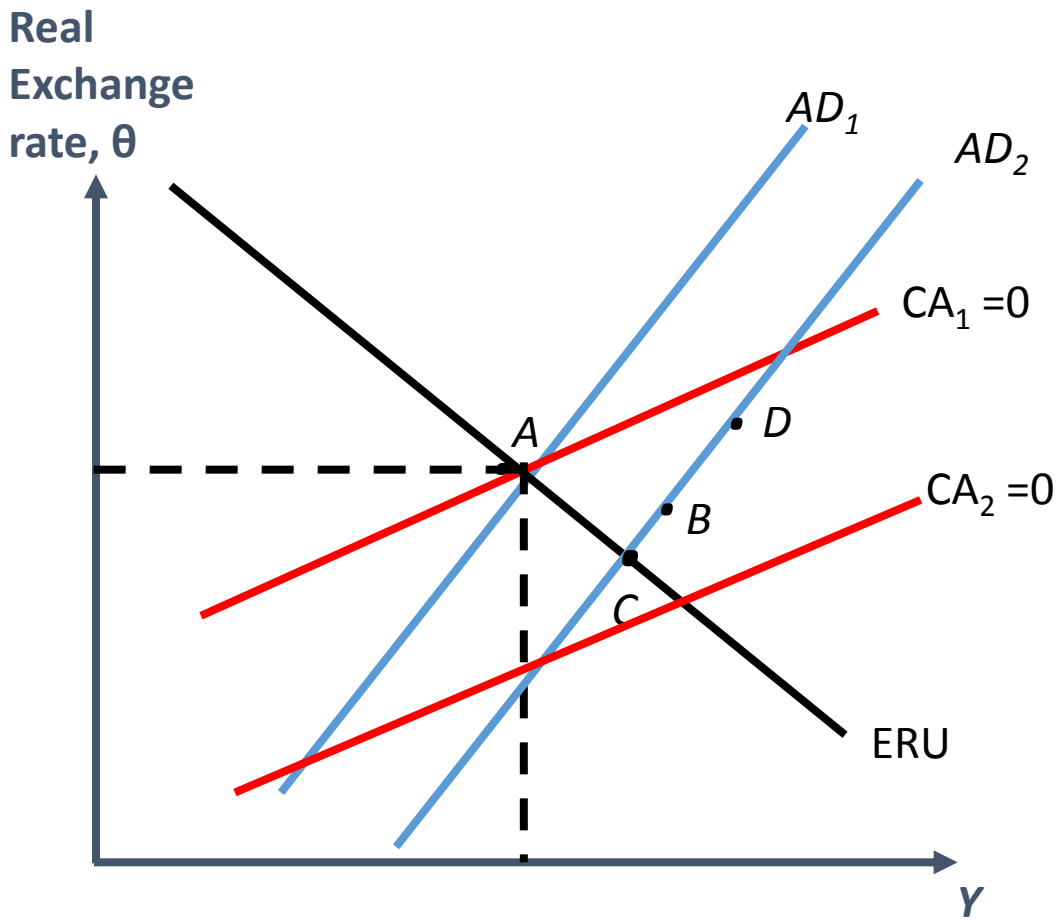


CA < 0 current account deficit remains

BOP deficit (FDI inflows stop) → ↑ e nominal depreciation → ↑ θ (real depreciation)

Then π > π* → ↓ θ (real appreciation)

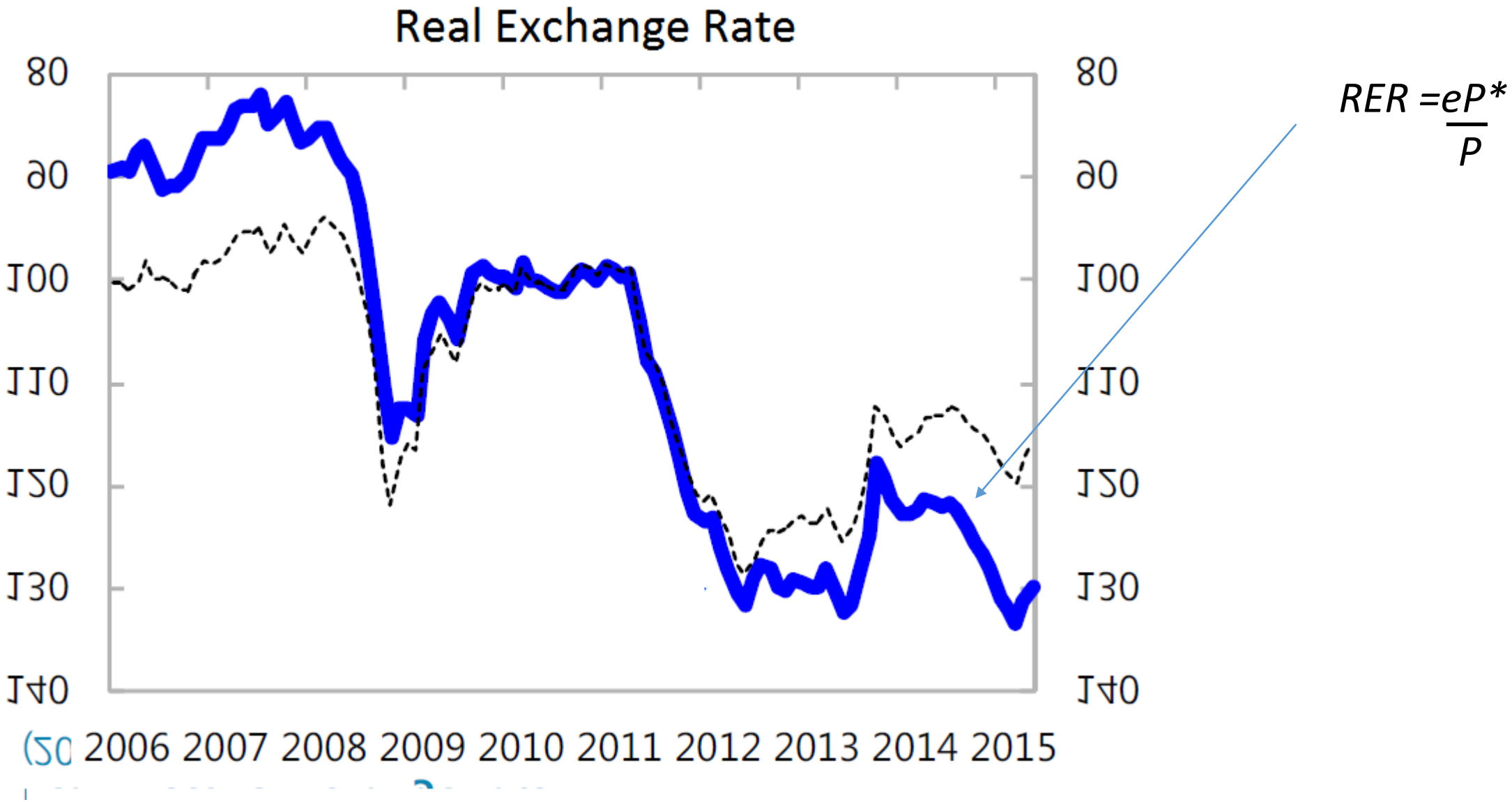
Export boom, contraction in Government spending



CA > 0 current account surplus

BOP deficit → ↑ e nominal depreciation → ↑ θ causes real depreciation

Then π > π* → ↓ θ real appreciation



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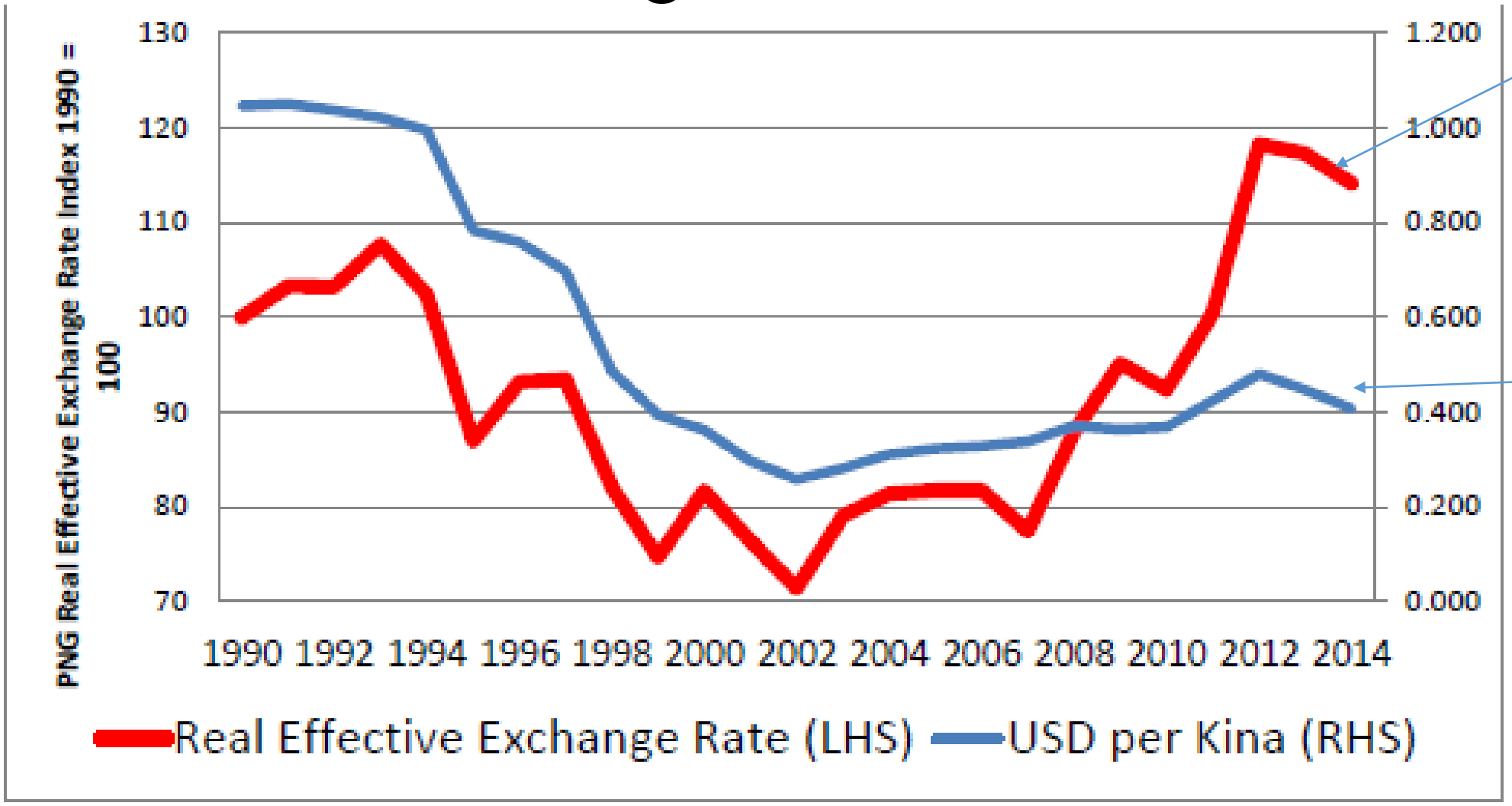


$$RER = \frac{P}{eP^*}$$

$$\frac{1}{e}$$

Source: P. Flanagan, 18 June 2015

Export Supply Shock: fall in energy prices

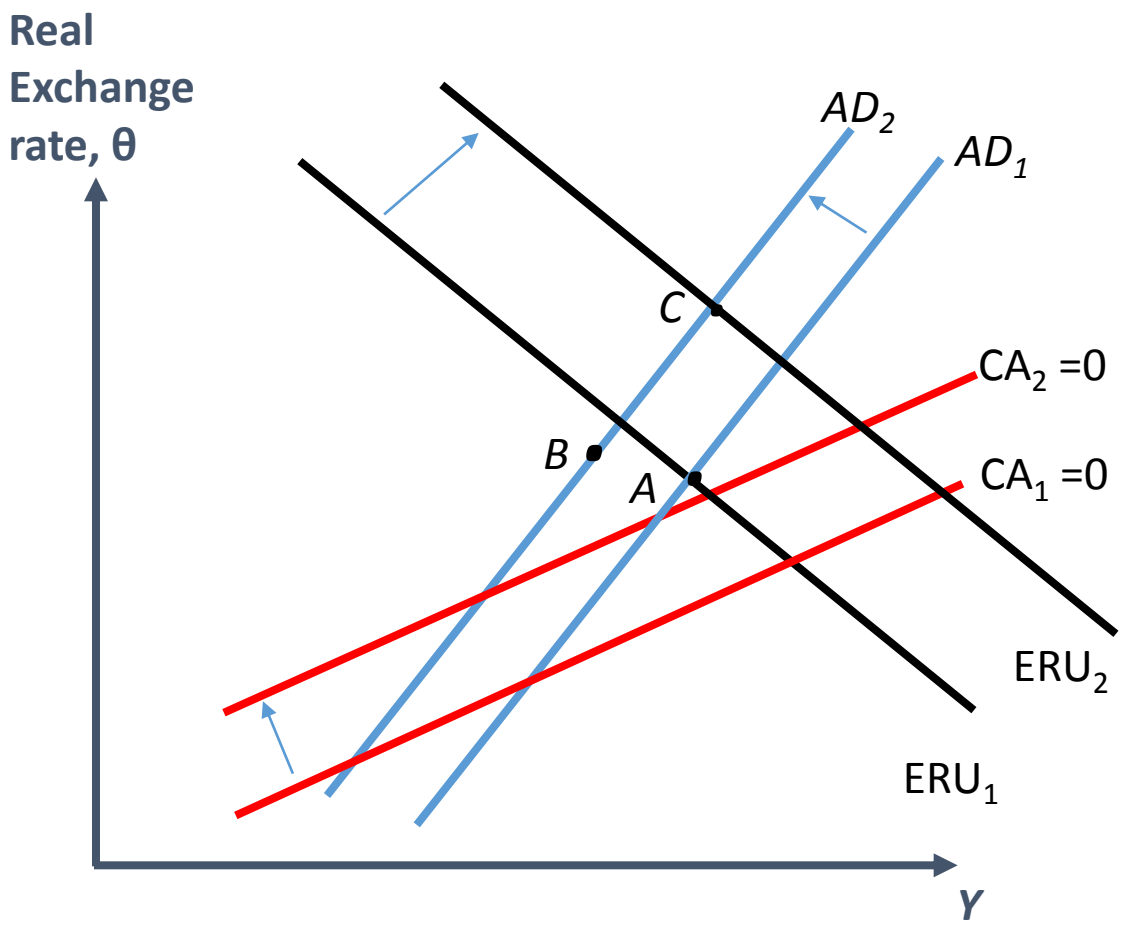
Demand Side

- Fall in Terms of Trade for PNG: shifts AD and BT curves inwards as net exports fall
  - need to export more to buy same level of imports
- $\downarrow P_{oil/gas} / P_{final\ goods}$ (fall in price of intermediates relative to final goods)

Supply Side

- energy price fall (oil, gas)
  - big windfall for households
- increase in real wage, θ constant, workers offer more labor →↑Y→ERU curve right
- offsetting: El Nino (reduces productivity), min wage increase

Export Supply Shock: fall in energy prices

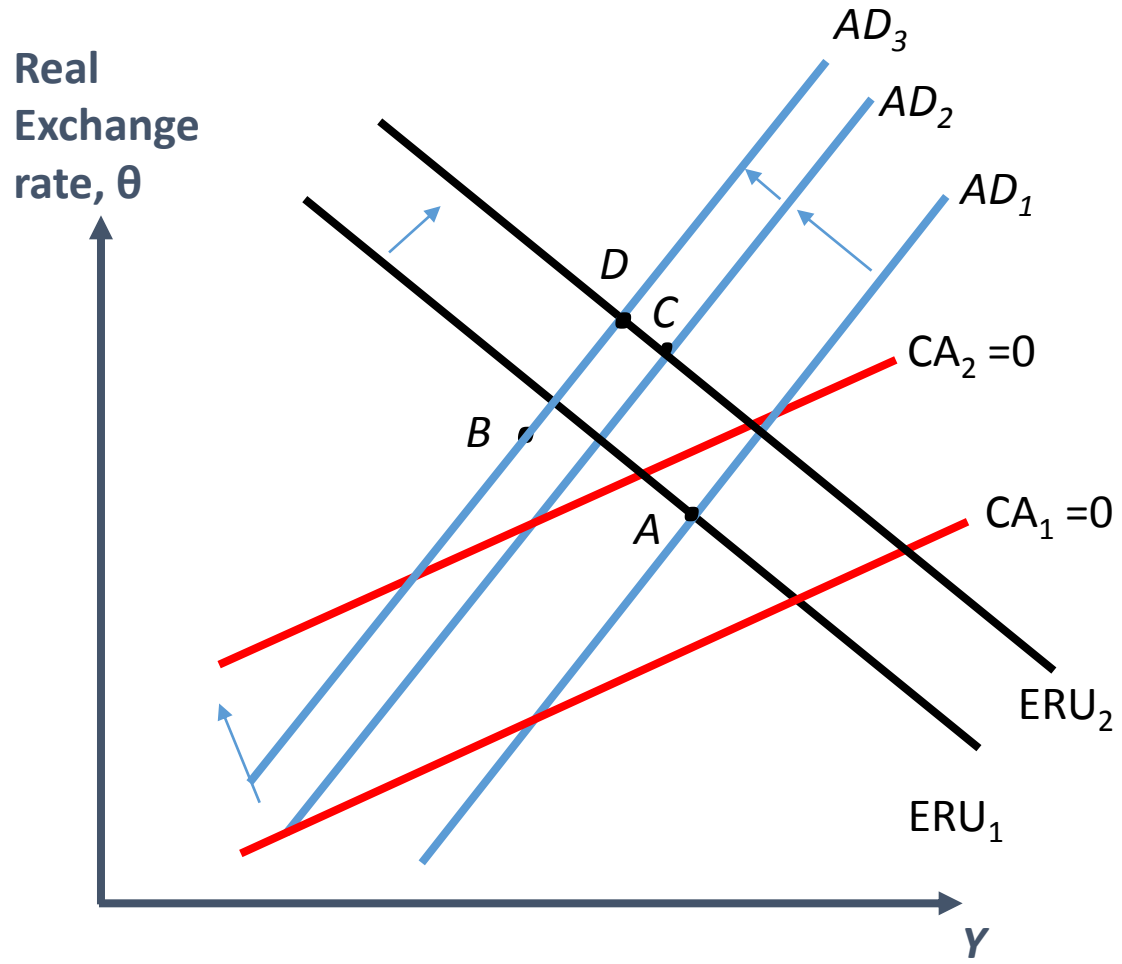


CA < 0 current account deficit

$Y < Y_f$: $\pi < \pi^*$

e ↑ *(depreciation*

Export Supply Shock + fiscal contraction



CA < 0 current account deficit

$Y < Y_f$: $\pi < \pi^*$

e ↑ *(depreciation)*

Sovereign bond issue: borrow USD 1 billion

- borrowing in foreign currency: original sin; assets in Kina, liabilities in foreign currency
  - exposes borrower to foreign currency risk
  - cost of borrowing in kina = foreign interest rate + expected depreciation of kina

$$r = r^* + \Delta e/e$$

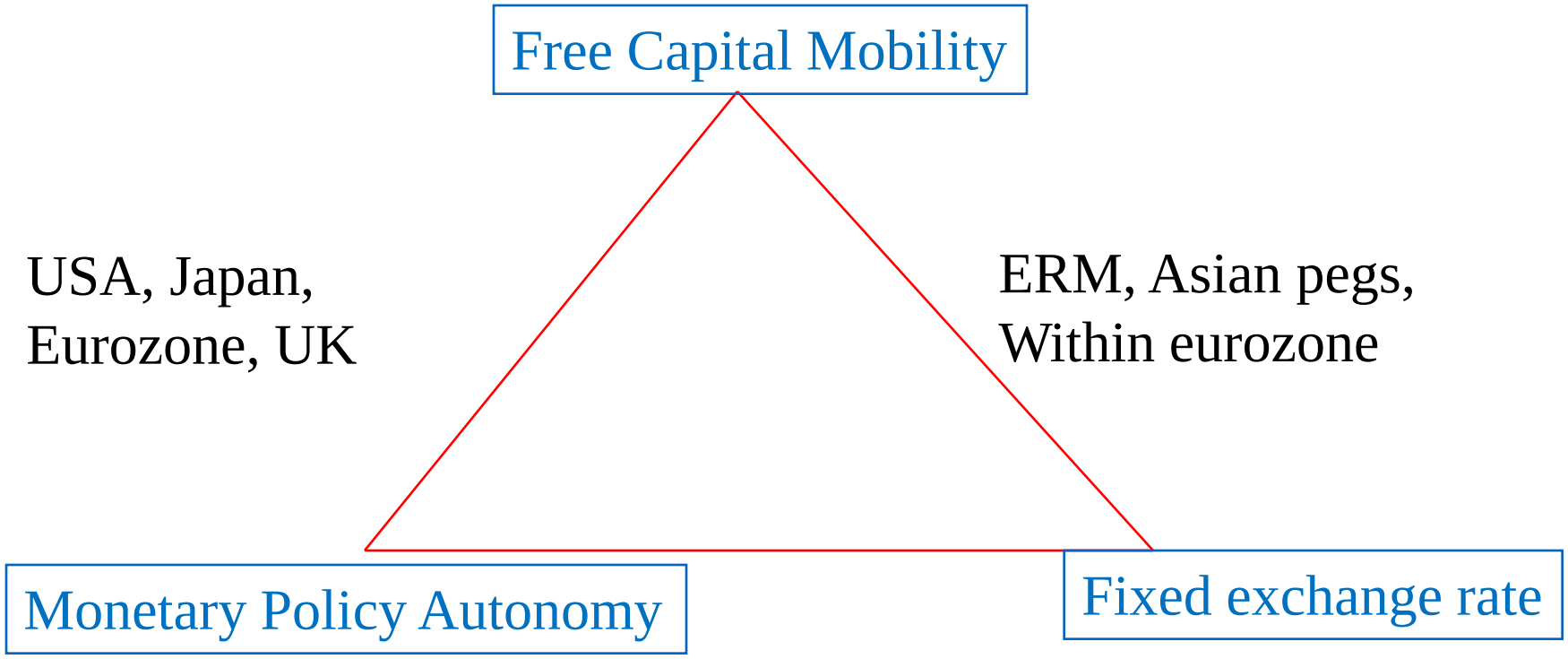
25% = 10% + 15%

- K depreciating at 15% p.a. => cost of loan 25% p.a. (assuming r*=10%)
  - BPNG has perfectly elastic supply of K
  - can covert USD to K at any e-rate; choose long term (5 year equilibrium)
    - increase of e=3.33 convert at e = 5
- monetary consequences: converting USD to K increases money supply
  - sterilization: sell gov't bonds to offset monetary expansiion
  - excess liquidity anyway

Capital Mobility: change in policy paradigm

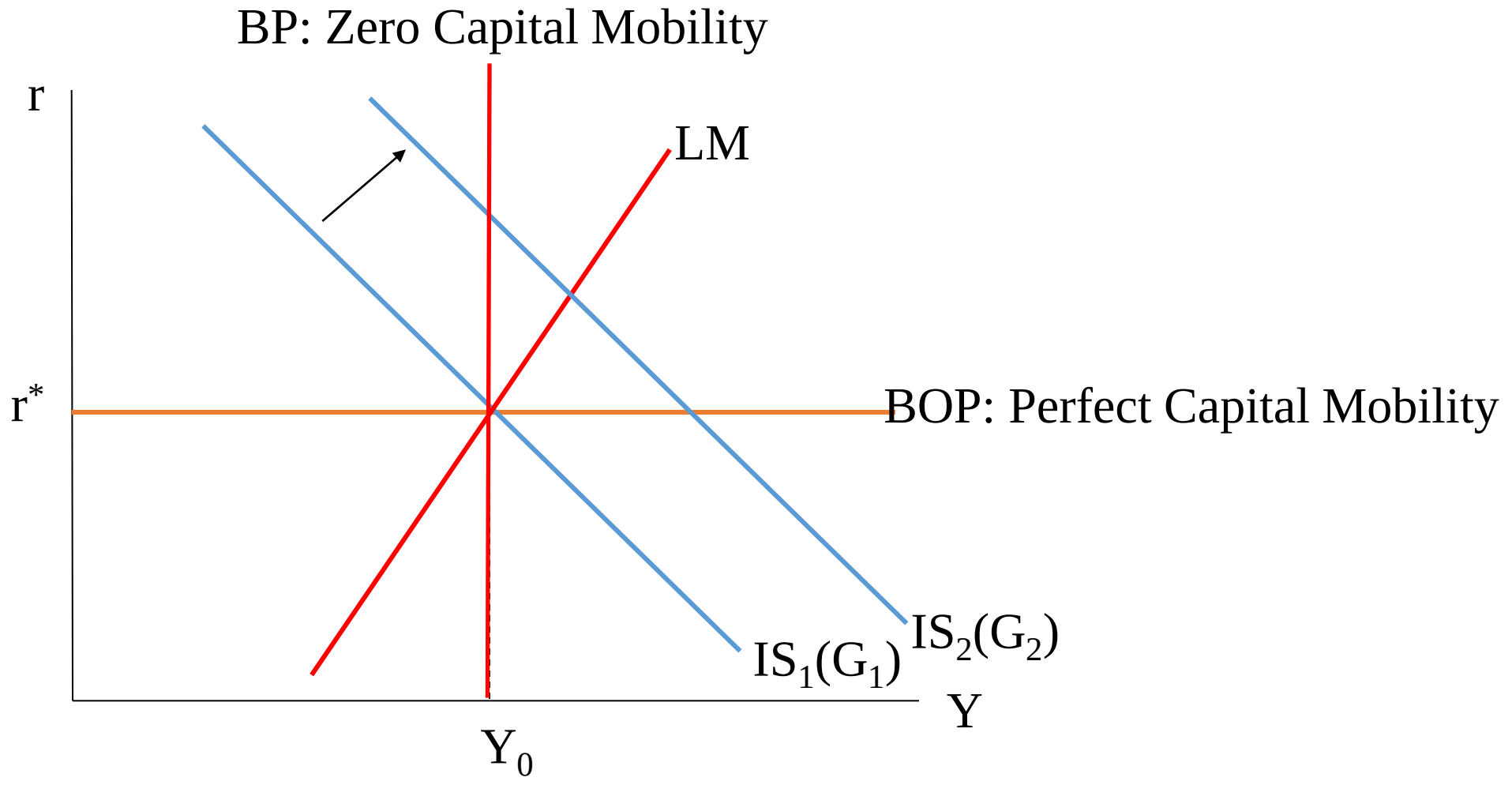
- capital mobility very low: *financial flows between PNG and the rest of the world are insensitive to the relative rates of return (BPNG, IMF)*
  - forex flows are primarily exports, imports, fdi (intl remittances also)
  - BPNG set interest rate (r) and exchange rate (e) (intervene heavily – crawling peg)
- sovereign bond encourage intl investors into t-bill market and local stock market: increase capital mobility (flows hot compared to FDI)
  - Impossible Trinity: monetary consequences: set interest rate or exchange rate – not both
  - fiscal consequences:
    - currently fiscal expansion causes to bop deficit – pressure to depreciate (↓ *CA*)
      - ↑*G* → ↑*Y* → ↑*IM* → ↓*CA* → ↓*BOP= CA + FA*
    - new paradigm: fiscal expansion leads to bop surplus
      - higher interest rates attract foreign investment (↑ *FA*)
      - ↑*G* → ↑*r* → ↑*capital inflows*→ ↑ *Financial account* → ↑ *BOP = CA + FA*
    - fiscal response depends on e-rate regime

The Impossible Trinity



Bretton Woods system

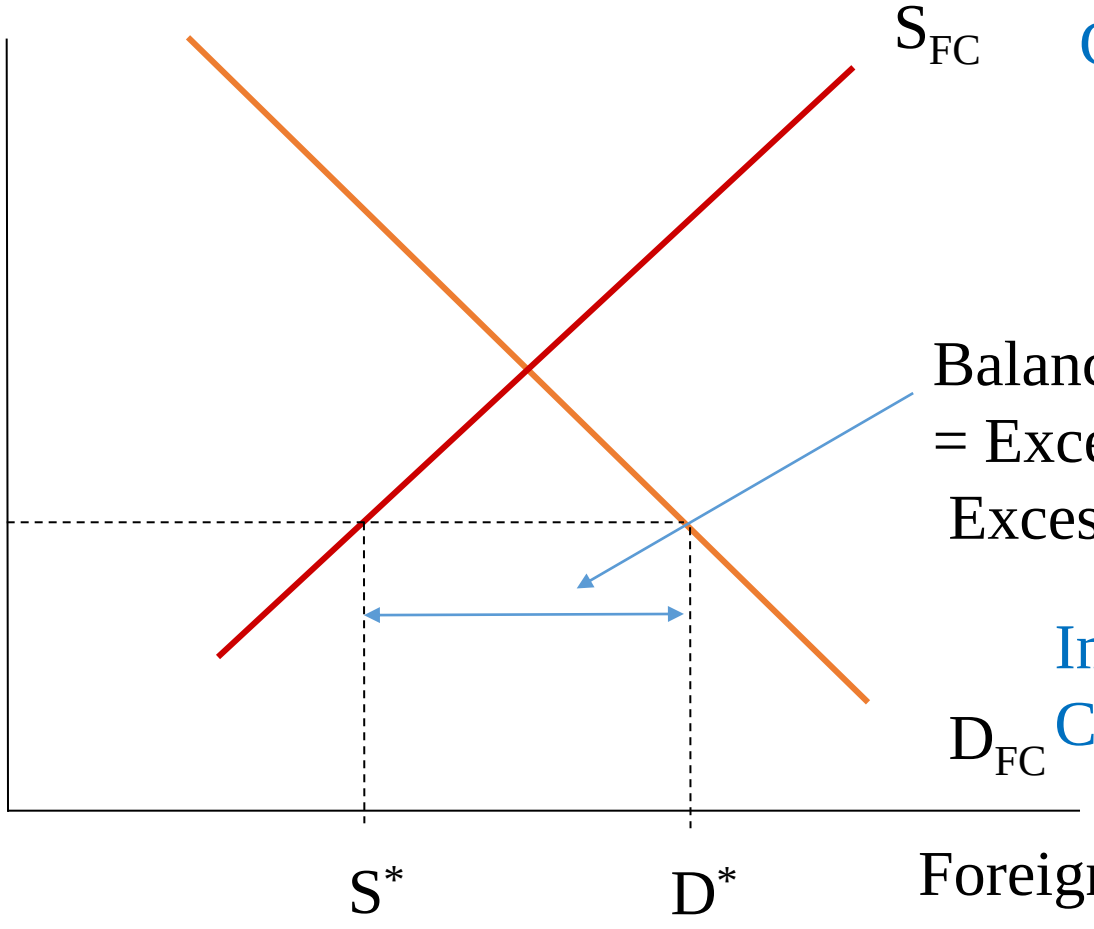
Fiscal Policy under zero and perfect capital mobility



BOP = Current Account (EX-IM) + Financial Account (net capital inflows)

PNG: Market for Foreign Exchange

$$e^* = \frac{1}{0.3} = 3.33$$



Exports +
Capital Inflows

Balance of payments deficit
= Excess demand for forex /
Excess supply of Kina (K607 mn)

Imports +
Capital Outflows

Capital Mobility: Risks

- Current international paradigm
  - inflation targeting central bank: set r (monetary autonomy)
    - BPNG
  - allow e to float
  - risks: excess volatility in e
- alternatively: fix e, give up control of M
  - import monetary policy of country you peg to (uncorrelated shocks)
  - risk of currency crisis: UK (1992), Mexico (1994), Asia (1997), China (20XX?)

- before free float need to build domestic financial sector capacity to deal with exchange risk
  - hedging, forward rates

Brexit

- Brexit: global uncertainty shock – that will last for a long time
  - lower growth
  - uncertain how big - could be quite large
  - if it causes a cascade of EU departures then very large
- effects on PNG; lower global growth, low commodities prices
  - banks safe – SMEs can continue to borrow; large enterprise may be affected
  - may effect sovereign bond issue (market reluctant to risk)
- possible vulnerabilities:
  - China

Export boom, Fiscal expansion (small or big)

Mundell-Fleming model