

EE 460: External Disequilibrium Adjustment

Bhanupong

Lecture 21

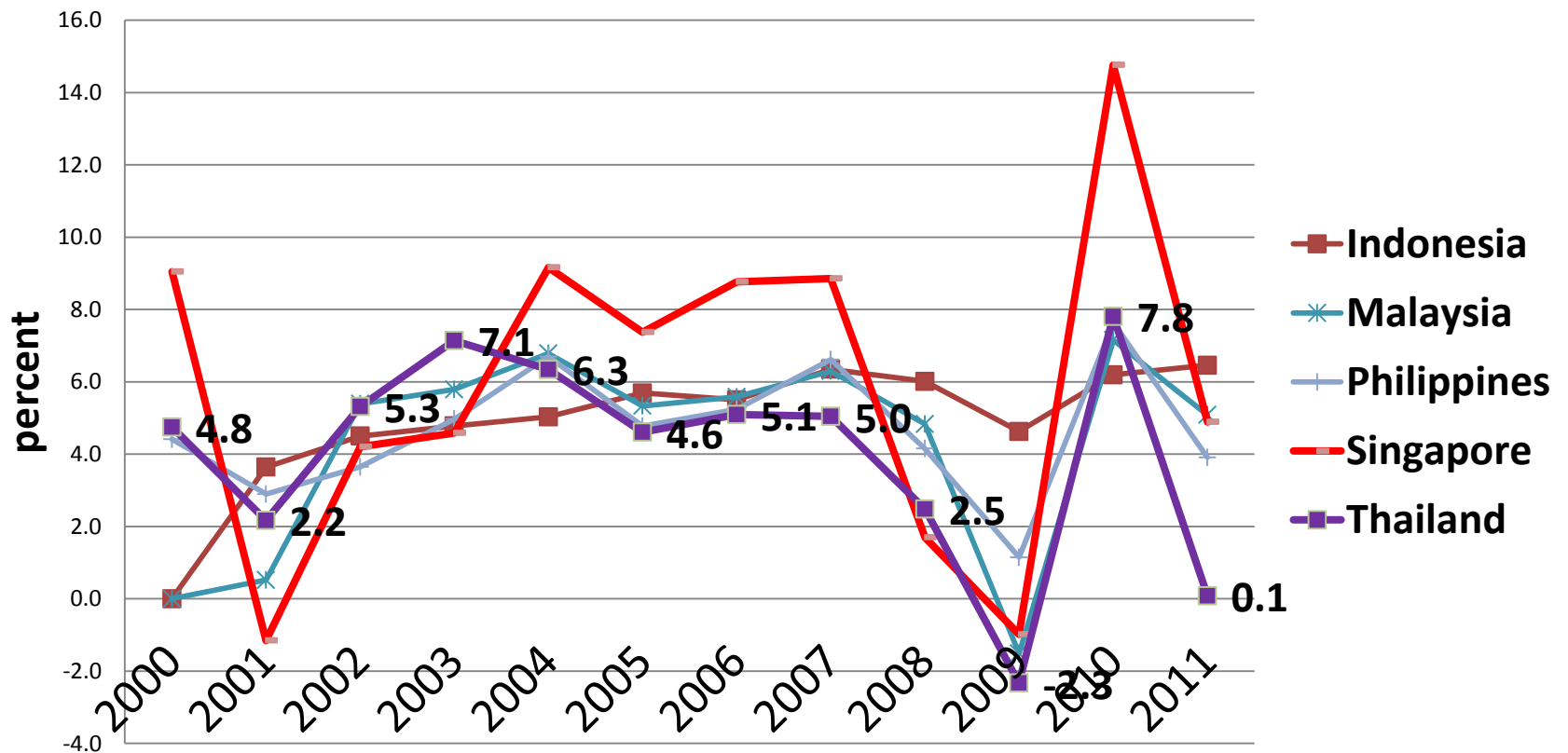
What are mechanisms for disequilibrium adjustment?

Main themes

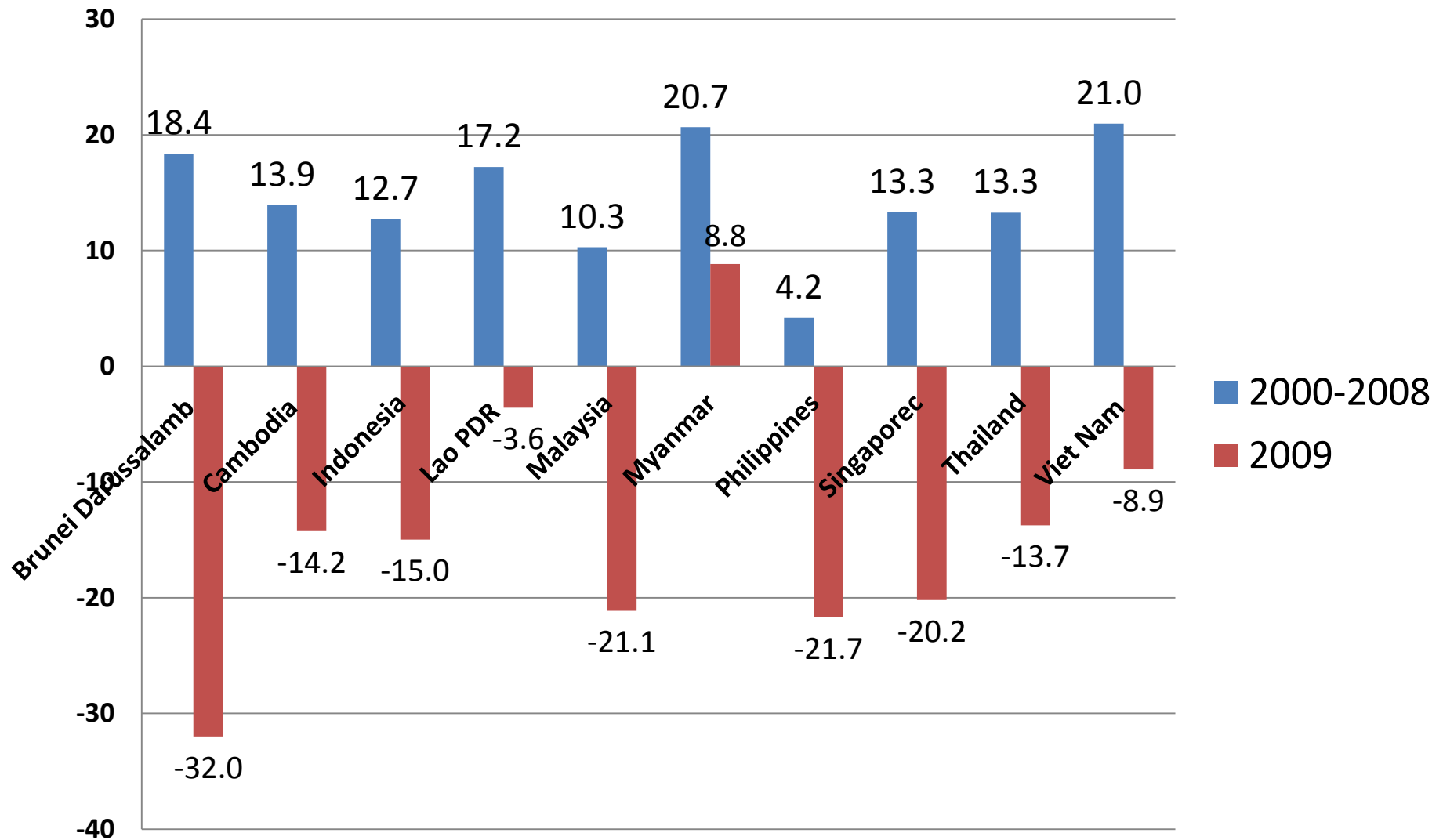
- Increasing financial and trade Integration
- Current account disequilibrium
- Determinants of investment-saving gap
- Role of exchange rate adjustments
- Policy responses to current account disequilibrium

Growth Synchronization

GDP Growth: ASEAN 5

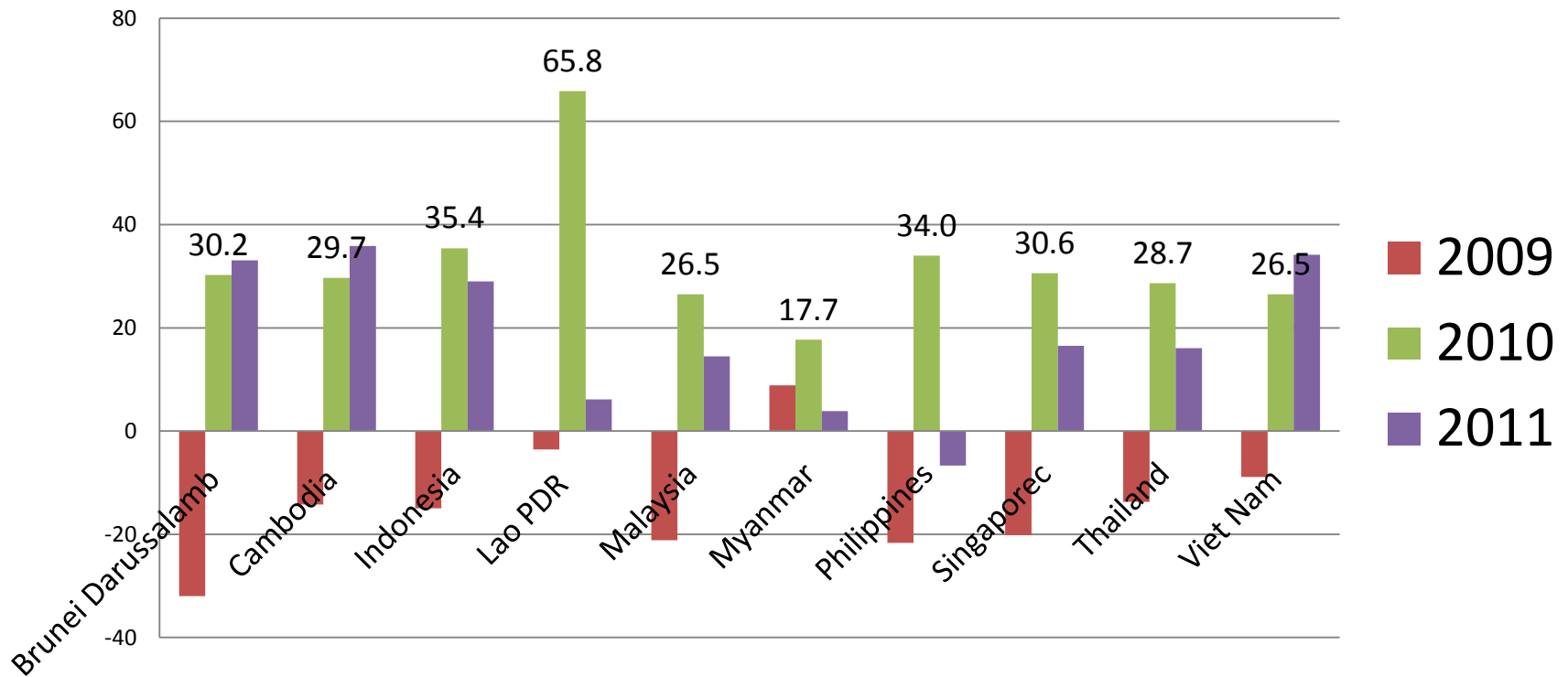


Impact of GFC on Exports (% change)



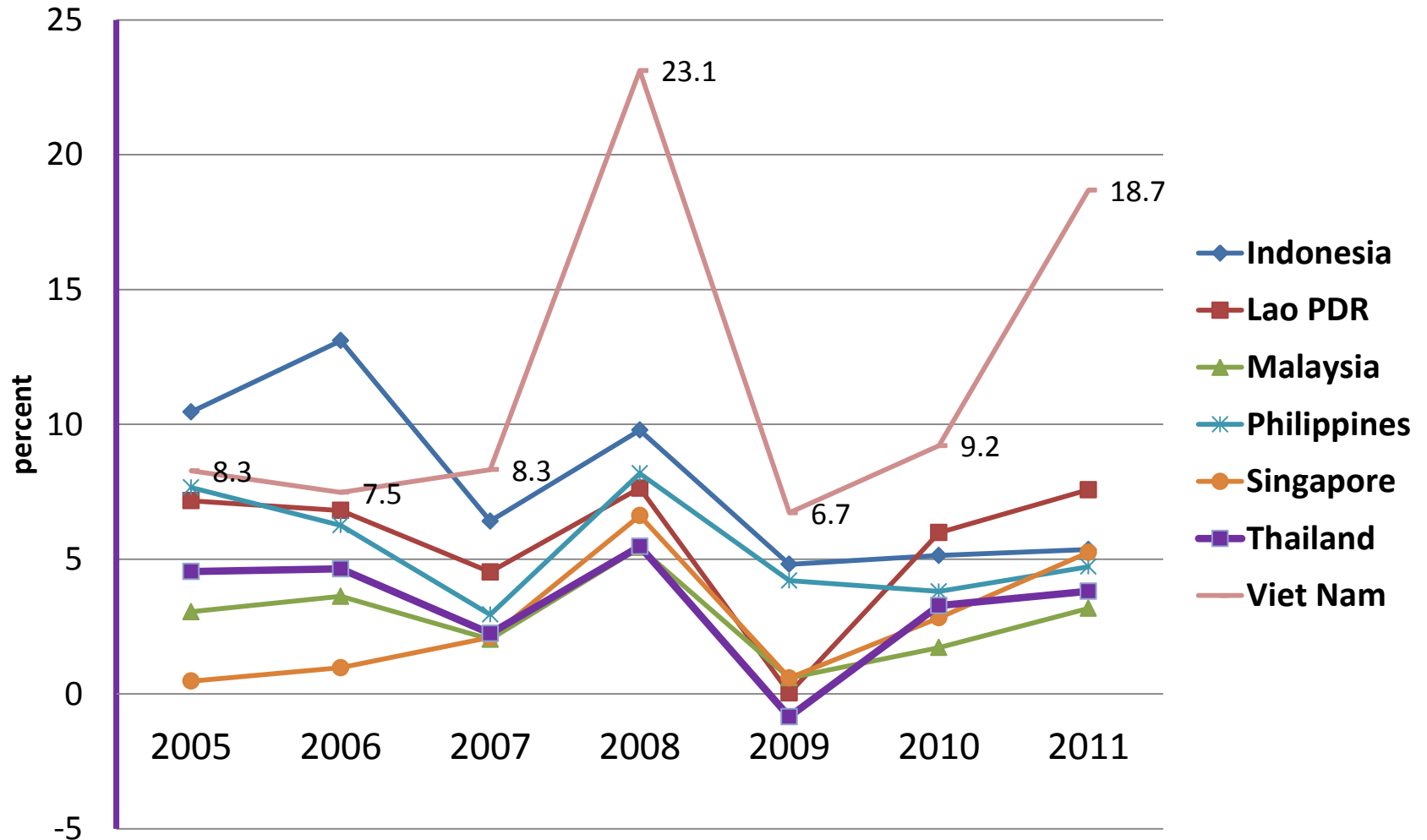
What do ASEAN have in common?

**Impact of GFC on Exports
(% growth)**



Inflation synchronization

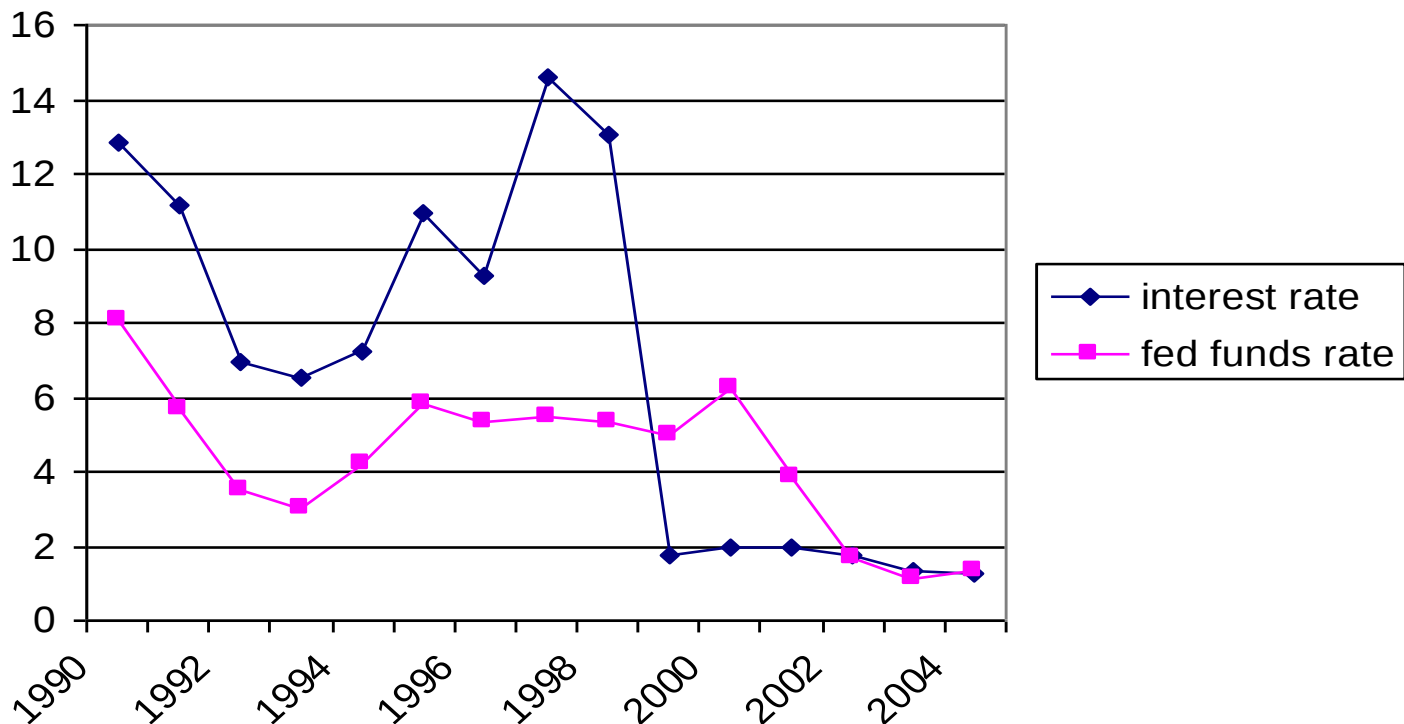
Inflation in Southeast Asian Economies



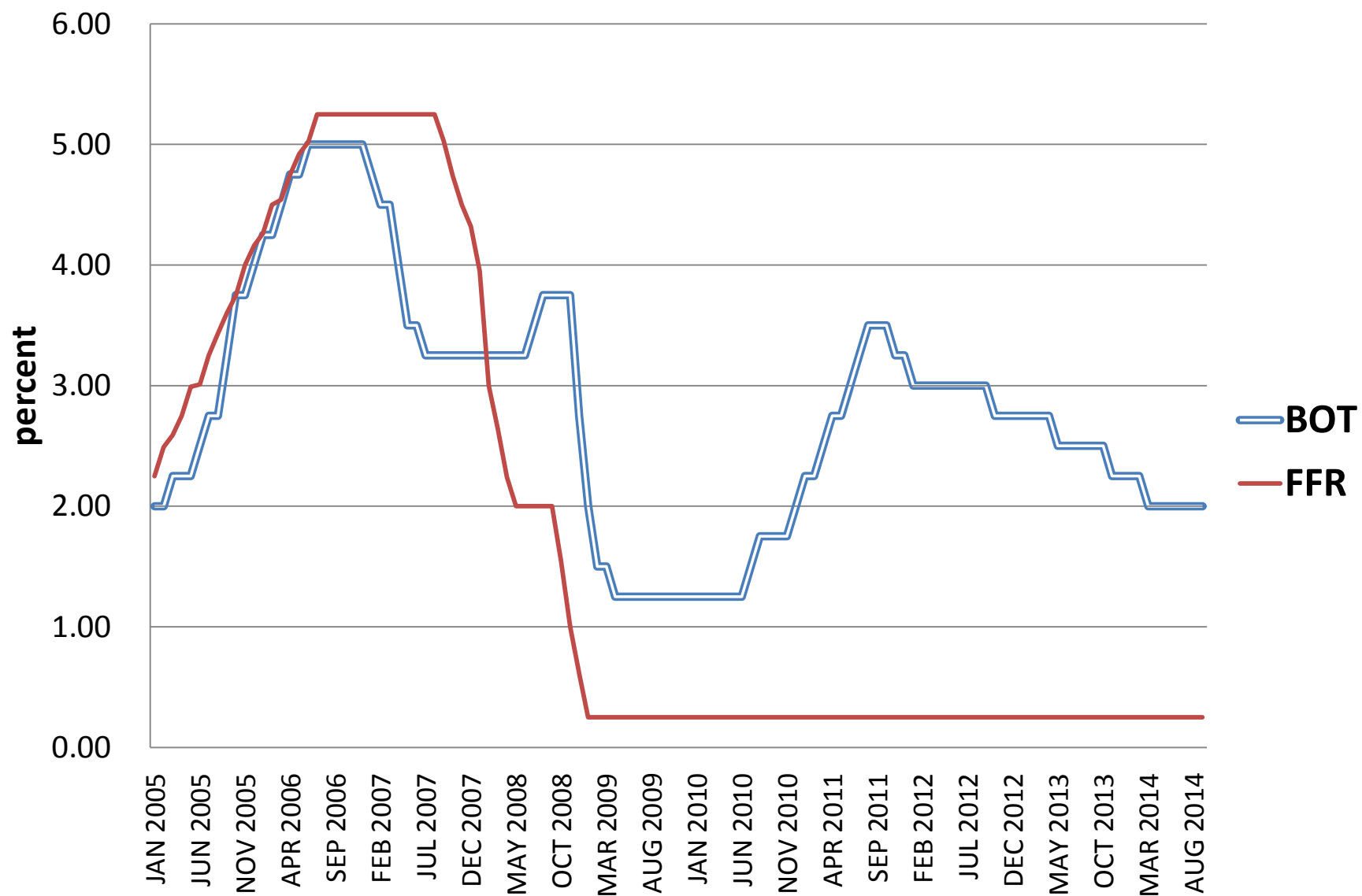
Narrowing the interest gap

What is the implication?

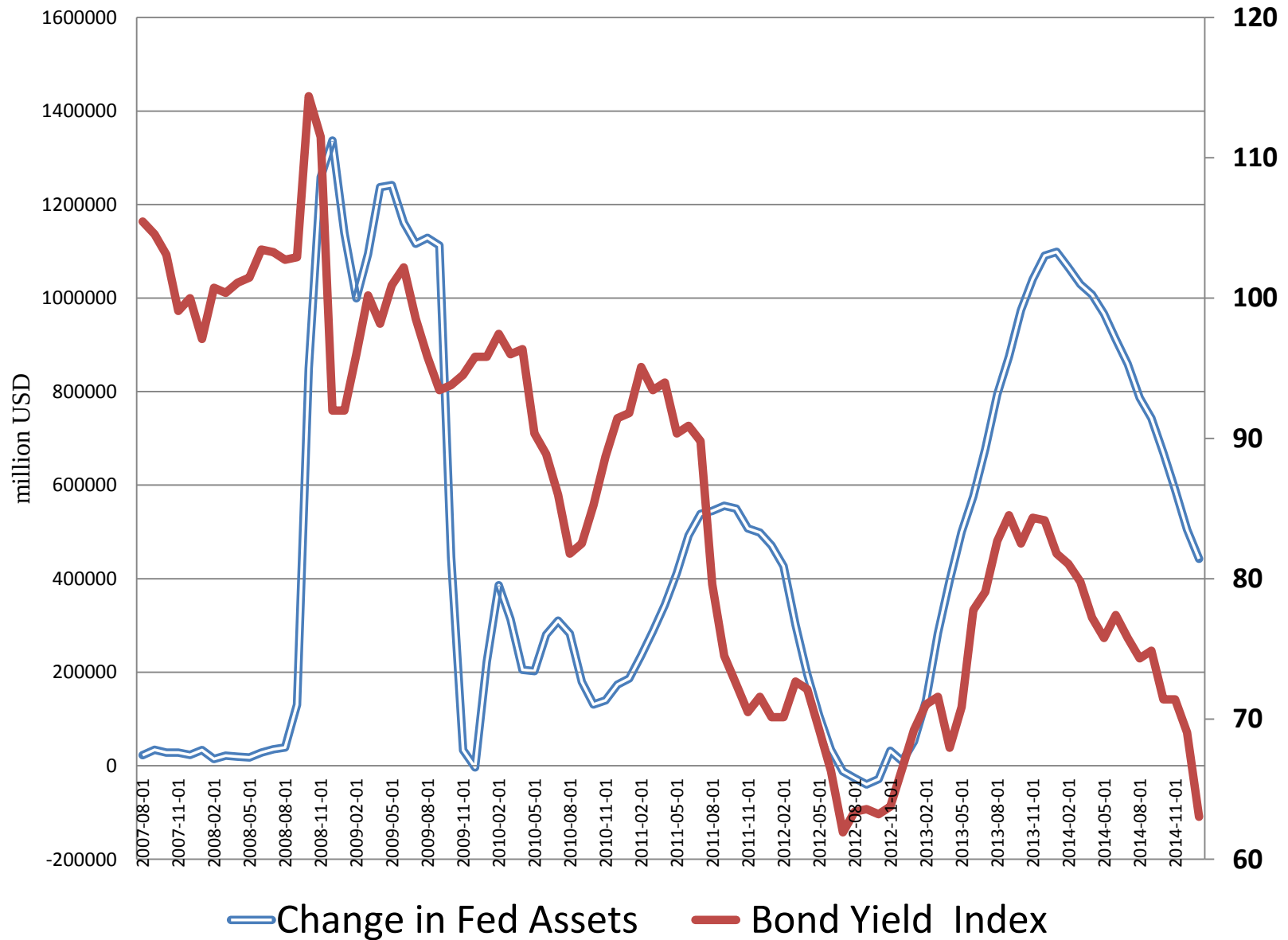
Money market interest and fed funds rates



BOT policy rate and Federal funds rate

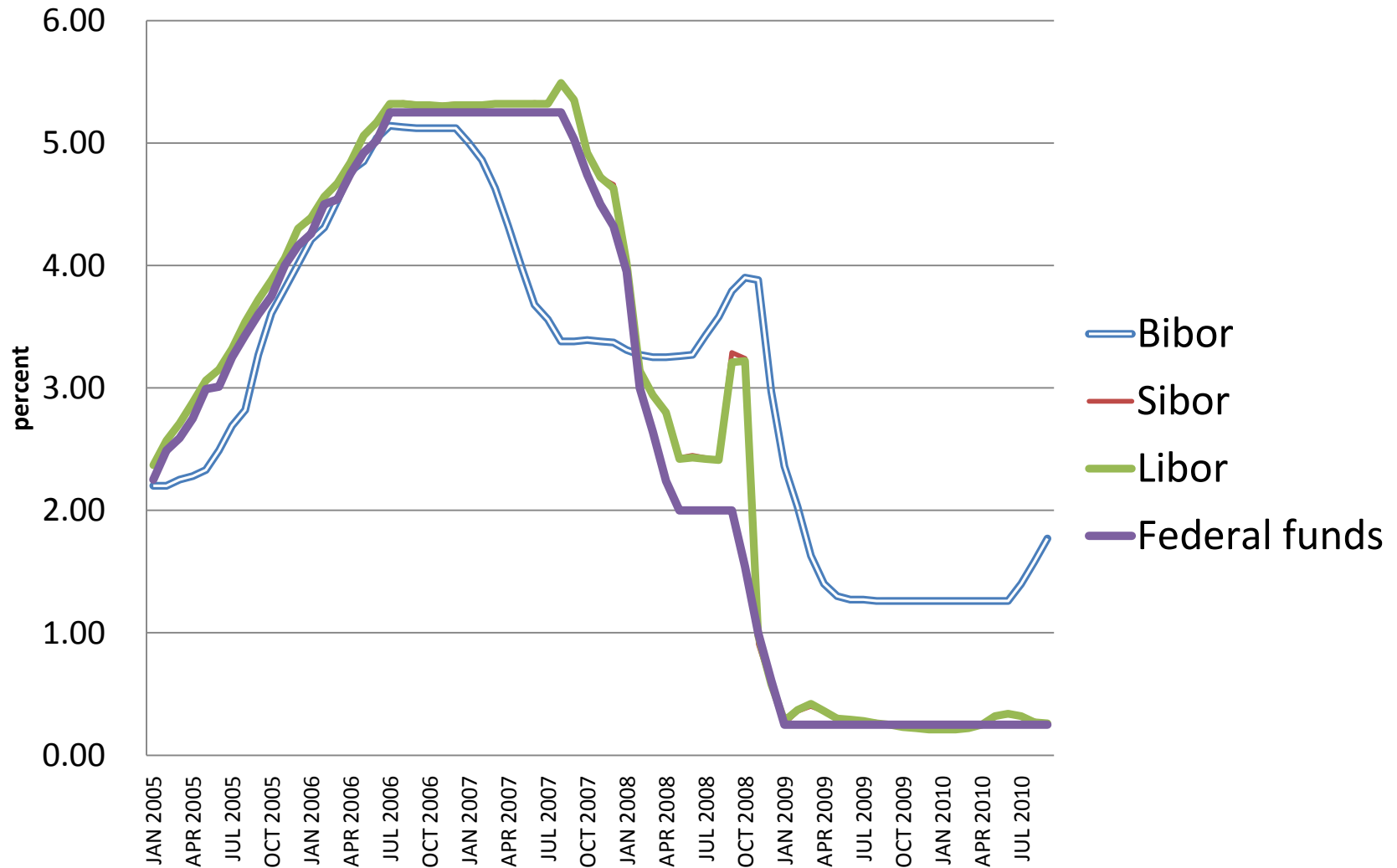


QE and Corporate Bond Yield in the US

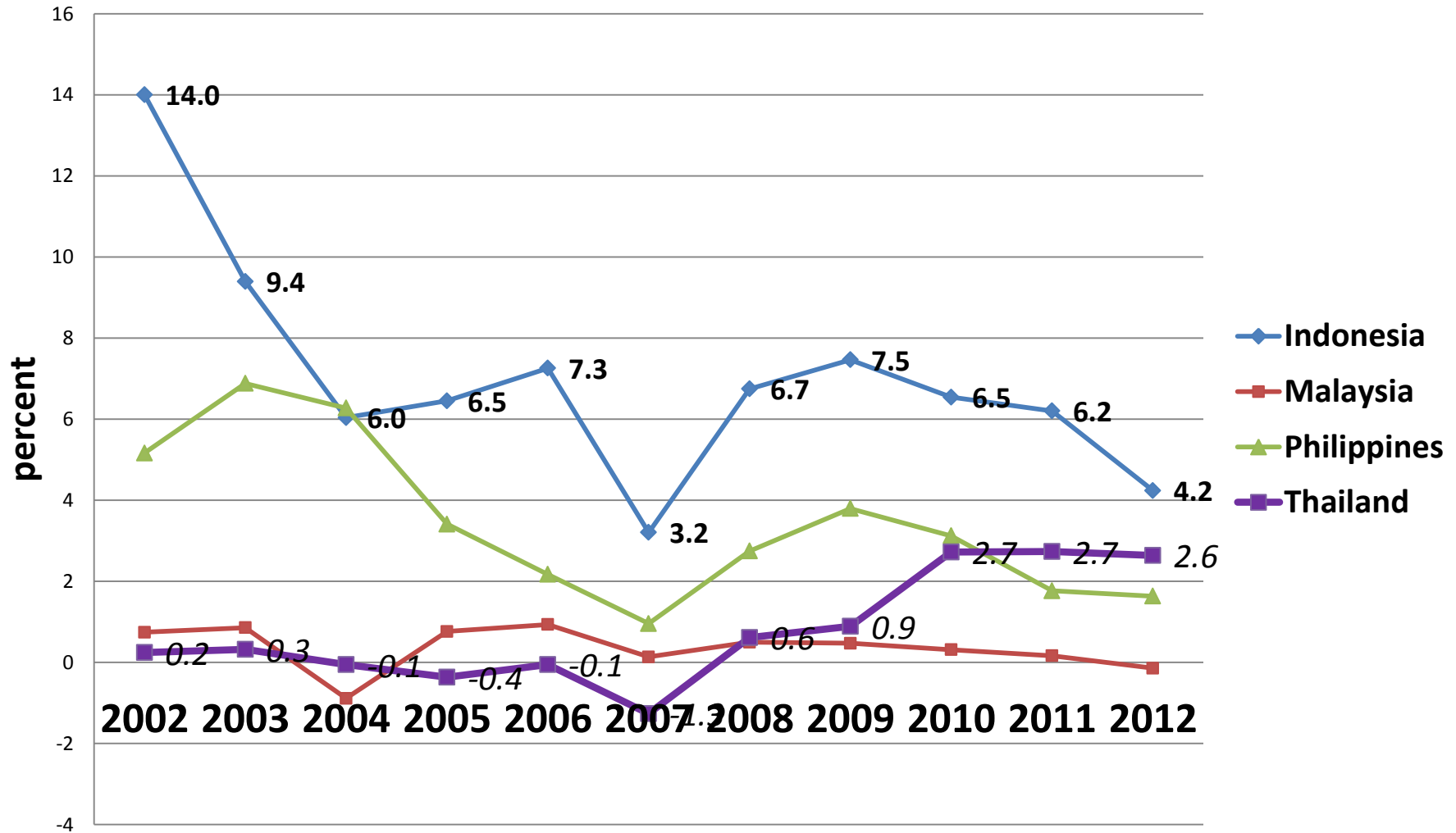


Interbank offered rates: Jan 2005-Sep 2010

(Maturity: one week)



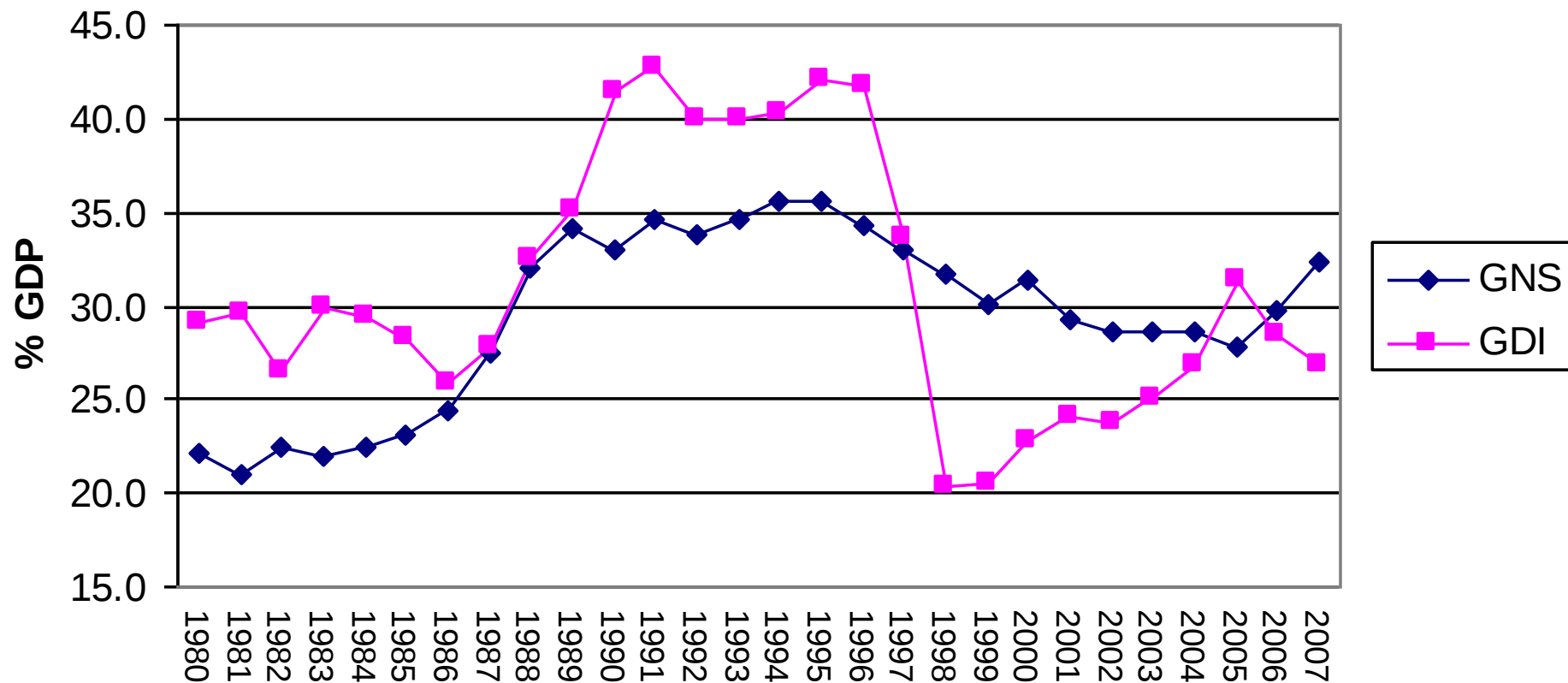
Money market rate differentials vis-à-vis Singapore



Financial globalization

- Short term interest rates are closely related, reflecting free capital movements.
- Singapore's money market is more closely related to London, when compared to Bangkok's.
- Short-term money markets are less volatile in Bangkok, indicating higher degree of intervention by the BOT through adjusting the key policy rate.

Investment and Saving Rates



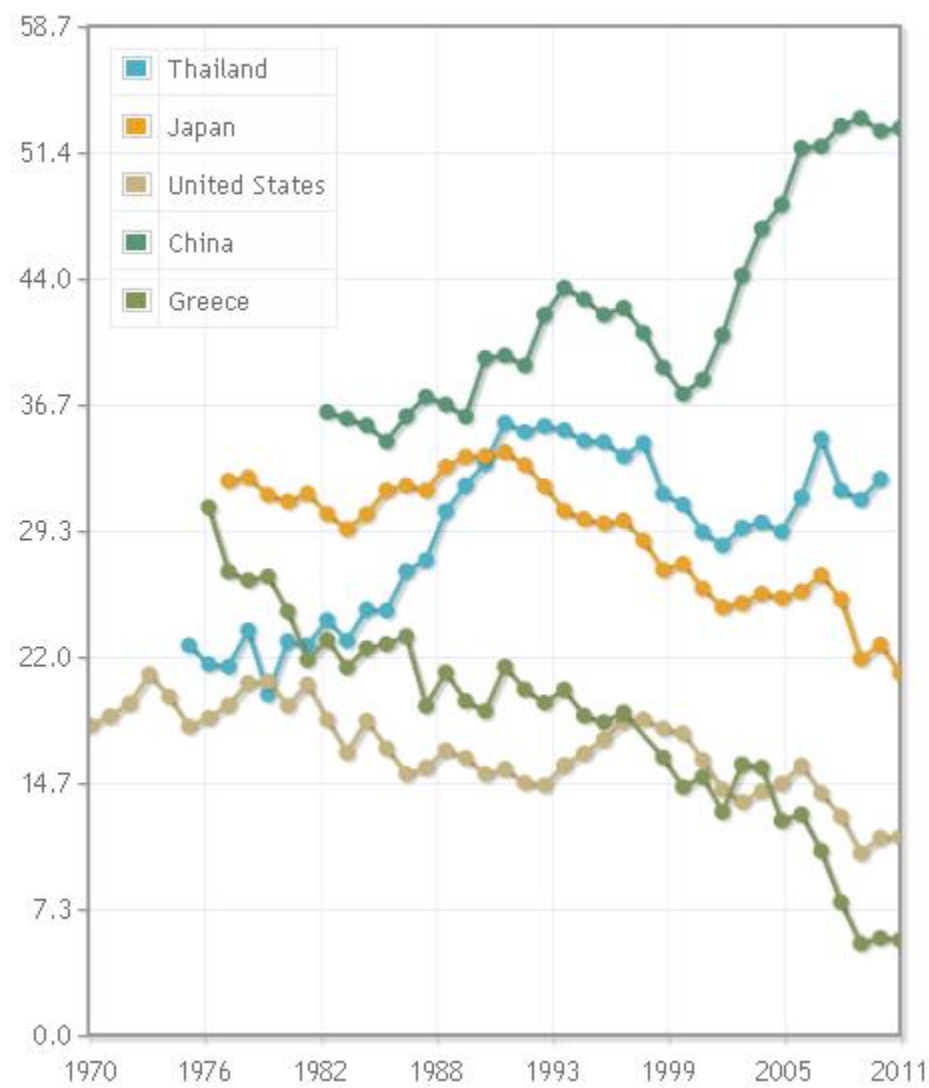
Source: NESDB

Saving and Output growth rates

- $S_t = \alpha + \beta Y_t$
(implied by absolute income theory of consumption)
- $(S/Y)_t = \alpha/Y_t + \beta$
- $s = \alpha/[(1+g)Y_{t-1}] + \beta$
- s = saving rate, g = growth rate
- Since $\alpha < 0$, $\partial s / \partial g > 0$
- There is a positive impact of growth on saving rate.

Gross savings (% of GNI)

Gross savings are calculated as gross national income less total consumption, plus net transfers.



$$I/Y = \alpha + \beta(S/Y) + \varepsilon$$

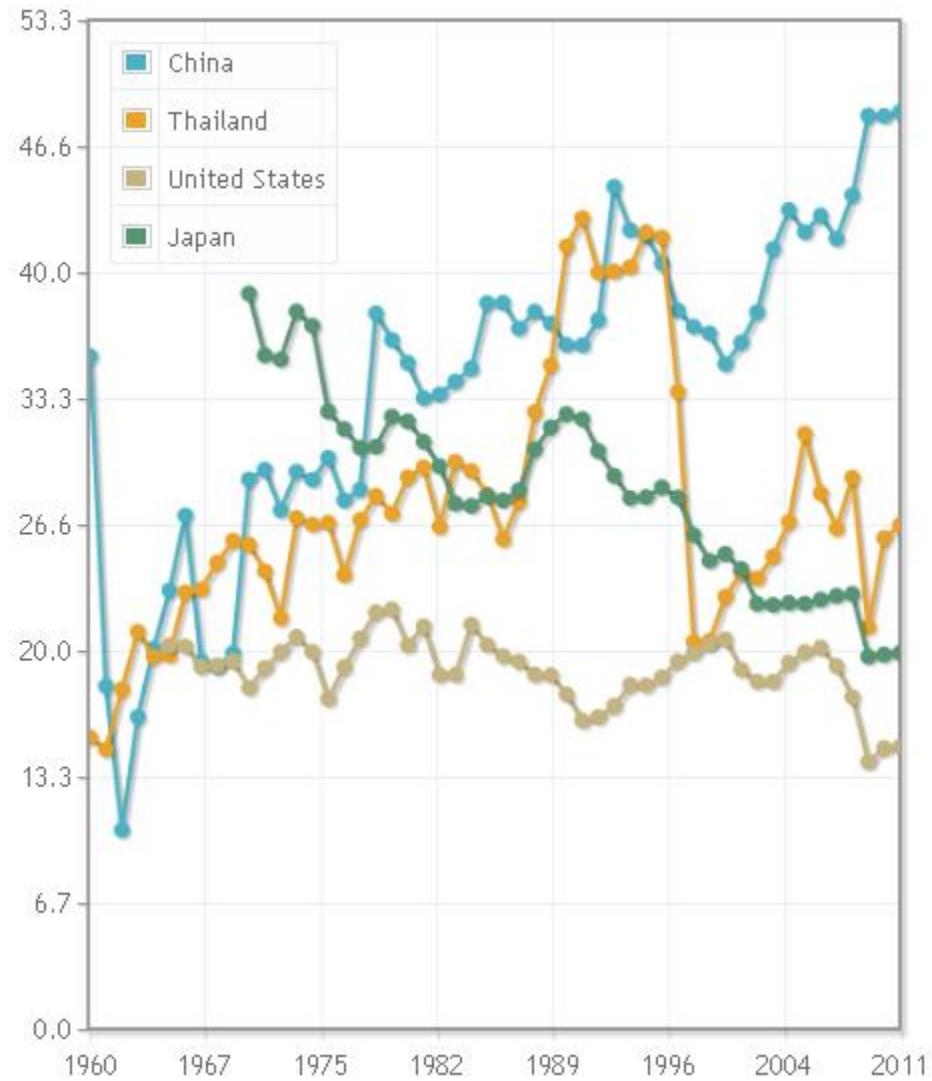
- Martin Feldstein and Charles Horioka (EJ 1980)

"with perfect world capital mobility, there should be ***no relation between domestic saving and domestic investment***: saving in each country responds to the worldwide opportunities for investment while investment in that country is financed by the worldwide pool of capital."

- In a cross-section study:
if capital mobility is perfect, The estimated coefficient $\beta=0$

Gross capital formation (% of GDP)

Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories



Current account deficit: Absorption (**A**) approach

- $M - X = (I - S) + (G - T)$

The twin deficits

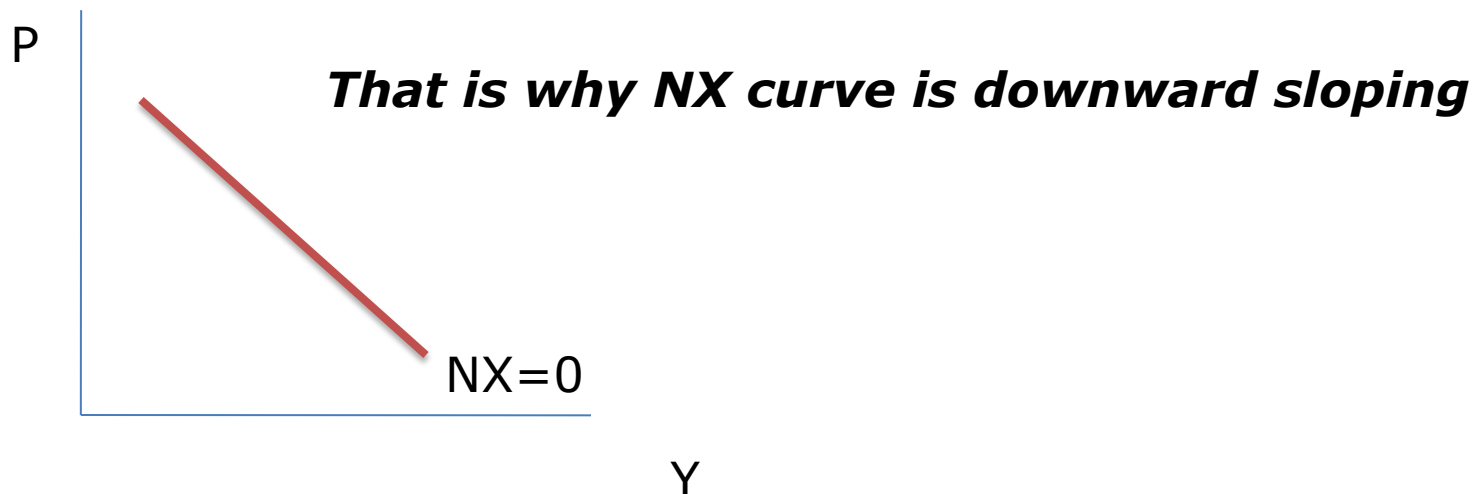
- $M - X$ can be thought of as foreign savings used to finance investment gap and budget deficit
- $Y = C + I + G + (X - M) = \mathbf{A} + (X - M)$
- $(X - M) = Y - \mathbf{A}$

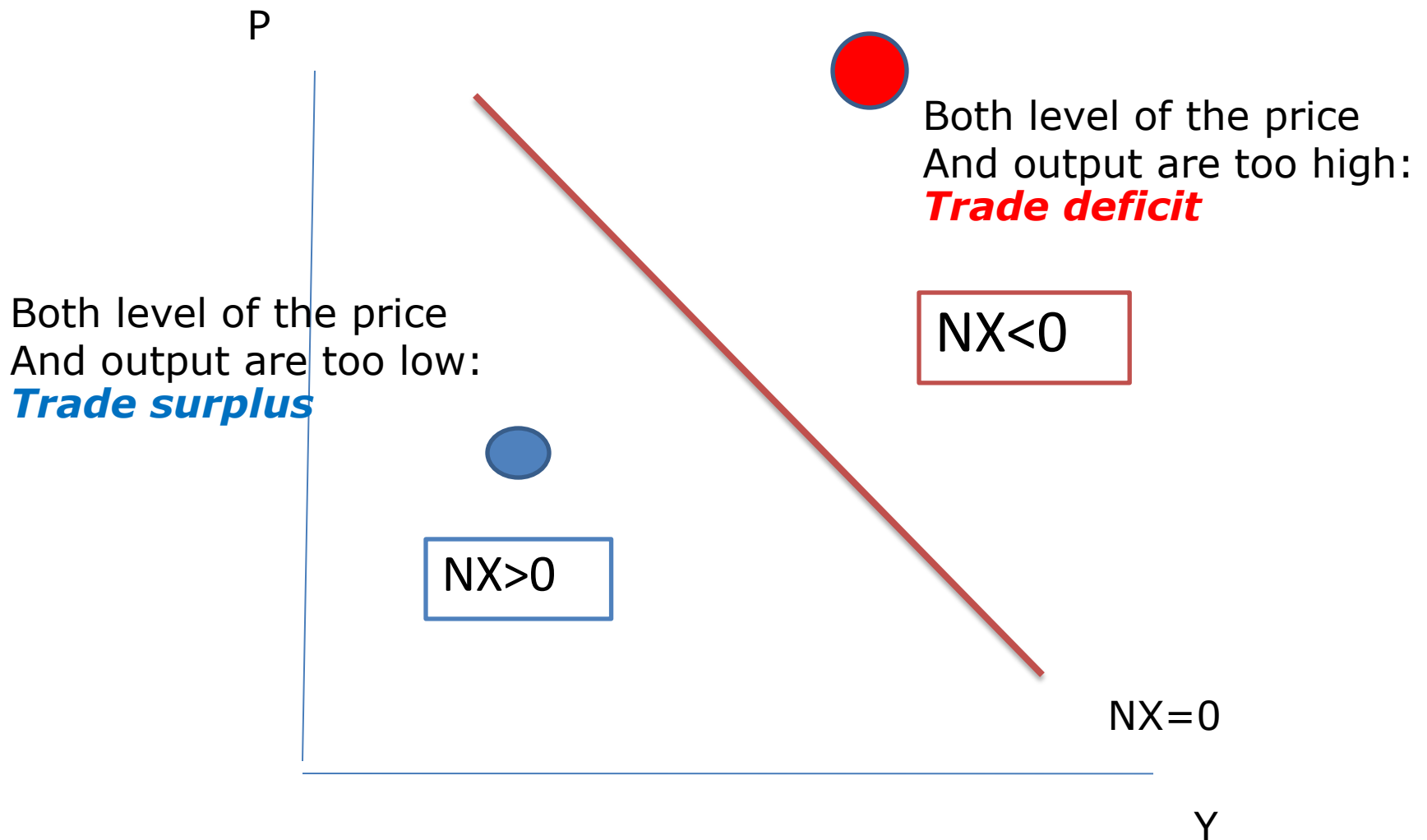
Current account deficit: Absorption (A) approach

- To reduce trade deficit, domestic absorption must be curtailed, if Y cannot be raised.
- The approach ignores the price effect (exchange rate)
- $NX = X - M$
- $NX = 0$ at the trade balance equilibrium

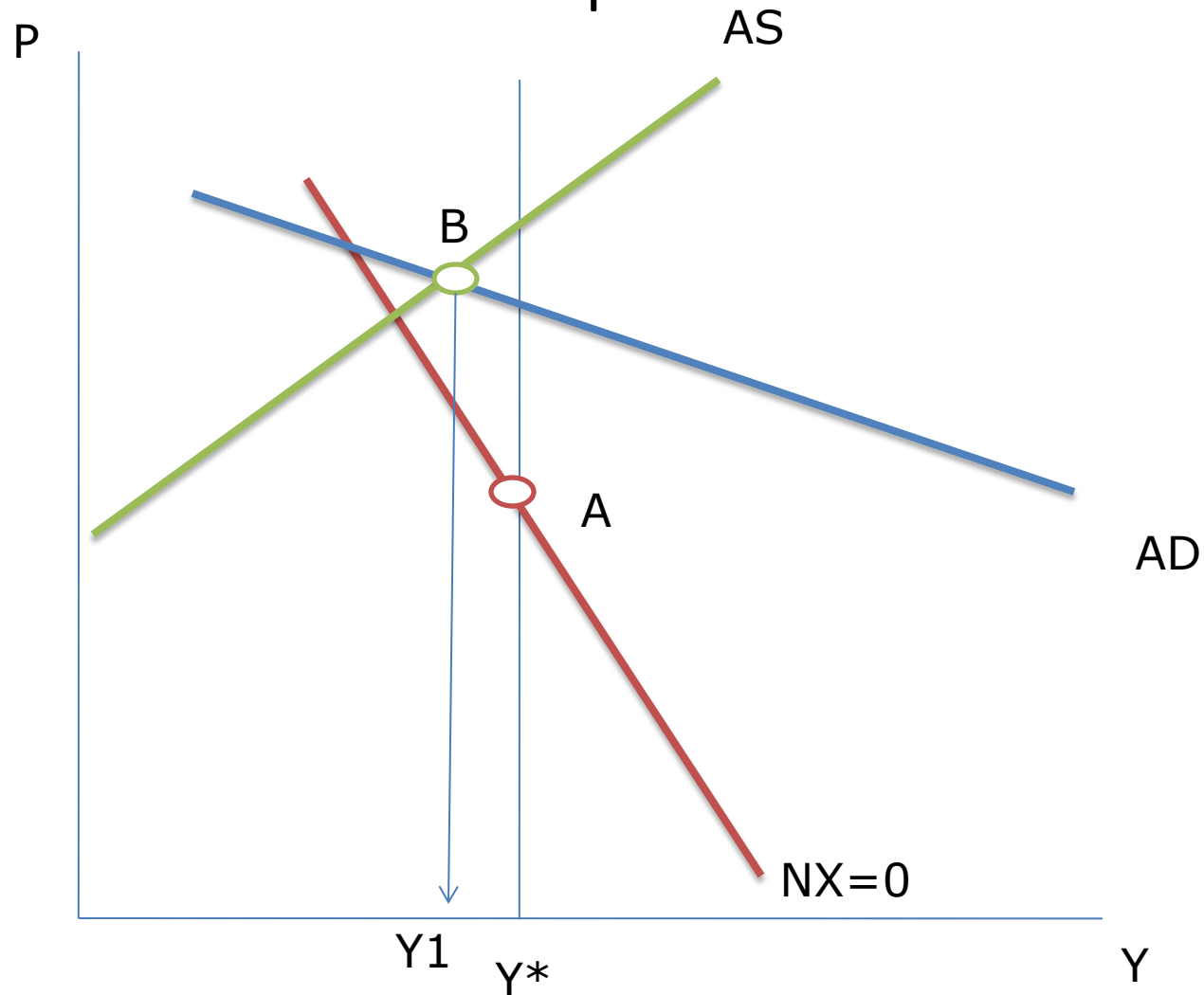
$$NX=0$$

- An increase in income raises imports and worsens the trade balance.
- To restore trade balance equilibrium, domestic prices would have to be lower to make home country more competitive, raise exports, and reduce imports.





An open economy with internal equilibrium and external disequilibrium



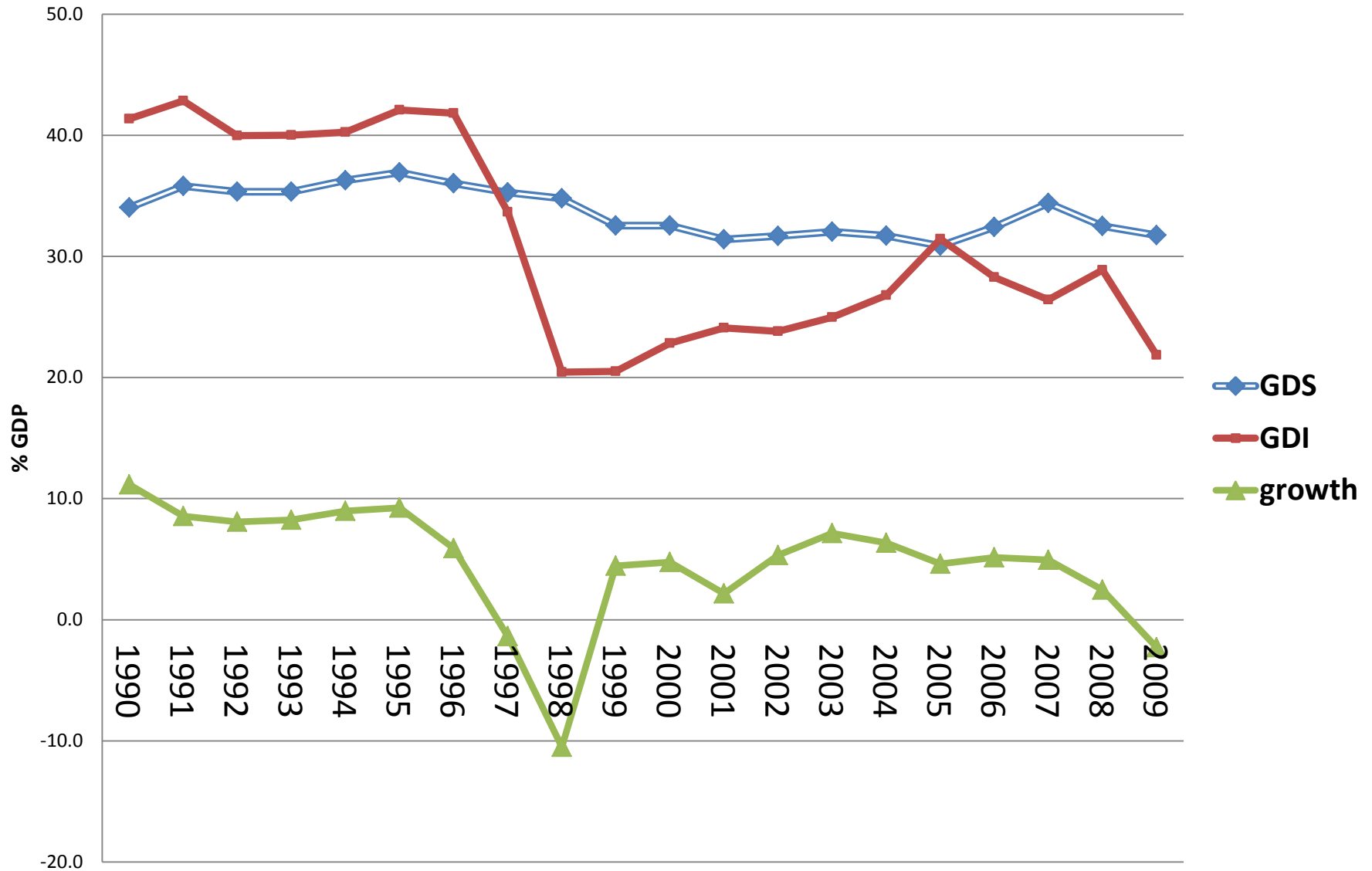
Macroeconomic equilibrium at point B ($AD=AS$)
at less than full employment income (Y^*) and **$NX < 0$** .

$$NX = X(Y_f, \frac{eP_f}{P}) - IM(\frac{eP_f}{P}, Y)$$

$$\text{Real exchange rate} = \frac{eP_f}{P}$$

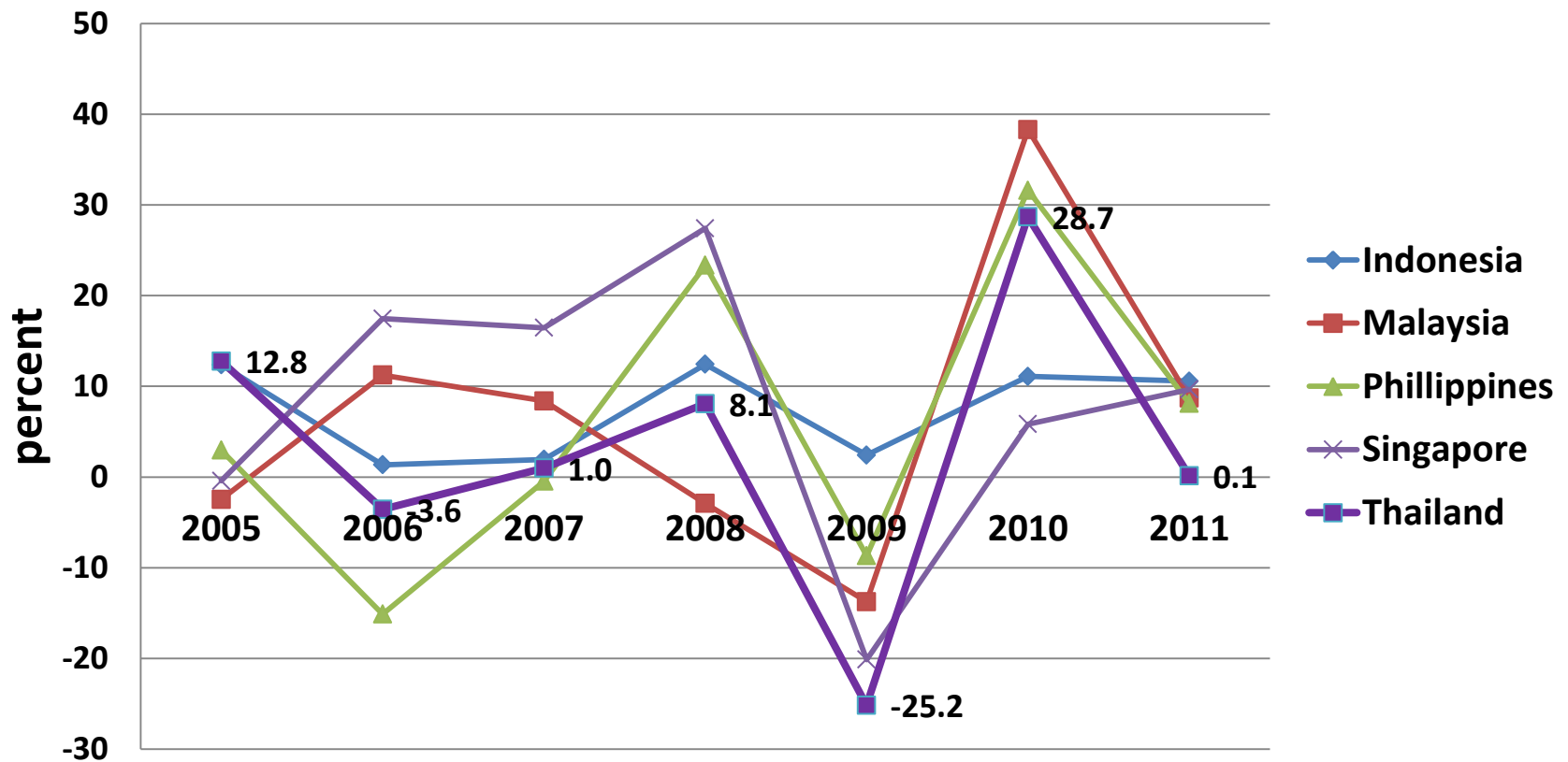
$$e = \text{Baht} / \$$$

Domestic Saving and Domestic Capital Formation



Investment synchronization

Gross Domestic Investment



Investment and growth

- $\Phi = K/Y =$ capital-output ratio
- $\Delta K = \Phi \Delta Y$
- $I/Y = \Phi \Delta Y/Y$
- $I/Y = f(g); f' > 0$
- Accelerator effect of growth on investment
- There are other factors determining investment rate: credit availability and the interest rate.

$$BP = NX\left(Y, \frac{eP_f}{P}\right) + CF\left(i - i_f - \frac{\Delta e}{e}\right)$$

$$\frac{\Delta e}{e} = \text{expected depreciation}$$

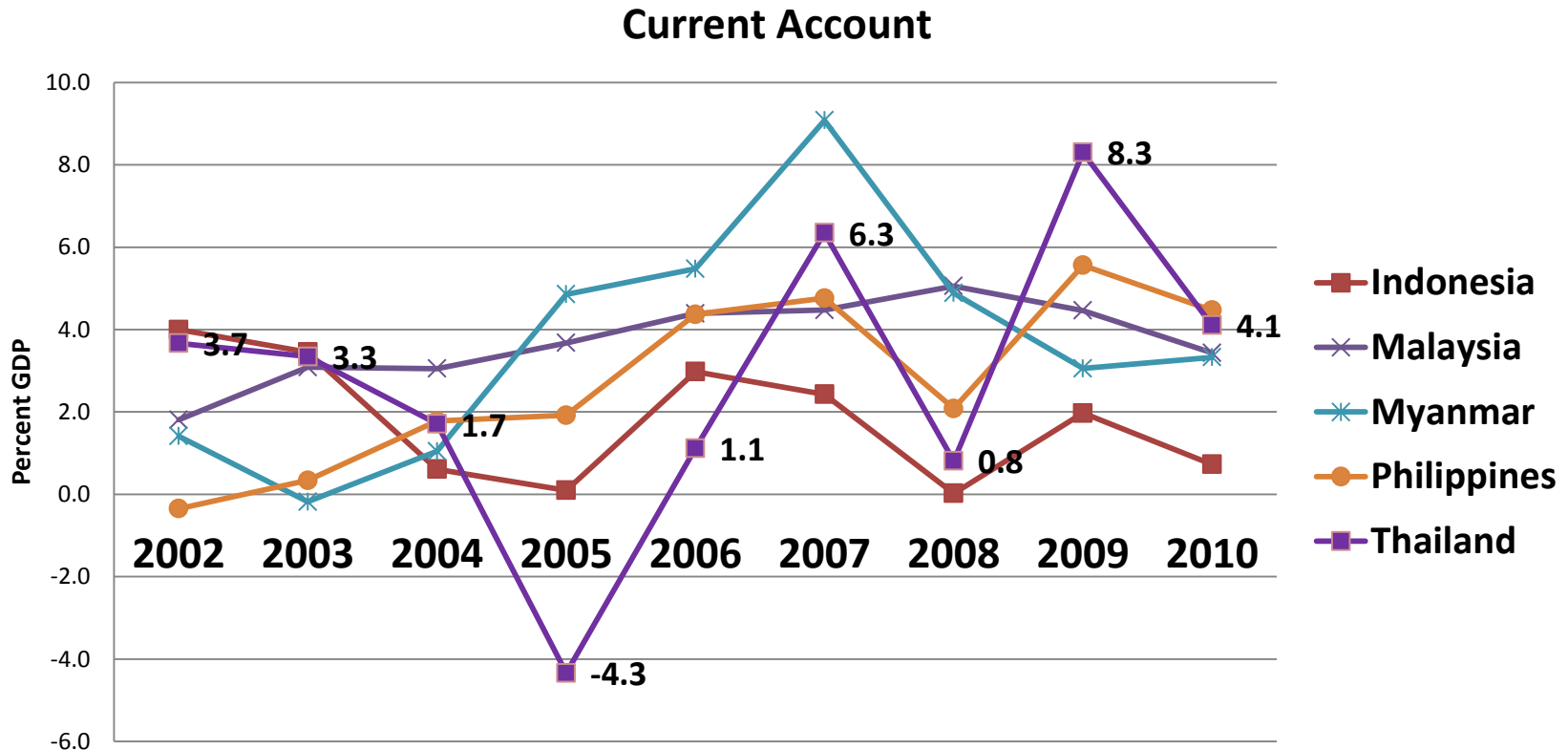
Interest rate differentials BOT Policy rate and FFR



Determinants of current account balances

- Growth
- Real interest rates
- Capital inflows
- Inflation
- Exchange rates
- Fiscal imbalance
- *These determinants are intricately related.*

What do ASEAN countries have in common?



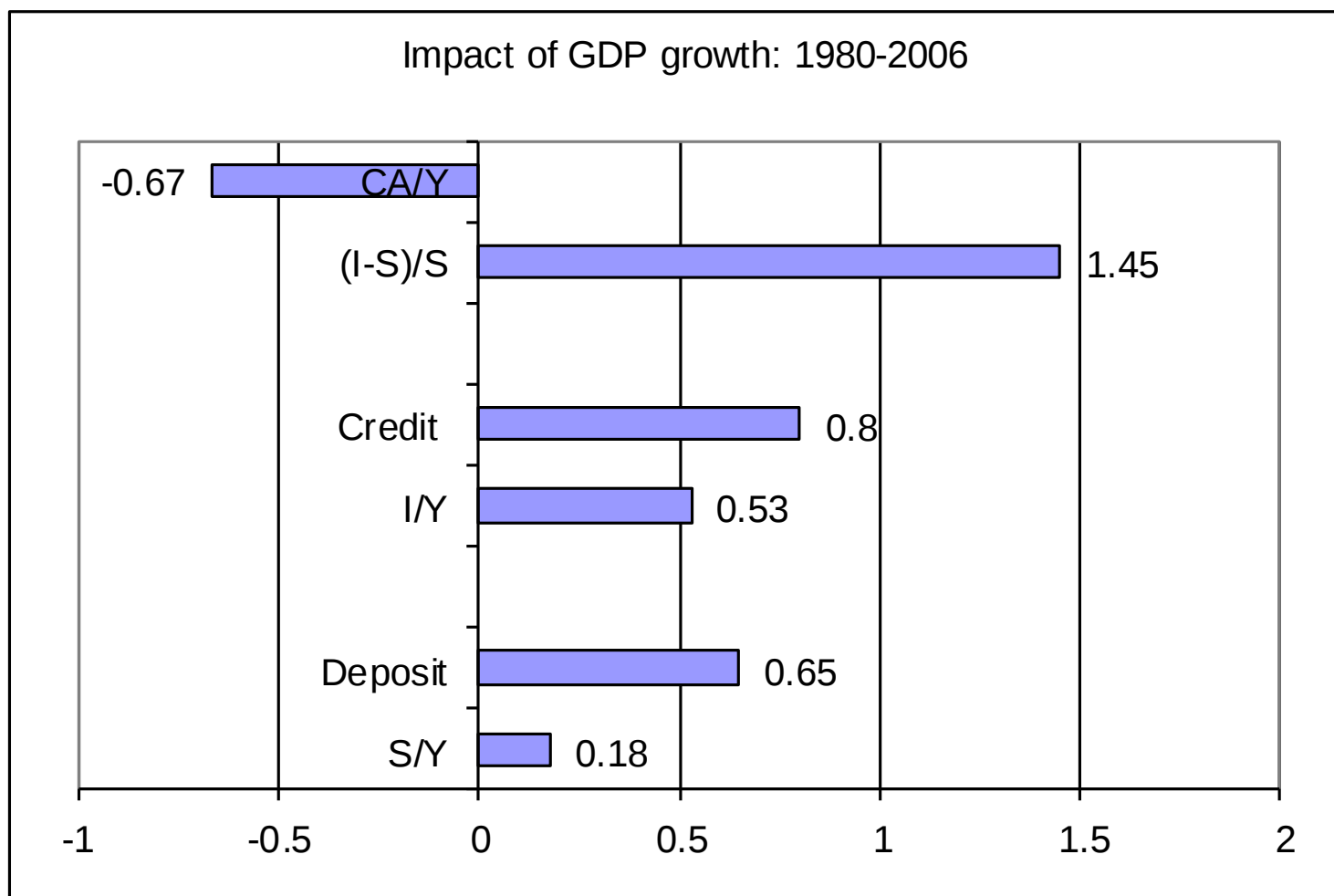
Growth, financial resource, and current account deficit

- Higher expected growth generates demand for credit requires by investors to expand their plants.
- Higher growth increases permanent income and raises saving deposits.
- If loan growth outpaces deposit growth, interest rates tend to rise.

Why does strong growth lead to current account deficit?

- Output growth leads to strong demand for imports of raw materials and capital goods.
- If growth is not export-driven, growth can lead to problem with current account.

When the Thai economy was expanding

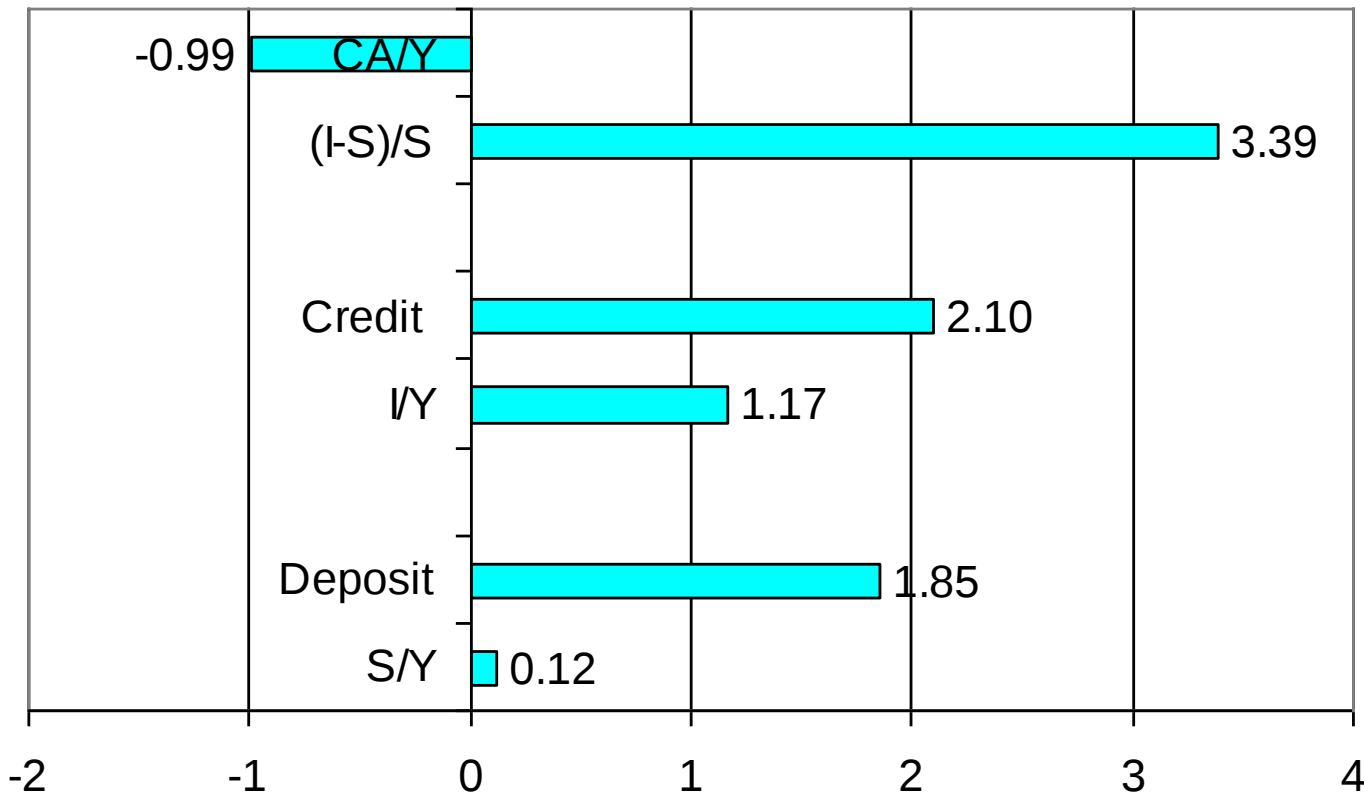


Why strong growth may lead to problems

- Investment rises faster than savings.
- Bank credit grows faster than deposits.
- Investment-savings gap is widening.
- Current account deficit deteriorates.
- However, during economic downturn, we observe surplus in current account.

When interest rates rise:

interest rate impact: 1980-2006

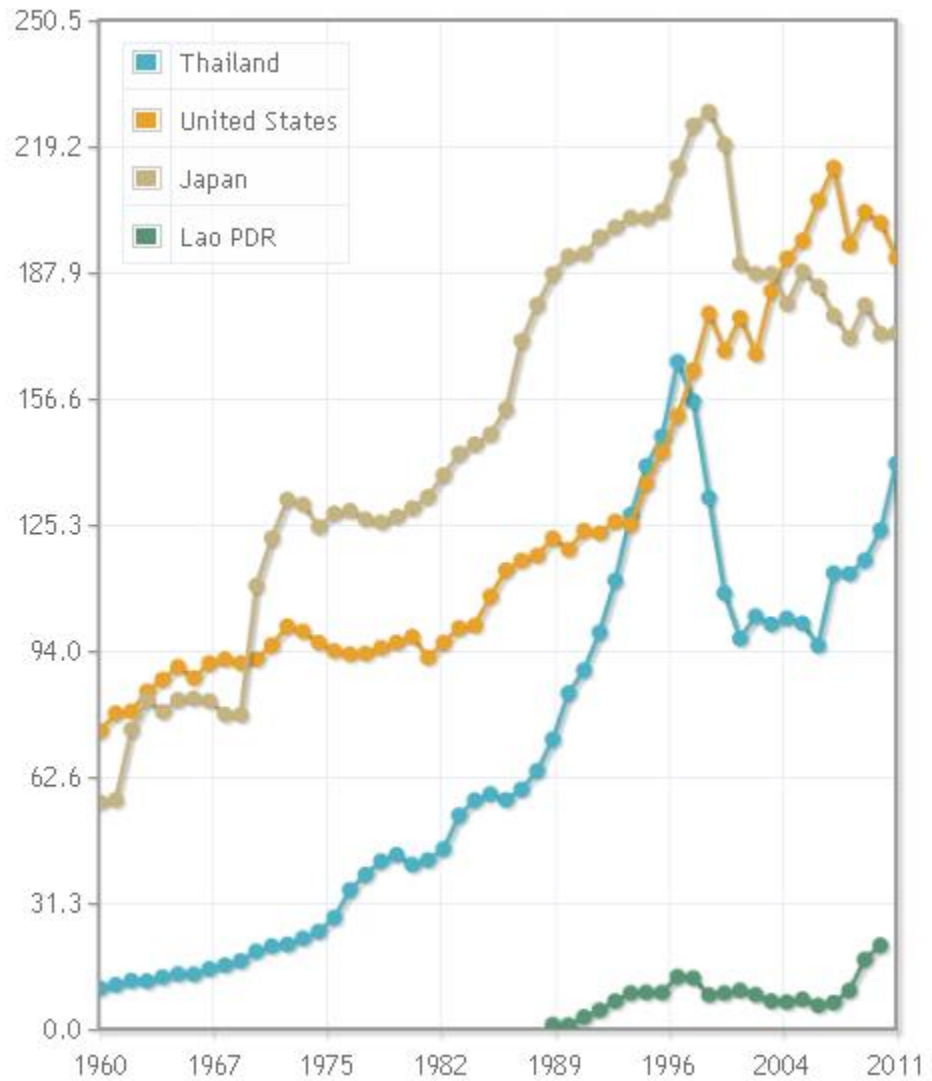


As domestic interest rate rises

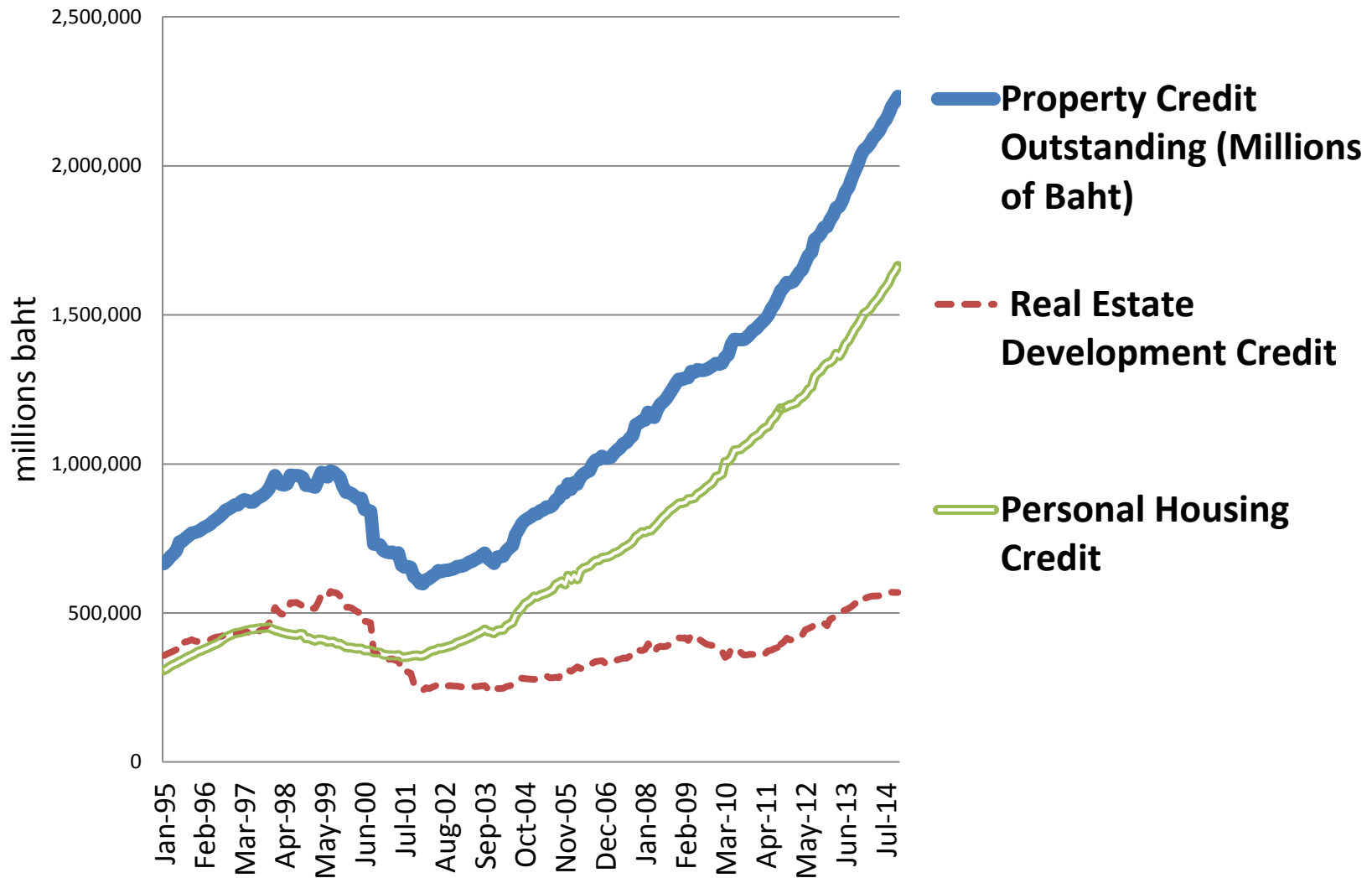
- Bank credit expands (supply of loan)
- Bank deposit grows
- Bank can borrow from abroad if domestic savings are insufficient.
- Demand for credit should fall, other things being equal.
- With higher expected growth, interest rate rises could lead to widening investment-saving gap.

Domestic credit to private sector (% of GDP)

Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment.



Property Credit Booms



Equilibrating interest rates?

- Similar to growth impacts on current account, interest rates are pro-cyclical.
- Investment-saving gap is widening when interest rate increases, causing external instability.
- With increasing integration, capital flows would mitigate the rise in the domestic interest rates.

A conventional strategy

- Growth is the first priority, in particular export growth.
- Capital inflows propel private investment.
- Exchange rate appreciation should be delayed as much as possible.
- Engineer competitive (though unrealistic) exchange rates to drive exports.

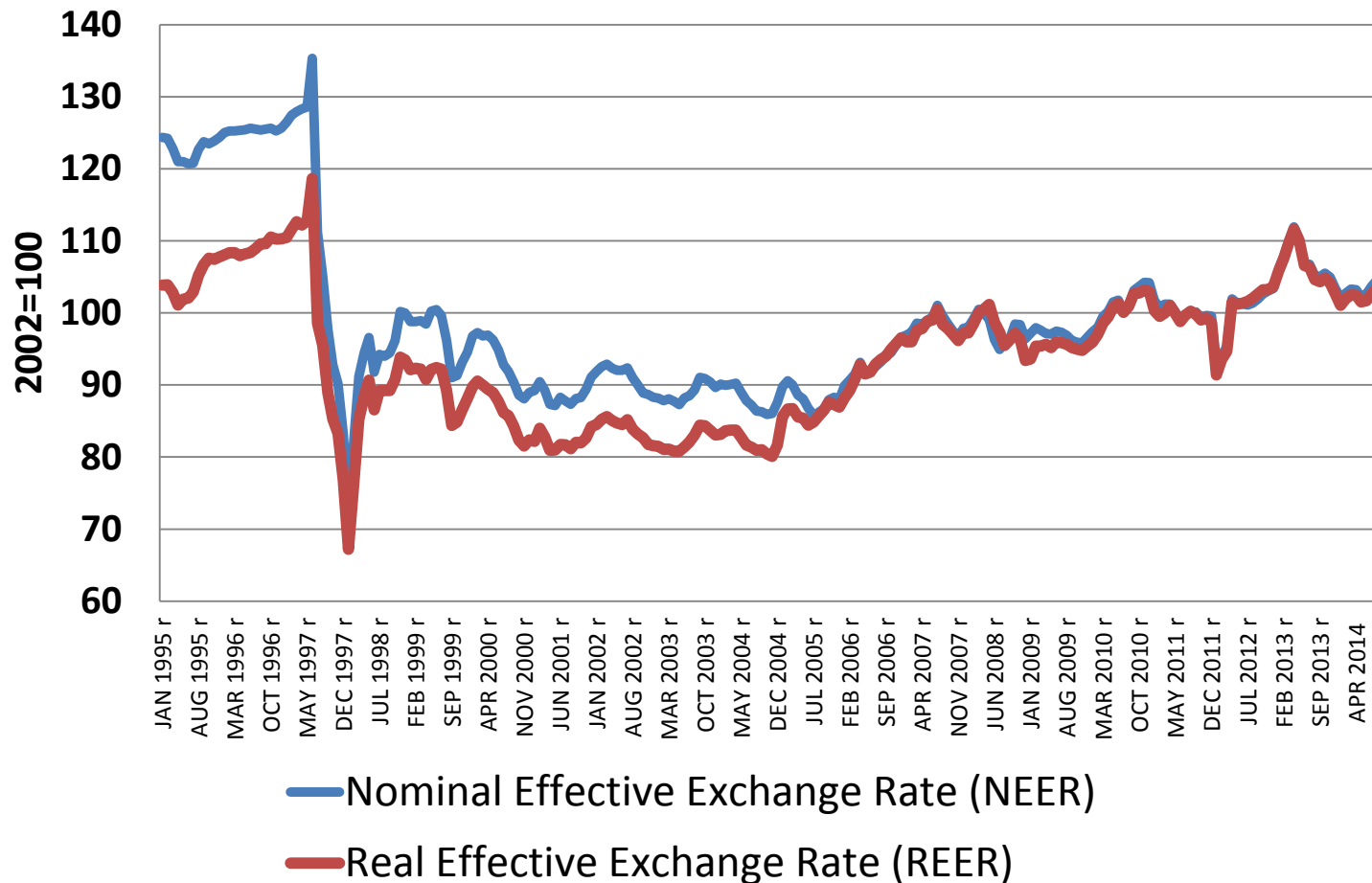
Growth Drivers

- During period of growth acceleration, private consumption and investment play a leading role.
- During growth slowdown, with the absence of fiscal stimulus, net exports are the ***only*** growth driver.
- Favorable external markets conditions and competitive exchange rates helped to boost exports in 2007.

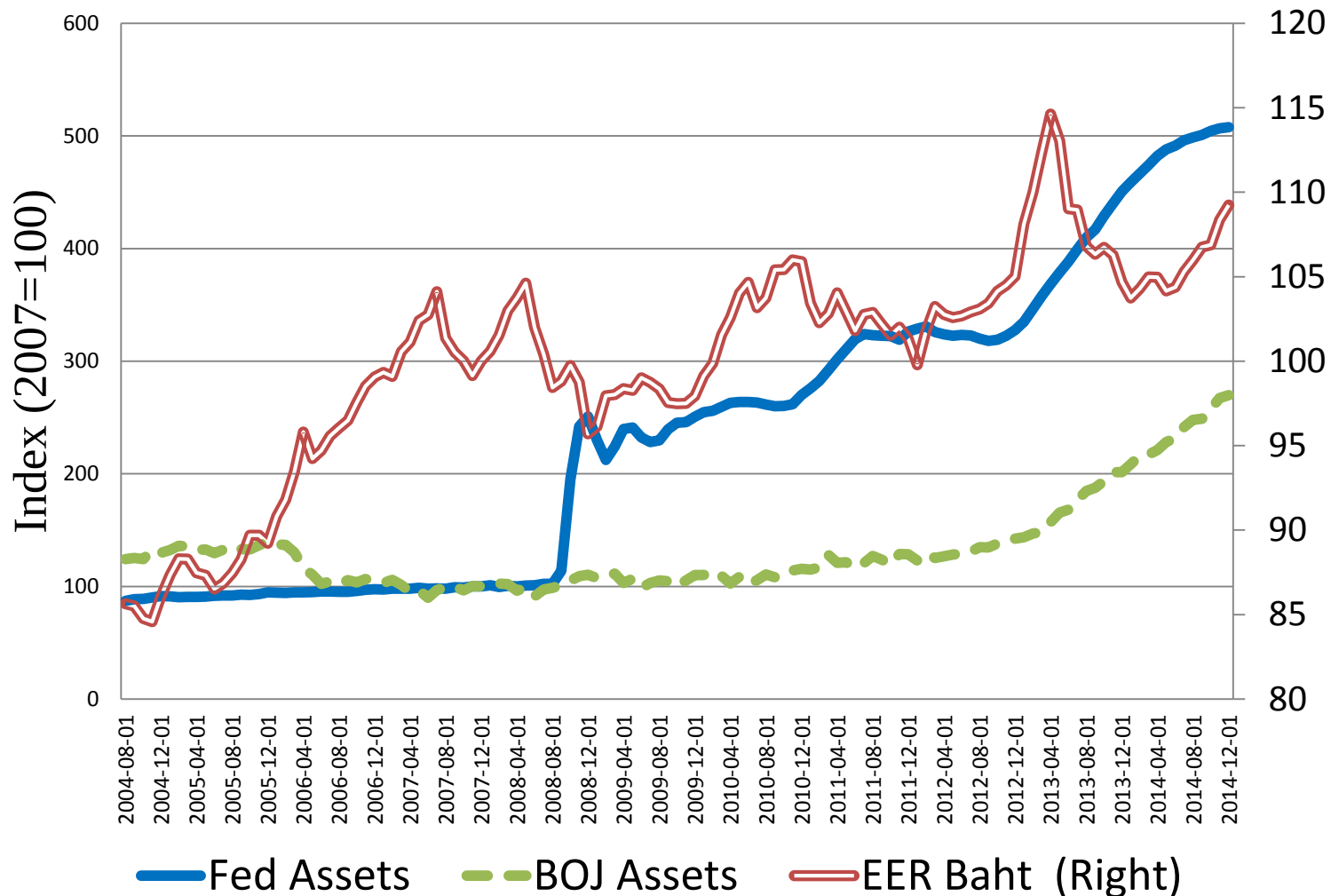
Exchange rates trends

- The baht-dollar exchange depreciated 0.3 % per month between 1999 and 2003; NEER and REER moved in a similar direction with a slower rate.
- Between 2006 and 2007, the baht-dollar rate appreciated 0.48%; NEER appreciated by 0.05 %.
- But the REER depreciated by 0.09%, thanks to relatively low domestic inflation.

Nominal and Real Effective Exchange rates: 1995-2014



QE Index and Thailand's international Competitiveness: Broad Real Effective Exchange rate (EER)



The long run relationship

- Five key variables: changes in current account, output growth rate, rate of change in REER, changes in capital flow, and fiscal balance
- These five variables exhibit long-run relationship: current account balance and other four variables.
- Current account deficit takes place during the period of high growth, huge capital inflows, appreciating real effective exchange rate, and budget deficit.
- Strong output growth leads to deterioration in the current account.
- Capital inflows finance current account deficit.
- Appreciation of the REER leads to current account deficit.

- Current account surplus gives rise to output growth, while budget surplus has contractionary impact on growth.
- Capital flows are caused by rapid economic growth and currency appreciation.
- REER appreciates as capital account surplus is rising.
- Capital account surplus weakens fiscal position, while currency appreciation strengthens it.

Concluding remarks

- There are equilibrating mechanisms, through exchange rate channel, to bring the economy back from imbalances to external balances.
- Exchange rates should be allowed to play equilibrating role in external balance adjustments.
- Delay the exchange rate adjustments would lead to substantial changes in output and exchange rates in the long run.