

EE 460: External Disequilibrium Adjustment

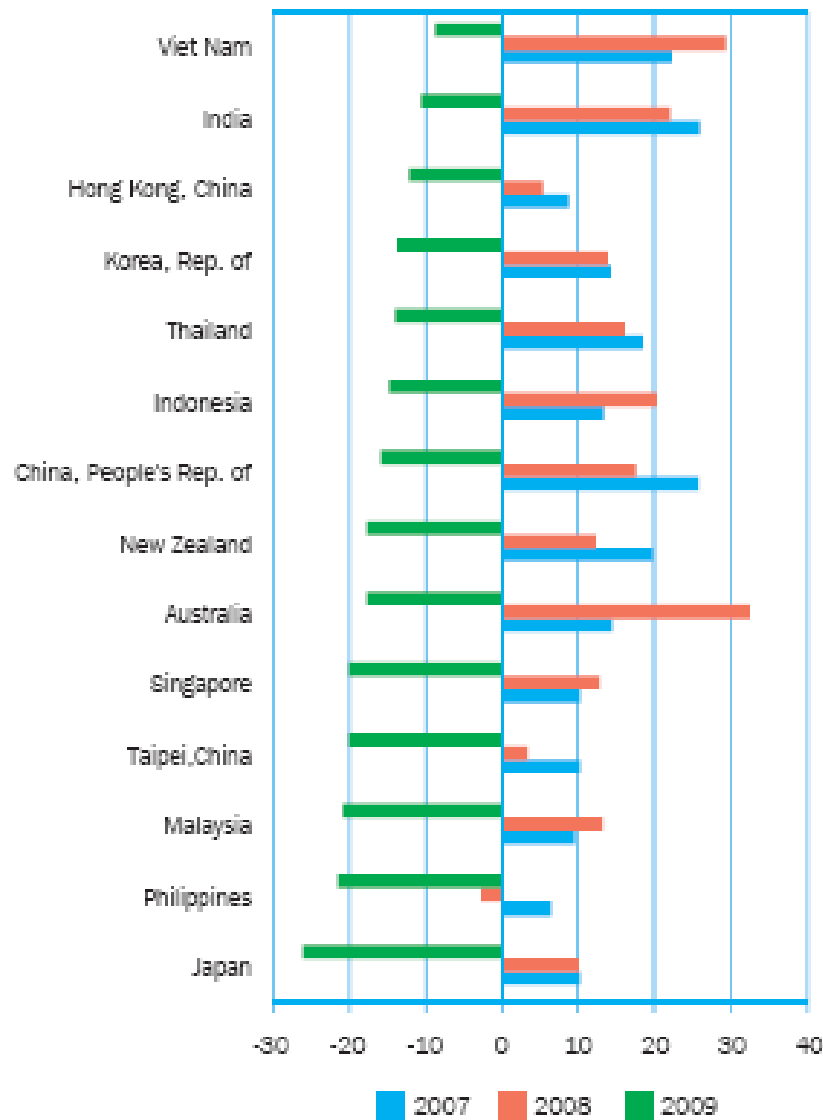
Bhanupong

Lecture 22

Main themes

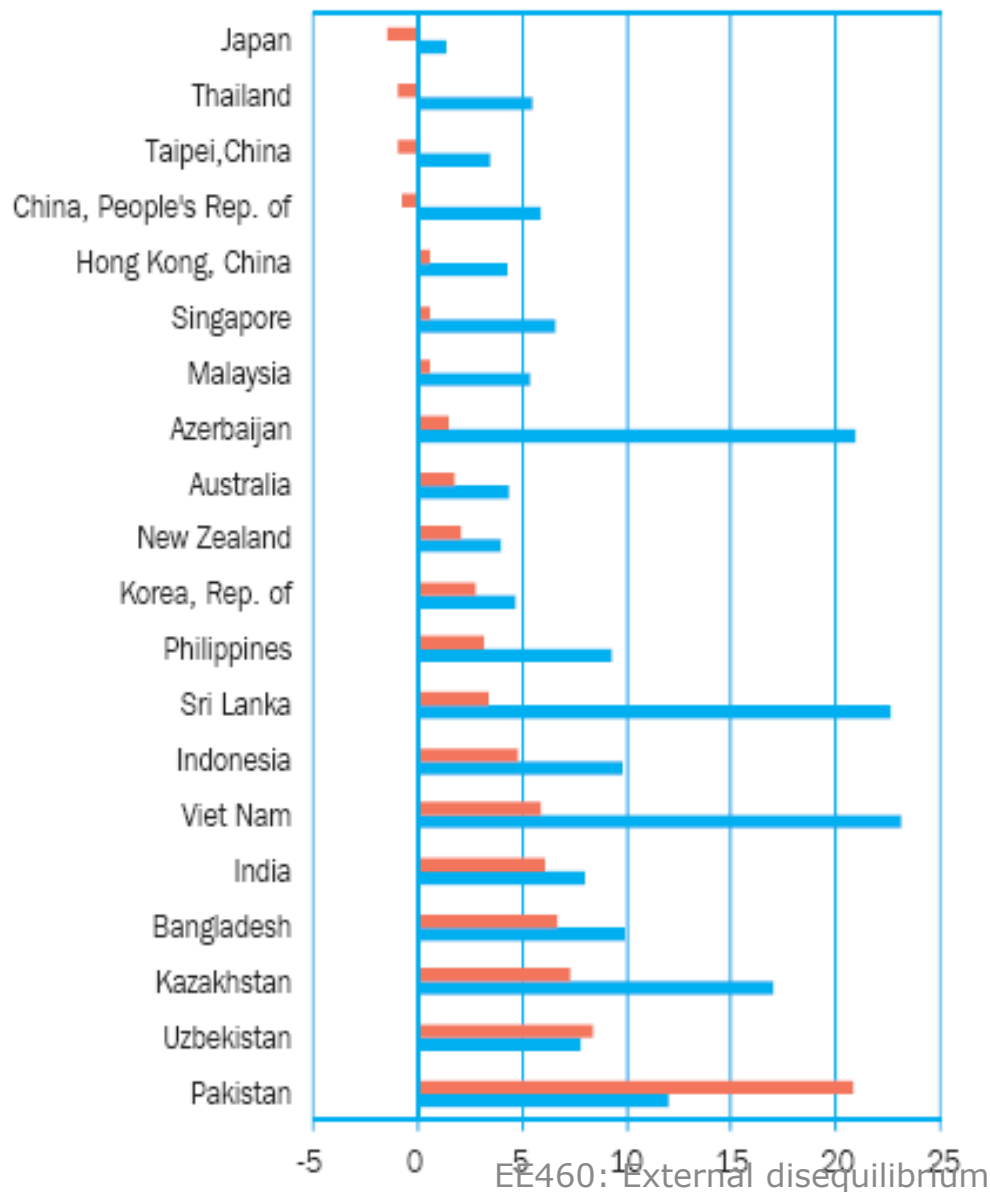
- Increasing financial and trade Integration
- Current account disequilibrium
- Determinants of investment-saving gap
- Role of exchange rate adjustments
- Policy responses to current account disequilibrium

Figure H13 Annual Growth in Merchandise Exports in US Dollars, 2007, 2008, and 2009 (percent)



The global economic crisis severely cut demand for Asia's exports. Exports by the region's main exporters had been growing rapidly in 2007 and continued to do well even in 2008 when the crisis erupted. In 2009 merchandise exports were down by at least 9% and by more than 20% in some cases.

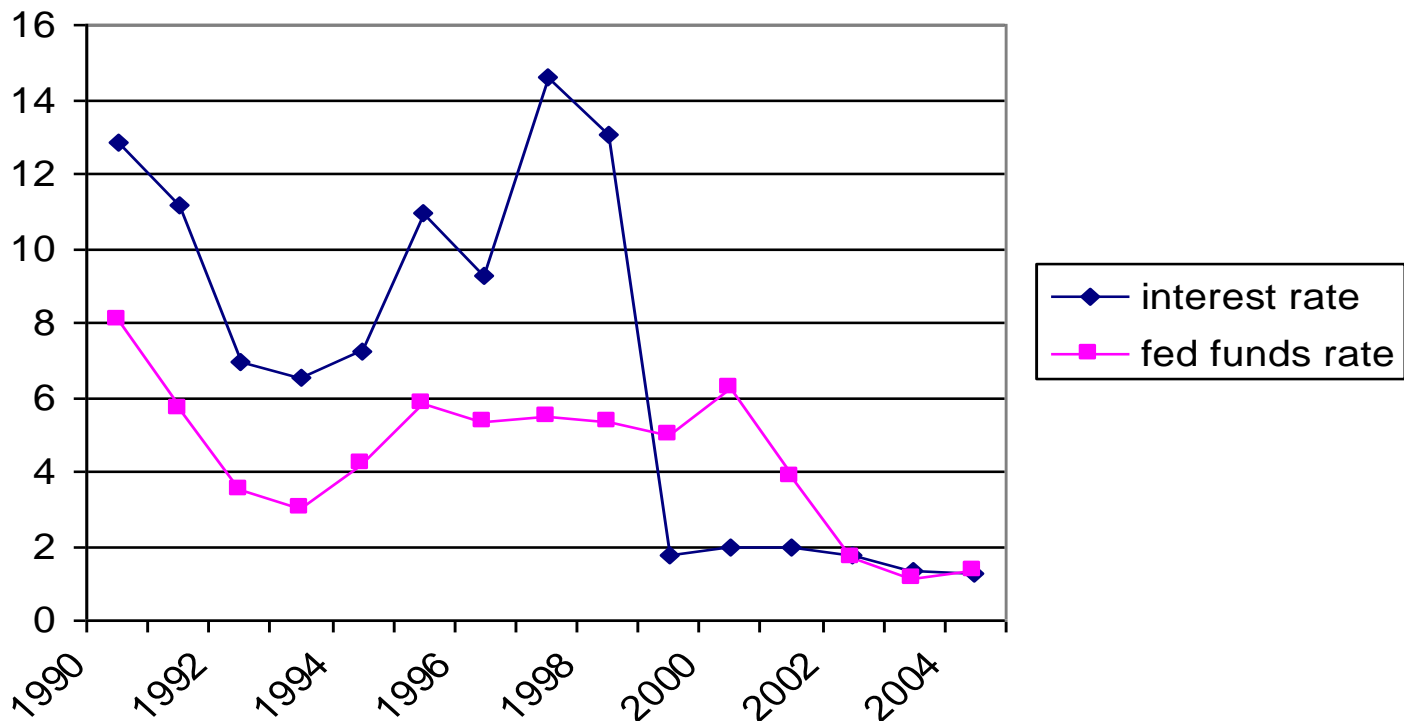
Figure H12 **Consumer Price Indexes, 2008 and 2009 (annual percentage change)**



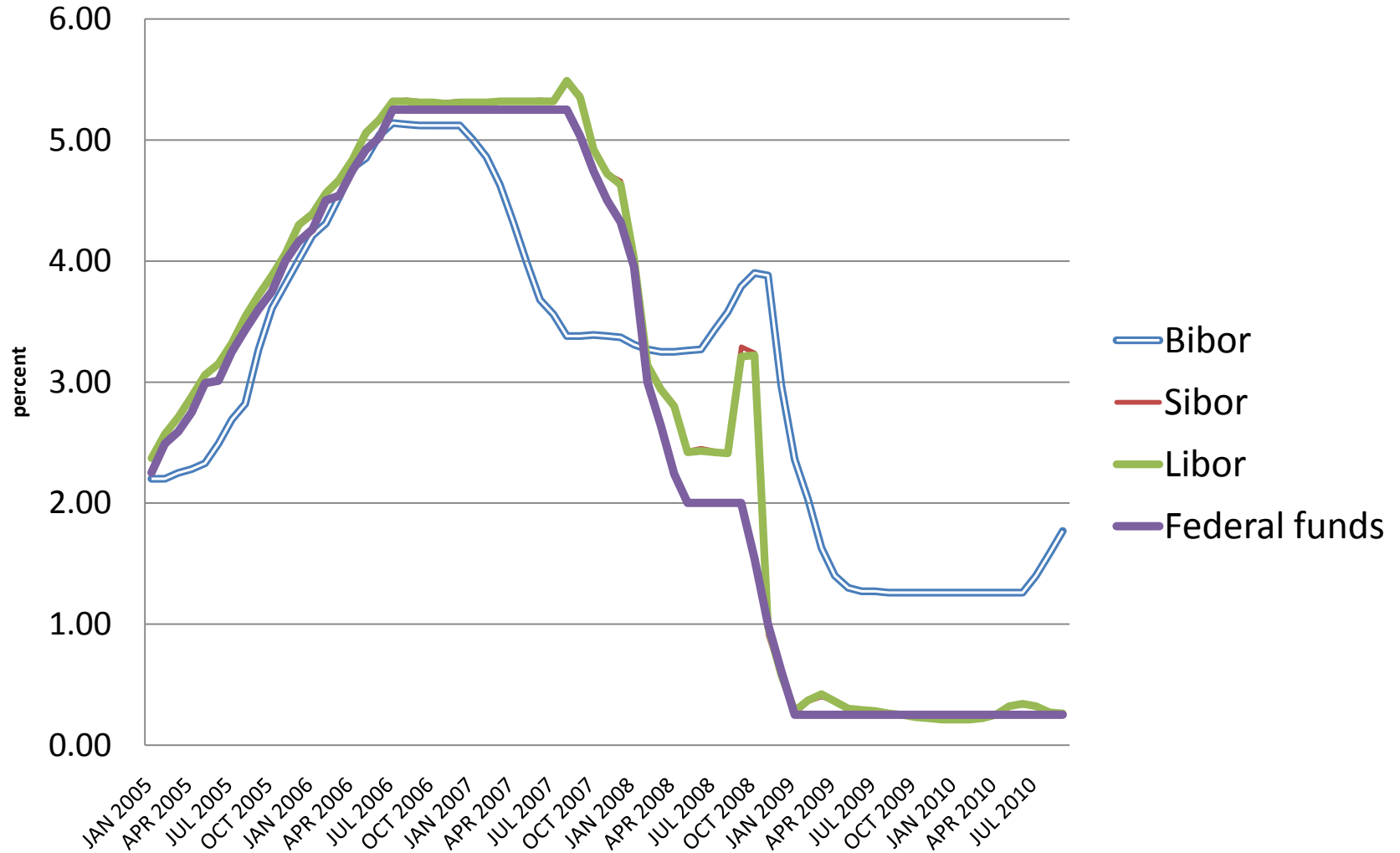
Inflation was sharply down in 2009 in most economies. Some economies experienced deflation as prices of consumer goods and services on average fell in 2009 compared to 2008.

Narrowing the interest gap

Money market interest and fed funds rates



Interbank offered rates: Jan 2005-Sep 2010 (one week)



Correlation coefficients

	bibor	sibor	libor
bibor	1	0.753	0.752
sibor		1	0.99
libor			1

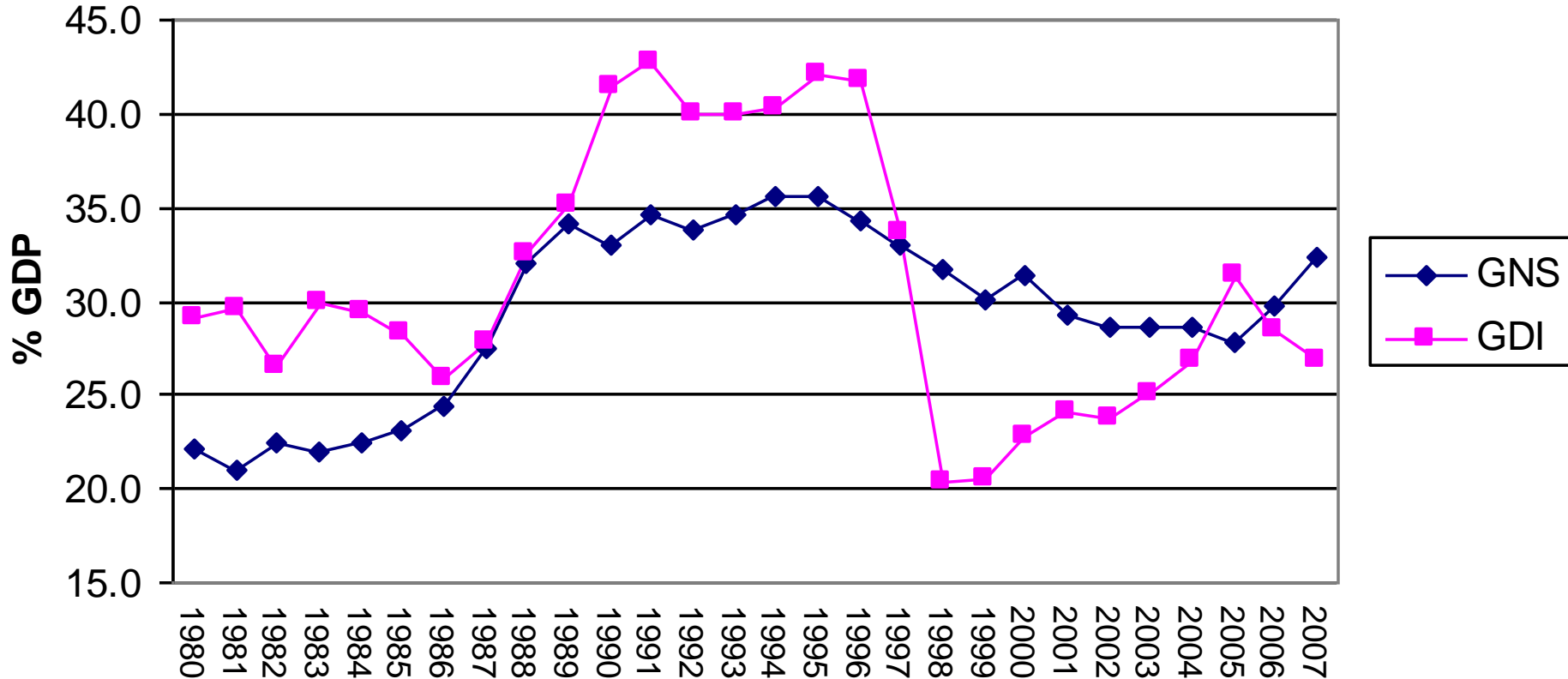
Financial globalization

- 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.

Mean and SD (Jan 2005-Sep 2008)

	Mean	SD
bibor	3.77	0.92
sibor	4.187	1.114
libor	4.183	1.116

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.

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

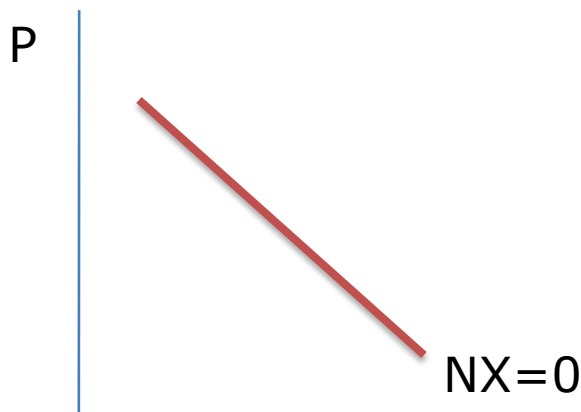
- Martin Feldstein and Charles Horioka (EJ 1980)
"with perfect world capital mobility, there should be no relation between domestic saving and domestic investment: saving in each country responds to the worldwide opportunities for investment while investment in that country is financed by the worldwide pool of capital."
- In a cross-section study:
 $\beta=0$ if capital mobility is perfect.

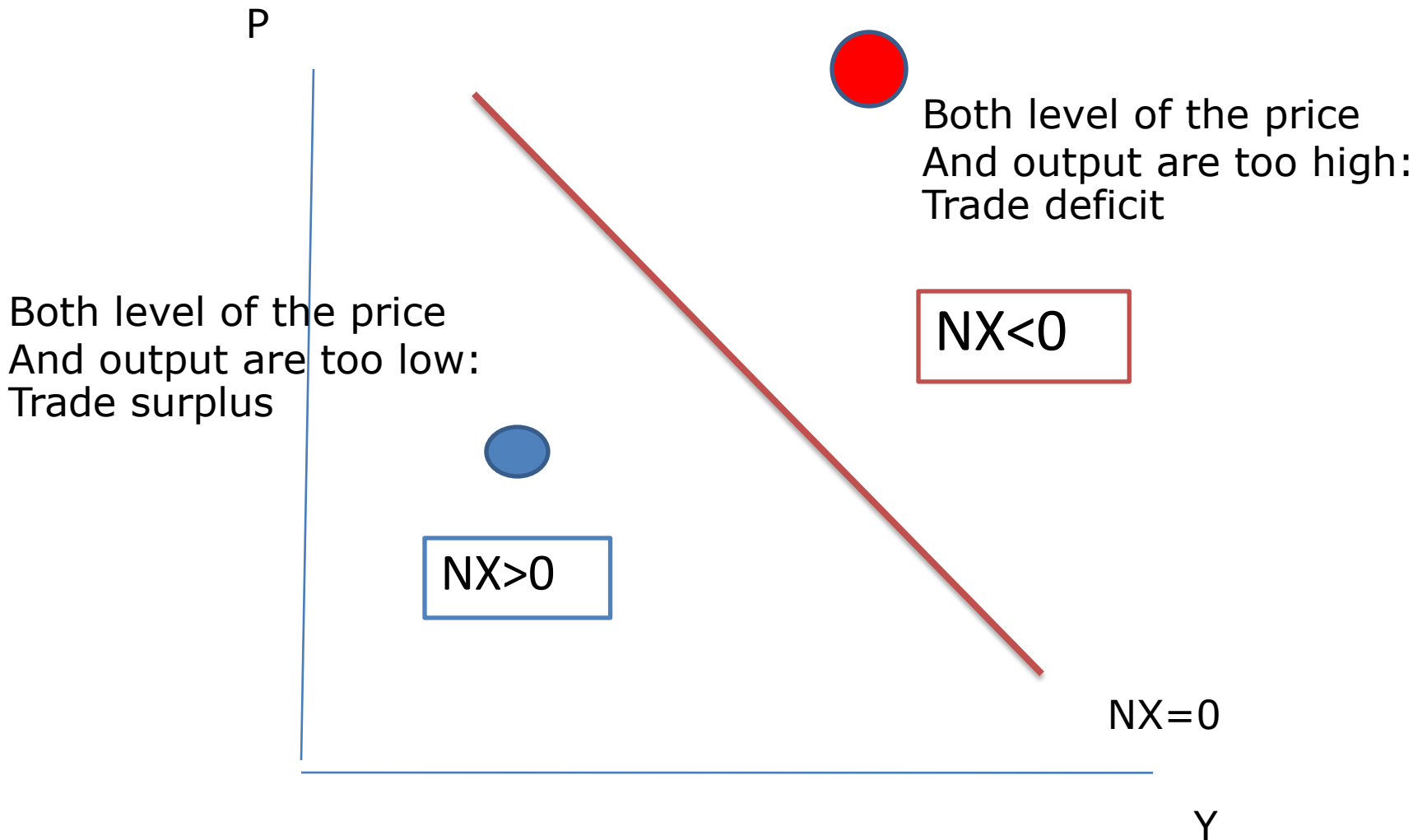
Current account deficit: Absorption (A) approach

- $M-X = (I - S) + (G - T)$
The twin deficit
- $M-X$ can be thought of as foreign savings used to finance investment gap and budget deficit
- $Y = C + I + G + (X-M) = A + (X - M)$
- $(X - M) = Y - A$
- 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 trade balance equilibrium

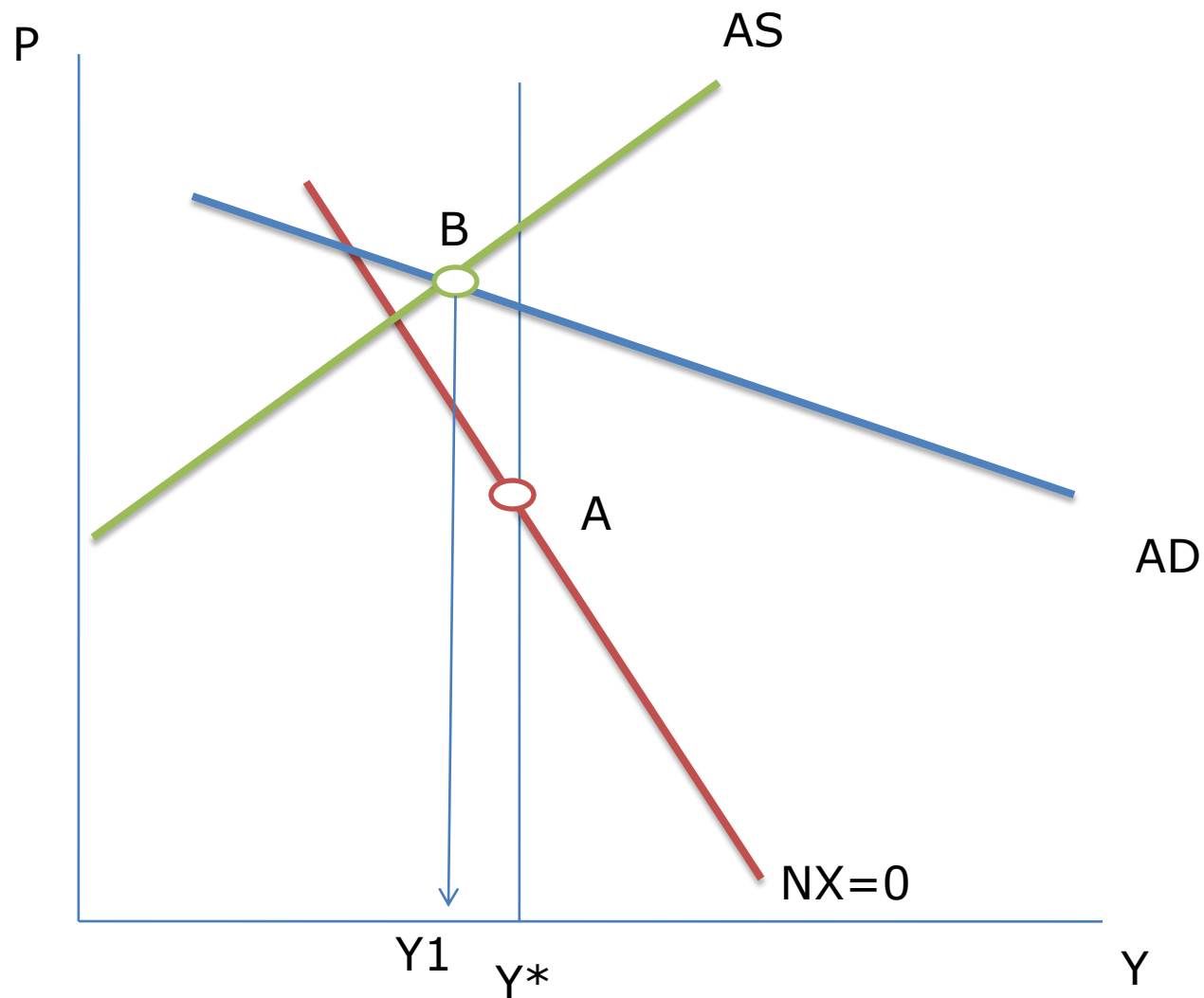
$NX=0$

- 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.





Open economy equilibrium with price adjustment



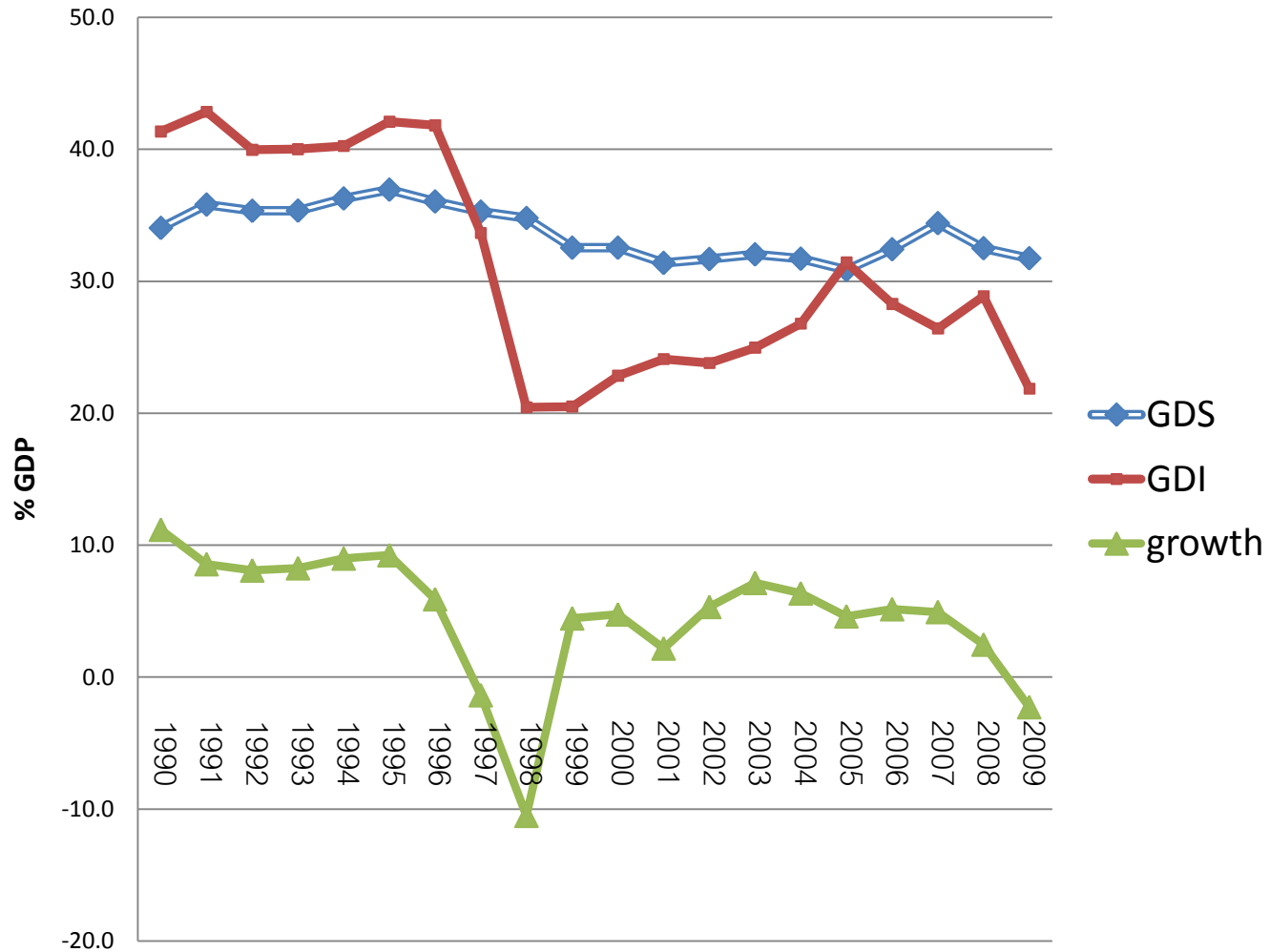
Macroeconomic equilibrium at point B ($AD=AS$)
at less than full employment and $NX < 0$.

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

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

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

Domestic Saving and Domestic Capital Formation



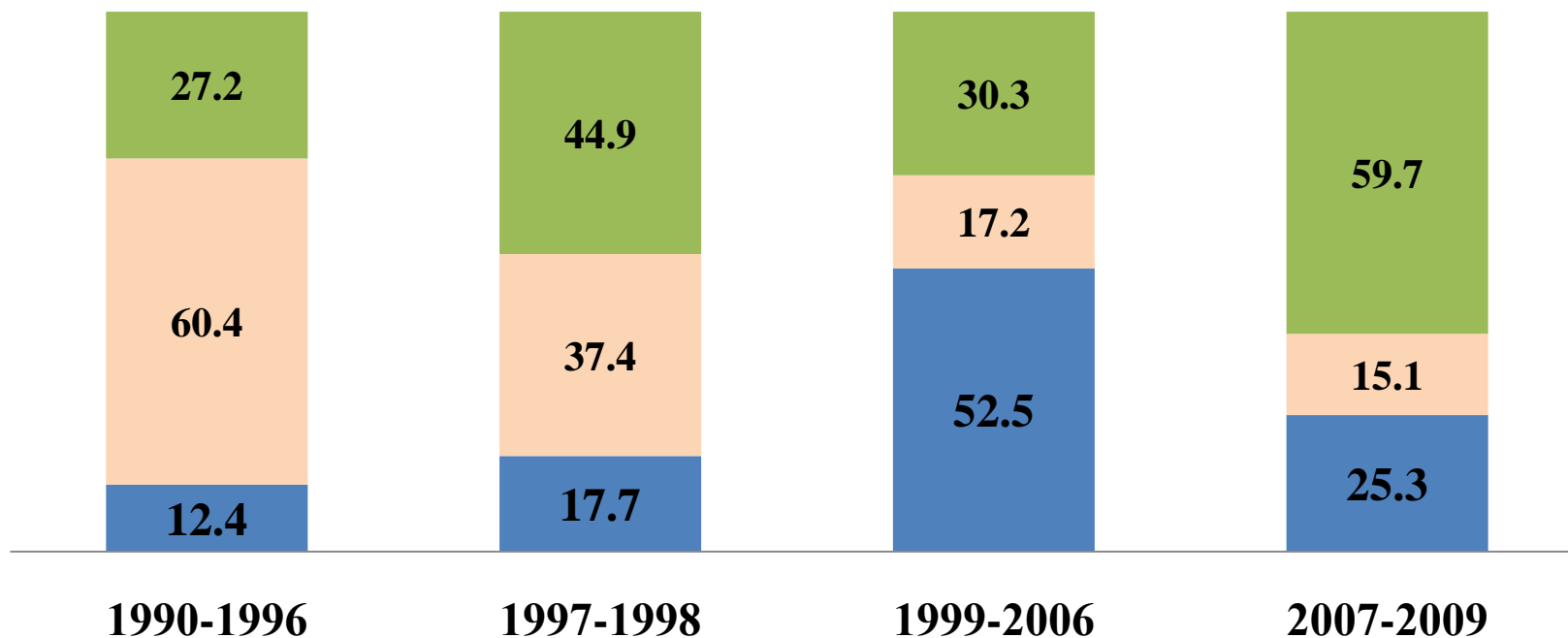
EE460: External disequilibrium

Investment and growth

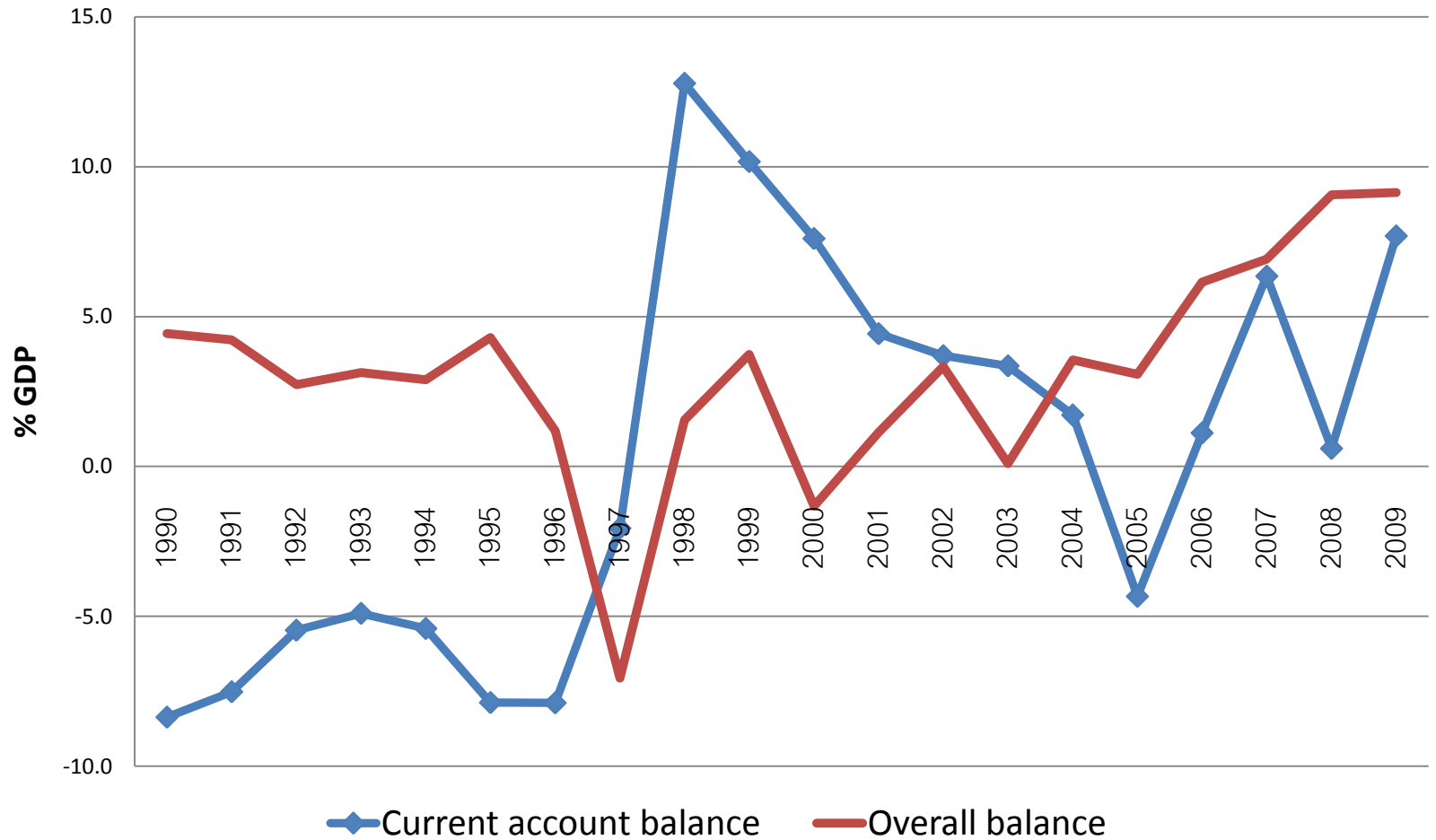
- $\Phi = K/Y =$ capital-output ratio
- $\Delta K = \Phi \Delta Y$
- $I/Y = \Phi \Delta Y/Y$
- $I/Y = f(g); f' > 0$
- Accelerator effect of growth on investment
- There are other factors determining investment rate: credit availability and the interest rate.

Changing structure of capital flows (% total flows)

■ FDI ■ Loans ■ Portfolio investment



Balance of payments



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

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

Determinants of current account balances

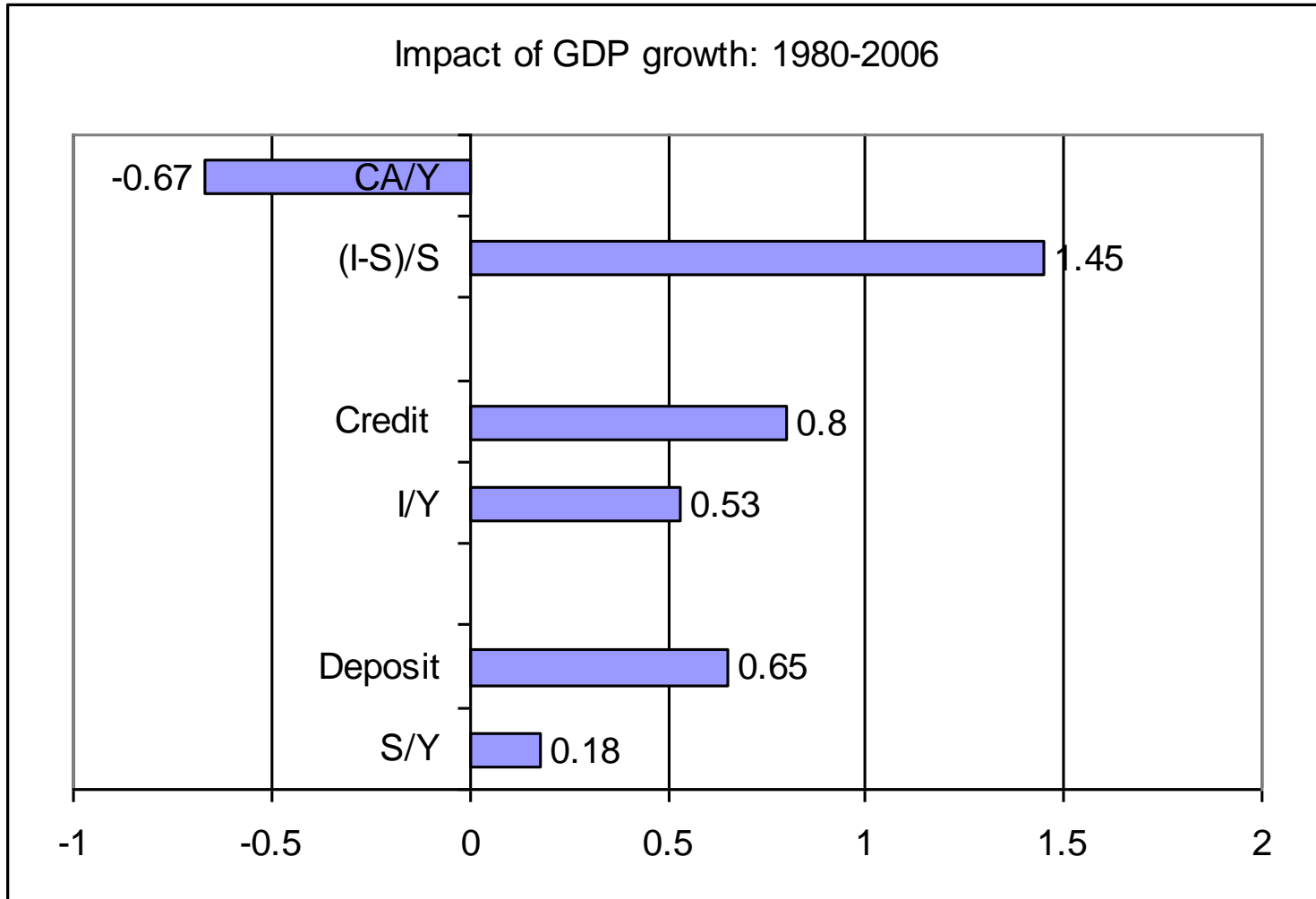
- Growth
- Real interest rates
- Capital inflows
- Inflation
- Exchange rates
- Fiscal imbalance
- *These determinants are intricately related.*

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.

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

When the economy was expanding

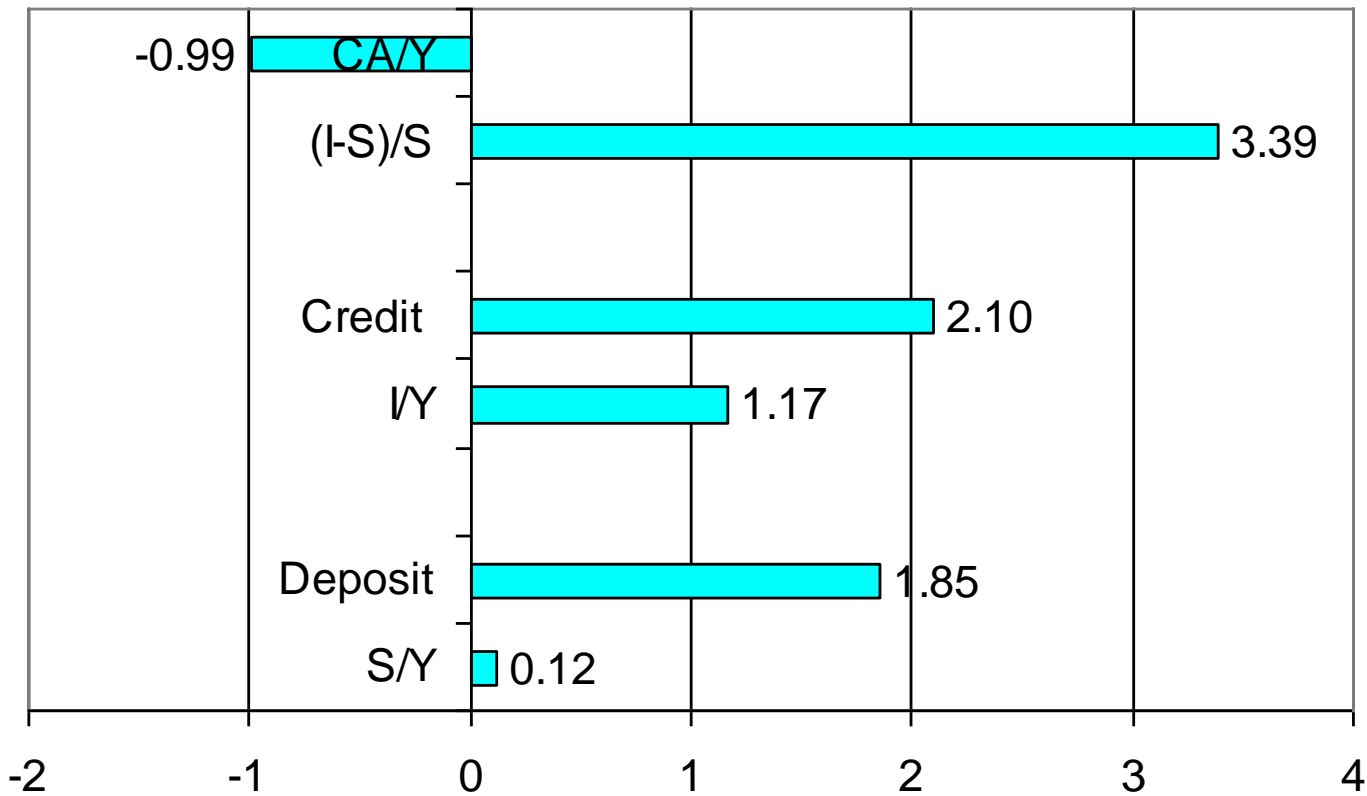


Why strong growth may lead to problems

- Investment rises faster than savings.
- Bank credit grows faster than deposits.
- Investment-savings gap is widening.
- Current account deficit deteriorates.
- 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 not sufficient.
- Demand for credit should fall, other things being equal.
- With higher expected growth, interest rate rises could lead to widening investment-saving gap.

Equilibrating interest rates?

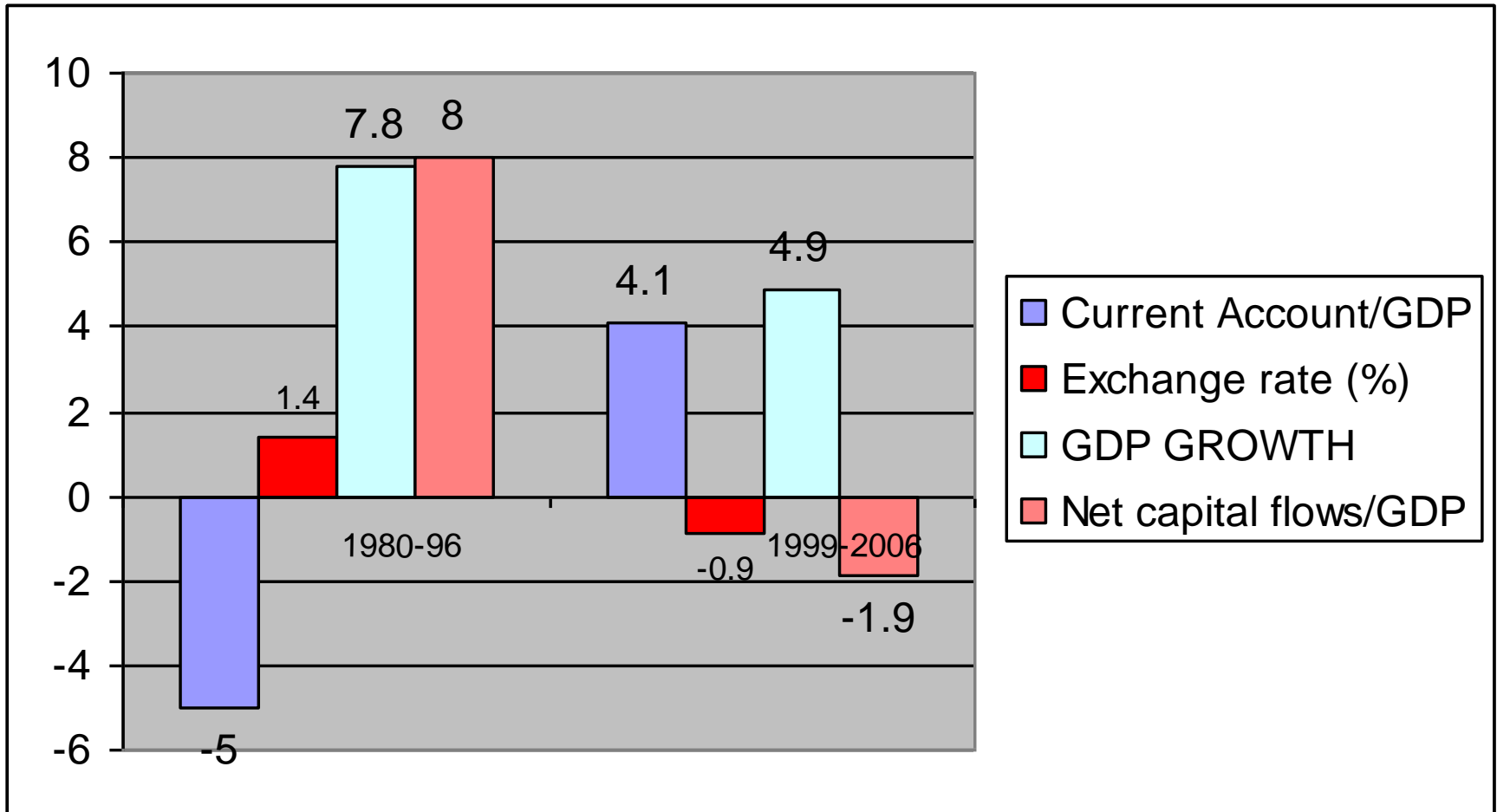
- Similar to growth impacts on current account, interest rates are pro-cyclical.
- Investment-saving gap is widening when interest rate increases, leading instability.
- With increasing integration, capital flows would mitigate the rise in the domestic interest rates.

Conventional strategy

- Growth is the first priority.
- Capital inflows propel private investment.
- Exchange rate appreciation can be delayed.
- Engineer competitive (though unrealistic) exchange rates to drive exports.

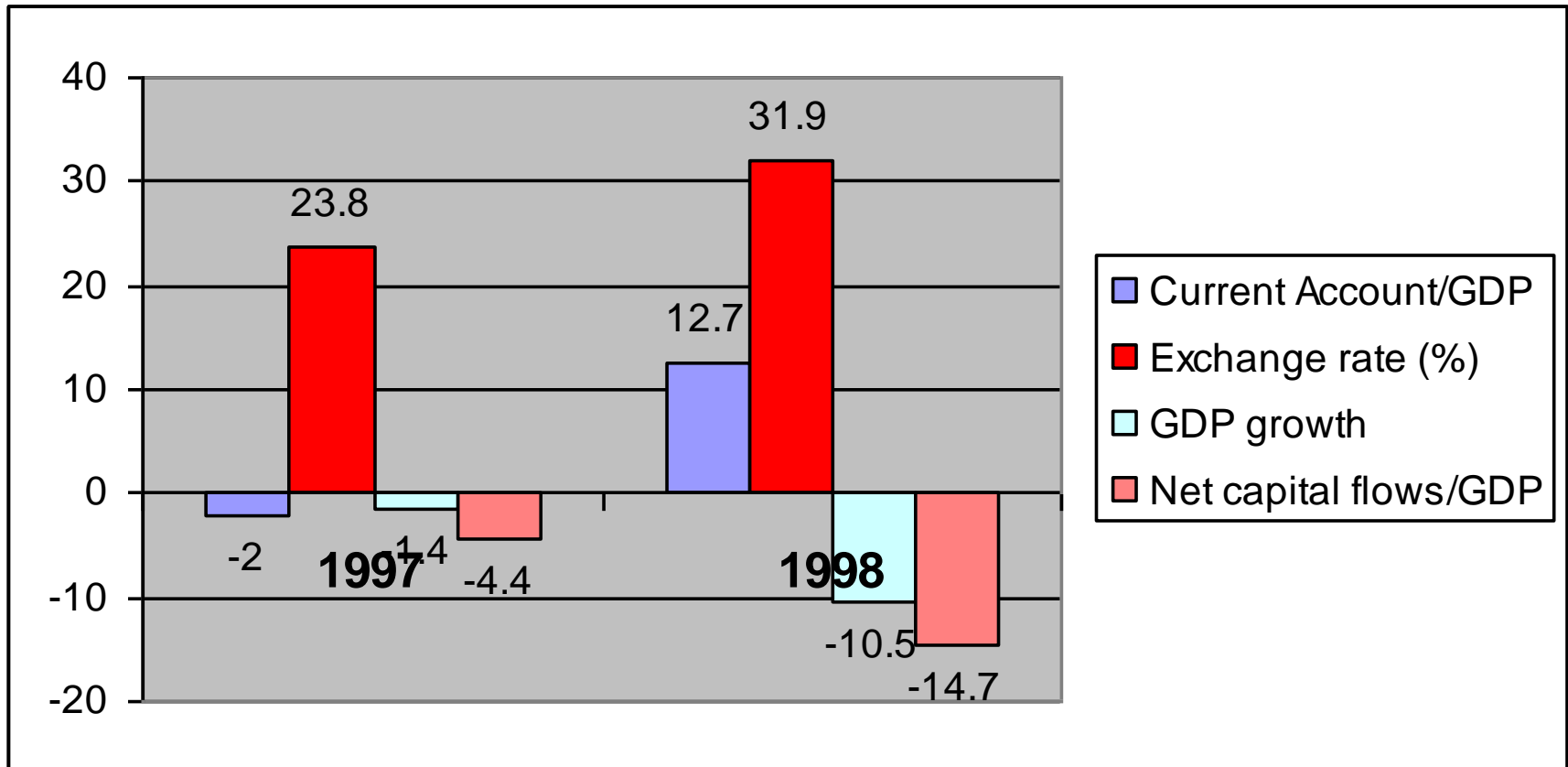
Exchange rate and output adjustments

excluding 1997-98

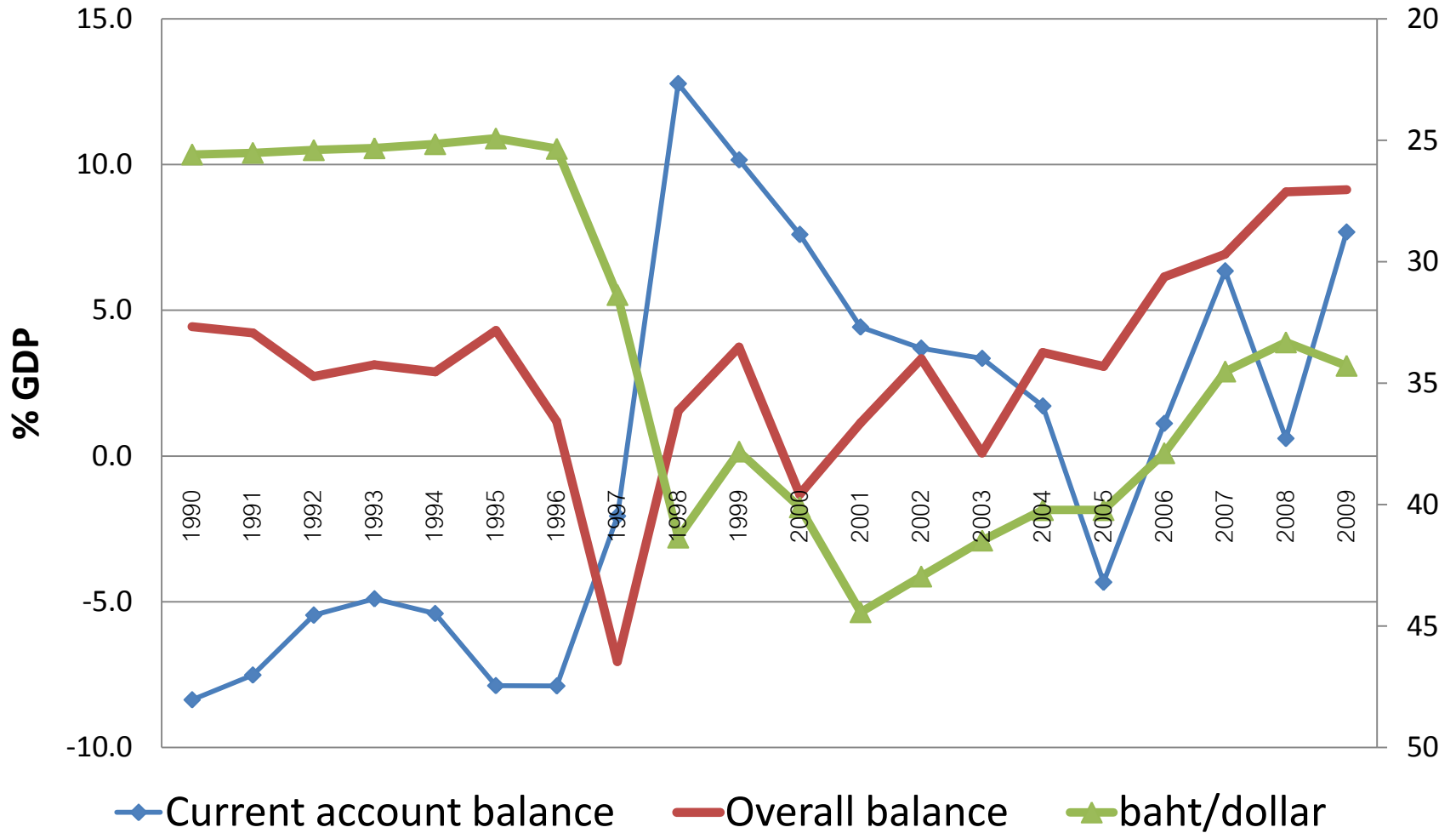


***How can we tame capital inflows?
Should we apply capital controls?***

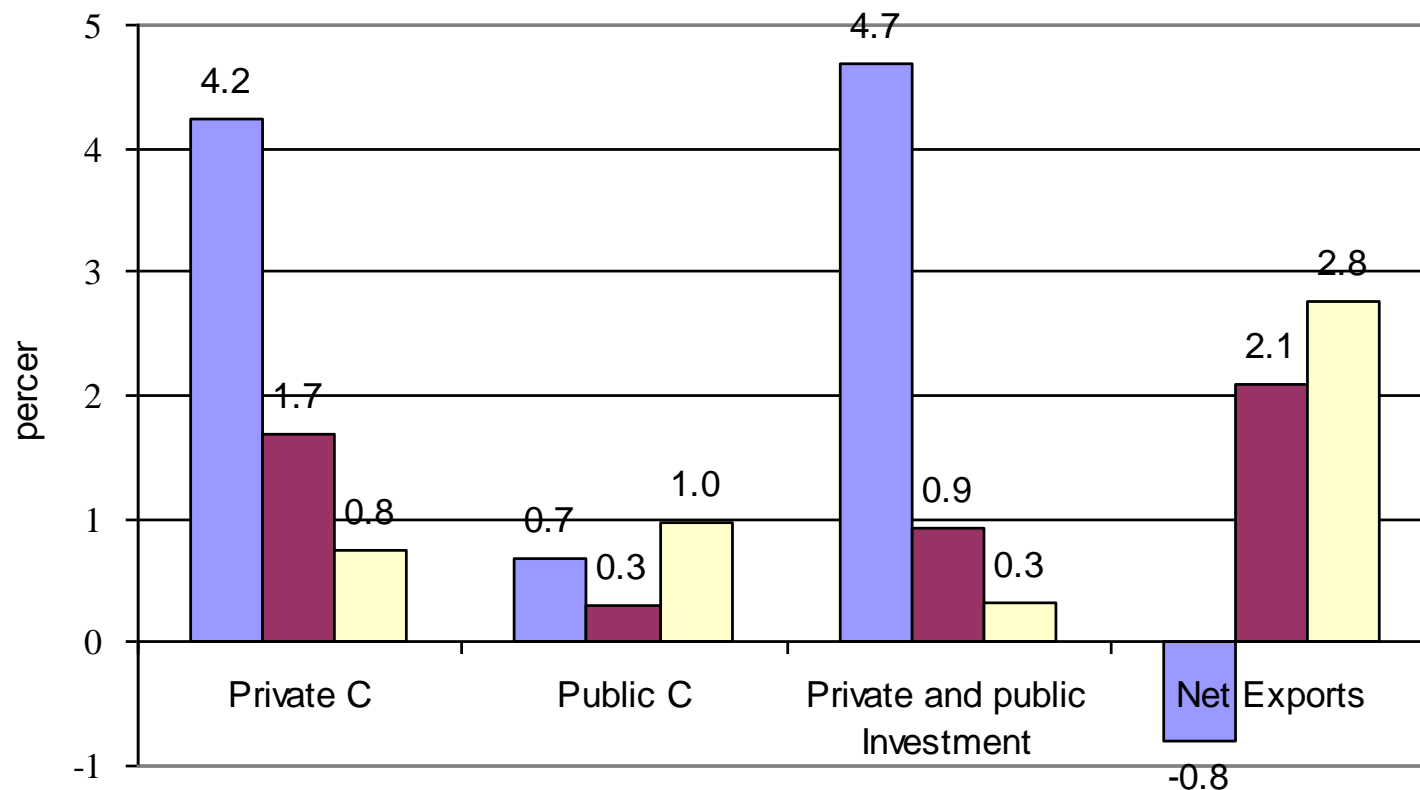
When *both* exchange rates and **output** adjustments were allowed to perform



Balance of payments



Contributions of net exports when other growth drivers slow down

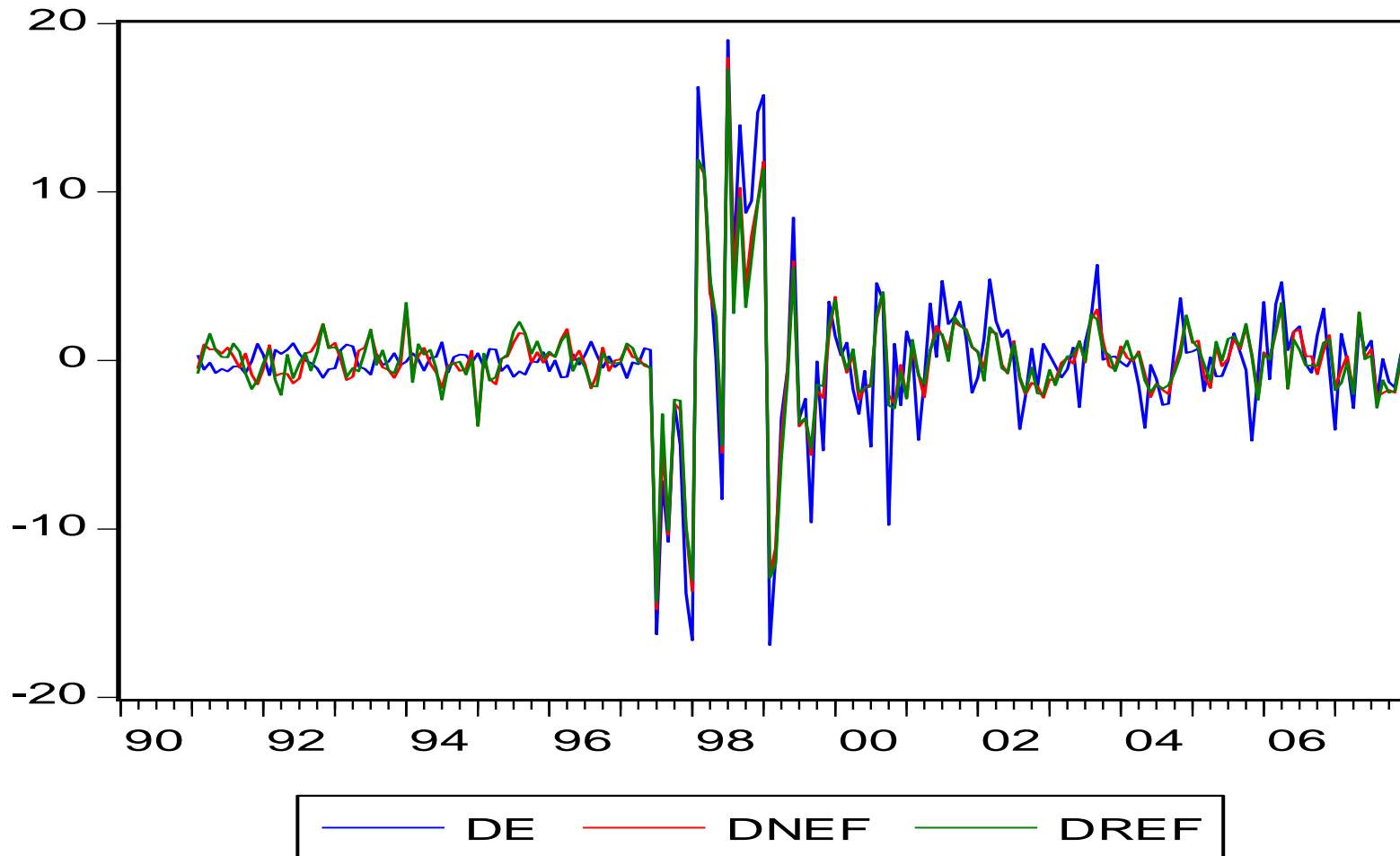


Source: NESDB

EE460: Growth and Equilibrium
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Volatilities of Exchange Rates

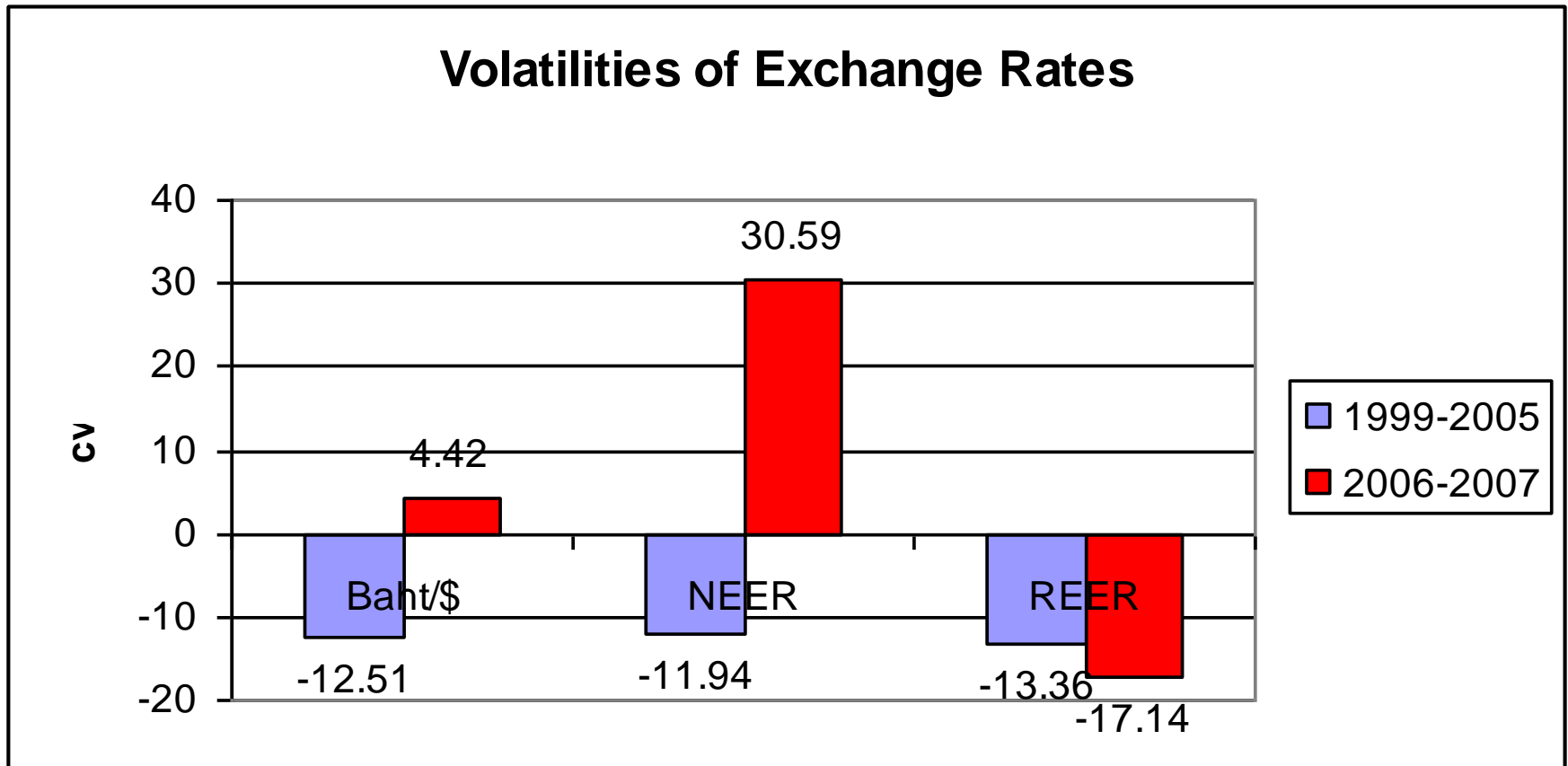
changes (D) in bilateral (E), nominal effective (NER), and real net effective exchange rates (RER)



Increasingly volatile

- Volatilities increased after abandoning the “fixed” exchange rate regime.
- Comparing the period 2006-2007 and 1999-2005, the baht-dollar rate became less volatile,
- But the NEER, and REER had been fluctuating more.

More volatilities in the effective exchange rates ($cv = \mu/\sigma$)



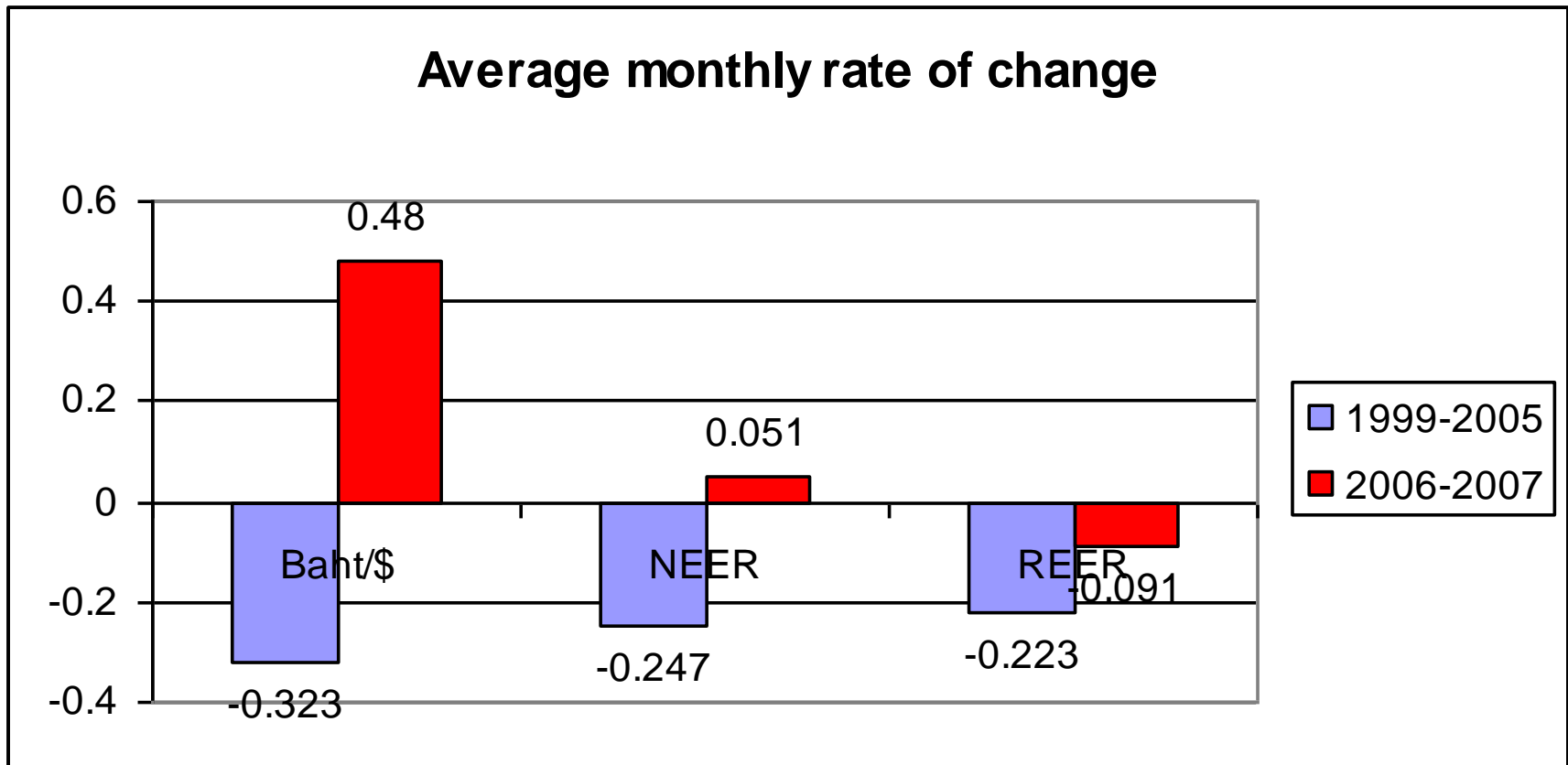
Growth Drivers

- During high growth period, private consumption and investment played a leading role.
- During low growth period, 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 low domestic inflation.

Maintaining export competitiveness by maintaining price stability



Despite nominal appreciation, international competitiveness can be maintained by keeping inflation below the trading partners'.

The long run relationship

- Five key variables: change 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 between 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 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 economic back from external imbalances.
- Exchange rates should be allowed to play their 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.