

Macroeconomic Management with Open Capital Accounts

Khor Hoe Ee

Assistant Managing Director

Monetary Authority of Singapore

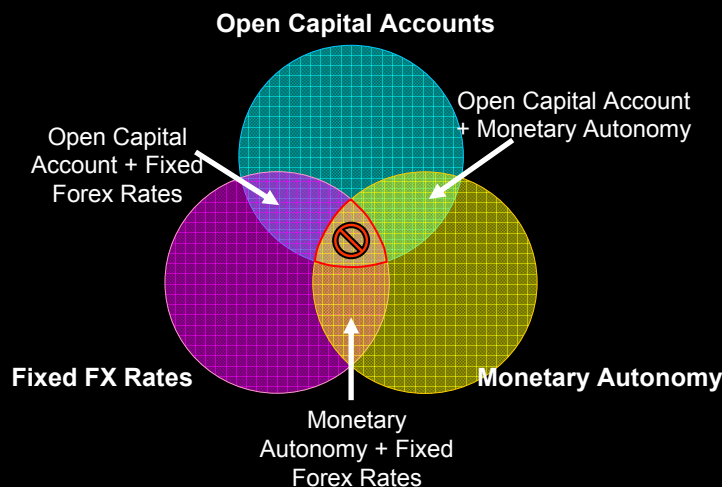
**Presentation at IMF High Level Seminar on Crisis
Prevention in Emerging Markets, 10 Jul 2006**

MAS

Presentation Outline

- The Open Economy Trilemma
- The Post Bretton Woods Period – Increased magnitude and volatility of capital flows
- Asia's response – strengthening of financial systems, capital account restrictions, FX intervention, reserves accumulation, macroeconomic credibility
- Policy issues

The Open Economy Trilemma



When capital accounts are open, policymakers can either control the exchange rate OR the interest rate, but not both

The Trilemma has been validated in history

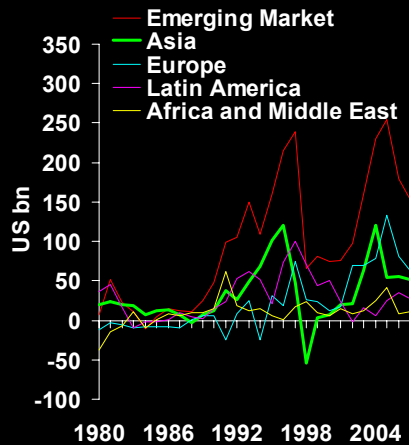
The Trilemma in History: Tradeoffs Among Exchange Rates, Monetary Policies and Capital Mobility (Obstfeld, Shambaugh & Taylor, 2005)

- Analyses the validity of the Trilemma worldwide, across 3 historical periods over 130 years
- Key Findings of the study:
 - Classical Gold Standard (1870-1913) : Rapid transmission of interest rate shocks fixed exchange rate episodes
 - Bretton Woods (1959-1973) : High degree of monetary autonomy with fixed exchange rates. However as capital controls became more porous in the 1960s, the combination of fixed exchange rates and monetary independence became untenable.
 - Post-Bretton Woods (1974-present): Countries with fixed exchange rates lose considerable monetary independence, whereas those with floating regimes have some monetary autonomy.

The analysis validates the Trilemma as a binding condition which holds over a long span of economic history

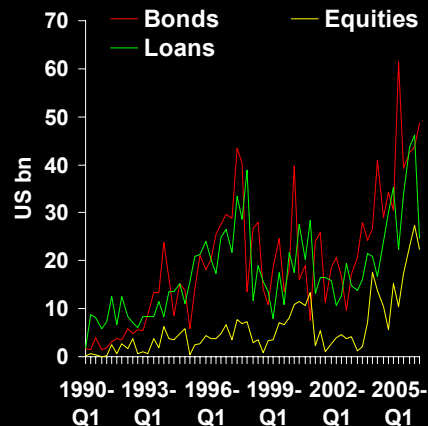
The Post Bretton Woods Period – Increased magnitude and volatility of capital flows (1)

Emerging Markets: Net Private Capital Flows



Source: IMF

Emerging Markets Gross Issuance



Source: IMF

The Post Bretton Woods Period – Increased magnitude and volatility of capital flows (2)

Coefficient of Variation of Net Private Capital Flows to Emerging Markets

	1880 - 1913	1970 - 1979	1980 - 1990	1991 - 2000	2001 - 2005
Total net private capital flows	1.71	0.29	1.04	0.46	0.48
Asia	1.65	0.67	0.60	1.24	0.74
Western Hemisphere	1.97	0.67	1.61	0.43	0.85
Europe	7.04	-1.12	-1.27	1.69	0.56

Source: Bloomfield (1968); and International Monetary Fund, World Economic Outlook.

- Characterised by a situation whereby industrial economies have liberalised their capital accounts
- Developing countries, for various reasons, were not quite ready to fully liberalise capital accounts
- Smaller emerging economies in Asia nonetheless have to manage this increased volatility of capital flows, which largely originate from the industrialised countries

Asian Crisis demonstrated the dangers of volatile capital flows and premature capital account liberalisation

Average Annual Real GDP Growth

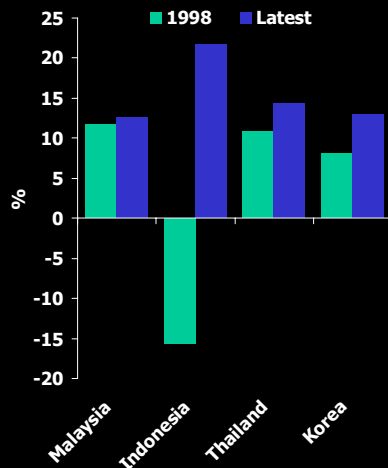
	80 - 90	91 - 96	97	98	99 - 05
Hong Kong	7.2	5.4	5.1	-5.5	5.1
Korea	7.8	7.7	4.7	-6.9	5.8
Taiwan	7.9	7.0	6.6	4.5	3.9
Indonesia	5.9	7.4	4.7	-13.1	4.3
Malaysia	6.2	9.6	7.3	-7.4	5.4
Philippines	2.1	2.8	5.2	-0.6	4.5
Thailand	7.6	8.1	-1.4	-10.5	4.9
Singapore	7.7	8.7	8.3	-1.4	5.3

Source: IMF WEO April 2006, Fame

Asia's response to an environment of more volatile capital flows

1. Strengthening of Financial systems

Capital Adequacy Ratios



- Balance Sheet Strengthening (both corporate and banks)
- Strengthening of prudential supervision
- Operational restructuring - improved risk management, stronger corporate governance
- Injection of foreign management expertise
- Stronger surveillance of financial system

Asia's response to an environment of more volatile capital flows

2. Restrictions in the capital account

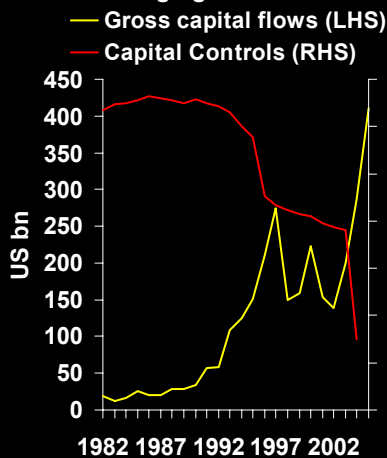
Indonesia	Restrictions on indirect lending of rupiah to non-residents via the swap market Regulations on net open position in foreign exchange of onshore banks
Thailand	Limits on baht-denominated credit facilities by Thai financial institutions to non-residents unless there is an underlying trade or investment activity
Malaysia	Non-residents not allowed to park ringgit proceeds overseas, or in offshore accounts.

- During the crisis, some countries imposed restrictions on the capital account
 - Malaysia, Thailand and Indonesia had measures designed to deter speculation of their currencies
- China and India delayed the liberalisation of their financial/capital account

Asia's response to an environment of more volatile capital flows

2. Restrictions in the capital account

Capital Controls and Flows to Emerging Markets



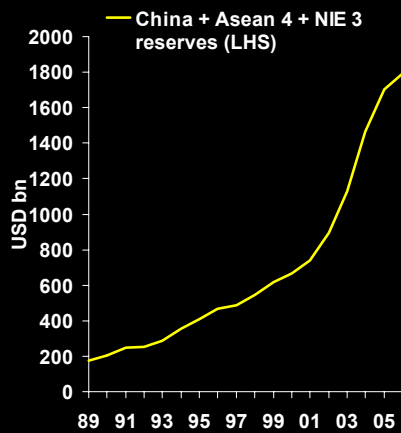
- Notwithstanding restrictions, the trend is towards increasing capital account liberalization
- Increasing financial integration will also mean greater capital mobility, at least within the region
- Countries more willing to open up their capital accounts as banking systems are strengthened
- Some evidence that capital controls act as deterrents to FDI
- Indeed, recent steps taken to liberalise capital accounts in China and India

Source: International Monetary Fund, Annual Report on Exchange Arrangements and Exchange Restrictions; and World Economic Outlook.

Asia's response to an environment of more volatile capital flows

3. FX intervention and reserve accumulation

East Asia's Reserves



- Most Asian central banks have intermediate exchange rate regimes.
- Excessive FX volatility harmful for exporters due to risk of misalignment and high degree of uncertainty
- Asian central banks therefore intervene to smooth out excessive FX volatility,
- Purchase of self insurance against future capital flow reversals

Asia's response to an environment of more volatile capital flows

4. Improving credibility of macroeconomic policies

Inflation Targeting Frameworks in Asia

	IT Adoption Date	Current Inflation Target (percent)	Publishes Forecast
Thailand	2000Q2	0-3.5	Y
Korea	2001Q1	2.5-3.5	Y
Philippines	2002Q1	5-6	Y
Indonesia	2005Q3	5.5 (+/- 1)	Y

- Ultimately, a sound macroeconomic framework is the best defence against crisis
- Some countries have switched to inflation targeting (IT), using interest rates as the operating target.
- IT commits CBs towards explicit medium term inflation targets and implies greater transparency and accountability
- Over time, successful IT will anchor price stability and lead to more flexible exchange rate

Greater exchange rate flexibility in Asia likely going forward(1)

Standard Deviation of Monthly Percentage Fluctuations against the Dollar

	Pre-crisis	Post-crisis	2003/2005	2005/2006	
Chinese rmb	0.25	0.01	0.12	0.43	+
Hong Kong dollar	0.05	0.02	0.15	0.05	=
Indonesian rupiah	0.42	5.94	1.93	2.04	+
Korean won	0.92	2.03	1.70	1.63	+
Malaysian ringgit	0.94	0.00	0.06	0.57	-
Philippines peso	1.21	1.78	1.02	1.19	=
Singapore dollar	0.76	1.17	0.92	1.13	+
New Taiwan dollar	1.02	1.12	0.98	1.77	+
Thai baht	0.46	1.67	1.46	1.32	+

Pre crisis (Feb 94 - May 97), Post-crisis (Jan 99 - Dec 02), 2003/2005 (Jan 03 - Jul 05), 2005/2006 (Aug 05 - May 06)

Greater exchange rate flexibility in Asia likely going forward (2)

Standard Deviation of Monthly Percentage Fluctuations of NEER

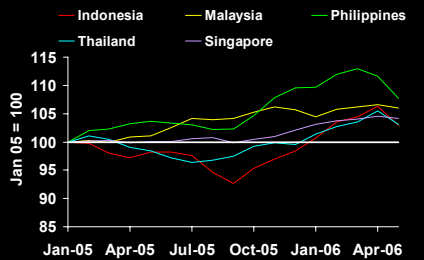
	Pre-crisis	Post-crisis	2003-2005	2005/2006	
Chinese rmb	1.1	1.1	1.2	1.3	+
Hong Kong dollar	0.6	0.6	0.6	0.8	+
Indonesian rupiah	1.1	5.7	1.7	2.4	+
Korean won	0.9	1.8	1.5	1.3	+
Malaysian ringgit	1.3	1.0	1.0	0.8	-
Philippines peso	1.6	1.8	1.3	1.9	+
Singapore dollar	0.6	0.9	0.6	0.6	=
New Taiwan dollar	0.9	1.0	0.9	1.3	+
Thai baht	0.7	1.5	0.9	1.2	+

Pre crisis (Feb 94 - May 97), Post-crisis (Jan 99 - Dec 02), 2003/2005 (Jan 03 - Jul 05), 2005/2006 (Aug 05 - May 06)

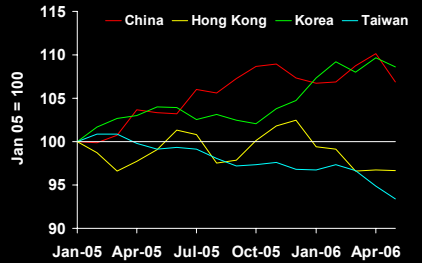
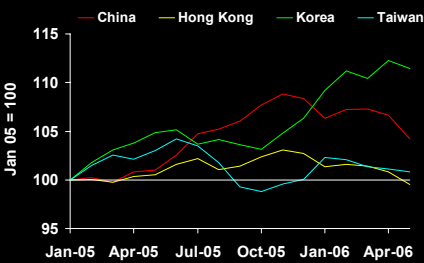
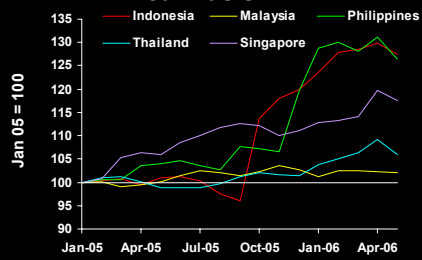
Exchange rates have in fact appreciated

Trade Weighted exchange rates

Nominal Basis

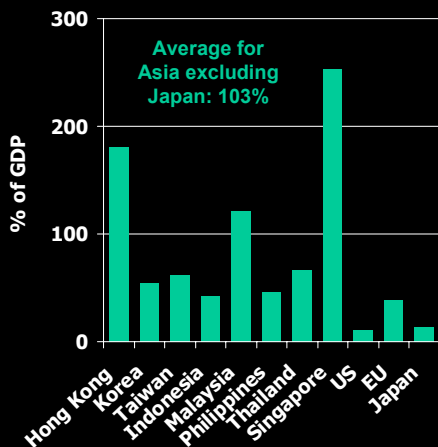


Real Basis

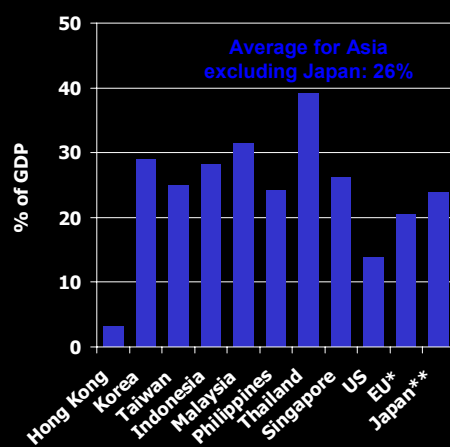


Problems posed by volatile capital flows are more acute for Asia because of high export dependence

Exports as a share of GDP (2005)



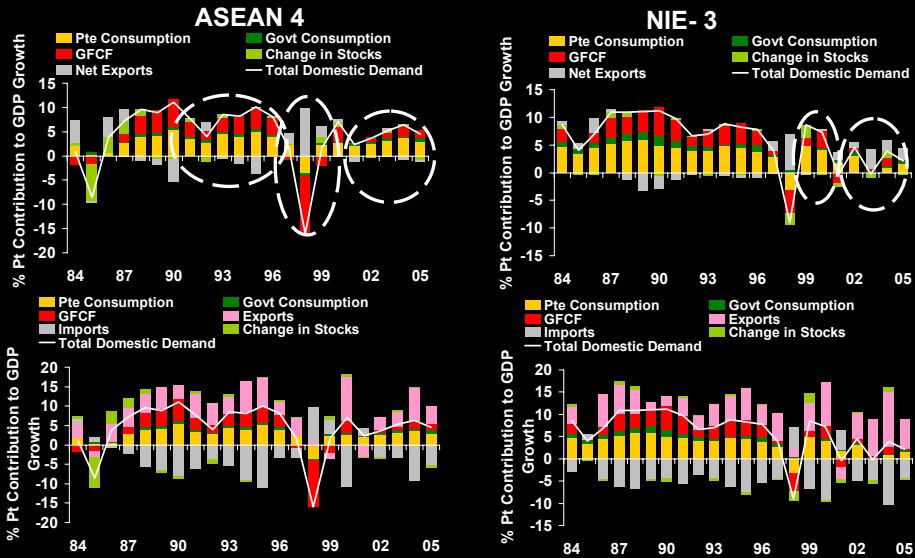
Manufacturing as a share of GDP (2005)



*Manufacturing, Energy and Mining ** Data for 2003

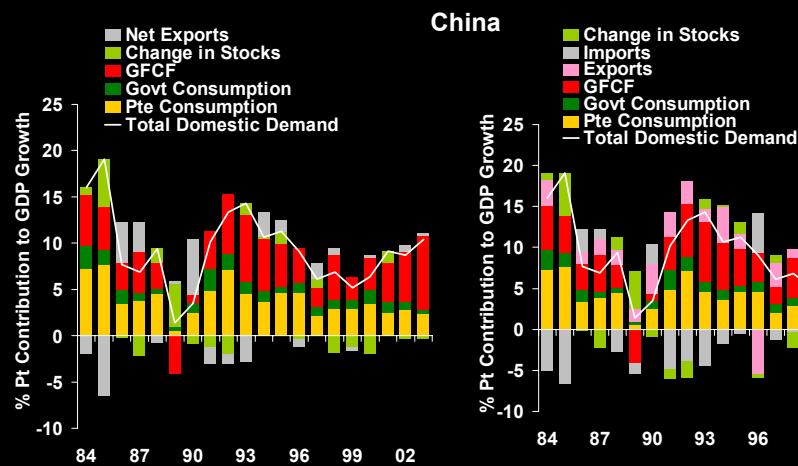
Greater emphasis on domestic demand than is commonly assumed (1)

Contribution to GDP growth



Greater emphasis on domestic demand than is commonly assumed(2)

Contribution to GDP growth



Policy issues

- Trilemma constraint – how binding?
- Trend towards greater openness in capital accounts – how open? What is the benefit of full convertibility?
- Flexibility of exchange rate – how flexible? What is the gain from floating?
- Intervention/sterilization/foreign reserves – what are the costs and benefits?
- International organizations/cooperation – what role?

Thank You

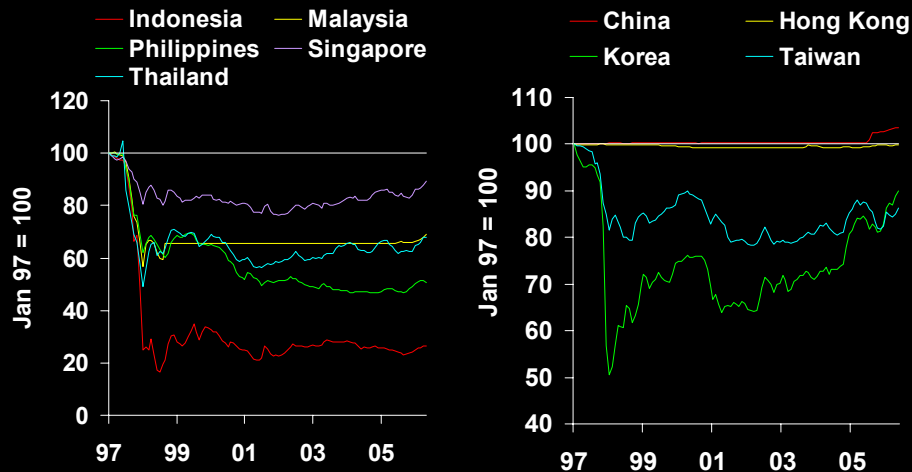
Summary

- Post Bretton Woods – globalized financial markets with large and volatile capital flows
- Trilemma condition binding – no escaping
- Asian economies have implemented reforms
 - Strengthened balance sheets of banks and corporate
 - Strengthened financial system and enhanced financial surveillance
 - FX Intervention and reserves accumulation
 - Sound and credible macroeconomic framework
 - Allowed more flexibility in their exchange rates

Policy challenges

- Policymakers will have to be more aware of challenges associated with an environment of open capital accounts and more volatile flows
- For instance, despite the credibility of New Zealand's monetary policies, it too has experienced recent exchange rate volatility
 - NEER drop of 10% in the 1st 3 months of 2006.
 - By fluctuating in a very wide range (rising more than 50% from 2000-2005), it has caused income volatility for exporters and import-competing firms.
 - In the current phase of the cycle, both domestic and imported inflation are likely to be strong, delaying the point at which interest rates can respond to the slowing economy
 - RBNZ announced in 2004 willingness to intervene in FX market, although under tightly constrained circumstances

Bilateral Exchange rates against the US\$



The Trilemma has been validated in history

The Trilemma in History: Tradeoffs Among Exchange Rates, Monetary Policies and Capital Mobility (Obstfeld, Shambaugh & Taylor, 2005)

- Analyses the validity of the Trilemma worldwide, across 3 historical periods over 130 years
 - The Classical Gold Standard (1870-1913)
 - The Bretton Woods System (1959-1973)
 - The Post-Bretton Woods era (1974-present)
- Compares the movements of local and base interest rates, using the equation

$$\Delta R_{it} = \alpha + \beta \Delta R_{bit} + \theta(c + R_{it-1} - \gamma R_{bit-1}) + u_{it}$$

↗ Local Interest Rate ↖ Base Interest Rate

- β expresses the relationship between the local and base interest rates. $\beta < 1$ if governments use their monetary independence to offset base interest rate shocks.

- R^2 is the proportion of the variation in base rates explained by the regression model.

The Trilemma has been validated in history

$$\Delta R_{it} = \alpha + \beta \Delta R_{bit} + \theta(c + R_{it-1} - \gamma R_{bit-1}) + u_{it}$$

Local Interest Rate Base Interest Rate

- β expresses the relationship between the local and base interest rates. $\beta < 1$ if governments use their monetary independence to offset base interest rate shocks.
- R^2 is the proportion of the variation in base rates explained by the regression model.
- Lower β or lower R^2 implies more monetary independence.

	Forex Regime	Capital Controls	Monetary Autonomy
Gold Standard	Floating	Lax	High ($\beta = .05, R^2 = .00$)
	Fixed		Low ($\beta = .52, R^2 = .41$)
Bretton-Woods	Fixed	Strict	High ($\beta = -.26, R^2 = .04$)
Post-Bretton Woods	Floating	Generally Lax	Moderate ($\beta = .27, R^2 = .01$)
	Fixed		Low ($\beta = .46, R^2 = .19$)

The analysis validates the Trilemma as a guiding policy framework, as its lessons have been borne out over a long span of economic history