A BBC Regime for Asian Financial Cooperation: Fundamentals and Feasibility

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Introduction

- Background:
  why the progress of Asian financial cooperation is unsatisfied?
  what is the key obstacle and precondition?
  where is the solution?
- Literature survey:
  papers on Asian financial cooperation, BBC regime for Asia, and research on Asian currency basket.
- Main focus:
  1) exchange rate arrangement like BBC for Asian financial cooperation by providing a regional benchmark exchange rate, aim at regional surveillance, trade stabilization, promoting cross boarder investment and improving reserve management;
  2) the possibility (fundamental) and feasibility of BBC regime in East Asia;
  3) Asymmetry effect among ASEAN5+3
- Objective:
  design a desirable regional exchange rate benchmark as of BBC
- Axiom taken:
  exchange rate stabilization has positive effect on trade and economy
- Scope:
  regional exchange rate regime among ASEAN5+3 and Hong Kong
- Methodology:
  data depended

Abstract

Asian financial cooperation began with CMI, deepened with Asian bond market initiatives and AMU/ACU proposals, but the progresses are less satisfied. Lack of a regional exchange rate arrangement is a key reason for it.

The economic integration of East Asia is based on trade mainly, but can not comparable to the level of Euro area. It might be early to talk about regional currency within current economic fundamental. However, a currency basket benchmark is a necessary precondition for conducting regional surveillance and policy coordination.

The report provides a dual baskets BBC regime design including the choice of peg currency, the choice of parity and the choice of band width and shows: 1) 10% band can be possible achieved, especially for nominal exchange rate coordination; 2) Real exchange rate analysis indicates that the importance of regional convergent requirements like the Maastricht Treaty in Asia.

Why the Progress of Asian Financial Cooperation is Unsatisfied: Reasons and New Challenges

Retrospective Evaluation: Policy Driven vs. Market Driven

- What is Regional Cooperation?
  - market driven and widely participate by private sector may start with policy driven
  - cross border transaction, liberalization, regional financial market and exchange rate risk management
  - failures of internationalization of yen and trade settlement by RMB recently
- CMI: Embarrassment
  - crisis management but not daily program for regional cooperation
  - bilateral, link to IMF, lack of daily organization for regional surveillance
  - expending from official to trade facility (market oriented vs. policy oriented)?
  - no application during the recent crisis but BSA extended
- ABM: Symbolic
  - exchange rate risk for regional investors vs. derivative market
  - index/basket investment; attracting/expending to private sector but less effect
  - lesson from Euro bond markets and the restructure of JBIC
- AMU/ACU: not for the future
  - common currency? deviation surveillance? denomination currency?
  - asymmetric response and coordinate failure
  - trade stabilization vs. REER stabilization
  - no details about ACU was published even though it was regarded as the base of Asian currency index of ABD by Kawai, while AMU was published in details
- Key of Promoting Cooperation: regional exchange rate arrangement

Cooperation in a Changing World

- Exchange Rate Effect on Trade Volatility in ASEAN5+3
  - Typical case of the exchange rate fluctuation with the third currency (USD) disturb the trade among East Asia (compare with Euro15)
  - Exchange rate volatility by international capital flow rather than fundamentals: the case of 1997 crisis and 2007 Philippines peso appreciation
- Financial Structure and the Instability
  - Financial structure has been improved obviously, but nothing to do with substantial change in financial fundamental: potential danger
- Currency Mismatch and Uncertainty
  - Heavy rely on external debt made export orientated economy expose to the uncertainty of outside world
- Excessive Foreign Reserve and Risk Management
  - Reserve accumulation made the risk management inevitable
  - Embarrass status in global dollar standard in global imbalance: a future goal of Asian cooperation as of common currency and common bond market
- Conclusion
  - Regional cooperation should pointed to regional exchange rate arrangement first, then regional financial market development and policy coordination, and finally aimed at regional currency and common market for the far future.

The Possibility of Integration and Coordination in East Asia: Fundamentally towards a OCA?

Stylized Facts of Integration: Asian and Euro 15

- Intraregional trade and trade dependency :
  ASEAN5+3 is about 30% lower than Euro 15, too low for large and high for small
  Stable level of trade integration in Euro15 against ASEAN5+3 indicates that Euro area integration is mature
- Difference between big and small countries on regional integration.
- Regional trade balance: deficit in Asia vs. little surplus in Euro area
- Portfolio investment integration in East Asian:
  very low, far from the beginning.
- The share of FDI inflow to ASEAN10 from ASEAN10+3:
  dominated, but served as a complementary of intraregional trade and small compare to trade volume
- Fundamental convergence:
  In terms of GDP growth, money supply, CPI, lending rate and real effective exchange rate, Japan and China often move in different direction since mid 90's,
  Philippines and Indonesia often deviated far from the regional level, makes policy coordination harder
- Exchange rate regime:
  Some economies try to moved away from dollar pegging, but still in a dollar peg regime. In the turmoil of 2009, some became slightly heavier peg on dollar.

Intraregional Trade among ASEAN5+3

	Ratio of Export to ASEAN5+3			Ratio of Import from ASEAN5+3		
	1980-89	**1990-99**	**2000-08**	**1980-89**	**1990-99**	**2000-08**
Japan	20.96	30.50	37.41	22.55	29.14	37.73
Korea	27.85	38.14	42.14	35.71	36.22	42.39
China	26.38	27.67	25.60	39.61	42.39	40.80
Sub Average	**21.53**	**26.71**	**31.99**	**28.48**	**34.91**	**40.02**
Indonesia	63.21	54.49	54.58	43.45	39.30	41.58
Malaysia	53.77	49.21	49.89	49.5	53.29	56.59
Philippines	36.15	35.37	50.09	35.79	45.21	50.17
Singapore	25.4	28.53	40.07	44.7	50.77	51.53
Thailand	37.45	40.72	45.15	45.41	47.34	50.91
Sub Average	**43.25**	**40.08**	**46.13**	**44.57**	**48.76**	**51.40**
Total Average	**26.37**	**30.39**	**35.82**	**32.47**	**39.19**	**42.93**
Av. Regional Vol. bn.	93.076	286.462	700.695	103.412	334.968	767.045

Intraregional Trade among Euro15

	Export to Euro15			Import from Euro15		
	1980-89	**1990-99**	**2000-08**	**1980-89**	**1990-99**	**2000-08**
Germany	40.80	40.86	43.37	39.66	40.10	42.55
France	38.72	43.68	50.11	40.84	44.71	56.80
Italy	44.77	48.03	46.23	43.49	49.18	48.65
Sub Average	**41.06**	**43.24**	**45.72**	**40.96**	**43.51**	**48.22**
Austria	52.88	58.81	54.69	60.34	63.63	65.95
Belgium- Luxembourg	63.98	64.41	63.53	61.65	62.81	60.89
Cyprus	13.62	19.30	30.12	41.06	37.11	49.77
Finland	24.30	31.75	31.32	28.98	33.10	35.83
Greece	51.58	52.97	42.33	47.48	54.24	48.09
Ireland	33.04	37.62	40.52	21.95	19.16	23.40
Malta	51.15	53.60	33.90	53.75	56.05	55.24
Netherlands	50.27	53.64	62.72	38.69	38.79	39.74
Portugal	50.16	61.47	65.76	45.38	62.96	67.37
Slovenia	n.a.	60.54	53.34	n.a.	62.28	64.94
Spain	46.71	59.82	58.59	36.76	53.08	54.81
Sub Average	**51.27**	**55.76**	**57.64**	**45.94**	**50.87**	**50.68**
Total Average	**44.60**	**47.93**	**50.70**	**42.86**	**46.49**	**49.26**
Av. Regional Vol. bn.	303.684	715.472	1392.941	298.836	670.621	1256.592

Trade Dependency and Intraregional Trade ratio among ASEAN5+3

	Trade Dependency			Intraregional Trade ratio		
	1980-89	**1990-99**	**2000-08**	**1980-89**	**1990-99**	**2000-08**
Japan	19.40	15.85	22.71	21.66	29.92	37.56
Korea	57.52	50.89	63.78	31.76	37.19	42.26
China	20.06	34.27	56.70	27.37	30.52	29.23
Sub Average	**21.59**	**21.12**	**36.47**	**23.93**	**31.45**	**34.48**
Indonesia	33.74	41.11	46.62	55.32	47.95	49.68
Malaysia	96.48	156.91	179.52	51.80	51.20	52.91
Philippines	38.71	64.93	87.79	35.94	41.00	50.13
Singapore	308.01	277.05	326.24	35.83	39.92	45.47
Thailand	49.44	76.60	117.19	41.92	44.26	47.98
Sub Average	**68.59**	**101.74**	**130.43**	**43.91**	**44.46**	**48.57**
Total Average	**26.05**	**28.23**	**45.55**	**28.92**	**35.59**	**38.60**

Trade Dependency and Intraregional Trade ratio among Euro15

	Trade Dependency			Intraregional Trade ratio		
	1980-89	**1990-99**	**2000-08**	**1980-89**	**1990-99**	**2000-08**
Germany	48.51	41.47	61.55	40.28	40.50	43.00
France	35.95	37.07	45.66	39.83	44.19	53.55
Italy	34.62	34.23	43.08	44.09	48.58	47.45
Sub Average	**40.62**	**38.34**	**51.69**	**41.01**	**43.37**	**46.92**
Austria	51.97	54.49	81.24	57.00	61.40	60.36
Belgium- Luxembourg	115.03	115.60	163.10	62.79	63.63	62.24
Cyprus	60.15	54.91	45.85	33.17	32.72	46.43
Finland	46.10	48.82	63.78	26.62	32.35	33.38
Greece	29.62	28.97	30.25	48.80	53.87	46.69
Ireland	92.44	109.60	94.40	27.55	29.80	33.91
Malta	80.55	138.67	120.42	52.84	55.12	46.79
Netherlands	88.13	83.92	118.09	44.57	46.53	51.83
Portugal	50.30	50.12	53.65	47.19	62.37	66.74
Slovenia	n.a.	86.92	107.87	n.a.	61.47	59.39
Spain	27.61	33.25	42.62	40.80	56.00	56.35
Sub Average	**60.93**	**62.35**	**80.54**	**48.45**	**53.26**	**54.42**
Total Average	**46.24**	**45.10**	**61.15**	**43.72**	**47.22**	**50.16**

Geographic Breakdown of Portfolio Investment

		2001	2007			2001	2007
Japan	**Region**	3.69	2.45	**Germany**	**Region**	43.55	47.95
	US	36.48	40.94		**US**	11.50	13.24
	Euro	18.01	24.86		**UK**	11.19	5.00
	UK	17.35	11.17		**5+3**	10.46	6.45
Korea	**Region**	18.45	15.81	**France**	**Region**	39.36	49.36
	US	44.90	39.42		**US**	18.47	18.56
	Euro	14.53	25.86		**UK**	16.80	5.14
	UK	14.05	8.46		**5+3**	9.06	7.28
China	**Region**	13.72	18.44	**Italy**	**Region**	60.03	75.51
	US	32.30	37.42		**US**	8.32	7.94
	Euro	22.26	22.78		**UK**	15.71	3.27
	UK	21.36	12.09		**5+3**	6.22	4.93
ASEAN5	**Region**	27.12	23.00	**Euro12**	**Region**	55.33	62.85
	US	34.40	33.55		**US**	14.04	10.00
	Euro	10.55	22.31		**UK**	8.60	5.96
	UK	18.04	11.37		**5+3**	7.75	5.16
Regional Av.	**Region**	10.58	10.60	**Regional Av.**	**Region**	50.42	58.86
	US	36.45	38.90		**US**	13.45	11.82
	Euro	17.31	24.17		**UK**	11.42	5.36
	UK	17.65	11.05		**5+3**	8.44	5.74

Top Ten Sources of FDI Inflow to ASEAN10

	Share to total FDI inflow			
	2006	**2007**	**2008**	**2006-2008**
EU-25	19.4	26.5	20.3	22.3
ASEAN10	13.8	13.5	18.4	15.2
Japan	18.6	12.1	12.8	14.2
USA	6.2	9.1	5.9	7.2
Other America	6.7	3.0	1.6	3.7
Bermuda	2.4	4.0	2.9	3.2
ROK	2.3	4.5	2.1	3.1
Cayman	6.4	1.1	2.0	3.0
Hong Kong	2.3	2.3	0.9	1.9
China	1.8	1.8	1.9	1.8
Sub-total	80.0	78.0	68.7	75.6
Others	20.0	22.0	31.3	24.4
Total inflow	100.0	100.0	100.0	100,0
ASEAN10+3	**38.88**	**34.20**	**36.09**	**36.21**
Total Amount, bn.	54.980	69.481	59.440	183.902

The Estimate of Dollar Pegging

- Frankel and Wei (1994):

  a regression of the changes in the value of the domestic currency against the changes in the value of foreign currencies, without constant term on weekly data

  $\triangle E^{j} = \beta_1 \triangle E^{USD} + \beta_2 \triangle E^{DEM} + \beta_3 \triangle E^{JPY} + u$

  in the case of a perfect basket peg, OSL regression will uncover the correct weights, when the currency is not in fact perfectly pegged to any basket, the choice of numeraire affects the interpretation of the error term

  they express the log value of all currencies in terms of the Swiss franc

  their analysis based on weekly data for coefficient of USD, DEM and JPY

- Kawai (1998):

  $\triangle E^{j} = \alpha + \beta_1 \triangle E^{USD} + \beta_2 \triangle E^{DEM} + \beta_3 \triangle E^{JPY} + \beta_4 \triangle E^{FRF} + \beta_5 \triangle E^{GBP} + u$

  log differences of exchange rate were expressed in terms of a numeraire currency, the Swiss franc

  their analysis based on monthly data for coefficient of USD, DEM, JPY, FRF and GBP

- Ogawa (2005): update to 2004:

  update the estimate to 2004 and 2005 according to Frankel and Wei (1994)

- Here:

  estimate by the method of Frankel and Wei (1994) based on daily data

China and Malaysia: Steady Peg on USD

CNY	USD	EUR	JPY	Adjust R^2
1999-2002	0.997527*** (0.001977)	-0.000114 (0.004534)	-0.001092 (0.001555)	0.997578
2003-2006	0.980440*** (0.005071)	-0.012308 (0.013786)	0.028877*** (0.005380)	0.985809
2007-2008	0.965773*** (0.011211)	0.043444* (0.016848)	0.004424 (0.009458)	0.972350
2009	0.981482 (0.005182)	0.002850 (0.009289)	0.006037 (0.004501)	0.997032
MYR	**USD**	**EUR**	**JPY**	**Adjust R^2**
1999-2002	1.002168*** (0.003510)	0.006767 (0.008046)	-0.002185 (0.002753)	0.992402
2003-2006	0.972522*** (0.008141)	0.005185 (0.022131)	0.022549*** (0.008637)	0.963638
2007-2008	0.889501*** (0.032285)	0.214569*** (0.048519)	-0.033596 (0.027239)	0.793126
2009	0.842034*** (0.044948)	0.306070*** (0.080563)	-0.108060*** (0.039038)	0.762657

Singapore and Thailand: Mainly Peg on USD

SGD	USD	EUR	JPY	Adjust R^2
1999-2002	0.778092*** (0.014529)	0.104700*** (0.033306)	0.165980*** (0.011397)	0.866190
2003-2006	0.605170*** (0.012944)	0.173402*** (0.035188)	0.272791*** (0.013732)	0.872617
2007-2008	0.680305*** (0.024582)	0.413629*** (0.036943)	-0.031289 (0.020741)	0.829430
2009	0.683384*** (0.029788)	0.421354*** (0.053391)	-0.044829* (0.025871)	0.850771
THB	**USD**	**EUR**	**JPY**	**Adjust R^2**
1999-2002	0.780059*** (0.024136)	0.095567* (0.055328)	0.175320*** (0.018933)	0.705110
2003-2006	0.695215*** (0.017640)	0.144383** (0.047954)	0.276524*** (0.018714)	0.818689
2007-2008	0.915698*** (0.070559)	0.189128* (0.106038)	-0.028660 (0.059532)	0.455093
2009	0.831323*** (0.023323)	0.148497*** (0.041804)	0.029625 (0.020257)	0.928212

Korea: Might Peg on Broader Basket

KRW	USD	EUR	JPY	CNY	AUD	Adjust R^2
1999-2002	0.856757*** (0.027868)	-0.044252 (0.063884)	0.182411*** (0.021861)			0.674690
2003-2006	0.734230*** (0.027539)	0.117766 (0.074865)	0.260501*** (0.029217)			0.661013
2007-2008	0.870877*** (0.110007)	0.731015*** (0.165322)	0.321179*** (0.092815)			0.296580
	0.725717*** (0.113011)	0.283521 (0.189521)	-0.136489 (0.101909)	0.129580 (0.070164)	0.295904*** (0.066008)	0.324202
2009	0.807726*** (0.110076)	0.574697** (0.197294)	0.307145*** (0.095602)			0.334371
	0.671032*** (0.107812)	-0.063507 (0.244592)	-0.144351 (0.096682)	0.110505 (0.093266)	0.423965*** (0.092381)	0.406547

Indonesia and Philippines: Peg but Disturbed

IDR	USD	EUR	JPY	Adjust R^2
1999-2002	0.116435 (0.101628)	0.019449 (0.232968)	0.044118 (0.079721)	0.001753
2003-2006	0.770516*** (0.037689)	0.108311 (0.102460)	0.192471*** (0.039986)	0.505197
2007-2008	0.797320*** (0.064565)	0.674210*** (0.097031)	0.022095 (0.054475)	0.538798
2009	0.877546*** (0.076615)	0.105431 (0.137321)	-0.060578 (0.066541)	0.535486
PHP	**USD**	**EUR**	**JPY**	**Adjust R^2**
1999-2002	0.886457*** (0.040265)	0.036871 (0.092302)	0.115733*** (0.031586)	0.486482
2003-2006	0.800315*** (0.027727)	0.003392 (0.075416)	0.067030** (0.029416)	0.622089
2007-2008	0.002855 (0.079886)	0.056270 (0.119936)	-0.105475 (0.067309)	0.007468
2009	-0.213369** (0.098520)	0.013611 (0.176061)	0.074806 (0.086355)	0.018395

Asymmetry Effect of Exchange Rate Stabilization on Different Economies

- Difference on trade balance pattern between Japan and China will result in different attitude to regional exchange rate arrangement like OCA or BBC
- Japan is running surplus both in interregional and intraregional trade. JPY shift from free float to stabilization will help to keep both of those surplus.
- The exchange rate volatility of KRW is high, and Korea is running surplus both in interregional and intraregional trade in recent years. KRW shift from volatility to stabilization will help to keep both of those surplus.
- China run surplus in interregional trade but run deficit in intraregional trade. CNY shift from peg on USD to regional basket will make interregional trade surplus unstable while help to keep the intraregional trade deficit.
- ASEAN5 will benefit from regional exchange rate arrangement since their intraregional trade is dominated.

Asymmetry Effect of Exchange Rate Stabilization

	Japan and Korea	China	ASEAN
Intraregional	Surplus can be stable	Deficit can be stable	Trade become stable
Interregional	Surplus become less fluctuate	Surplus shift from stable to fluctuate	Trade become more fluctuate
Overall	Benefit on both side	Loss because inter regional dependence on trade balance	Benefit because regional dependence both in volume and balance

Is East Asia an OCA?

- Eichengreen and Bayoumi (1999) find East Asia satisfies the standard optimum currency area criteria, but conflict between exchange rate peg and domestic financial system would request the band at least 10%!
- Kawai and Motonishi (2005) believe that Japan, Korea, China Taiwan, Singapore, Hong Kong, Malaysia and Thailand are well integrated in terms of trade, finance and macroeconomic activity, but ASEAN+3 is not an optimum currency area.
- Kim (2005) indicate there exist a non-stationary property and no cointegration relationship in most of the bilateral convergence in East Asia.
- Frankel and Rose (1998) about the endogeneity of OCA criteria: Some countries may appear to be poor candidates for OCA, but OCA entry for whatever reason, may provide a substantial impetus for trade expansion. This will in turn result in more highly correlated business cycle, and the country will more likely to satisfy the criteria to be a member of the OCA.

The Impact of Exchange Rate Uncertainty on Trade

Choice of Exchange Rate Regime

- Fix vs. Flexible:

  Frankel (1999) no single currency regime is right for all countries or at all times
- Deeds vs. words, de facto vs. de jure:

  Mussa et al (2000): nine determinates of exchange rate regime
- General conclusion:

  Husain, Mody and Rogoff (2004):

  1) developed countries will benefit by having increasingly flexible exchange rate system;

  2) developing countries with little exposure to international capital markets, peg are neutral though are least durable and high risk of crisis

Exchange Rate Uncertainty and Trade: Empirical Research

- Because of the complicated interaction among trade, exchange rate volatility and national income, there exist two opposite schools/opinions/empirical results on if exchange rate uncertainty has significant effect on trade volume
- Bahmani-Oskooe and Ltaifa (1992) found: 1) developed countries' exports are found to be less sensitive to exchange risk than that of developing countries; 2) developing countries who fixed their exchange rate to one major currency to be subject to less risk than the other developing countries.
- Bahmani-Oskooe and Hegerty (2008): the effect of exchange rate uncertainty on trade in short run is more apparently than in long run.
- Irandoust, Ekblad and Parmler (2006): different import/export elasticity is the key in the Marshall-Lerner condition, and determined the exchange rate effect on trade.
- Fang, Lai and Miller (2009): different import/export elasticity among emerging economies will also result in the asymmetric effects of exchange rate uncertainty on trade.

Exchange Rate Volatility (CV) and Trade Growth

	1996-2000	2001-2005	2006-2007	2008
Japanese yen	**8.7653**	**6.6753**	**2.5076**	**5.1166**
Korean won	20.7792	8.2707	1.9178	15.0489
Chinese yuan	0.1949	0.6665	2.7713	2.0056
Indonesia rupiah	52.606	8.0041	1.6216	8.6007
Malaysia ringgit	18.5794	0.2159	3.6464	4.4664
Philippines peso	20.6315	4.1254	6.5495	6.6148
Singapore dollar	8.3621	3.3794	3.3323	3.5773
Thailand baht	20.1027	4.6191	8.8601	4.7972
Total trade growth	4.2742	11.6209	15.5862	19.9940
Regional trade growth	4.8649	12.8881	13.2556	18.9612
Trade growth with US	3.9816	5.2091	9.7137	6.9538
Trade growth with Euro	3.7995	11.4393	16.1678	13.2821

A Survey on Basket Peg Proposals

General Background on Currency Basket

- The aim of currency basket peg system is to maintain the weighted average exchange rate stabilization against currencies in the basket.
- Krugman (1991) provide a basic theory of target zone and crawling band with a fundamental determinants of the exchange rate in a simply monetary model. A crawling band combines a central exchange rate target that could be changed in frequent small increments with a wide band within which the actual exchange rate is allowed to fluctuate, but at the edge of band, authorities are committed to intervening to prevent further movement.
- Williamson (1996) further developed the idea into a BBC (basket, band and crawl) rules by empirical evidence. Keys of the BBC regime include the choice of peg and intervention currency, the choice of parity, the choice of band width and the choice of rate of crawl.
- The final objective of currency basket peg system is to decrease the impact of exchange rate volatility, as well as inflation, on trade and real economy.

Issues in Currency Basket Design

- Stabilization target: income? price level? trade?

  In most case of research focus on emerging market premature financial system, the effect of exchange rate on trade stabilization is more directly, but may be changed lately.
- Trade balance vs. trade volume?

  Since economic development, industrial upgrading and opening are very crucial for emerging economies, trade volume is widely used in estimate weight of currency basket in Asian theoretical research and European practice.
- The evaluation of the effect of currency basket peg on trade

  Standard deviation of trade volume: many factors can affect and we are hard to know if it is the result of exchange rate stabilization.

  The deviation of the actual exchange rate of a member currency to the basket is practical applied in conducting currency basket peg system.
- Stabilization of nominal exchange or REER or NER (NEER)?

  It is the real effective exchange rate, rather than the nominal exchange rate will effectively affect trade, but the actual and proposed currency basket peg systems are all focus on the real time nominal exchange rate determination or for coordination.

Retrospective of Currency Basket Schemes

- Trade Weighted Currency Basket by Williamson (1999, 2005)

  Insulate the trading relationship of the region from outside disturbances;

  create a propitious environment for further advances towards regional monetary integration.

  A common basket composed of G3 currencies by trade weights, 40.2 : 31.6 : 28.2 for dollar, Euro and yen.
- A Desirability of a Basket for REER stabilization by Ogawa and Ito (2000)

  If Asia want to avoid trade balance cycle by overvalued/undervalued exchange rate fluctuation under dollar peg, the real exchange rate must be managed.

  A basket currency regime is made to avoid Nash equilibrium and coordination failure in term of competitive depreciation.
- A Long Term Sustainability Basket: Ogawa and Kawasaki (2003)

  Apply G-PPP to detects cointegration relationship among real effective exchange rates, analyze long run equilibrium with common currency basket as an anchor and the long run sustainability when basket is placed with trade weight on G3 currencies.

  Weight on the US dollar in the basket is larger than the weight based on trade.

  Japanese yen works as an exogenous variable in the cointegration system before crisis, but works as an endogenous one and regarded as an insider currency after crisis.

Retrospective of Currency Basket Schemes (Cont'd)

- AMU: A Currency Basket for ASEAN+3 by Ogawa and Shimizu (2005)
  First defined the nominal exchange rate of AMU in terms of the dollar and euro by trade weight , Second calculated weights of each currency of ASEAN10+3 in AMU by weights of GDP at PPP and trade volumes.
  Defined the benchmark as the total trade of ASEAN+3 close to balanced in 2001.
  Estimate real and nominal deviation indicator of member currencies for surveillance.
  AMU peg system is more effective on stabilization of effective exchange rates
- Other Baskets Schemes:
  Moon et al. (2006) suggest RCUs weight on nominal and PPP GDP, trade and CMI.
  Turnovsky (1981) trade weight is important in determine larger country's weight, price elasticity of demand is more important for small open economy.
- Frankel (1999), Yoshino, Kaji and Suzuki (2004):
  each loss function for each policy objectives to choose the optimal exchange rate system can only minimize for only one circumstance.

A Persistent Daily Updated AMU of RIETI

- Conducted by Ogawa and Shimizu
- Benchmark year set on 2001which mainly focus on intraregional trade balance
- ASEAN+3 currencies were given their weights in AMU by their arithmetic average share of trade and GDP at PPP, and their benchmark exchange rate
- Rate of changes in Nominal Deviation Indicator of currency$_i$ =

$$\frac{(\text{actual ER of AMU/currency}_i - \text{benchmark ER of AMU/currency}_i)}{\text{benchmark ER of AMU/currency}_i} \times 100\%$$

- Rate of changes in real deviation indicator of currency$_i$ =
  Rate of Changes in Nominal Deviation Indicator of currencyi – ($inf_{AMU} - inf_i$)
- Weight are revised annually
- AMU, AMU-CMI (plus Hong Kong SAR) and AMU-wide (plus Australia, New Zealand and India) are provided simultaneously
- Even though AMU is aimed at common currency, the deviation indicator is apparently aimed at providing a tool for regional surveillance and coordination

Evaluations of Currency Basket Peg

- Rajan (2002), Wang (2008), Ogawa and Shimizu (2006a):

  common currency basket system might be favorable because the possibility of a competitive devaluation would continue exist if monetary authorities in East Asia choose their own individual currency basket.
- Williamson (2005), Ogawa and Shimizu (2006a):

  trade stabilization is not stabilize trade volume or trade balance themselves, but to prevent exogenous impact on trade, especially the impact of the exchange rate change of the third currency.
- Keys of BBC regime in Asia: policy independent and economic sovereignty; asymmetric effect (Park and Wyplosz, 2007):

  as long as the reluctance to abandon any element of monetary sovereignty remains strong, the way towards monetary integration must be imperfect and highly incomplete, formal basket pegging is unlikely to be sustainable but can easily mimicked with country-specific pegs, Dirty float or soft pegging is the only possibility.

Functions of Basket Peg and Regional Benchmark Rate

- A general index for measuring the Asian exchange rate volatility of East Asian currency as a whole against the currencies of their main trade partners, like USD, euro and more……
- A index for measuring the exchange rate volatility among currencies of ASEAN5+3 in conducting exchange rate coordination
- A key index for regional surveillance
- A reference benchmark of regional currencies exchange for official swap and private transactions
- A possible candidate of denominated currencies on regional market.

BBC and Asian Monetary Integration

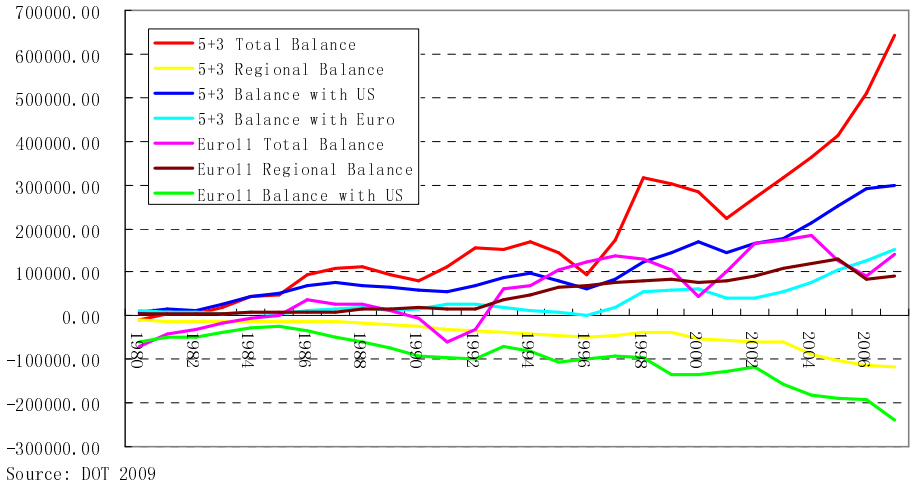
- Eichengreen (2007) believe that parallel currency is more stable and simple compare to ACU between the choice of parallel currency and harmonized inflation targeting for regional cooperation.
- Choi and Yoon (2005) appeal to make ACU shift from a basket numeraire to a parallel currency by real transactions and asset management, after the growing acceptance by the private market participants, and establish a multilateral exchange rate arrangement with the ACU as the Asian Exchange Rate Mechanism (AERM)
- Lee and Yoon (2007) suggest that the First step is making environment for coordinated policy by multilateralize CMI, institutionalize policy dialogue and create a system for information sharing. Second is establishing a common exchange rate mechanism by exchange rate cooperation, introduce a regional currency unit and creating financial facilities for intervention. The third is create single currency by create an Asian central bank and substitute national currencies with a regional currency unit.

A BBC Regime Proposal for Asia

Some Assumptions

- Peg on USD and Euro vs. 5 major currencies?
  trade balance vs. trade volume? total trade vs. export?
- Japanese yen should be include
  demand of Japan and from ASEAN, but too deep to intervene
- Two baskets regime: similarity and difference to Euro
  anchor basket and regional basket
  EMU focus on keeping member currencies within the regional basket band, the exchange rate of euro is free floating because of trade pattern. Asia need care the both.
- Benchmark year
  2001 is the most close to balance and no disturb, considering the J curve effect of exchange rate, we take 1999 as benchmark year of exchange rate
  but too old the reflect structure change
- Exchange rate
  REER? Nominal ER? Real ER?
- Resetting Interval:
  Fixed? Annually? Periodically?
  1999-2002, 2003-2006, 2007-present by data of 1995-1998, 1999-2002, 2003-2006. This could have crisis impact in separate period, and reflect the new turmoil.

Figure5.1 Trade Balance of ASEAN5+3 and Euro11



Source: DOT 2009

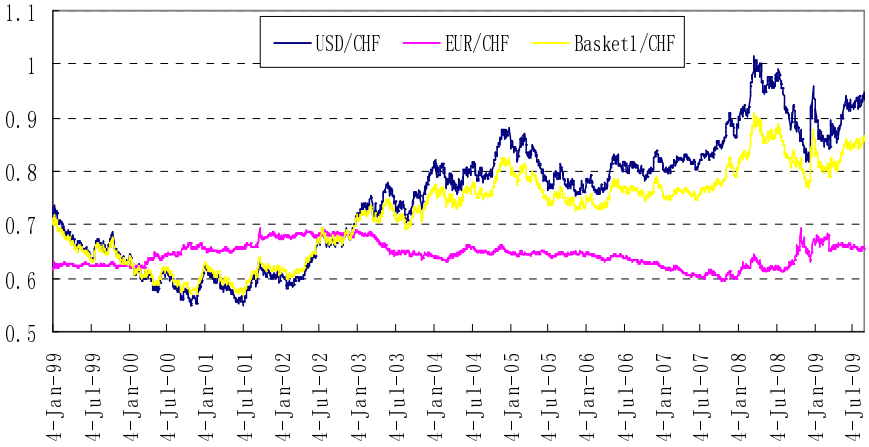
Trade Composition of ASEAN5+3

	Intra-regional Trade ratio			Trade Ratio with the US			Trade Ratio with Euro11			ROW		
	1980-89	1990-99	2000-09	1980-89	1990-99	2000-09	1980-89	1990-99	2000-09	1980-89	1990-99	2000-09
Japan	21.66	29.92	37.56	27.58	26.48	20.05	9.08	11.68	10.50	41.69	31.92	31.89
Korea	31.76	37.19	42.26	28.89	20.71	14.55	8.42	9.66	9.60	30.93	32.44	33.59
China	27.37	30.52	29.23	11.06	14.63	14.80	10.54	11.01	12.26	51.03	43.84	43.72
Sub Average	**23.93**	**31.45**	**34.48**	**25.47**	**22.80**	**16.77**	**9.19**	**11.15**	**11.10**	**41.41**	**34.60**	**37.35**
Indonesia	55.32	47.95	49.68	16.90	13.08	10.31	8.72	12.95	9.69	19.06	26.02	30.32
Malaysia	51.80	51.20	52.91	15.99	18.33	16.67	9.88	9.82	9.54	22.33	20.65	20.88
Philippines	35.94	41.00	50.13	27.82	26.12	19.62	10.00	10.17	11.09	26.23	22.71	19.16
Singapore	35.83	39.92	45.47	17.24	17.80	12.49	8.19	10.34	9.18	38.74	31.94	32.86
Thailand	41.92	44.26	47.98	15.04	15.69	12.47	13.14	11.21	9.11	29.89	28.84	30.44
Sub Average	**43.91**	**44.46**	**48.57**	**17.51**	**17.53**	**13.77**	**9.48**	**10.74**	**9.47**	**29.09**	**27.27**	**28.19**
Average	**28.92**	**35.59**	**38.60**	**23.48**	**21.12**	**15.94**	**9.26**	**11.02**	**10.65**	**38.33**	**32.27**	**34.81**

Anchor Basket Scenarios 1

- Peg on USD and euro: trade balance
- Trade weight: yearly trade volume data from DOT, assume a third trade of ASEAN5+3 with the rest of world is settled by USD.
- Investment weight: yearly foreign reserve data from COFER, estimated by world average.
- Same weights of trade and investment
- Anchor Basket = $0.5\sum W_{TJ}C_J + 0.5\sum W_{iJ}C_J$
- Anchor Basket = 0.8257 USD + 0.1743 Euro (1995-1998)
  = 0.7525 USD + 0.2475 Euro (1999-2002)
  = 0.7167 USD + 0.2833 Euro (2003-2006)

Table 5.3 Exchange Rate Volatility of Anchor Basket 1



Source: Calculation by data of UBC.

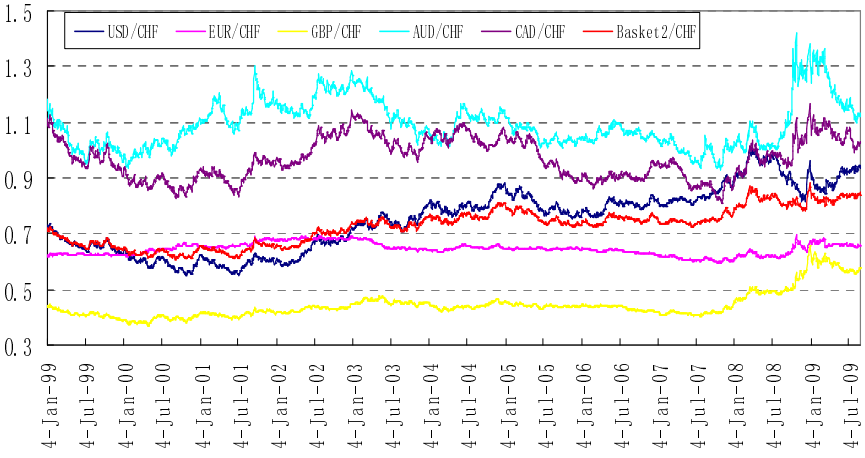
Anchor Basket Scenarios 2

- Peg on USD, EUR, GBP, CAD, and AUD
- Trade weight only
- Anchor Basket = $\sum W_{TJ} C_J$
- Anchor Basket (for 1995-1998, 1999-2002 and 2003-2006)
  = 0.5660 USD + 0.2728 EUR + 0.0676GBP + 0.0581AUD + 0.0355ACD
  = 0.5685 USD + 0.2766 EUR + 0.0631GBP + 0.0580 AUD + 0.0338 ACD
  = 0.5358 USD + 0.3066 EUR + 0.0678GBP + 0.0566 AUD + 0.0333ACD
- Compare to scenarios 1, weights of 5 currencies are stable
- USD has less influence on the basket
- The basket became more stable.

Top 12 Trade Partners of ASEAN 5 + 3

1995-1998		1999-2002		2003-2006	
country	ratio	country	ratio	country	ratio
United States	20.86	**United States**	20.28	**United States**	15.73
Euro Area	11.27	**Euro Area**	11.22	**Euro Area**	10.96
United Kingdom	2.79	**United Kingdom**	2.56	**Australia**	2.42
Australia	2.40	**Australia**	2.35	**United Kingdom**	2.02
Canada	1.46	Saudi Arabia	1.50	Saudi Arabia	1.84
Saudi Arabia	1.38	**Canada**	1.37	United Arab Emirates	1.58
United Arab Emirates	1.15	United Arab Emirates	1.29	India	1.32
Switzerland	0.87	India	0.93	**Canada**	1.19
India	0.85	Russia	0.73	Russia	1.10
Russia	0.76	Switzerland	0.72	Vietnam	0.79
Brazil	0.70	Mexico	0.62	Brazil	0.73
Panama	0.57	Vietnam	0.61	Iran, I.R. of	0.70
ASEAN5+3	45.87	ASEAN5+3	46.64	ASEAN5+3	49.16
Total	**90.93**	**Total**	**90.82**	**Total**	**88.81**

Figure5.5 Exchange Rate Volatility of Anchor Basket 2



Source: Calculated by data from UBC.

Descriptive Statistic Result of Anchor Baskets Volatility

	Anchor Basket 1	Anchor Basket 2
Mean	0.721386	0.726581
Median	0.739963	0.738167
Maximum	0.909251	0.882871
Minimum	0.568754	0.607806
Std. Dev.	**0.082439**	**0.064127**

Nominal Regional Basket

- Trade weight: trade volume, DOT, year data
- GDP weight: GDP at PPP, WEO , year data
- CMI contribution , period data
- Weights for trade, GDP and CMI are 0.6, 0.3 and 0.1.
- Common Basket = $0.6 \sum W_{TJ} C_J + 0.3 \sum W_{GDPJ} C_J + 0.1 \sum W_{CMIJ} C_J$
- Common Basket

  = 0.3433JPY + 0.1096KRW + 0.2642CNY + 0.0572IDR + 0.0662MYR + 0.0255PHP + 0.0775SGD + 0.0566THB (1995-1998)

  = 0.3354JPY + 0.1214KRW + 0.3044CNY + 0.0463IDR + 0.0588MYR + 0.0280PHP + 0.0586SGD + 0.0471THB (1999-2002)

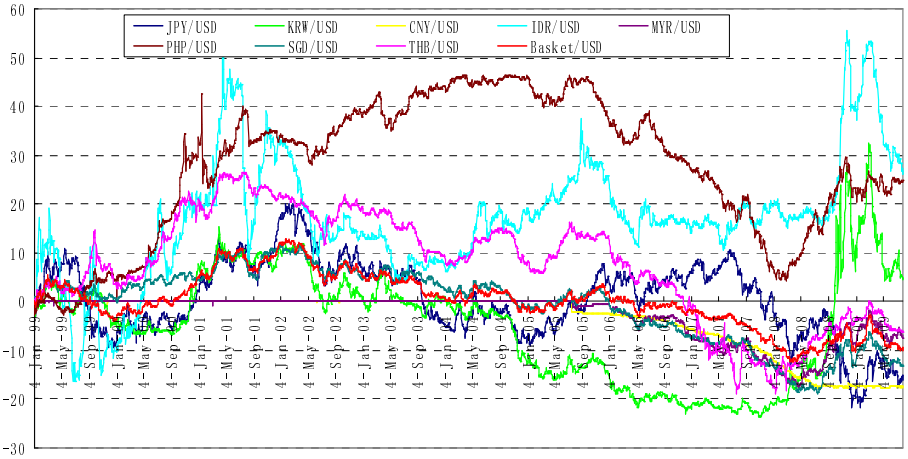
  = 0.3102 JPY + 0.1306KRW + 0.3285CNY + 0.0423IDR + 0.0496MYR + 0.0249PHP + 0.0637SGD + 0.0502THB (2003-2006)
- Exchange rate volatility calculated on daily data
- Findings:

  1) most currencies of ASEAN5+3 fluctuate quite close to the fluctuate of regional basket, naturally exist a basis of exchange rate coordination ;

  2) Japan and China have more influence on the common basket fluctuate;

  3) in facing with outside impact and increase volatility, basket show obviously stabilization effect

Figure 5.6 Exchange Rate Volatility of Regional Basket



Source: UBC database and author's calculation.

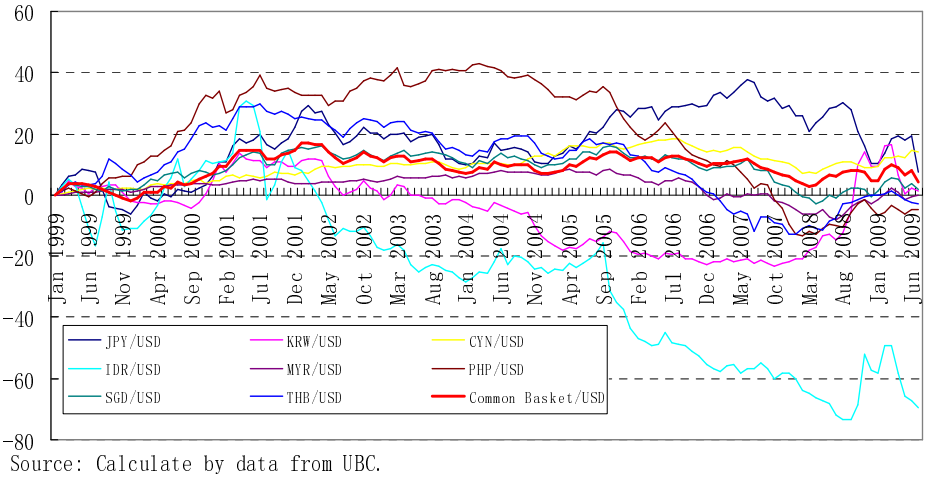
Nominal Exchange Rate Stabilization Effect of Regional Basket

	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB	Basket
Mean	0.736250	-4.545223	-3.686379	17.05098	-2.737280	27.68299	-0.446178	7.315416	0.319133
Median	1.560410	-2.449616	-0.016914	16.53204	0.000000	30.81472	1.862792	8.386045	0.274785
Maximum	20.18725	32.39228	0.057991	55.54848	0.055269	46.41143	11.74343	26.50609	12.90205
Minimum	-21.70486	-23.78700	-17.72843	-16.50656	-17.56764	-2.682022	-18.76658	-19.00119	-12.35575
Std. Dev.	**7.725814**	**11.41672**	**5.981147**	**12.23423**	**4.520136**	**14.13166**	**7.483031**	**10.99821**	**5.544914**

Real Regional Basket

- Basic calculation is same as nominal regional basket.
- Real Exchange volatility
  = nominal exchange rate volatility (direct quotation) – inflation
  $RER_i = NER_i - (inf_i - inf_{us}) = NER_i - inf_i + inf_{us}$
- Real Exchange rate volatility measured by index when January 1st, 1999=0
- Findings:
  1) Indonesia rupiah and Philippines peso became more deviated from the regional level and Indonesia rupiah present a appreciation trend rather than depreciation
  2) The real exchange rate volatility of Korean won became more stable

Table 5.7 Real Exchange Rate Volatility and Regional Basket



Source: Calculate by data from UBC.

Real Exchange Rate Stabilization Effect of Regional Basket

	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB	Basket
Mean	17.40933	-4.870266	9.717984	-25.58840	2.952542	19.86148	8.697701	10.78658	8.775819
Median	18.15717	-2.506098	10.02956	-22.69448	3.918424	23.78168	10.02615	12.90216	9.599247
Maximum	37.91057	16.43912	18.53937	30.87877	8.571035	43.20678	16.20908	29.51471	17.08108
Minimum	-6.408649	-23.42860	0.000000	-73.49210	-8.027143	-13.45747	-2.722452	-12.73064	-1.760120
Std. Dev.	**10.34126**	**11.39542**	**4.660505**	**26.67897**	**3.755827**	**17.44944**	**5.020109**	**11.62362**	**4.277248**

Descriptive Statistic Result of Regional Baskets Volatility

	Nominal Basket	Real Basket
Mean	0.319133	3.000315
Median	0.274785	2.900856
Maximum	12.90205	13.27798
Minimum	-12.35575	-7.179639
Std. Dev.	**5.544914**	**4.555985**

Feasible Band of Asian BBC

- Evaluated by Mean, media, maximum, minimum and standard deviation of difference of exchange rate volatility of ASEAN5+3 currencies to basket.

  The evaluation standards for mean, median, and standard deviation are <5=good, 5-8=acceptable, 8-12=fair, >12=difficulty

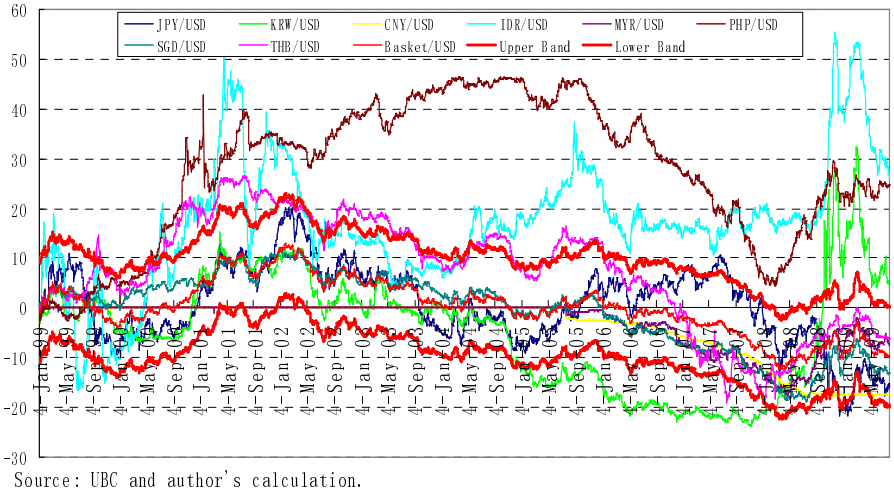
  The evaluation standard for maximum and minimum value are <10=good, 10-15=acceptable, 15-20=fair, >20=difficulty.
- Evaluated by average out degree (daily average degree of a currency fluctuates out of the band) :

  $$\text{Average out Degree} = \frac{\text{sum of daily volatility out of bands in percentage}}{\text{total observation days of out of bands}}$$
- Evaluated by out of frequency (the ratio of total days volatility out of the band to total observation days)
- Findings:

  1) 10% band can be achieved with little effort for most currencies in the past 10 years

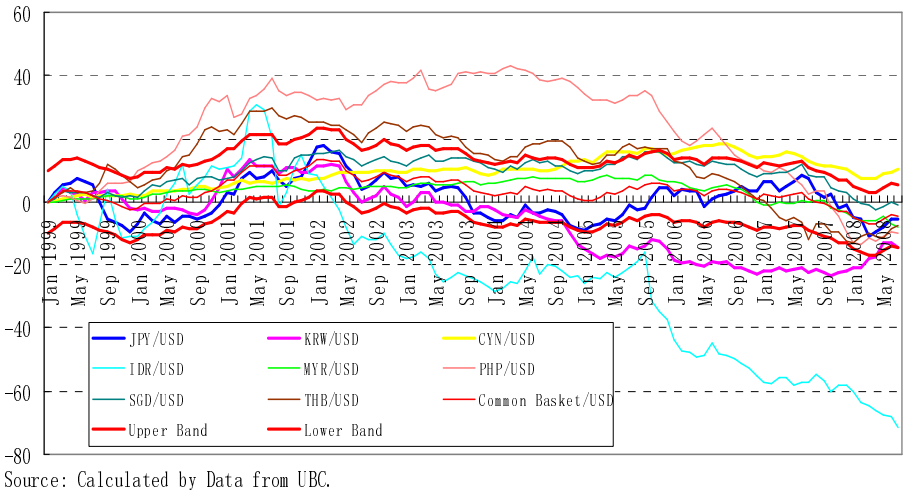
  2) the RER analysis shows it would be more difficult to keep within the band (except Philippines), suggest regional economic fundamental difference and the importance of regional convergent standard like in the Maastricht Treaty of European Union

Figure5.8 Nominal Exchange Rate Volatility and Bands



Source: UBC and author's calculation.

Figure 5.9 Real Exchange Rate Volatility and Bands



Source: Calculated by Data from UBC.

Nominal Exchange Rate Volatility and OCA Evaluation

(3 good, 2 acceptable, 2 fair and 1 difficulty)

1999-2009	JPY/USD	KRW/USD	CNY/USD	IDR/USD	MYR/USD	PHP/USD	SGD/USD	THB/USD
Mean	0.417117	-4.864357	-4.005512	16.73185	-3.056413	27.36385	-0.765311	6.996283
	good	good	good	Fair	good	difficulty	good	good
Median	0.592678	-4.225675	-3.541745	16.82225	-2.785383	29.13775	-0.160702	8.564637
	good	good	good	Fair	good	difficulty	good	good
Maximum	13.14680	35.53419	4.031125	60.33671	4.229456	48.21312	6.351978	19.93151
	acceptable	difficulty	good	difficulty	good	difficulty	good	Fair
Minimum	-12.65647	-20.12437	-14.43750	-18.61461	-12.89678	-6.389290	-8.340738	-14.76056
	acceptable	difficulty	acceptable	Fair	acceptable	good	good	acceptable
Std. Dev.	5.054890	10.21328	3.780222	13.33845	3.558869	12.97560	3.028258	6.602282
	Fair	difficulty	acceptable	difficulty	acceptable	difficulty	good	Fair
Overall	**acceptable**	**Fair**	**good**	**Fair**	**good**	**difficulty**	**good**	**acceptable**

Real Exchange Rate Volatility and OCA Evaluation

(2 good, 1 acceptable, 3 fair and 2 difficulty)

1999-2009	JPY/USD	KRW/USD	CNY/USD	IDR/USD	MYR/USD	PHP/USD	SGD/USD	THB/USD
Mean	8.633508	-13.6461	0.942165	-34.3642	-5.82328	11.08566	-0.07812	2.010762
	fair	difficulty	good	difficulty	acceptable	fair	good	good
Median	6.732773	-10.8857	1.921632	-32.4628	-6.52674	15.31076	0.279553	5.605345
	acceptable	fair	good	difficulty	acceptable	difficulty	good	acceptable
Maximum	26.63294	7.835606	10.19526	16.49214	2.676854	34.6222	4.551481	17.91684
	difficulty	good	acceptable	fair	good	difficulty	good	Fair
Minimum	-4.64853	-32.9725	-9.87774	-81.5794	-14.3097	-17.995	-7.43273	-21.997
	good	difficulty	good	difficulty	acceptable	fair	good	difficulty
Std. Dev.	8.078263	11.969	4.137002	26.73207	4.208025	15.45297	2.732697	10.08054
	fair	fair	good	difficulty	good	difficulty	good	fair
Overall	**fair**	**fair**	**good**	**difficulty**	**acceptable**	**difficulty**	**good**	**fair**

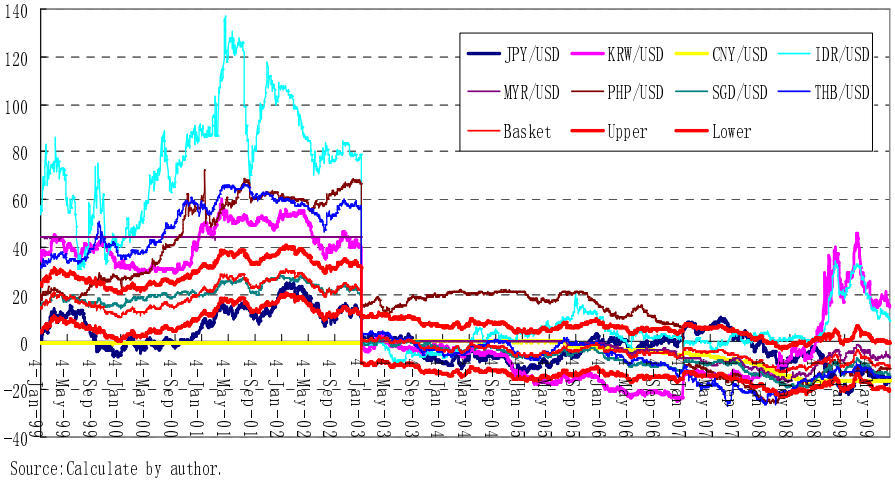
Nominal and Real Deviation to Bands Comparison

Nominal	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB
Degree	1.2548	7.3019	1.4477	13.3942	1.2842	21.1329	0	3.119
Frequency	5.35%	37.66%	8.29	67.68%	4.75%	86.82%	0	38.42%
Real	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	2.4619	9.3849	3.2062	29.5618	0	15.6292	0.0236	3.9777
Frequency	7.09%	38.58%	43.3%1	74.02%	0	66.14%	2.36%	56.69%

The Benchmark Adjustment

- The benchmark year is set fixed at 1999:
  merit: close to trade balance; consider J curve effect; no exogenous impact before; proper set the interval in regards to crisis
  disadvantage: too long to reflect fundamental change
- Adjustable benchmark
  adjust at beginning of every interval: may result in comparative depreciation periodically
  adjust by trend in the past one interval which can be regarded as a continuously renewed by equilibrium level, which had lasted for years and reflected the economic fundamentals and should be unveiled more meaningful result.
- The Benchmark adjustment present some changes:
  there are no obviously differences on real and nominal evaluation
  crisis impact is more obviously on nominal deviation volatility
  bands is easier to be maintained within ±10% in normal years for most countries
  some economies, Indonesia in particular, constantly experienced unstable fundamentals against other economies in the region.

Figure 5.10 Nominal Exchange Rate Volatility and Bands

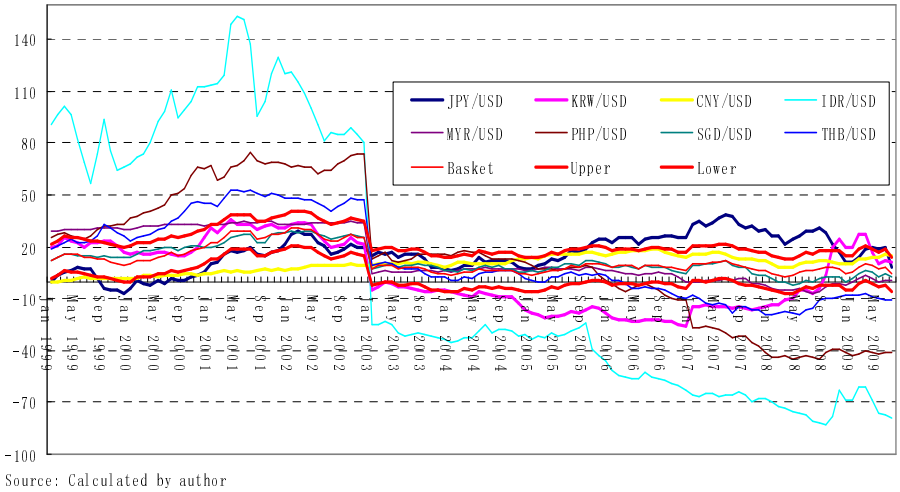


Source:Calculate by author.

Nominal Deviation of ASEAN5+3 Currencies to Bands

1999-2002	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB
Degree	3.8568	11.5965	10.8567	47.2764	13.7553	19.8575	0	19.9875
Frequency	69.69	100	100	100	100	82.65	0	100
2003-2006	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	0	4.6353	0	3.0744	0	9.6633	0	0
Frequency	0	46.96	0	21.64	0	100	0	0
2007-2009	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	1.3263	15.5515	1.2497	10.0115	0	2.2982	0	4.3599
Frequency	23.27	47.76	6.47	64.25	0	33.59	0	41.60

Figure 5.11 Real Exchange Rate Voltiality and Bands



Source: Calculated by author

Real Deviation of ASEAN5+3 Currencies to Bands

1999-2002	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB
Degree	3.384	0.9351	6.4966	68.0030	6.2149	23.3243	0	10.0394
Frequency	56.25	6.25	87.50	100	58.33	97.92	0	85.42
2003-2006	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	5.8204	11.7271	0.4003	34.4974	0	3.6074	0	3.5222
Frequency	31.25	91.67	2.08	100	0	33.33	0	20.83
2007-2009	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	11.2106	8.9962	1.1370	68.0461	1.4691	35.4320	0	10.4884
Frequency	80.65	83.87	3.22	100	29.03	100	0	100

Nominal and Real Deviation Comparison (1999-2009)

Nominal	JPY	KRW	CNY	IDR	MYR	PHP	SGD	THB
Degree	1.2548	7.3019	1.4477	13.3942	1.2842	21.1329	0	3.119
Degree*	3.606	10.955	10.4705	31.9243	13.7553	13.0025	0	16.6729
Frequency	5.35%	37.66%	8.29	67.68%	4.75%	86.82%	0	38.42%
Frequency*	30.24%	64.07%	39.36%	61.66%	37.78%	77.21%	0	47.95%
Real	**JPY**	**KRW**	**CNY**	**IDR**	**MYR**	**PHP**	**SGD**	**THB**
Degree	2.4619	9.3849	3.2062	29.5618	0	15.6292	0.0236	3.9777
Degree*	6.8498	10.3109	6.2362	55.3500	5.0605	23.9612	0	9.4144
Frequency	7.09%	38.58%	43.3%1	74.02%	0	66.14%	2.36%	56.69%
Frequency*	52.76%	57.48%	34.65%	100%	29.13%	74.02%	0%	64.56%

Some Opening Issues

Crisis Management Solution

- Exchange rate volatility increased during the period of financial turmoil in 2008
- Nominal exchange rate volatile more than real exchange rate, which indicate the actual impact is not very serious but real exchange rate are more deviated indicating fundamental difference
- Policy focus should be placed on real exchange rate coordination which is more difficult to keep within the band
- For currencies serious deviate from the basket (measured by the accumulated difference of volatility), there could be two options:
  1) decrease its weight and increase its band in the same scale;
  2) departure from the basket
- The return of a departure currency
  the exchange rate back to the moving track according to the past exchange rate volatility became stable for a interval
- Important:
  the aim of OCA is stabilization effect during crisis period, the difficulty of maintain band in crisis period indicate the BBC can only be serviced as surveillance or coordination, rather than common currency

Asymmetry Issues and Selective Band

- Trade volume is important for major countries, as well as for the regional stable, but exchange rate elasticity is important for small open economies;
- Huge volatility of small open economies can also influenced the basket: the case of Indonesia rupiah and Philippines peso in real exchange rate analysis
- Because of their slight weights in the basket, when major currencies make change will lead the basket change with them, the adjustment pressure of those small open economies is much larger in order to keep the basket change
- Market of yen is too deep to be managed
- Possible solution:

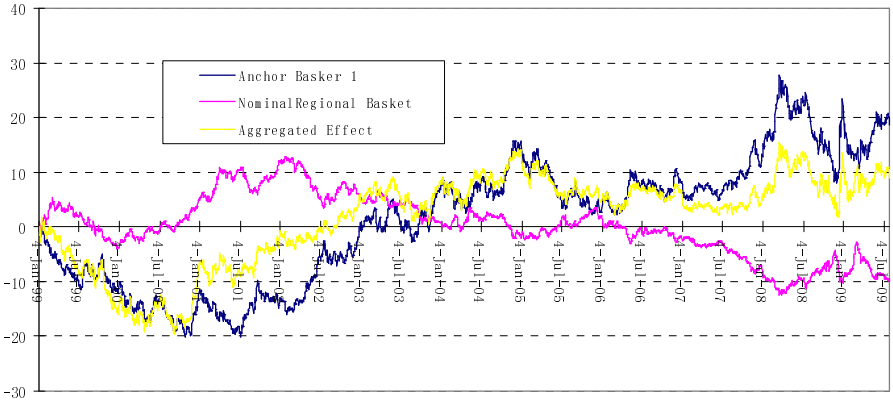
  1) selective band; 2) weight option; 3) gradual way of yen
- A more important lesson from Euro for East Asia:

  the convergent requirements for East Asia like the Maastricht Treaty and call for further economic integration rather than trade integration only

The Aggregated Volatility Effect

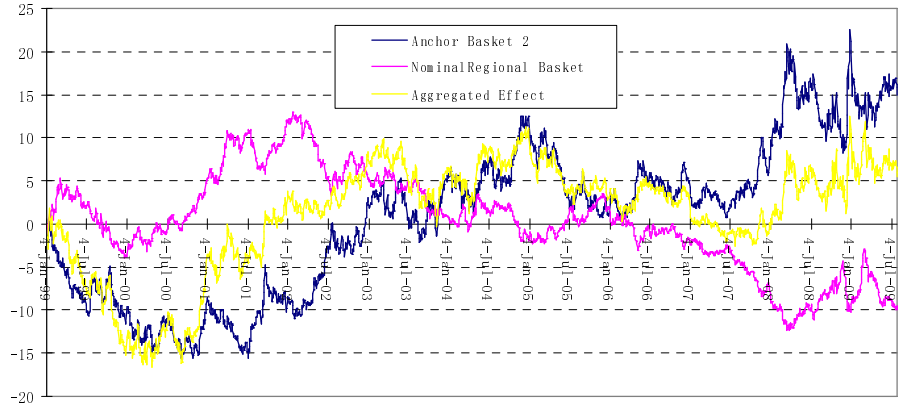
- The aggregated volatility effect is the key of the dual baskets regime
- Aggregate the volatilities of the two baskets together to detect the combined stabilizing effect on exchange rate
- Only anchor basket 1, anchor basket 2 and the nominal regional basket can be available at daily data and can make comparison
- The volatility of the two baskets is generally in opposite direction, and the combined volatility trace indicating the stabilizing effect is in between during most periods
- The final stabilizing effect of the dual baskets regime will be comprised the exchange rate volatility of the two baskets
- Since most of ASEAN5+3 currencies are de facto peg on USD, the volatility of the regional basket, especially the nominal one, should mainly follow the volatility of the USD. The opposite volatility of the anchor basket and regional basket is still remained as a mystery

Figure 5.12 Aggregated Effect of the Two Baskets



Source:Calculated by author.

Figure 5.13 Aggregated Effect of the Two Baskets



Source: Calculated by author.

Statistical Descriptions of Aggregated volatility Effect

	Anchor 1 (1)	Anchor 2 (2)	Nominal (3)	(1) + (3)	(2) + (3)
Mean	1.202128	0.703282	0.319133	1.521261	1.022415
Median	3.855394	2.388117	0.274785	4.157828	2.791109
Maximum	27.74538	22.51264	12.90205	15.41745	12.49053
Minimum	-20.0929	-15.6571	-12.3558	-19.6652	-16.7083
Std. Dev.	11.50523	8.827394	5.544914	8.175549	6.400118

Conclusion Highlights

- A regional exchange rate arrangement is the key in promoting regional cooperation in East Asia.
- In regards to Euro area, regional integration in East Asia is not qualified for creating a common currency, even for conducting exchange rate coordination.
- It is really needed to establishing a regional exchange rate benchmark as BBC regime for regional surveillance and trade stabilization, and may provide a benchmark for private investment and official swap in the region.
- Provide a suggested currency basket design, including the choice of peg currency, the choice of parity and the choice of band width.
- A BBC regime with 10% band can be possible achieved, especially for nominal.
- RER analysis shows that the importance of regional convergent requirements like the Maastricht Treaty and call for a overall economic fundamental integration in Asia

Future Work

- Benchmark year setting and resetting
- Stabilization effect of BBC on trade of East Asia
- Asymmetric effect among East Asia
- the choice of intervention currency and the choice of rate of crawl
- Effect of anchor and regional basket combination
- Scenario of 99 and 01 benchmark year

Thanks!