

International Conference on Monetary  
Policy Frameworks in Developing  
Countries: Practices and Challenges

# Exchange Rate Policy and Monetary Policy Implementation

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# Background

- Discussion of monetary policy choices in many African countries is framed around the transition from monetary aggregate targeting to inflation targeting, in the context of a flexible exchange rate
- A valid debate – but these options are only a part of the wide range of monetary policy options available, encompassing a range of exchange rate policy choices
- Even within the monetary-inflation targeting transition, different exchange rate options are possible
- This presentation will review:
  - Exchange rate and monetary policy choices with reference to developing countries
  - How exchange rate policy choices impact on monetary policy
  - Both in theory and in practice
  - With a focus on sub-Saharan Africa

# Exchange rate and monetary policy choices

Fundamental macroeconomic policy decision

- with major implications

Wide range of options

- no “obvious” choice
- depends on many country/economy characteristics

Monetary & exchange rate policy choices not independent

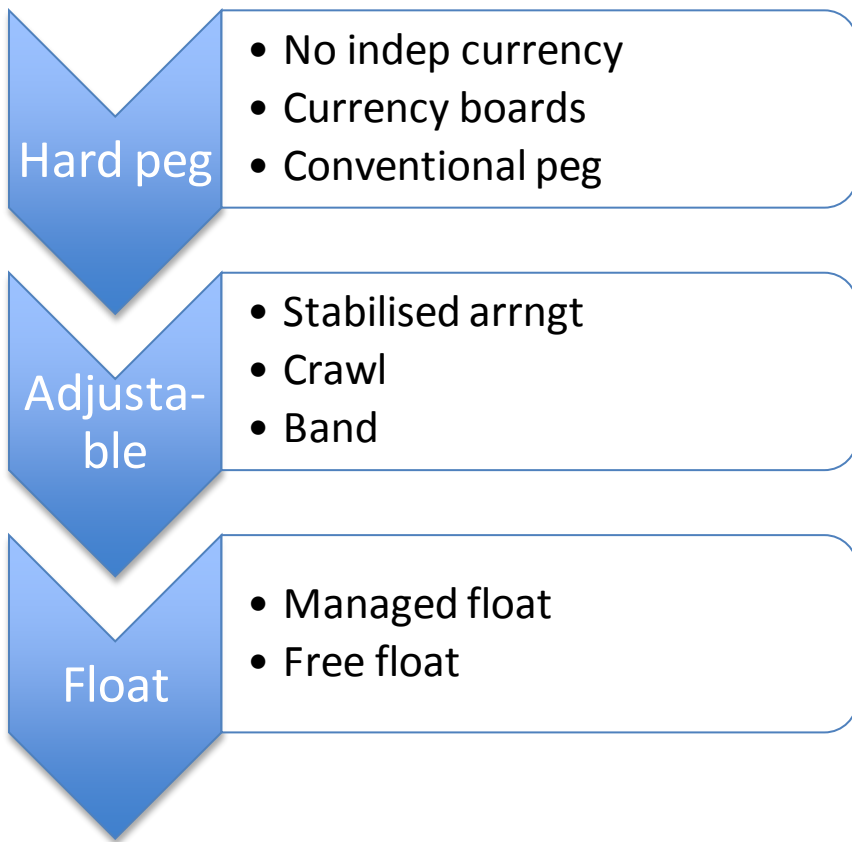
- a “joint” decision

“Theoretical” constraints may be blurred in practice

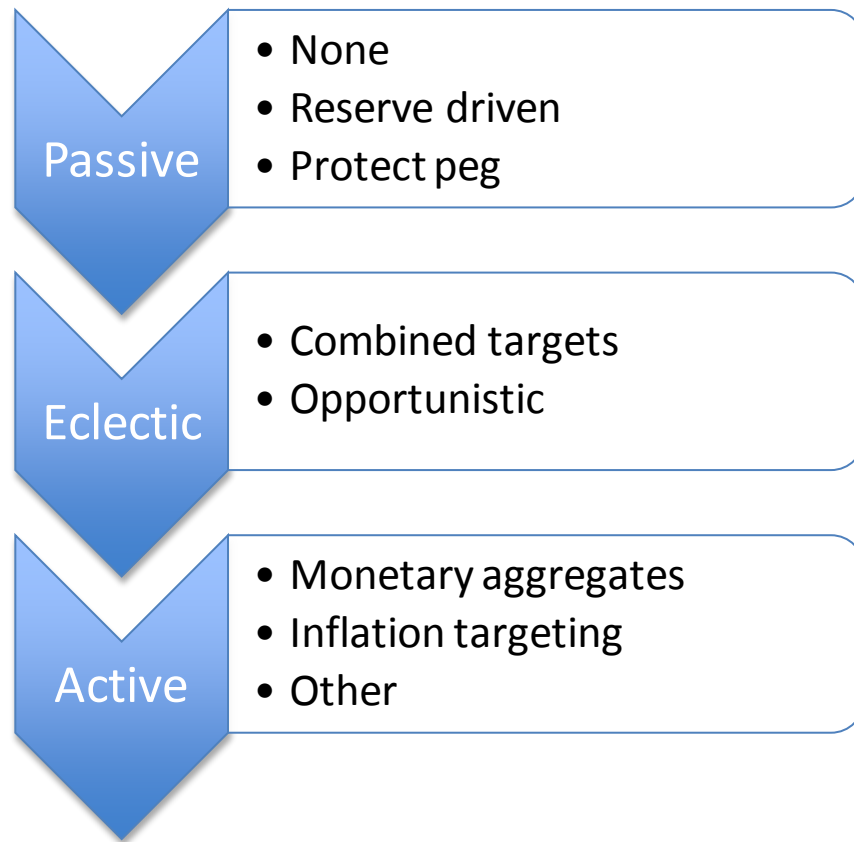
- leading to many “intermediate” solutions

# Exchange rate and monetary policy choices

## Exchange rate policy



## Monetary policy



# Monetary Policy Frameworks and Exchange Rate Anchors – IMF classification

Exchange rate target	Currency peg - USD	Currency peg – other			
Monetary target			Monetary Aggregate	Inflation Targeting	Other
<b>% of IMF members, 2010</b>	26.5%	26.4%	13.2%	16.4%	17.5%

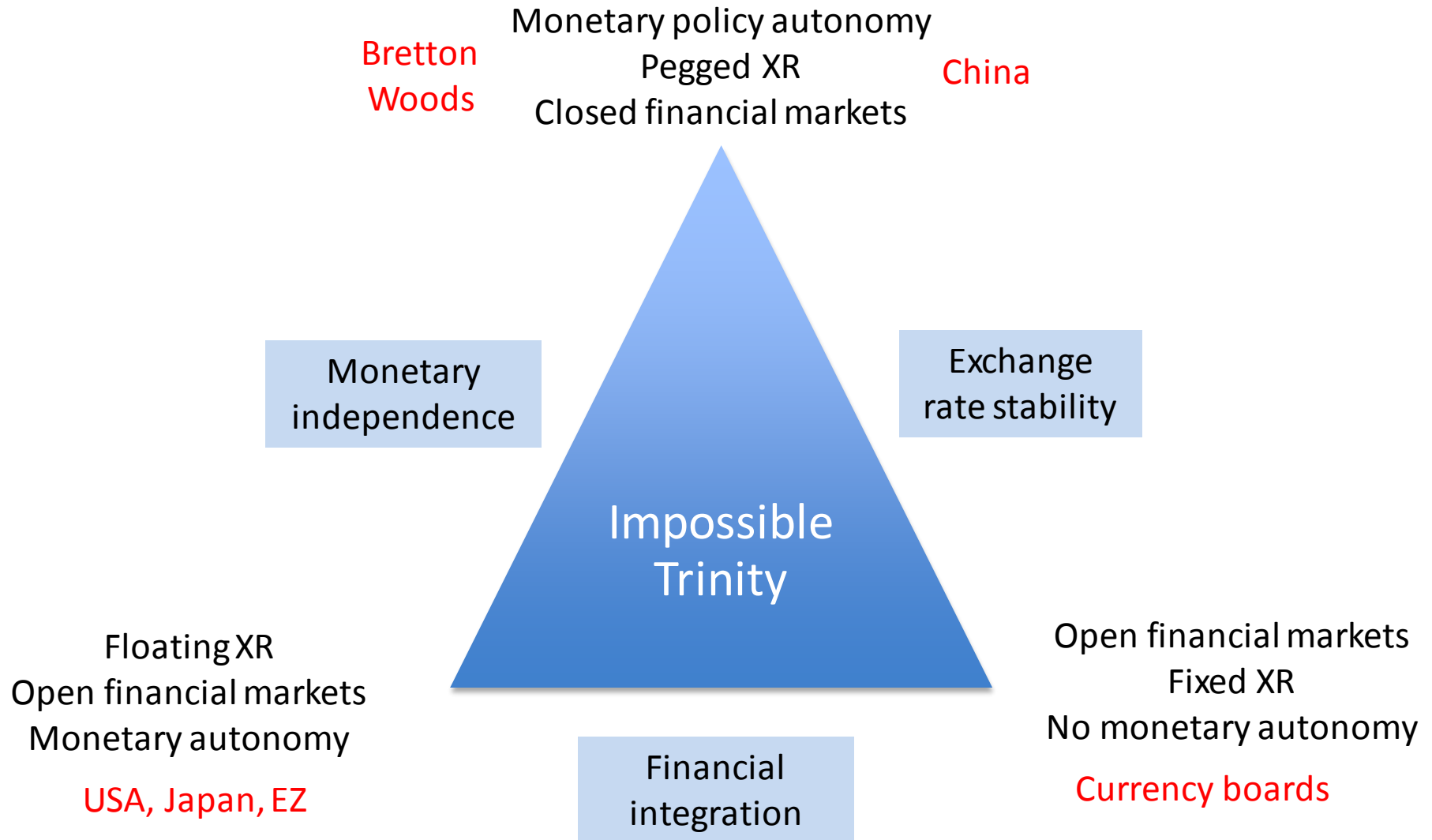
*Source: IMF Annual Report on Exchange Arrangements and Exchange Restrictions, 2010*

# Monetary Policy Frameworks and Exchange Rate Anchors

- Majority of IMF members use exchange rate targets
  - Typically small open economies – as theory suggests
  - Approx 20% of world GDP
  - USD dominant peg but declining in importance
- Monetary targeters typically much larger (if Eurozone countries included)
  - Monetary aggregate anchors used by countries with less developed financial markets (M2/GDP avg 0.3)
  - Inflation target countries have more developed financial markets (M2/GDP avg 0.6)
  - “Other” includes USA, Eurozone, Japan – with high levels of credibility

**WHAT ARE THE AVAILABLE  
CHOICES?**

# The Mundell-Fleming “Trilemma”





# Trilemma in theory

- Typically posed in the context of financial integration / open capital account
- Hence posing a stark choice between exchange rate stability and monetary autonomy
- An example – attempting to combine tight monetary policy with an exchange rate target

## Tight monetary policy

- High risk-adjusted interest rates
- Capital inflows, leading to XR appreciation
- To stabilise XR, buy FX & accumulate reserves

## Monetary expansion

- FX purchases create domestic currency liquidity
- Lower interest rates
- Offsets original monetary policy

## Sterilisation

- Liquidity absorbed by central bank to prevent monetary expansion
- High costs for central bank, as domestic interest rate exceeds earnings on the FX reserves

# Trilemma in practice

- But in the real world, policymakers may legitimately strive for a workable policy that combines elements of financial integration, monetary policy autonomy and exchange rate stability
- In particular, forgoing XR stability may be undesirable for developing countries with active monetary policy:
  - XRs may be quite volatile – due to capital flow and commodity price volatility
  - XR volatility can cause problems for:
    - Domestic balance sheet mismatches (depreciation)
    - High pass-through to inflation (depreciation)
    - Competitiveness (appreciation)
    - Trade flows and export development (both)
  - Minimising or reducing XR volatility may therefore be a worthwhile policy objective

# Trilemma in practice

- In practice the choices may not be so stark as the theory suggests:
  - Financial integration constrained by:
    - Formal capital controls
    - Other regulatory constraints to capital flows (e.g. institutional investors, ownership restrictions)
    - Underdeveloped capital markets (bond & stock) – where do capital inflows go?
    - May be a policy objective or unintended
  - Provides scope for intermediate solutions combining a degree of exchange rate stability with monetary autonomy
    - Particularly the case with small, underdeveloped financial markets

# **SELECTED RESEARCH FINDINGS**

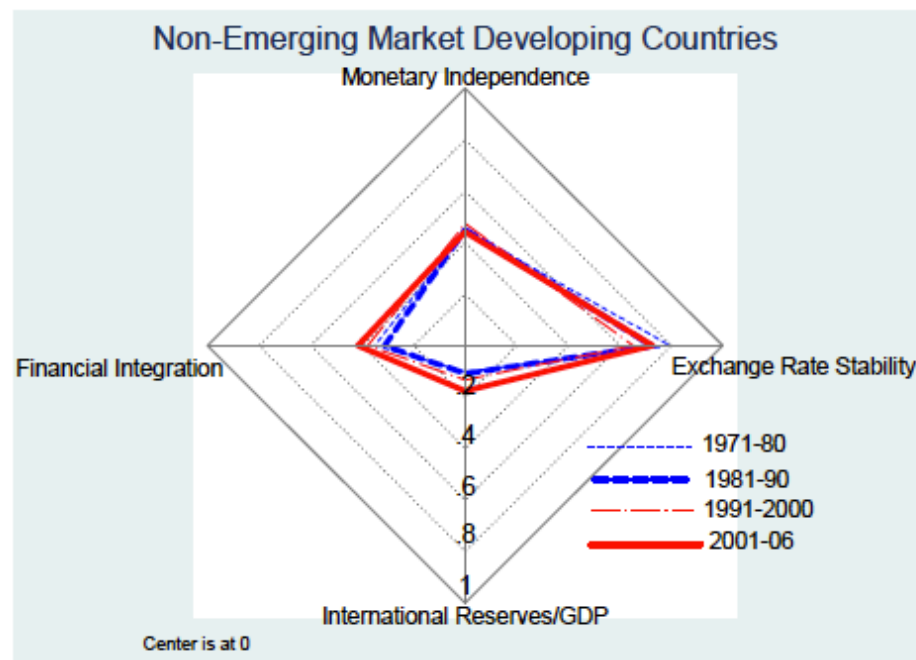
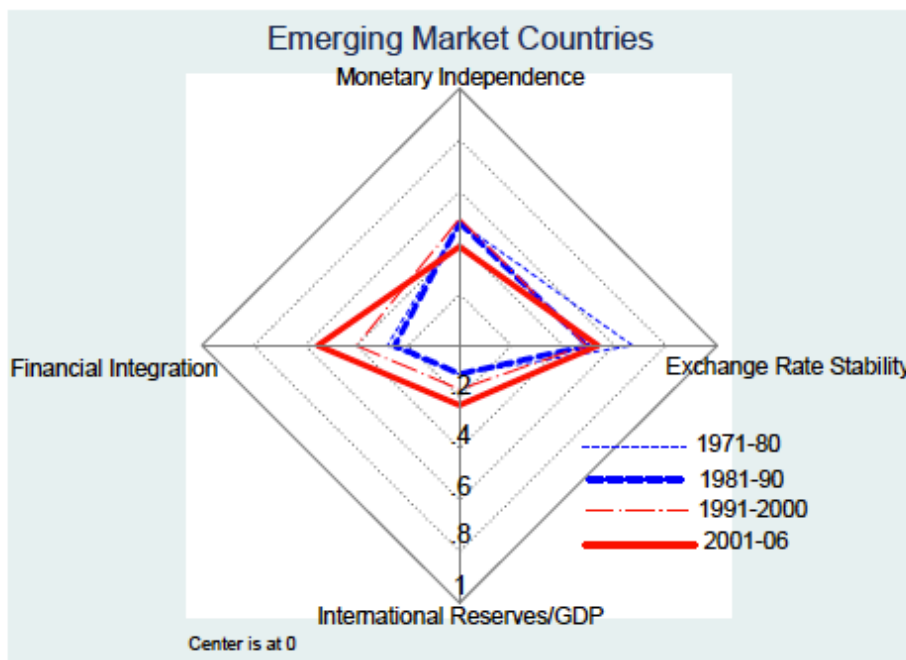
# Selected research findings

- Aizenman, Hutchison & Noy (2008) “Inflation targeting and real exchange rates in Emerging Markets” (NBER)
- Investigates how Inflation Targeting (IT) emerging market (EM) central bank (CB) respond to inflation, output gaps and real exchange rates
- Estimate monetary policy reaction function for 16 IT EM economies
- Main findings:
  - EM IT CBs behave differently from non-IT EM CBs and from IT industrial country CBs
  - EM IT CBs do not follow “pure” IT strategies, but respond systematically to the RER as well as expected inflation
  - EMs with high concentration of commodity exports are more responsive to RER
  - A “modified” IT that responds to RER is superior in terms of output volatility
  - Having an exchange rate (RER) target is not inconsistent with active monetary policy (IT)

# Selected research findings

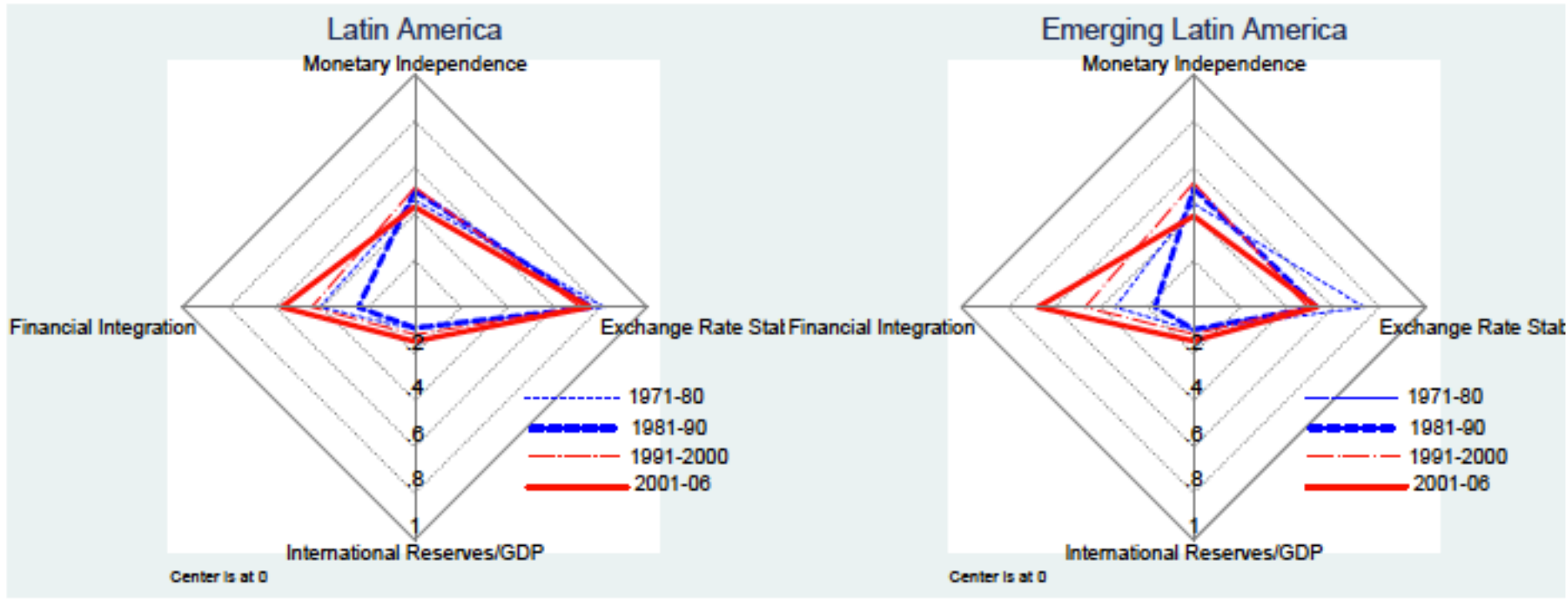
- Aizenman, Chinn & Ito (2008) “Assessing the Emerging Global Financial Architecture: Measuring the Trilemma’s Configurations Over Time” (NBER)
- Addresses the “trilemma” directly, and investigates the degree of exchange rate flexibility, monetary independence and capital account openness by calculating indexes for each over time
- Distinguishes between EMEs and non-EM developing countries
- Incorporates the impact that reserve accumulation can have on trilemma constraints, by providing a buffer
- Extends the trilemma “triangle” by incorporating reserves

# Aizenman, Chinn & Ito (2008)



- EMEs have moved towards deeper financial integration and reduced monetary independence, with IR accumulation – but overall a balanced combination of macro policy goals
- Non-EMEs have focused more on exchange rate stability, with less financial integration, stable monetary independence less IR accumulation

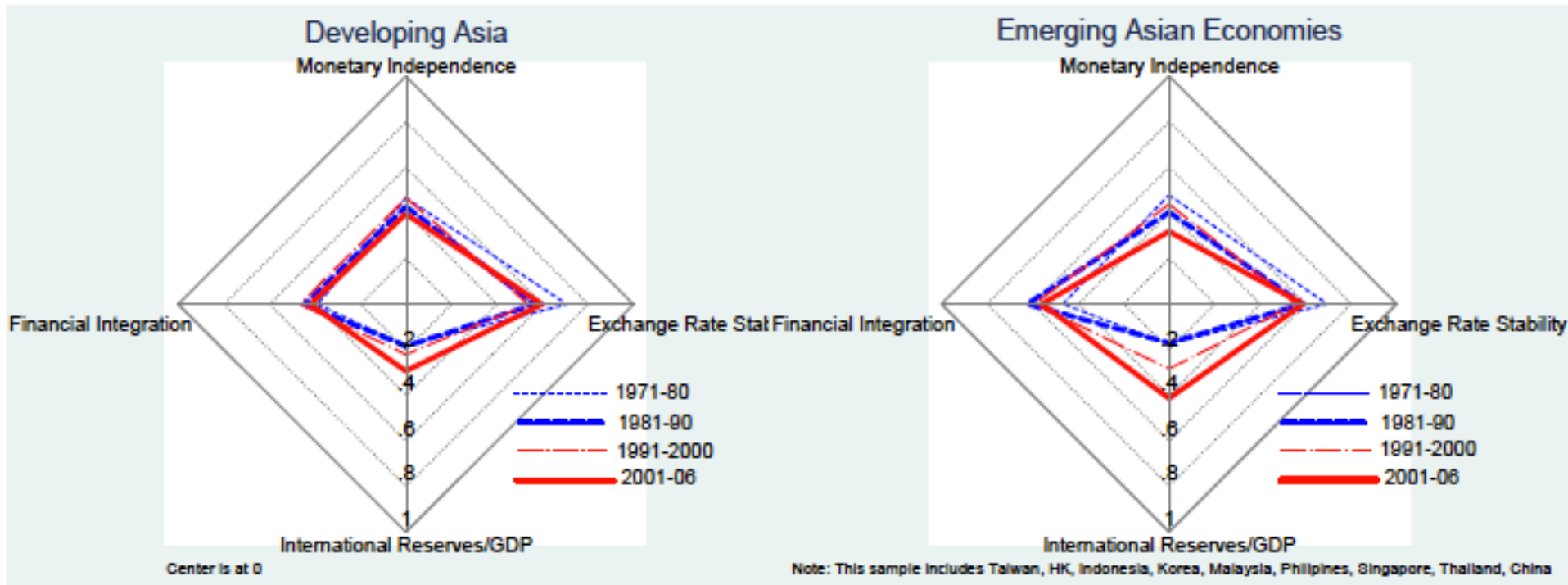
# Latin America



- Increased financial integration with less monetary independence and exchange rate stability, especially for EMEs
- Little accumulation of IR

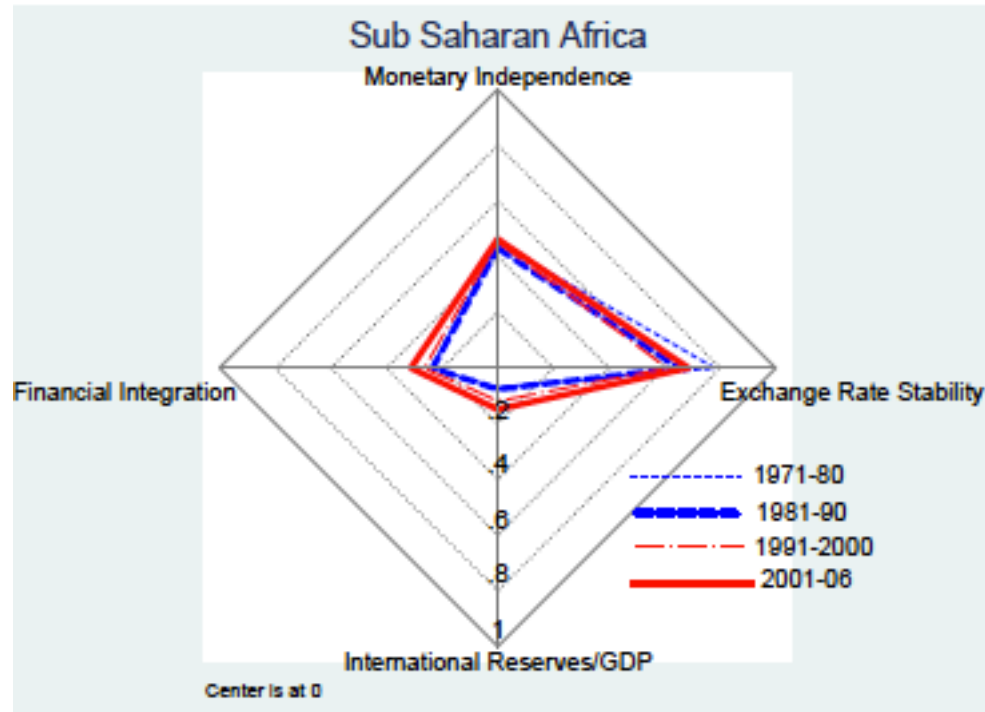


# Asia



- Overall a more balanced combination – Asian EMEs have stable financial integration and XR stability, reduced monetary independence, substantial IR accumulation
- Distinct from other EMEs

# Sub-Saharan Africa



- SSA more focused on XR stability, although some reduction, with stable monetary independence
- Little financial integration or IR accumulation

# Aizenman, Chinn & Ito (2008)

- Overall findings”
  - EMEs converging towards a “middle ground” with managed XR flexibility, buffered by sizeable IR holdings, with medium monetary independence and financial integration
  - Trilemma constraints are binding: a change in one of the variables induces an opposite change in (a combination of) the other two
  - Output volatility lower with greater monetary autonomy and less XR stability
  - But IR holdings provide a buffer against output volatility with XR stability if  $> 20\%$  of GDP
  - XR stability is more effective in reducing inflation than monetary policy autonomy; financial integration also reduces inflation
  - High IR holdings enable relaxation of trilemma constraints

# Selected research findings

- Ostry, Ghosh & Chamon (2012) “Two Targets, Two Instruments: Monetary and Exchange Rate Policies in Emerging Market Economies” (IMF SDN)
- Considers whether adoption of IT requires countries to forego XR stabilisation (i.e., does IT require a floating XR, to avoid policy conflicts?)
- Developing countries vulnerable to XR volatility due to capital flow volatility and commodity price volatility (ToT changes)
- XR volatility a potentially serious problem
- Imperfect capital mobility (limited financial, smaller stocks of domestic currency assets), gives scope for fx market intervention
- Valid objective for CBs to target both price stability and XR stability (minimise deviations from equilibrium values)
- Evidence suggests that IT CBs in EMEs do in practice target XR (to stabilise RER) in addition to using interest rate policy in accordance with Taylor rule
- Conclude that supplementing monetary policy in IT regime with FX intervention likely to be welfare enhancing, can boost CB credibility and may inhibit speculative inflows

# **EXCHANGE RATE & MONETARY POLICY FRAMEWORKS IN SSA**

# Exchange rate policies in Africa

IMF classification	Category	No of countries (2010)
No separate legal tender	A1	1
Currency board	A2	1
Conventional peg	A3	22
Stabilised arrangement	A4	3
Crawling peg	A5	1
Crawl-like arrangement	B1	1
Pegged XR within horizontal bands	B2	0
Other managed arrangement	B3	3
Floating	C1	12
Freely floating	C2	1

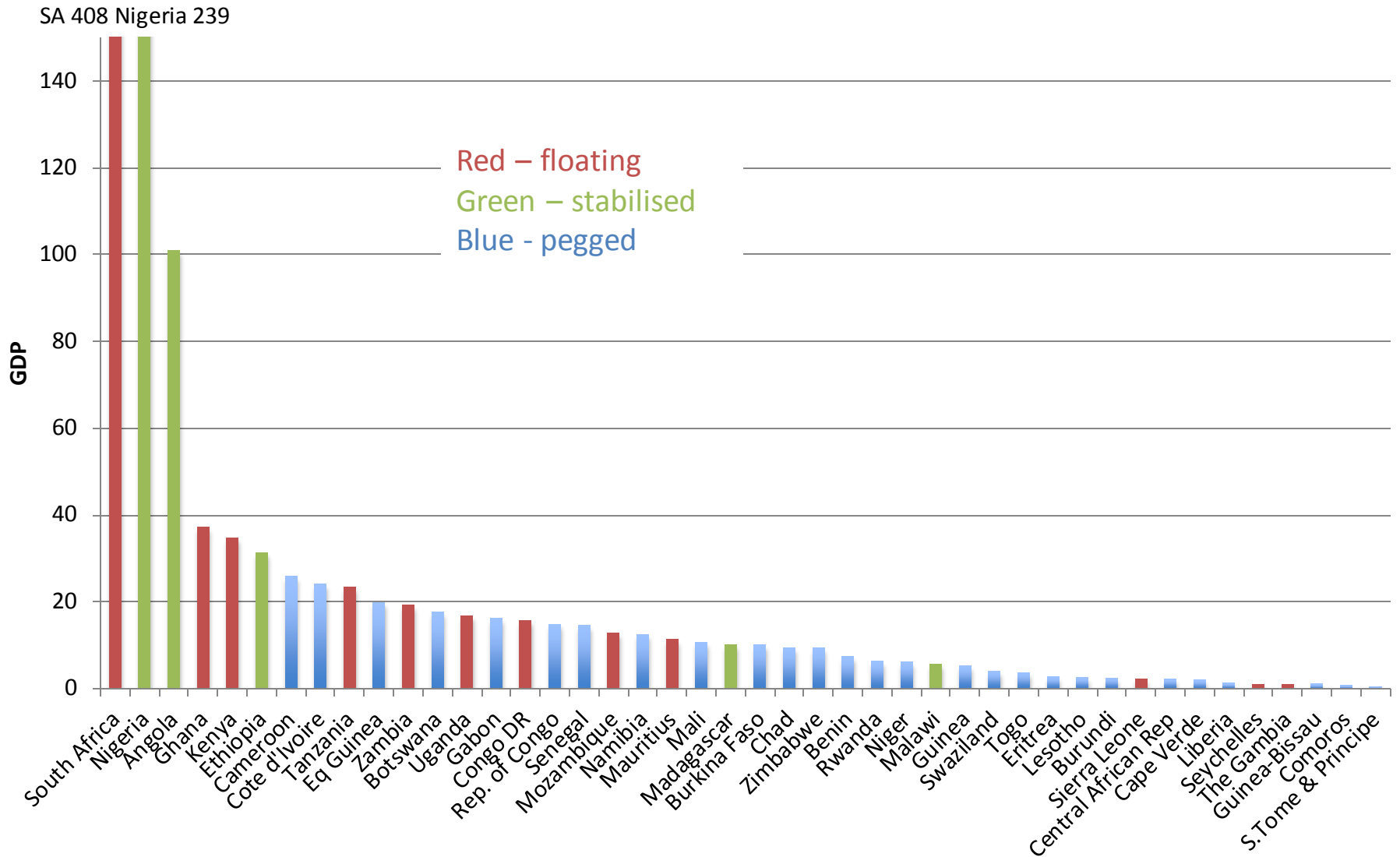
# Exchange rate policies in Africa

	Fixed (A)	Managed (B)	Floating (C)
No of countries	28	4	13
%	62%	9%	29%
GDP (\$bn)	232	377	593
%	19%	31%	49%
Average inflation 2005-10	6.8%	11.3%	10.4%

- Majority of countries (62%) have a form of pegged XR (hence the result earlier)
- However, these tend to be smaller countries and account for only 19% of SSA GDP
- The larger economies have predominantly floating rates (49% of GDP) or managed regimes (31%)
- Average inflation lowest in fixed rate economies

# Exchange Rate Policies in Africa

## (IMF de facto classifications, 2010)





# Variation of monetary and exchange rate policy arrangements in a REC - SADC

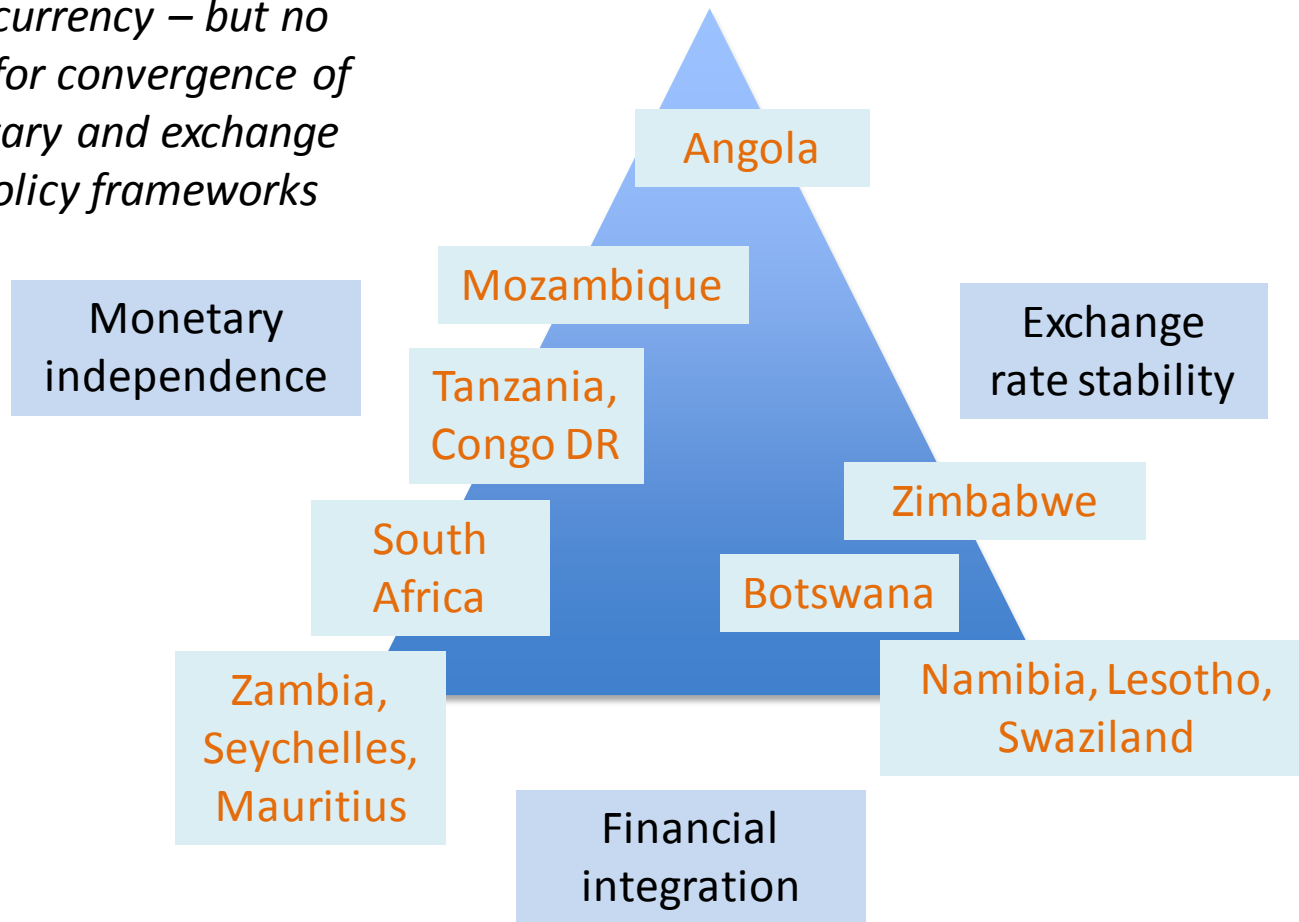
Country	XR policy	Monetary policy	Capital acc.	Comments
Angola	Other managed arrangement	Active using interest rates and monetary aggregates	Extensive controls (Article XIV)	Unclear policy framework, problems with inflation and exchange rate stability
Botswana	Crawling peg (to ZAR-SDR basket)	Active, using interest rates	Liberalised	Policy flexibility buffered by very high IR (an "Asian" position?), but sterilisation costs an issue at times
Mauritius	Free float	Hybrid inflation targeting, intending to move to formal IT	Liberalised	Slight RER overvaluation, but FX intervention limited to containing volatility
Namibia	Conventional peg (to ZAR) within CMA	Passive (follows SA)	None within CMA; similar to SA vis a vis RoW	Quasi currency board arrangement vs ZAR

# Variation of monetary and exchange rate policy arrangements in a REC - SADC

Country	XR policy	Monetary policy	Capital acc.	Comments
South Africa	Float	Inflation target	Some controls on capital outflows.	Capital market highly integrated into global markets. Volatile XR. Concerns about currency overvaluation, driven by capital inflows. Some reserve accumulation, but concerns about cost of sterilisation.
Zambia	Float	Monetary aggregate target (RMP)	Liberalised	XR volatility an issue, but no attempt to directly manage.
Zimbabwe	No separate legal tender. Multi-currency system with USD, ZAR, EUR, GBP & BWP permitted. USD dominant.	None	Some controls	Debate over whether / when to restore domestic currency. Serious institutional and policy credibility issues, and political instability

# The “Trilemma” in SADC

*Plans for a common SADC currency – but no plans for convergence of monetary and exchange rate policy frameworks*



# **CONCLUSIONS**

# What does this all mean?

- No single “best” policy framework – a range of options can work in different circumstances
- Use of heavily managed or pegged XR can work:
  - Most suited to very small open economies, and/or those with underdeveloped financial markets and little external financial integration
  - XR can provide a useful nominal anchor esp. to a large trading partner with a strong monetary policy of its own
  - Also suited to commodity exporters with strong BoP, especially if surpluses lead to reserve accumulation, which can provide some monetary policy flexibility
  - Helps to prevent dutch disease and vulnerability to ToT changes
  - BUT danger of misaligned real exchange rate

# What does this all mean?

- Experience suggests that for larger / more developed emerging markets, some degree of XR flexibility is optimal, combined with active monetary policy (monetary or inflation targeting)
- Does not mean that XR can or should be neglected:
  - a combination such as IT plus managed float may be feasible
  - with intervention to smooth out short-term volatility
  - but raises important policy issues

# 3 key policy issues

1. How much intervention?
  - Policymakers need to gauge equilibrium real exchange rate and target that (an empirical issue)
2. Is there a role for controls on (short-term) capital inflows?
  - May be useful for countries already integrated into global financial system
3. Should monetary policy itself react to XR changes, i.e. with a policy rule (expanded Taylor Rule)?

$$i_t = f\pi_t + gy_t + he_t$$

- Policy interest rate responds to XR ( $e$ ) as well as inflation ( $\pi$ ) and the output gap ( $y$ )
- Size of coefficients (reaction function) an empirical issue
  - needs estimation, simulation and calibration to individual economies
  - complex modelling required to estimate loss functions (output and inflation volatility)

# QUESTIONS?

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