

# **Factors in the Choice of Monetary Policy Regime**

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# Outline

- Background and recap: monetary frameworks and nominal anchors
- Inflation Targeting: a powerful emerging consensus
- Implications for emerging-market and pre-emerging market economies

# Monetary Policy Frameworks

The institutional arrangements under which monetary policy is made

- Institutional structure and mandate of the central bank
- Monetary policy objectives
  - Nominal anchor
  - Other objectives of monetary policy (output stabilization)
- Other objectives
  - Financial sector regulation

Focus here is on the monetary policy objectives

# Monetary Policy Frameworks

- All frameworks are 'Inflation Targeting' frameworks in the sense that (one of) monetary policy objectives is to establish a (credible) nominal anchor for domestic prices.
- They differ in terms of the choice of anchor and, as a consequence:
  - choice of instruments
  - mode of operation (e.g. rules vs discretion)
  - communication and engagement
- They also differ in terms of how and how far concerns about other objectives are pursued.

# On the choice of nominal anchor

- The nominal anchor – to the extent it holds fast -- determines the average level of domestic prices in terms of the domestic currency
  - General equilibrium determines *relative* prices. Incentives and resource allocation flows from these.
  - In the long run all nominal variables converge to the rate of growth of the anchor...
  - ...but the objective of pursuing price stability over short- to medium-term is to ensure that agents' resource allocation decisions are not distorted by prospective changes in the general price level.

# Nominal anchors: three basic variants

- **Commodity anchors:**
  - Fix the domestic currency price of a controllable commodity (e.g. gold).
- **External (exchange rate) anchors:**
  - Fix the price of the domestic currency in terms of another country's currency (or a basket of other countries' currencies) to inherit the properties of the underlying nominal anchor of the anchor country.
- **Domestic (monetary) anchors:** target the growth of a nominal aggregate
  - **Money supply**
  - **Nominal income**
  - **(Expected ) inflation**

# Exchange rate anchors

## **Monetary Unions** ('dollarization' or 'euroization')

- Zero discretion and complete loss of seigniorage (all accrues to issuing country)

## **Currency Boards**

- Domestic currency backed 100% by foreign currency reserves
- $RM=NFA \Rightarrow NDA=0$
- Partial seigniorage (interest on foreign reserves held against domestic currency)

## **Unilateral Hard pegs**

# Domestic anchors: Money targets

**Which money aggregate?**

**Asset- or liability-side measures?**

Asset side anchors: (NFA-floor + NDA-ceiling favoured by IMF programmes).

Liability side anchors: Reserve Money? M3? + FCD?

Strict targeting requires either free float or managed float plus bond sterilization of NFA accumulation.

# Domestic anchors: fully-fledged inflation targeting (FFIT)

Public commitment to inflation (or forecast inflation) as the nominal anchor

- May be expressed as point or interval target with or without horizon over which target should be hit

Structured approach to deliberation and communication

- Verifiable
- Capable of revealing central bank's own expectations
- Reveal weight on other objectives (output gap or real exchange rate)
- May specify 'escape clauses'

Policy instrument is, typically, a short-term interest rate <sub>9</sub>

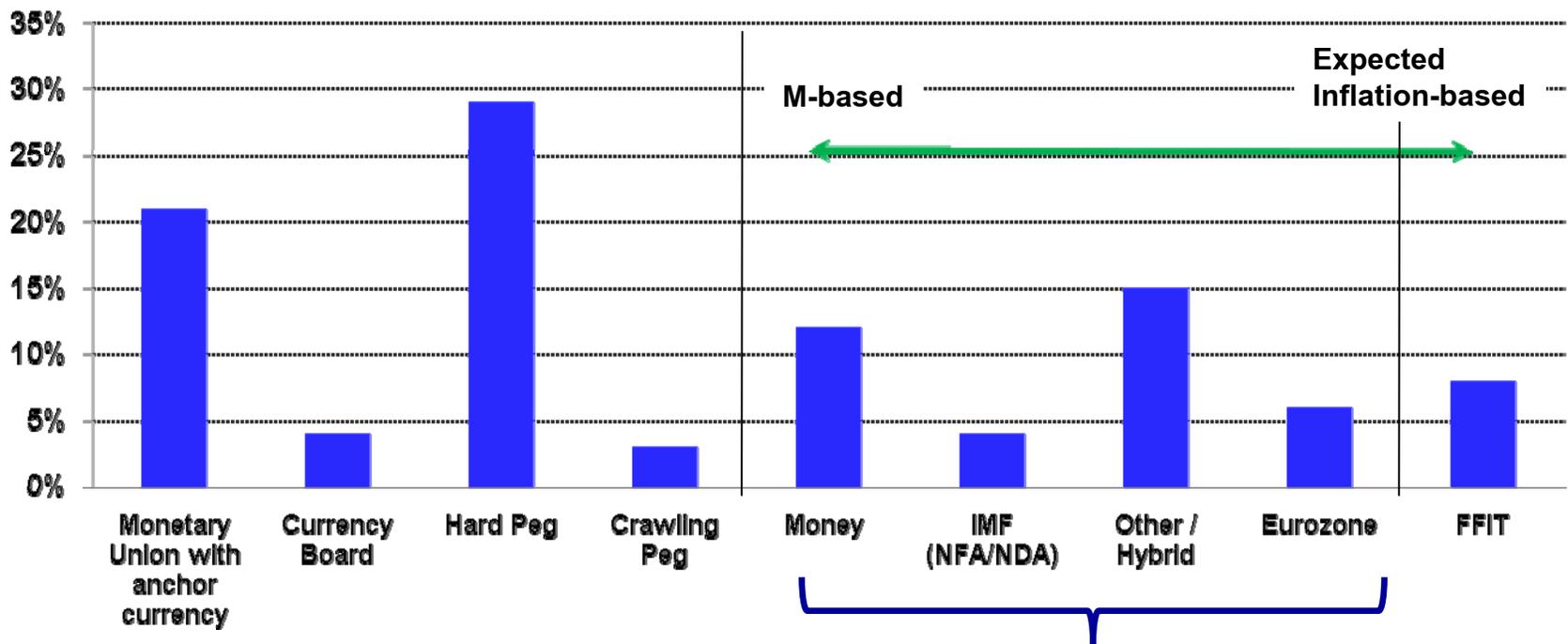
# Domestic anchors: Inflation Targeting Lite (ITL)

- Authorities maintain a target for inflation but not necessarily to the exclusion of others (for example the exchange rate)
- No structured system for dissemination
- Uncertainty about MTM may be revealed in multiple instruments
- Often characterized by:
  - High levels of intervention despite *de jure* commitment to float
  - Concerns about thinness / fragility of domestic financial sector
- Widely viewed as a transitional arrangement.

# The *de facto* choice of nominal anchor [with distribution of countries 2006 ]

'External' anchors

'Domestic' anchors



Source: IMF de facto ER arrangements

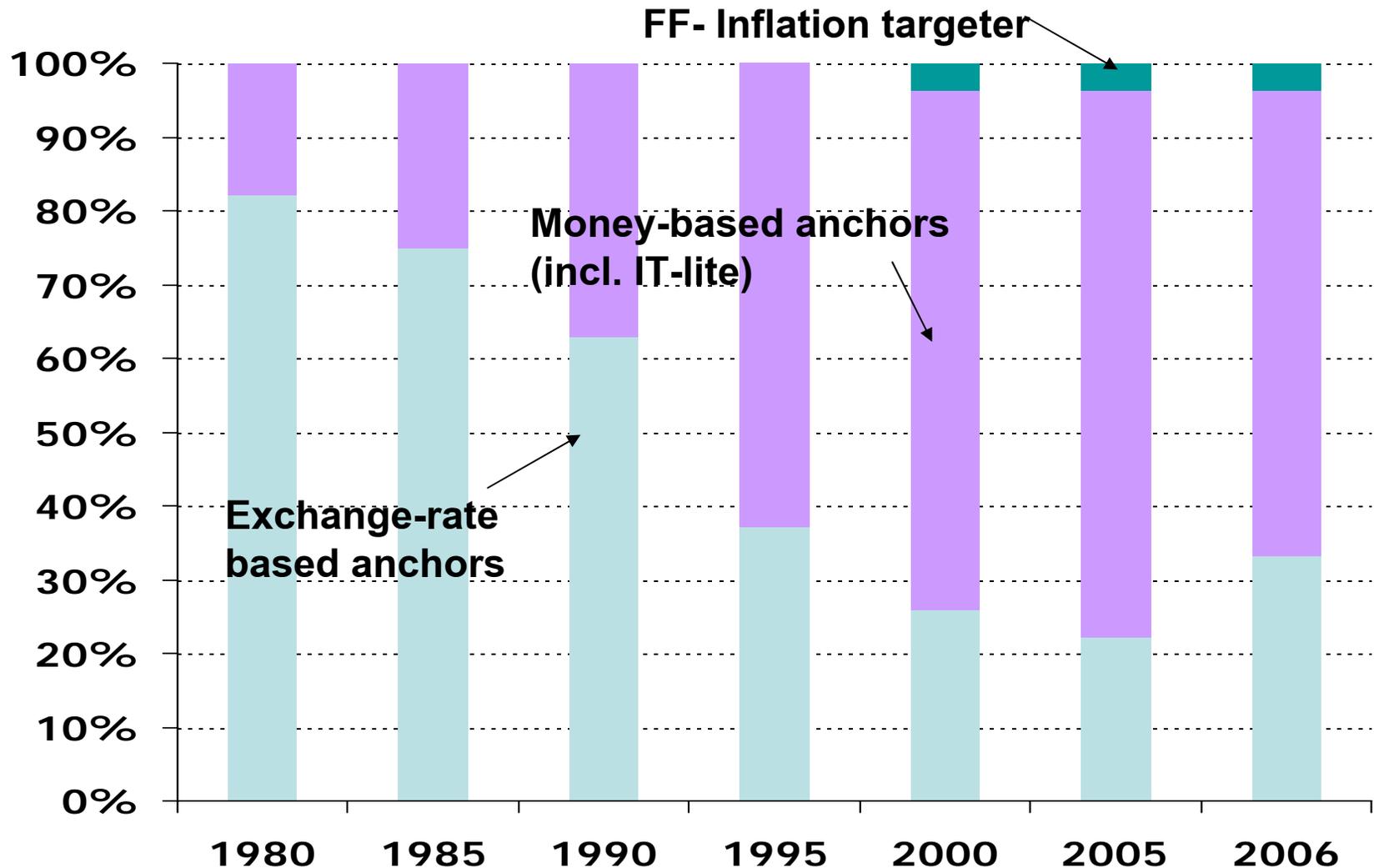
Includes 'IT-Lite' and  
'Eclectic IT' regimes

# Changes closer to home

Prospects for monetary policy radically altered in last 20 years.

- Enormous changes in fiscal control.
- Institutional and operational reforms in foreign exchange and domestic financial markets.
- Most central banks in SSA now pursue some form of inflation target
  - South Africa only FFIT-regime
  - A number of countries operating under 'inflation targeting lite' regimes -- Mauritius, arguably Ghana, Zambia, Nigeria(?)
- Most see current arrangements as transitional to FFIT.

# Changes closer to home: *de facto* SSA nominal anchors 1980-2006 [excludes CFA and CMA]



# The emerging consensus for Inflation-Targeting

A powerful intellectual and practical tide has been flowing  
in favour of FFIT

The academic case:

Woodford, Goodfriend, Svensson and others

The evidential case:

Mishkin and Schmidt-Hebbel

Batini and Laxton

## Some useful reading

*Journal of Economic Perspectives*, volume 21(4) Fall 2007

- Papers by Woodford, Gali and Gertler, and Goodfriend.

*Monetary Policy under Inflation Targeting*  
Frederic Mishkin and Klaus Schmidt-Hebbel (eds)  
Central Bank of Chile, 2007).

*New Monetary Policy Frameworks for Emerging Markets*  
Gill Hammond, Ravi Kanbur and Esward Prasad  
(eds) Bank of England (forthcoming 2008).

# Navigating the evidence

- Huge volume of empirical evidence
- Long tradition in 'Fixed vs. Floating' (roughly-speaking External vs. Domestic anchors)
  - For example, Ghosh, Gulde, and Wolfe (2003)
- More recently, within domestic anchor countries, IT vs non-IT
  - Mishkin and Schmidt-Hebbel (2007)
  - Batini and Laxton (2007)
  - Stone (2003)

# 'Long-run' cross country evidence (Ghosh et al, 2003)

On inflation:

Evidence favours E-based anchors for (average) inflation control

On growth:

Evidence again favours *de facto* managed rates (pegs and intermediate regimes)

Similarly, these regimes appear to reduce output volatility relative to M-based anchors

- Two issues:
  - Results strongly influenced by experience prior to 'great moderation'.
  - Possibly serious biases in measurement

More recent evidence points in a different direction...

# The IT-evidence

Mishkin and Schmidt-Hebbel (2007) summarize recent evidence:

- IT regimes tend to be associated with lower inflation:
  - significantly so relative to own past experiences
  - not significantly lower than in ‘Eclectic IT’ control groups (e.g. ECB and US).
- IT regimes lower inflation volatility *simultaneously* with lowering output volatility
  - not simply trading off preference lower inflation volatility against output volatility.

# Credibility: the glittering prize.

The more credible the anchor, the lower the correlation between expected future prices (upon which wage and prices are set) and current prices;

Corollary is that there is greater scope for short-run output stabilization (i.e. allowing monetary policy to pursue counter-cyclical policy).

# Credibility: the evidence

- Survey-based evidence (and evidence from bond ratings) suggest that inflation expectations falling and becoming less sensitive to current inflation outcomes.
- Some evidence of lock-in (these effects strengthen with time) especially with duration of low inflation.
- Pass-through weaker and (anecdotal) evidence of Phillips Curve getting steeper  
  
=> greater scope for stabilization.

# The IT-evidence (summary)

The case seems strong – and there clearly have been major gains for IT countries.

But how useful is this evidence to other emerging and pre-emerging countries?

- Small sample
- Serious sample selection issues
- Difficult to identify correct counterfactual.
  - The great moderation
  - The experience of ‘eclectic IT’ countries suggest deep determinant is fiscal control and credibility, FFIT is (partly) endogenous response.

Need to look very closely at own conditions.

# Key questions in choice of regime

- How 'fast' (and how credibly) does the anchor hold in practice?
- How controllable is the nominal anchor? What do we know about the transmission mechanism?
- Do different anchors provide different degrees of insulation from shocks?
  - Supply side shocks / demand shocks / wealth (portfolio) shocks
- Is the anchor robust to fiscal shocks – including those arising from supply-side shocks?
- Can regime accommodate multiple MP objectives?

# Fastness of the anchor

$$P = P_M^\alpha P_D^{(1-\alpha)} = E(1+t) P_W^\alpha P_D^{(1-\alpha)}$$

I  
f economy is relatively open ( $\alpha$  large) fixing the exchange rate ties a large proportion of domestic prices to world inflation.

High short-run 'pass-through' => exchange rate anchor will be highly effective in locking-down overall inflation. If not, may observe persistent RER misalignment.

If the economy is relatively closed, the aggregate price level is more influenced by domestic goods prices which, in turn, will respond to aggregate demand. A money-based anchor, which regulates aggregate demand, may be more effective.

**Implication:** Fixed exchange rates may be more natural for small open economies...

# How controllable and how 'fast'?

- E-based and conventional M-based targets based on simple quantitative balance-sheet instruments.
  - ⇒ good (potential) controllability although instability of pass-through and money demand may mean anchor 'drags' (at least in short-run).
  - ⇒ M-based may become particularly problematic if private capital flows large and volatile.
  - ⇒ Example: Tanzania 1999-2001 [[here](#)]

# How controllable?

- IT-literature typically assumes reliable and reliably understood transmission mechanism.
  - Textbook assumption is that transmission works through term structure and interest sensitivity of aggregate expenditure.
- For many transition, emerging and low-income countries, interest rate channel may not be powerful because of rudimentary nature of financial sector
- Does not rule out targeting expected inflation
  - Other instruments (quantities rather than prices) may be utilized
  - TM may be more powerful via exchange rate channel

**Key issue: understand the transmission mechanism.**

# Robustness to fiscal volatility

- Consensus view in OECD economies with strong counter-cyclical fiscal control that counter-cyclical (single-country) fiscal-monetary policy presents limited challenges

[See Benigno and Woodford (2007) and Allsopp and Vines (OXREP, 2005)]

- Greater challenge for emerging market economies where fiscal policy tends to be pro-cyclical

# Nominal anchors and fiscal dominance

- No nominal anchor can hold in circumstances of heavy fiscal dominance, at least not without serious distortions.
- Consolidated budget constraint (in real terms)

$$\underbrace{\Delta m_t + \left( \frac{\pi_t}{1 + \pi_t} \right) m_{t-1} + \Delta b_t - e_t \Delta z_t}_{\text{MONETARY POLICY}} = \underbrace{d_t - e_t a_t}_{\text{FISCAL POLICY}}$$

- For finite reserves, given inflation target and real money demand, excessive growth in the fiscal deficit net of aid inflows will lead to explosive growth in debt, default, or abandonment of inflation target.

# The Erosion of Fiscal Dominance in SSA



Period average of country group median values  
(% of GDP)

Country Groupings	1980-84	1985-89	1990-94	1995-99	2000-03
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*Net Domestic Credit to Government (Monetary Survey)*

CFA countries	1.7	0.9	7.2	6.5	5.1
Non CFA countries	8.0	9.6	5.3	4.0	3.7
Mature stabilizers [1]	15.1	10.8	6.2	4.8	2.6
<i>Nigeria</i> [2]	7.8	6.5	3.5	2.2	5.1

*Net Domestic Credit from central bank*

CFA countries	n.a	2.9	5.8	4.0	4.4
Non CFA countries	3.7	2.7	1.5	1.0	1.2
Mature stabilizers[1]	4.2	5.4	4.0	-0.5	-1.1
<i>Nigeria</i> [2]	11.8	13.6	16.3	3.8	-4.5

## Notes:

[1] Mature stabilizers (IMF definition): Benin, Ethiopia, Madagascar, Mozambique, Rwanda, Senegal, Uganda, Tanzania.

[2] Data for final period 2000-2005

**Source:** IMF International Financial Statistics

# Fiscal dominance:

- A serious challenge in resource-based economies where terms of trade effects are transmitted through the fiscal accounts, exacerbating pro-cyclicality of fiscal accounts.
- Are fiscal and political institutions sufficiently flexible to limit excessive fiscal dominance?
- Weak evidence that revenue reforms lower hazard of fiscal collapse
- Does extended period of relative fiscal control and falling inflation buttress credibility-based IT frameworks?
- Do moves towards credible IT, for example, require fiscal rules?

# Multiple objectives: the exchange rate

- Consensus IT view suggest CB should be concerned about the exchange rate. No direct role in CB objective function but definitely in as much as it influences the path of the output gap and inflation.
- As 'IT-Lite' evidence suggests, however, authorities may be concerned about movements in E for other reasons
  - Financial sector fragility
  - Fiscal and quasi-fiscal cost
  - Distributional effects (inter-sectoral (DD) and household)

# Central banks remained concerned about reconciling multiple objectives

*“...even if government’s domestic borrowing requirement remains low, a large aid-funded fiscal deficit can destabilize domestic financial markets.... To control the money supply in the face of a steep rise in liquidity arising from fiscal operations, the Central Bank had to step up the issuance of government securities to the domestic financial market....The only alternative sterilization instrument was larger sales of foreign exchange, but this would have risked destabilizing the exchange rate.”*

[Brownbridge and Tumusiime-Mutebile (2007)]

# Fear of Floating Index

## The Fear of Floating Index

$$\text{FoF Index} = \frac{CV_E}{CV_{NIR} + CV_E}$$

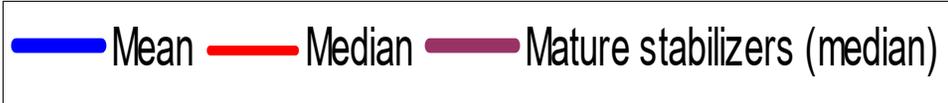
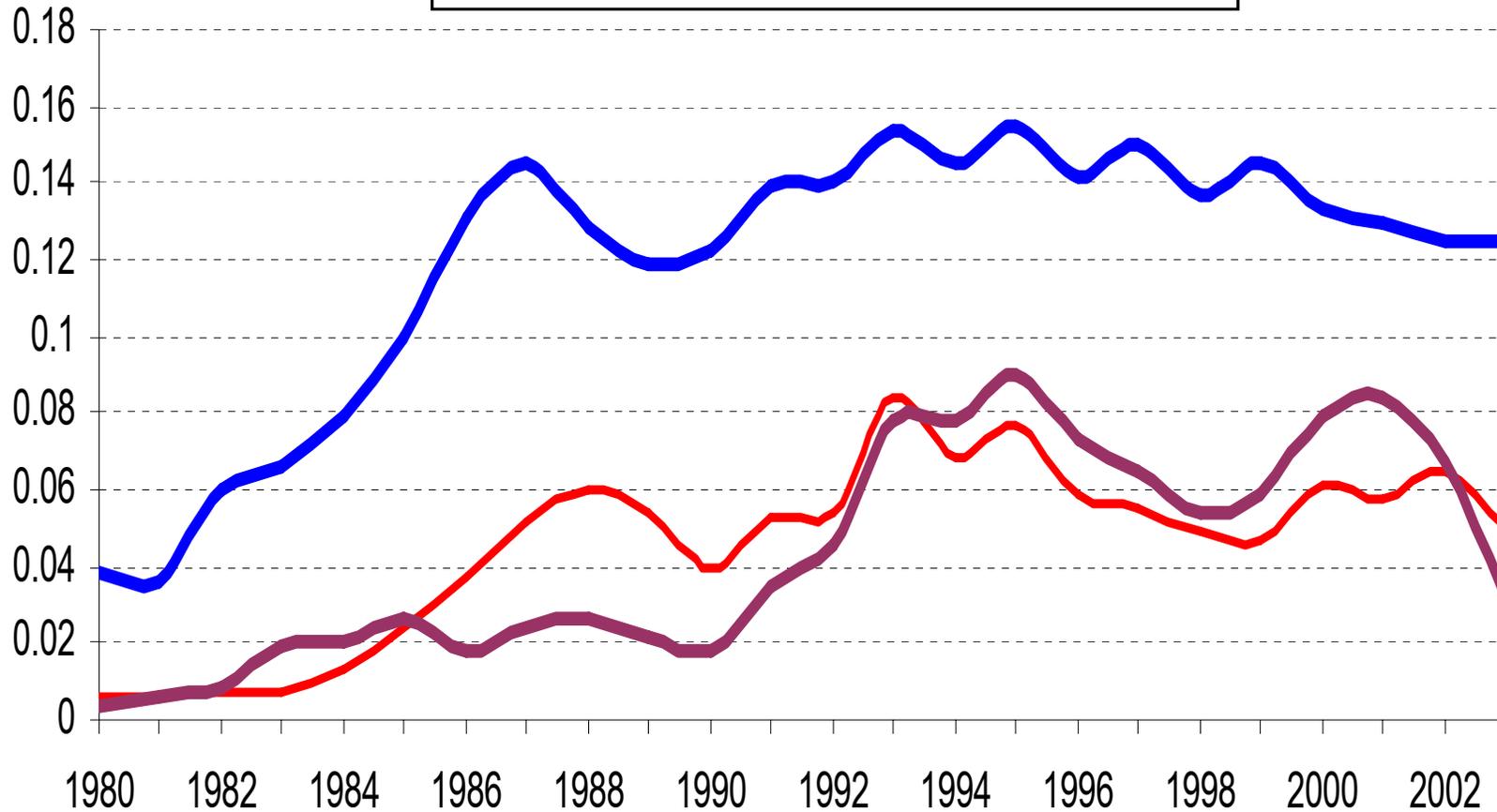
**Pure Float**  $\Rightarrow$  FOF = 0

**Pure Fix**  $\Rightarrow$  FOF = 1

# Non-CFA SSA Countries: De Facto Exchange Rate Flexibility Index



Note: A value of the index of 1 implies a pure float



# Multiple objectives

These are legitimate concerns, especially in the presence of credit rationing and weak financial sectors so that hysteresis effect attach high welfare costs to short-run exchange rate volatility

In the spirit of IT-Lite, can agents 'see-through' multiple objectives and internalize a hierarchy of objectives?

## Tanzania: Monetary and Exchange Rate Evolution 1999-2001

