Towards Inflation Targeting Framework for Monetary Policy in Nigeria: The Challenges for Central Bank of Nigeria

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I.   Introduction

This paper seeks to look at the challenges of moving to an inflation-targeting (IT) regime, specifically in Nigeria's emerging market environment. Part one outlines briefly the underlying mechanisms of inflation-management and general approaches to inflation targeting. Part two focuses on issues that specifically relate to IT in emerging markets, including the possible macroeconomic impact of the transition process. Part three considers the sequence and timing of the transition to IT in Nigeria, in particular on the shift in exchange rate management required to achieve long-term price stability. Additionally, Nigeria-specific challenges are also addressed. The paper concludes by noting that both the time frame and coordination for a successful transition will be considerable, and that the Financial Sector Strategy 2020 will be the critical vehicle for achieving this.

Fundamentals of Inflation Targeting

Inflation targeting has evolved in both academic literature and monetary policy practice over the last twenty years, in response to the failure of previous approaches to maintaining macroeconomic stability[1]. IT is based on the following macroeconomic principles:

1.   Price stability must be the overriding goal of monetary policy, other economic trends and variables must be subordinate to this, when necessary.

    a. In the long-run, monetary policy cannot be used to solve real sector macroeconomic constraints.

    b. Persistent and volatile inflation (>15% year-on-year) will undermine all other economic policy aims.

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[1]*Specifically, monetary policy based on the Philips curve in the 1970s following the end of the Breton Woods regime, and targeting of monetary aggregates in the 1980s.*

  c. Central Banks in small, open economies can only have one end-policy target/anchor.

  d. These views are now broadly supported by both Monetarist and New Keynesian macroeconomic thinking.

2. Inflation is driven by factors that can be influenced by monetary authorities (expectations, real sector demand, exchange rates, money supply growth) and structural factors that are outside the influence of authorities (supply constraints, cost-push factors).

3. By building a credible reputation for giving primacy to inflation-management, and by developing a transparent, coherent framework for applying available levers of policy, the Central Bank can maintain stable prices with limited costs, through management of expectations and economic behaviour, except in the face of exceptional circumstances.

Mechanics of Inflation Targeting

There is an ongoing debate in international economics as to what precise policy framework constitutes IT. The US Federal Reserve Bank, European Central Bank and Bank of Japan, all adhere to the broad fundamentals set out above, but have developed their own approach to monetary policy. In contrast, a core group of smaller, open economies (including the UK, New Zealand, Sweden, Canada) have developed a more formalised framework, which has been identified by the IMF as a preferred approach to monetary management, with the following components:

1. Grant operational independence to central bank-signals commitment to avoiding monetary loosening during political cycle (in response to issues of time inconsistency raised by Barro and Gordon, 1981 *inter alia*).

2. State a clear inflation target and tolerance range (including exact definition of inflation measure targeted).

3. Establish a transparent framework for generating and communicating inflation forecasts (covering data, model and key indicators).

4. Establish a monetary policy committee (MPC) with fixed membership, publicized voting structure and pre-announced meeting timetable.

5. Announce MPC decisions at a fixed time, release minutes of meetings of the MPC with a pre-announced lag.

6. Ensure that in the central bank's commitment to the principle of price stability, all monetary policy decisions and statements are unambiguous.

A critical pre-condition for inflation-targeting in developed economies is for the central bank to have an effective mechanism for influencing market interest rates

(both short and long-term). *Figure 1* sets out the basic process by which a number of central banks transmit monetary policy decisions to market rates[2]. Considerable effort is required to develop the architecture to manage daily market liquidity in order to ensure that the policy rate is reflected in the short end of the market.

Figure 1: Interest Rate Transmission Mechanism
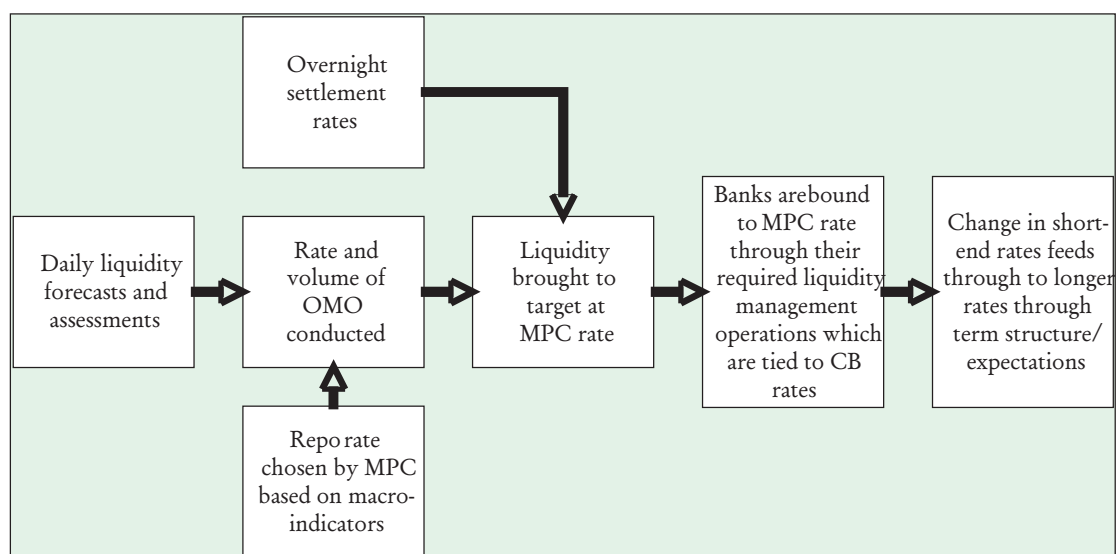
Source: Author

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[2] *This approach is not the only transmission mechanism available. The US Federal Reserve sets its policy rate as the Federal Funds rate, charged on mandatory reserve deposits made by DMBs to the Federal Reserve System.*

Secondly, and more fundamentally, changes in short-term rates caused by changes in the policy rate must feed through to the real economy, in order to provide the central bank a tool to control real activity and, therefore, prices.

Several channels are potentially available for rates to influence economic behaviour. *Ceteris paribus,* an increase in short-term interest rates will underpin an increase in capital inflows and, therefore, appreciate the nominal exchange rate. This will directly reduce the price of imported goods in the overall basket of goods in the short-run, as the consumption profile adjusts to new relative prices. This adjustment then leads to a relative shift away from domestic production, relaxing domestic price pressures.

An increase in interest rates can have a direct impact on both consumer and producer activity through variable rate lending and credit, which has an immediate impact in reducing the level of activity and, thus, reducing upward price pressures. Additionally, an increase in interest rates in the current period can have various effects on expectations of future economic activity, which can feed-through to consumer behaviour today and can further constrain firm investment choices through a changing credit environment[3]. These are further, more subtle ways that expectations play a key role in modern monetary policy.

For inflation targeting to be effective, and to establish strong credibility, there must be substantial and relatively rapid transmission through these channels to the level of consumer prices.

I.   Challenges of IT in Emerging Markets

Clearly, from the framework we have outlined above, a variety of economic and policy pre-conditions exist in order for inflation targeting to deliver sustained price stability. However, emerging markets present a number of additional challenges, beyond those faced in developed countries, which can prevent the achievement of the key goals of IT. These emerging market constraints can include, although this list is by no means exhaustive:

1.   Central banks remain under pressure to focus on real sector, developmental outcomes alongside macroeconomic stability, which compromise IT:

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[3] *Bernanke and Gertler (1999) have described this channel as the 'financial accelerator'.*

Figure 2: Transmission Mechanism to Real Economy
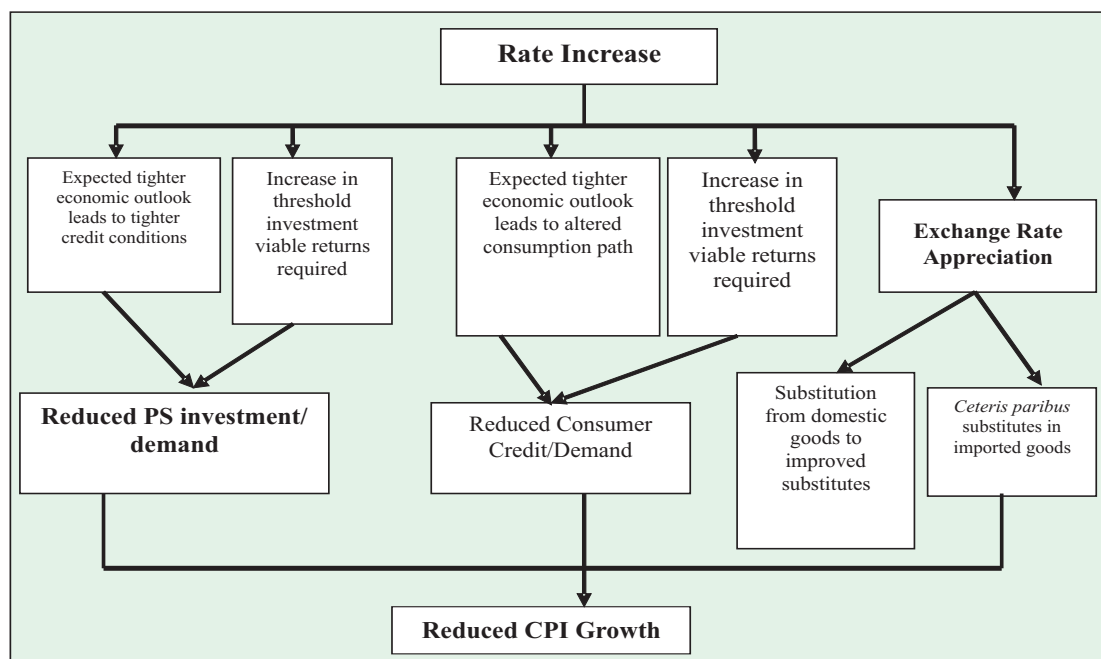
Source: Author

     a.   Driving credit growth to private sector; and

     b.   Targeting real exchange rate outcomes to protect employment through external competitiveness authorities consequently subordinate price stability to targean alternative variable.

2.   Coordination with fiscal policy authorities is critical expansionary fiscal positions, which remain too common in emerging markets, will prevent successful expectations management.

3.   Fiscal costs of aggressive liquidity absorption can be a binding constraint where the overall fiscal space is limited.

4.   Political difficulties often exist in emerging markets, (EM) around removing administered prices, which are often inflation linked and, therefore, contribute to backward-looking inflation inertia..

5.   Greater vulnerability to terms of trade shocks in EM increase the threat of exogenous price shocks breaking hard-won expectations of stable prices[4].

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[4]*Vulnerability to terms of trade shocks can come from several sources. Emerging markets have limited flexibility to deal with increases in the prices of manufactured goods or refined petroleum products, either through technology substitution or reduced price mark-ups. Equally, greater reliance on commodity exports for public revenues creates the threat of inflationary deficit financing in times of low primary export prices.*

6.   Strong (public sector) unions can create inflation-wage feedback.
7.   Shallow retail, corporate and mortgage lending limit impact of lending rate changes on real economic activity, undermining the transmission challenges set out above.

Market Risks Associated with Inflation-Targeting Transition

These specific, additional emerging market issues mean that the transition to inflation targeting in this environment may look fundamentally different from the relatively smooth shifts seen in developed countries over the last 15 years.

1.   Institutional market rigidities (administered prices, indexed wages) may slow expectation adjustment longer transition period required with potential for sustained high short-end interest rates required to build credibility. Appendix 1 sets out the evolution of the yield curve during the transition to inflation targeting

2.   Greater pressures to deliver on real sector, development goals prevent successful transition because of pressure to maintain expansionary monetary and/or fiscal policy
   a. **Risk of negative real rates** emerging out of failed IT transition, if rates are lowered before low inflation expectations are embedded.
   b. **Threat of currency crisis** if authorities completely liberalize the foreign exchange (FX) market but are not able to control inflation.

3.   For countries with strong external positions, but weak interest feed-through, exchange rate appreciation may be central for initial price control. Generally IT implies **greater volatility in exchange rates** as central banks need to avoid targeting multiple policy goals

4.   Authorities must take a much more proactive role in developing the financial system in order to create feed-though from policy rates, via market rates, to the real economy. Rapid credit expansion to the private sector must be combined with effective supervision to avoid fragility in the banking sector balance sheets.

Several emerging markets, in making the transition to an inflation targeting regime, have overcome these challenges. *Figure 3* sketches out the experience of Brazil. The move to inflation targeting in Brazil came as a result of the failure of the exchange rate peg in 1999, but importantly was predated by fiscal policy reforms which paved the way for primary surpluses, which have been critical for successfully maintaining the IT regime.
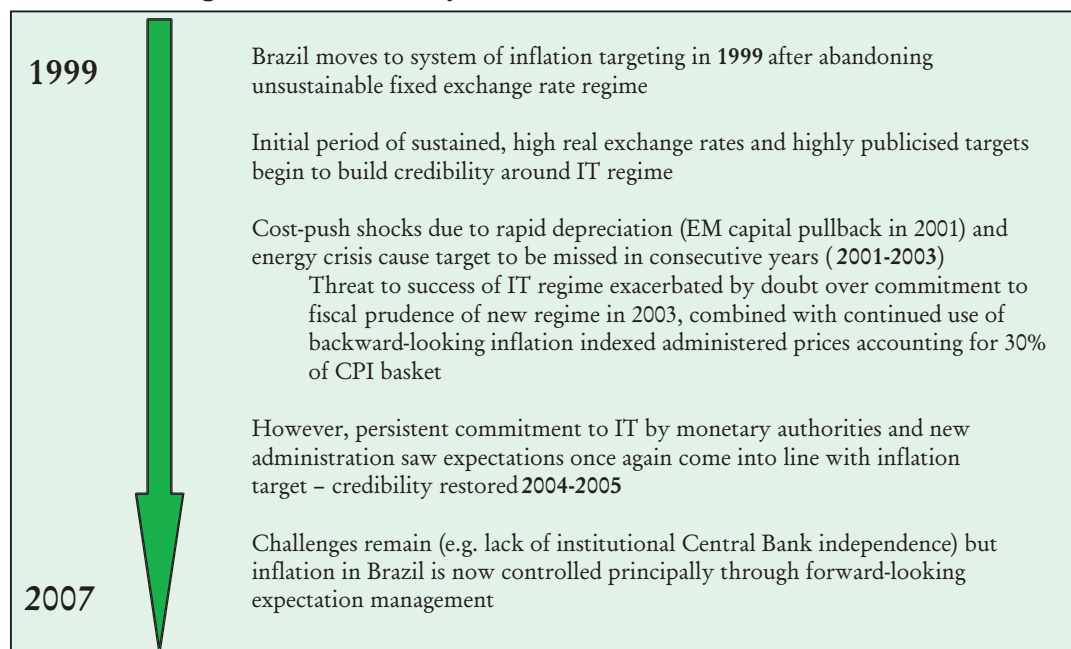
Having initially stated, and met, an inflation target in 1999 and 2000, a series of principally exogenous shocks forced inflation above the target zone for the next 3 years. These exogenous shocks, the 2001 real depreciation and the 2002-3 energy crisis, were exacerbated by internal rigidities such as administered prices. However, authorities maintained a tight monetary (and fiscal) stance in response, and supported by the commitment of the incoming administration, were able to regain control of expectations and bring inflation back within the target by 2004.

A number of key African economies have either explicitly or implicitly signaled their intentions to replicate the transition to inflation targeting seen in Brazil and other key emerging markets such as the Czech Republic and Israel. However, as we have seen above, frontier emerging markets such as those in Africa face a more challenging path to achieving a successful inflation targeting regime. *Figure 4* is a matrix capturing a set of economic policy-components that are collectively critical for an effective inflation-targeting regime to operate successfully. Several of these, such as inflation forecasting, MPC structure and communications, and the strengthening of feed-through channels, are essentially technical components of inflation targeting. It is somewhat surprising that many of the Central Banks have not made much progress in these areas, since they only face constraints from a technical viewpoint, which should be relatively easy to overcome.

A second, and distinct set of required IT components have a much greater policy element to them: central bank independence, exchange rate flexibility, removal of administered prices and fiscal-monetary coordination all require a much greater potential sacrifice on the part of the authorities, and thus present the greatest potential threat to successful transition.

We can identify from *figure 4,* two stylised facts about inflation management in Africa:

1.   Principal challenges are around the more politically sensitive issues of removing administered prices, developing better monetary-fiscal coordination and allowing genuine exchange rate flexibility. Failure to address a combination of these issues will be critical not just in preventing effective transition to inflation-targeting, but potentially opening the economy up to serious macroeconomic instability, particularly around exchange rate volatility.

Figure 3: Case Study of a Successful Transition: Brazil

1999	Brazil moves to system of inflation targeting in **1999** after abandoning unsustainable fixed exchange rate regime
	Initial period of sustained, high real exchange rates and highly publicised targets begin to build credibility around IT regime
	Cost-push shocks due to rapid depreciation (EM capital pullback in 2001) and energy crisis cause target to be missed in consecutive years (**2001-2003**)
	Threat to success of IT regime exacerbated by doubt over commitment to fiscal prudence of new regime in 2003, combined with continued use of backward-looking inflation indexed administered prices accounting for 30% of CPI basket
	However, persistent commitment to IT by monetary authorities and new administration saw expectations once again come into line with inflation target – credibility restored **2004-2005**
2007	Challenges remain (e.g. lack of institutional Central Bank independence) but inflation in Brazil is now controlled principally through forward-looking expectation management

Source: Author

2. The second major area of weakness relates to the lack of depth in the financial architecture, which loosens the linkages between interest rates and prices via the real economy. Further, the potential for utilising liquidity-oriented intermediate targets such as reserve money supply also drastically reduces. The Central Bank has to balance the pressures to proactively support financial sector deepening without compromising banking sector stability to avoid scenarios such as Kazakhstan's recent banking crisis.

II.   Establishing IT Decision-Making Framework in Nigeria

Initially, the Central Bank of Nigeria must focus on accelerating the development of the decision-making framework that underpins the inflation targeting regime. This step is politically straightforward, as it does not impinge on other government agencies and policy-makers. However, it will be a technically demanding process, and will require the Central Bank to further leverage its growing relationship with external technical advisers. In particular, the CBN must have a sustained and wide-ranging programme to develop modelling and technical research capacity, both through further in-house training and recruitment of additional personnel.

Figure 4: Ongoing Journey to Inflation Targeting in Africa

	South Africa	Egypt	Kenya	Ghana	Botswana	Mauritius
Expected timeframe to mature IT framework	In place	1-2 years	5+ years	3-4 years	2-3 years	4-5 years
Explicit inflation target	3-6%	Pending	No	<10%	4-7%	No
Central Bank Independence	Yes	Yes	Yes	Yes	No	Yes
Inflation Forecasting Framework	Yes	Improving	No	Yes	Yes	Improving
Predictable MPC process	Yes	Yes	No	Yes	No	Improving
Clear communication strategy	Yes	Improving	No	Improving	No	Improving
Policy rate with effective feed-through to market rates	Yes	Yes	Limited	Improving	Yes	Limited
Sufficient transmission channels between rates and real economy	Yes	Improving	Limited, via exchange rate	Limited	Limited	Limited
Pro-active use of other policy levers e.g. OMO	Where necessary	Where necessary	Limited	Yes	Where necessary	Improving
Flexible exchange rate focused on IT	Yes	Improving	No	No	REER target at odds with IT	Improving
Elimination in 'administered' prices	Yes	Improving	No	Electricity prices remain sticky	Not a challenge in Botswana	Improving
Substantive coordination of Fiscal and Monetary Policy	Yes	Fiscal deficit still problematic	No	Fiscal deficit still problematic	Yes	Limited

Source: IMF Article IV staff reports, Author

1. Demonstrate commitment to inflation target
   a. Central Bank must make dedicated announcement of transition to IT with timetable for all necessary components to be realized.
   b. Inflation target must be stated unambiguously
      i. Target inflation rate
      ii. Tolerance range
      iii. Specific inflation measure and CPI basket to be used
   c. Central Bank should indicate at commencement the various measures that will be taken in response to deviation from target
      i. Monetary policy levers that will be employed
      ii. 'Punishment' strategy for Central Bank in the event of deviation (New Zealand, UK)
   d. Central Bank operational independence is often viewed as a pre-

requisite for building 'tightening' credibility-this independence must be shown to operate in practice in Nigeria to be truly credible

2.   Develop robust inflation forecasts
    a.   Success of IT has been driven in most countries through management of expectations via forward looking inflation forecasts
    b.   CBN will need to conduct research and modeling on:
        i.   Underlying money demand and evolution of monetary structure (esp. if intermediate money supply targets are to be used)
        ii.   Exchange rate feed-through and foreign exchange path
        iii.   Policy-rate feed-through
        iv.   Liquidity forecasting (including real sector growth forecasts)
    c.   Deliver robust inflation forecasts and confidence intervals that will form the basis of both interventions and communications

3.   MPC Structure and Communications is an area where Nigeria is already making substantial progress.
    a.   MPC now has clear voting structure
    b.   Meeting schedule should not be altered once set
    c.   Clear rules should be set for timing and mode of communicating
        i.   Revised inflation targets and other macroeconomic data
        ii.   Monetary policy actions outside of MPC (e.g. OMO)
        iii.   Decision of the MPC
        iv.   Minutes of MPC
        v.   Reasons for deviation from target (if any) and remedial action

Strengthening Transmission Mechanisms in the Nigerian Economy

In the long-term, the critical challenge for all emerging market monetary authorities will be to develop stronger transmission mechanisms for control of real sector activity. In the initial stages of inflation control, the exchange rate channel will be crucial as it will provide the most critical impact, but this will not present a long-term sustainable source of price control.

However, the deepening of rate-variable financial markets represents a balancing act for the Central Bank. Supporting credit growth through relatively loose liquidity may be necessary, but the CBN must be pre-emptive in strengthening supervision to avoid fragility threatening the banking sector as has occurred in other emerging markets (e.g. South East Asia up to 1997, Russia up to 2000 and most recently Kazakhstan).

More fundamentally, the Central Bank must ensure that credit growth focused on strengthening transmission channels does not drive emergence of the same inflation that monetary authorities are seeking to control.

1.   **Effective Monetary Policy Rate**

    a.   Rate regime must be stable - changes must be well publicized to avoid uncertainty over future approaches to rate setting

    b.   Rate regime must be appropriate to market environment and must have influence over short-end market rates - many Central Banks exploit a combination of channels to influence market rates

        i.   Repo rate signals overnight rate a fixed period ahead

        ii.   Lending/deposit corridor provides additional guidance

        iii.   Alternative (e.g. US) to use direct reserve requirements

2.   **Further Development of Liquidity Instruments**

    c.   Continued deepening of markets for open market operations (OMO) and foreign exchange (FX) sales/swaps in order to maximise ability to reduce liquidity - build credibility amongst market participants

    d.   Novel additional options - inflation-linked notes and bonds signal Central Bank's commitment to inflation target - costs incurred if inflation is allowed to rise by CBN

    e.   Policy framework that strengthens liquidity can be guided to ensure that overnight rate converges to Central Bank's repo rate

3.   **Continued Linking of the Real Sector to Money Markets**

    f.   Reform payment systems- ATMs, Credit cards

    i.   Reduces cash-holding in the economy, places more money in banking system where rates have an impact on decisions

    g.   Increase interest-bearing formal credit sources

        1.   Business loans

        2.   Mortgages

        3.   Personal borrowing

Rate changes impact on spending/investment/savings decisions

    h.   Support banking system to develop effective credit market

    i.   Rate increases should start to signal slower growth and consequently limit firm access to credit. Further provide credit decisions based on firm fundamentals.

4.   A Flexible Exchange Regime is <u>Crucial</u> for Effective Inflation Targeting

    j.   Rate changes will also have an influence through changes in the exchange rate

        i.   Rate increases will not only affect prices through credit, investment and expenditure channel

        ii.   This effect will be particularly strong in Nigeria where imports/GDP ratio is 39% (with non-hydrocarbon imports at 25% of GDP)

    k.   Ultimately, the aim should be a flexible rate:

        iii.   Periods of external strength will naturally drive appreciation and moderate inflation

        iv.   Flexible depreciation will ensure that inflation remains in relative equilibrium with inflation in trading partners' countries through long-run purchasing power parity.

    l.   If intermediate regime is required

        v.   import-weighted crawling peg to ensure import-price pass through does not threaten inflation through disequilibrium with trading partner inflation

    m.   Avoid targeting real effective exchange rate for competitiveness - twin targets are not credible in the long-term.

5.   A Flexible Exchange Regime is therefore a <u>Critical</u> Long-Term Target for the CBN
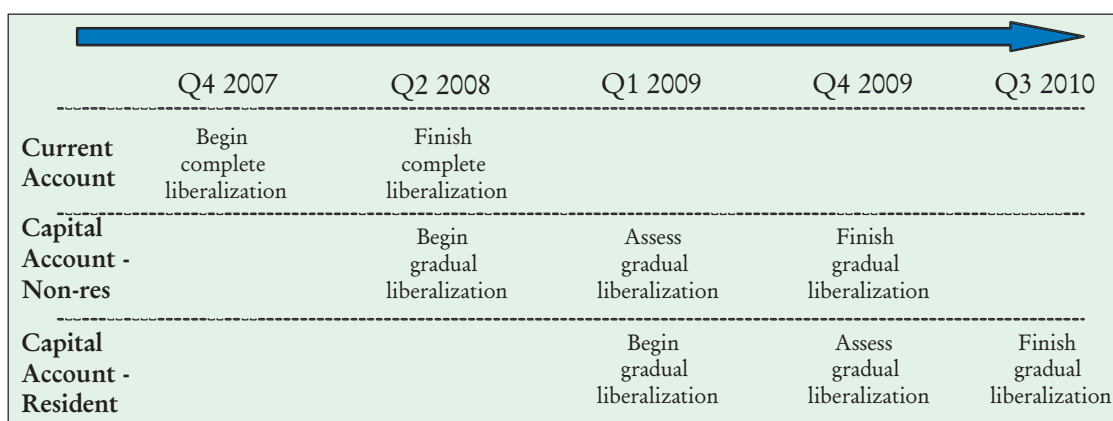
    n.   Timetable for liberalization - distinguish categories of FX transaction

    o.   Current account should be liberalized as quickly as possible in line with IMF Article VIII as non-liberalization is believed to distort economic activity

    p.   Capital account can be liberalized gradually by imposing ceilings for different types of flows and relaxing limit over time

        i.   Non-resident transactions should be liberalized

        1.   Annual portfolio flow are net less than 1% of foreign reserves

        2.   Non-resident listing is vital to vision of being African financial hub

        ii.   Resident transactions might remain subject to restrictions

        1.   Outwards FDI subject to supervision

Figure 5: Nigeria: Basket of Imported Goods, Value By Origin 2002 - 2007
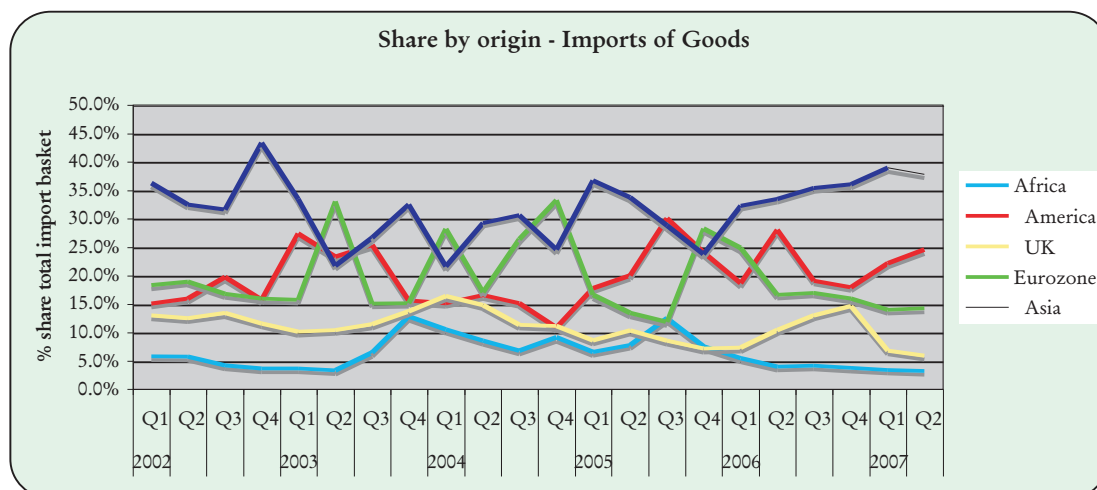
Source: National Bureau of Statistics, Author

6.   Timetable for Liberalization

The Central Bank must liberalize current and capital accounts in a manageable sequence over time to match financial sector development. Regular assessments of banking sector vulnerability should be made, particularly during the liberalization of the capital account, to ensure ongoing stability.

Figure 6: Timetable for Current and Capital Account Liberalization

	Q4 2007	Q2 2008	Q1 2009	Q4 2009	Q3 2010
Current Account	Begin complete liberalization	Finish complete liberalization			
Capital Account - Non-res		Begin gradual liberalization	Assess gradual liberalization	Finish gradual liberalization	
Capital Account - Resident			Begin gradual liberalization	Assess gradual liberalization	Finish gradual liberalization

Source: Author

Specific Nigerian challenges

The Central Bank of Nigeria, in looking to transit to inflation targeting, will face a number of challenges that are particularly pronounced in the Nigerian economy. We focus here on two specific issues-chronic structural barriers to price stability and the role of fiscal policy makers. Overcoming these will demand specific policy solutions tailored to the Nigerian environment.

1.   **Structural Constraints on Price Stability**

    a.   These can prevent supply curve from responding to price dynamics and deliver efficient allocation of goods

    b.   In countries such as Nigeria, this may not be due to under-supply in the economy as a whole, but because of inefficient distribution in the market

        i.   Failure of spatial arbitrage-poor and costly transport prevents goods from reaching areas of high demand despite high prices at a given point in time, and over-supply in other areas.

        ii.   Failure of temporal arbitrage-poor and costly storage/preservation prevents supply of goods from being spread over time, despite over-supply in some periods and under-supply in others.

    c.   These market failures create an additional challenge of managing different inflation dynamics in segregated sub-economies.

    d.   Inflexible input and production costs create downward price rigidity

        i.   Power

        ii.   Water

        iii.   Limited pool of surplus qualified labour

    e.   The overall solution to structural constraints must target fundamentals

        i.   Forcing too much additional liquidity into banking system without addressing financial architecture constraints to lending will not on its own produce greater real sector investment

        ii.   Increased lending/risk management capacity in the banking sector must be matched with political will and private sector capacity to finance and deliver critical infrastructure

2.   **Coordination of Monetary and Fiscal Policy** is essential in all emerging markets, but particularly where hydrocarbons dominate government revenue

    f.   In 2008, consolidated government spending will be 30.9% of Gross

Domestic Product (GDP) and 58.5% of non-oil GDP.
i.   Fiscal dominance remains the paradigm for monetary management
ii.   Fiscal performance will determine overall liquidity
g.   The balance of oil and non-oil revenue used is crucial due to highly inflationary nature of natural resource flows (75-80% of the Federation Account Allocation Committee (FAAC) inflows in 2008 will continue to be from hydrocarbons)
i.   Non-oil primary balance target of 40% of non-oil GDP remains a critical measure of fiscal prudence

**Figure 7: Consolidated Non-oil Primary Balance 2004 - 2010**
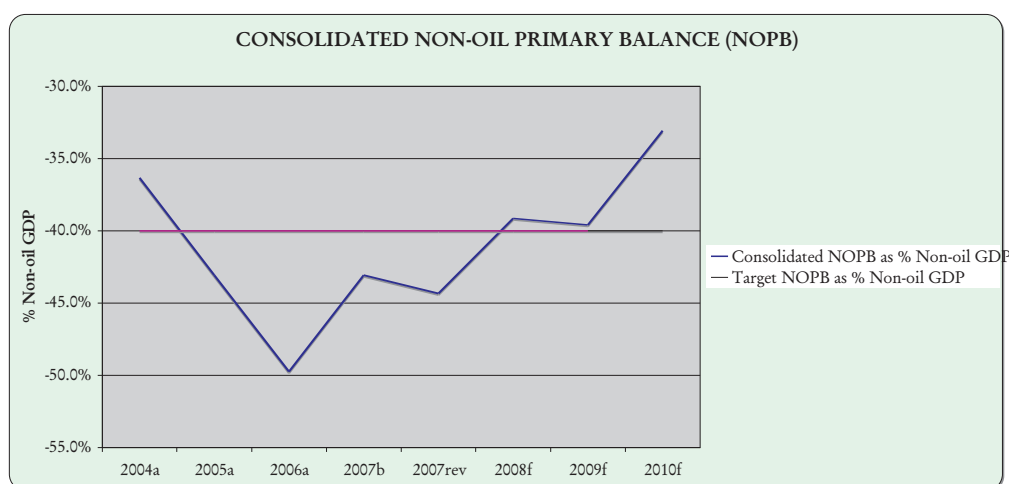
Source: Federal Government of Nigeria 2008 Fiscal Strategy Paper

h.   The correct balance of recurrent and capital expenditure is also critical in supporting inflation control
i.   Recurrent funds will be dispersed more predictably, but will be utilised at a higher level and exhibit much more rapid pass-though
ii.   Capital expenditure will be required to alleviate structural constraints on prices - cannot be achieved through incremental recurrent spending

i.   Effective coordination in budget implementation must be driven by fiscal policy authorities, who must focus on developing *and sharing* greater technical capacity in forecasting spending patterns
  i.   *Ex-ante* cash-flow planning must be developed and then more strictly adhered to by fiscal authorities
  ii. Forecasting and tracking of monthly revenue and expenditure with analysis of deviations and likely future outcomes on a 3-month horizon. This becomes much more difficult when sub-national government has to be factored in, which is critical in Nigeria.

**Figure 8: Nigerian Federation Flow of Fiscal Funds**
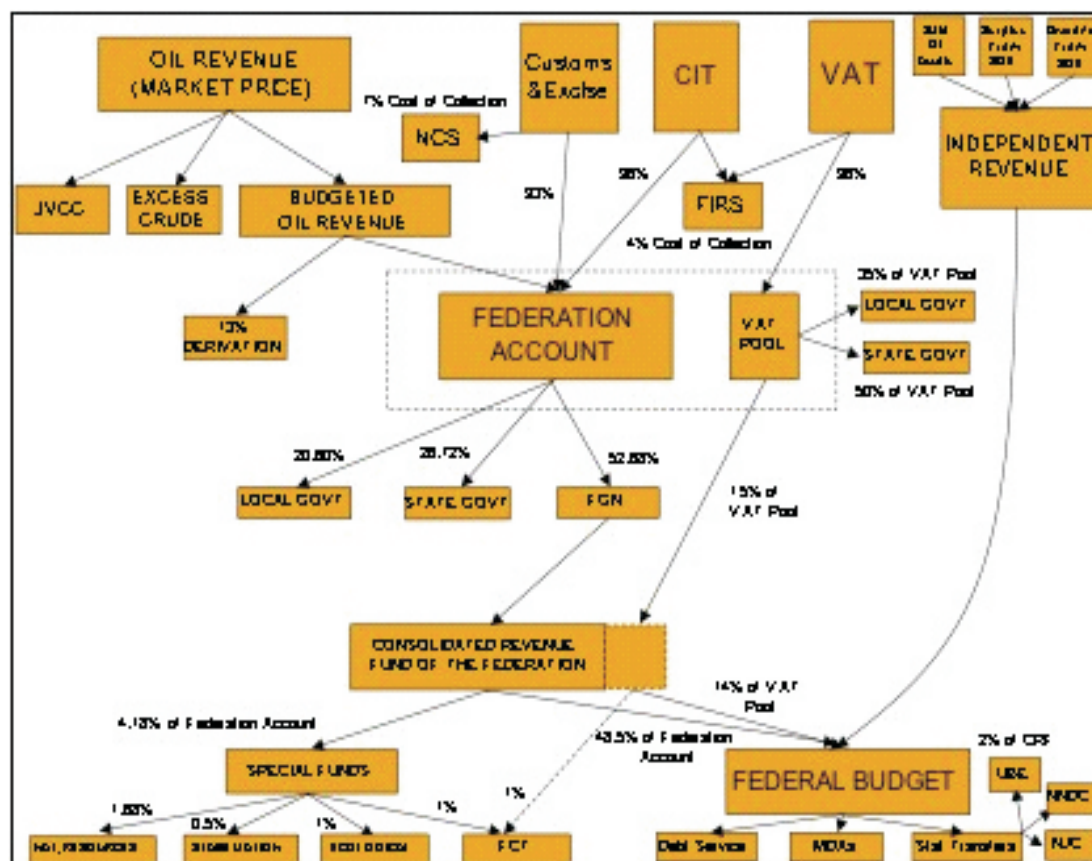
Source: Author

j.   Historically, Nigeria has relatively volatile revenue inflows. This is true of both oil revenues, particularly petroleum profit tax (PPT) and royalty payments, and also non-oil revenues. *Figures 9 and 10* below show monthly revenue incomes for two key streams in 2006, both of which are lumpy and unpredictable in nature. Better understanding and projecting of these flows are essential to understanding not just cash-flow from a government spending perspective, but also for pre-empting withdrawals of liquidity from the banking sector as tax payments are made.

k.   Brazil again provides a key example of the importance of fiscal policy in achieving stable price management (IMF working paper WP/05/109).
iii.   Brazils move to inflation targeting in 1999 was supported by a series of well publicized, credible fiscal reforms.
1.   Reorganization of sub-national debt (1997)
2.   Wide-ranging FRB to address persistent budget deficits (2000)

Figure 9: Nigerian Oil Royalty Payments 2006 (Monthly)
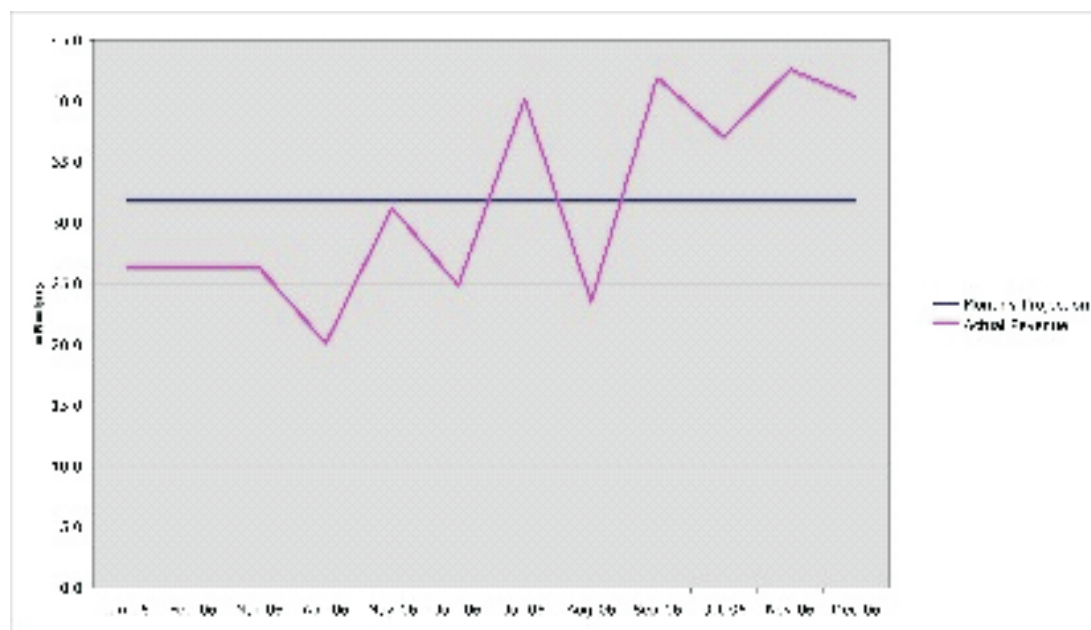
Source: Accountant - General of the Federation, Author

Figure 10: Nigerian Corporate Tax Receipts 2006 (monthly)
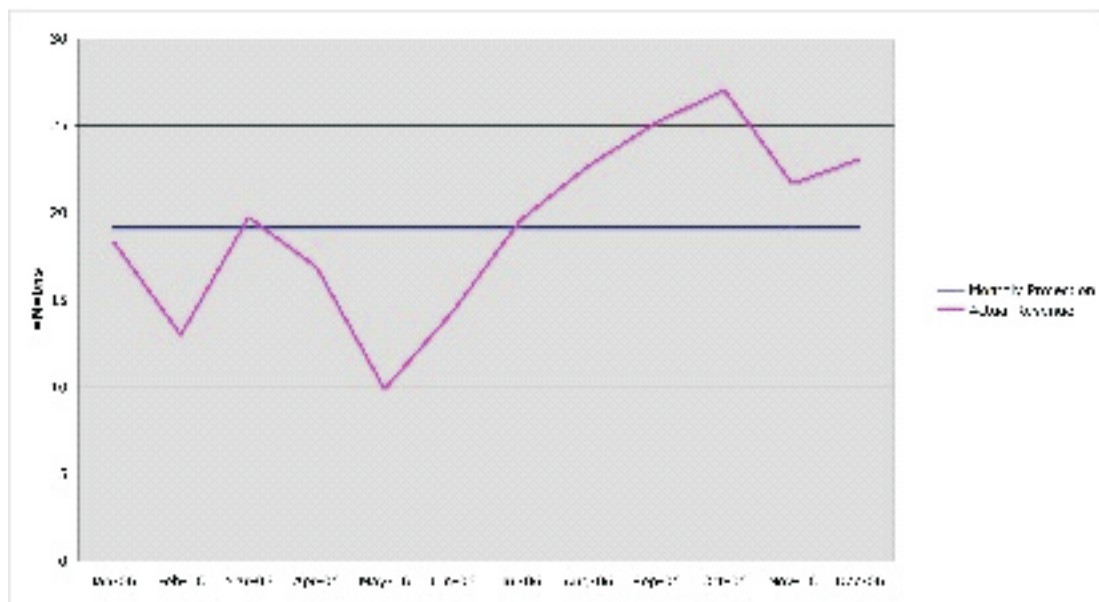
Source: Accountant - General of the Federation, Author

      i.   As a result, the primary surplus has become a key determinant of inflation expectations.
            1.   For every additional 1% primary consolidated surplus, inflation expectations 12 months ahead fall by 1%.
            2.   Impact of fiscal surplus on inflation expectation strengthened over time as credibility was developed.
   l.   Deficit financing in Nigeria has receded as an immediate source of fiscal policy destabilization of monetary aims, but this issue must continue to be actively addressed going forward, given the prominent role it has played historically in driving inflation.
      i.   It is critical that seignorage or 'ways and means' financing remains a non-option for any fiscal activity.
      ii.   Domestic borrowing.
            1.   Sensibly structured domestic borrowing programme can help to absorb longer-term liquidity and reduce systemic pressure.
            2.   Government can continue to provide risk-free reference yield curve.

       iii.   External borrowing
           1.   Must deliver efficient returns in reducing structural constraints of prices and competitiveness.
           2.   Must minimize Government exposure — this reduces incentives to manage exchange rate due to the impact on sovereign balance sheet.

m.   Tax policy can play an increasingly important role in supporting long-term price stability goals, and in Nigeria there is a need to ensure that tax reform strategies take monetary policy into consideration

       i.   Balance of taxes (oil and non-oil) will determine feed-through of changes in fiscal stance to system liquidity. Current tax reforms, whilst targeting lower rates, aim to increase total revenue through greater compliance. This will moderate domestic liquidity growth.

       ii.   Fiscal incentives to develop infrastructure and encourage financial market deepening are a critical complementary approach to private sector credit expansion, if this is to be translated into reduced supply side constraints.

n.   Fiscal authorities must publicly commit sufficient funds to allow credible OMO whenever required

o.   Long-term fiscal policies in Nigeria must ultimately complement the aims of the Central Bank of Nigeria to support rapid, but sustainable growth of the economy.

       i.   Establish 'primary surplus' credibility through repetition of prudent fiscal policies

       ii.   Target limits on recurrent budget to prevent imbalance of spending.

       iii.   Fiscal authorities must take the lead in relaxing infrastructure constraints.

       iv.   Seek out new sources of funding for infrastructure.

       v.   Coordinate private sector activity within strong regulatory framework.

IV.   Conclusion

This paper draws a number of conclusions for long-term monetary policy strategy in Nigeria, and the transition to inflation targeting. First, it is clear that inflation-targeting remains a fluid and evolving concept, without a one-size-fits-all framework that can be easily adopted. Second, emerging market Central Banks face a range of challenges in implementing such an approach to monetary policy, which can prevent a successful transition unless directly addressed. This paper has highlighted a

number of such challenges that are particularly prevalent in the Nigerian context.

Given these clear conclusions drawn from our descriptive analysis, the Central Bank of Nigeria must recognise that the move to inflation-targeting must be gradual, carefully planned within a coherent overarching framework, and done in complete coordination with other key economic management agencies. Without such a coordinated approach, the announced transition may not have the desired impact on prices, a problem encountered in several other emerging markets. The Financial Sector Strategy 2020 provides the ideal vehicle, and timeframe, in which to locate the necessary holistic approach to delivering this new monetary policy framework. Consequently, inflation-targeting must be at the heart of the FSS 2020 process.

Appendix 1

Implications for the yield curve during a transition to IT in EMs

This annex develops a scenario for the likely impact of a long-term transition to inflation targeting on the key characteristics of the yield curve. In order to establish entrenched expectations of price stability, Central Banks in emerging markets must be prepared to tighten monetary policy for a sustained period.

Before IT is adopted

Inflation often persistent at higher levels, and acts as a break on growth (particularly when over 15% year-on-year and volatile)
Also, greater volatility of inflation introduces possibility of negative real rates
Yield curve is overly responsive to monetary policy decisions at both the long and short ends
Authorities (both fiscal and monetary) have more latitude to vary policy, introducing additional risk that imposes a premium on all categories of economic transactions

During the transition to IT

Tighter initial short-term monetary policy combined with effective moderation of longer-term inflation (and therefore rate) expectations will lead to a broadly predictable evolution in the yield curve:
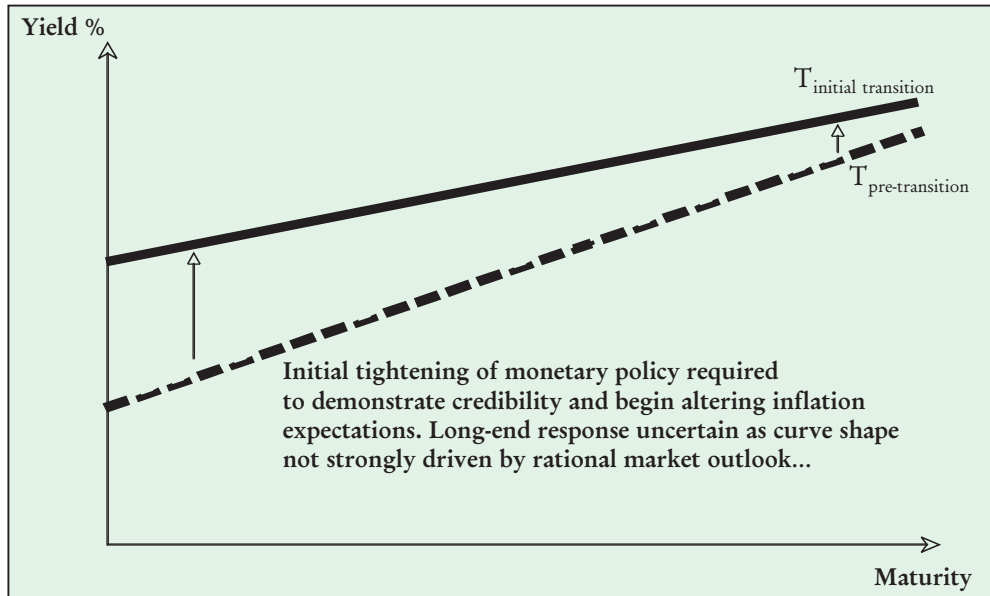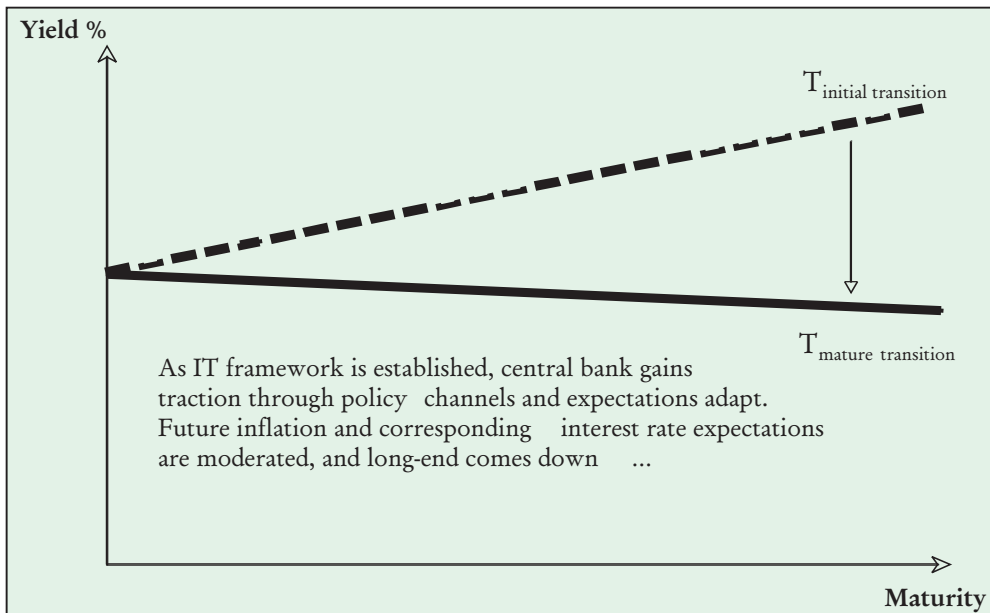
Figure A1: Initial Impact of Transition to IT on Yield Curve

Yield %

$T_{\text{initial transition}}$

$T_{\text{pre-transition}}$

**Initial tightening of monetary policy required
to demonstrate credibility and begin altering inflation
expectations. Long-end response uncertain as curve shape
not strongly driven by rational market outlook...**

Maturity

Figure A2: Yield Curve Following Change in Long-Term Inflation Expectations

Yield %

$T_{\text{initial transition}}$

$T_{\text{mature transition}}$

As IT framework is established, central bank gains
traction through policy channels and expectations adapt.
Future inflation and corresponding   interest rate expectations
are moderated, and long-end comes down   ...

Maturity

Figure A3: Yield Curve Under Effective IT

Yield %

As expectations are fixed around lower inflation and market deepening enhances   policy traction, policy rates can be brought down ...

$T_{mature\ transition}$

$T_{functioning\ IT}$

Maturity
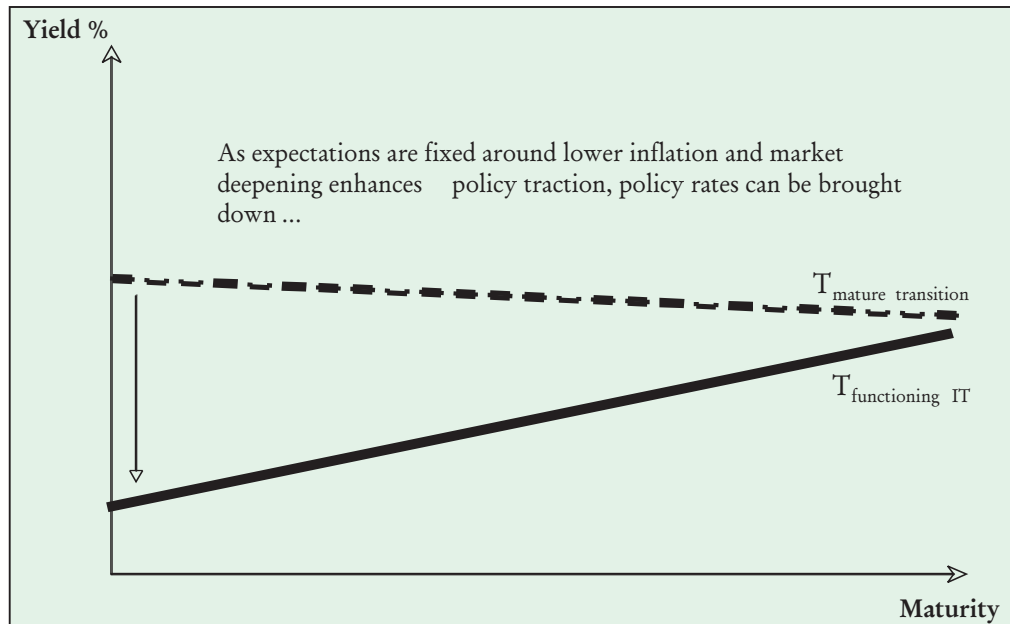
Figure A4: Yield Curve Characteristics Before and After Transition

Yield %

Post transition to IT the yield curve is *ceterus paribius* :
1.   Lower due to reduced overall levels of inflation
2.   Flatter as greater predictability and liquidity reduce term premium
3.   Less volatile along the curve as stronger policy feed-through to real sector allows smaller moves in   short-end rates

$T_{pre-transition}$

$T_{functioning\ IT}$

Maturity
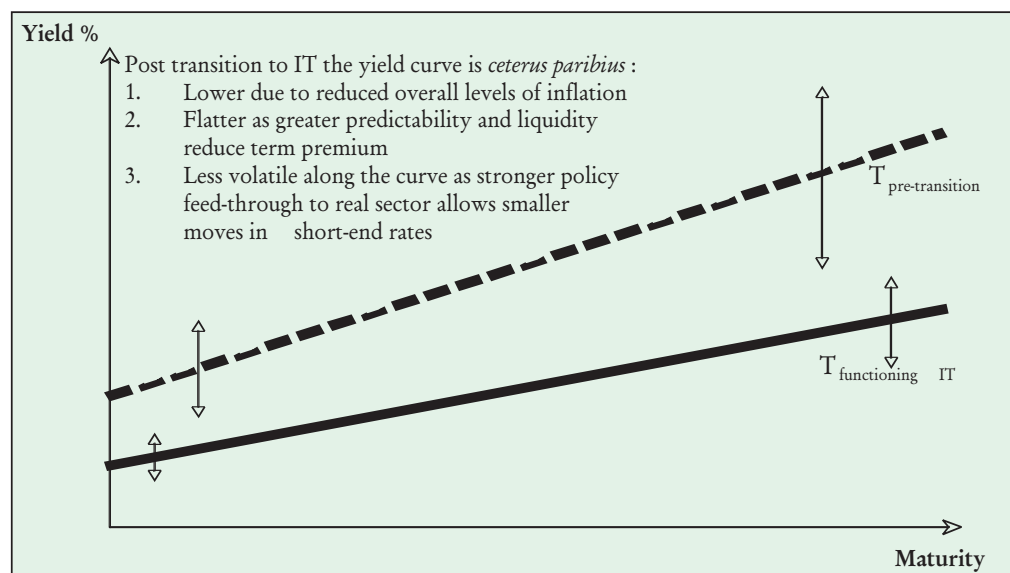
As credibility develops, increased transparency in both the targets of the monetary authorities and greater public availability of data, should increase rationality of markets and reduce volatility in response to monetary policy decision

Market development, supported by authorities to increase interest feed-through, should have positive impact on depth of financial system:
1.   Growth of retail credit market
2.   Development of mortgage and other asset-backed lending (providing environment for subsequent MBS/ABS)
3.   Introduction of repo framework enabling more efficiency liquidity management but also facilitating position-based trading
4.   Greater market liquidity will moderate term structure along yield-curve

After IT regime is in place

1.   Low, stable rates of inflation anchor broader macroeconomic stability
2.   Enhanced predictability and greater information reduce country risk
3.   Yield curve behaviour underpinned by conventional expectations formation and economic events

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