WP/15/136

IMF Working Paper

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The Case for Transitional Arrangements along the Road

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INTERNATIONAL MONETARY FUND

 WP/15/136

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Monetary and Capital Markets Department

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Authorized for distribution by Ghiath Shabsigh

June 2015

Abstract

Countries with evolving monetary regimes that decide to embark on "the Journey to inflation targeting" may not be able to adopt a full-fledged inflation targeting regime immediately. Those countries would be better off adopting transitional arrangements that take advantage of the informational content of monetary aggregates, developing an economic analysis capacity, and concentrating on monetay operations aimed at steering money market interest rates. This approach would allow the central bank to buy time for developing the building blocks for effective monetary policy, support transparent central bank communication, and limit the potential for undesirable outcomes along the road.

JEL Classification Numbers: E5

Keywords: Monetary Policy

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[1] Earlier versions of the paper benefited from comments at a MCM Policy Forum, at the First IMF Central Banks Forum for Developing Markets: *The Road to Inflation Targeting and Transitional Monetary Arrangements,* Paris, September 2014, and at the IMF-Bank Indonesia Conference "*Monetary Policy in Transition: The Case for a Two-Pillar Monetary Regime*" (October 2014). The paper also draws on discussions with policymakers during a number of MCM technical cooperation missions. The authors are grateful for comments by IMF colleagues, including Miguel Savastano, Michael Atingi Ego, Kal Wajid, Catherine Pattillo, Andrew Berg, and Inci Otker Robe.

Contents Page

I. INTRODUCTION

At present, most central banks are targeting inflation. In line with the emergence of a consensus in the economic literature in the 1990s, currently almost all central banks around the world are legally obliged to pursue price stability as one of their primary objectives.[2] Typically, the central bank law stipulates the objectives of monetary policy in a manner that identifies price stability as the most effective way in which the central bank policies can contribute to economic growth. This approach is in sharp contrast with policies of the 1970s in many countries, where central banks were expected to channel financial resources to priority sectors, thereby making them akin to development banks. In parallel, the independence of central banks has been strengthened as a means to attain this goal (Table 1).

Table 1. Central Bank Independence Scores 1/

Regions	1980s	2003
AFR	0.33	0.53
APD	0.30	0.63
EUR	0.30	0.88
MCD	0.30	0.53
WHD	0.36	0.67
All	0.32	0.68

1/ Higher numbers equals more independence (maximum of 1).
Source: Laurens and others (2009).

Countries with evolving monetary regimes and aspiring to move away from fixed exchange rate or *monetary targeting*[3] (MT) regimes[4] are modernizing monetary policy along the path adopted in advanced economies and several, though not all, emerging market economies. Such a path typically involved the adoption of what has become known as *inflation targeting* (IT) regimes. Yet countries with evolving monetary regimes, with weak policy transmission, relatively less developed financial markets, implementation constraints, or a weak enabling macro and financial environment, face numerous challenges along that road.[5] Establishing a *forward-looking* approach to monetary policy, with interest-rate focused operating procedures, to achieve inflation objectives is a desirable path for these countries.

The available literature to guide countries focuses mainly on the conditions for adopting IT. It mostly focuses on countries that have developed financial markets, and where monetary policy transmission is either robust or as a minimum can be strengthened within a predictable time horizon. Less guidance is available for countries with less developed financial markets, where policy transmission is weak due to an unfavorable environment and that may be subject to larger and more persistent economic shocks.

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[2] Laurens and others (2009) showed that based on a survey of practices covering 181 countries, 95 percent of them had price stability as one of the primary objectives of monetary policy. When central banks were assigned more than one objective, price stability typically was given a priority status.

[3] Key Concepts are defined in Appendix I. They are *italicized and underlined* when mentioned the first time.

[4] In this paper "countries with evolving monetary regimes" refers to countries transitioning from a peg or MT regime to IT. While not discussing fixed exchange rate regimes, their relevance in some cases is acknowledged.

[5] IMF (2008) reviews monetary and exchanger rate policies in Sub-Saharan African countries.

In particular, research done at the IMF in the last decade and a half has given relatively less attention to the set of operational issues faced by countries with evolving monetary regimes. Many papers touch upon some of the issues, including: assessing the scope for IT in developing countries (Masson, Savastano and Sharma, 1997); establishing the initial conditions in support of *inflation targeting*-IT (Carare and others, 2002); assessing transitional monetary regimes, such as *inflation targeting lite*-ITL (Stone, 2003); monetary implementation at different stages of money market development (Laurens, 2005); country experiences with the introduction and implementation of IT (Freedman and Ötker-Robe, 2009); elements for IT for emerging economies (Freedman and Ötker-Robe I., 2010). However, issues faced by countries with evolving monetary regimes, and in particular outlining a possible roadmap for "the Journey to IT" have received less attention.

This paper seeks to fill the gap. The methodology borrows elements from Schaechter and others (2002) on the building blocks for effective forward-looking monetary policy, Laurens (2005) on monetary policy implementation in the context of shallow markets, and Maehle (forthcoming) on monetary policy implementation issues.

The paper discusses options for developing forward-looking and interest-rate focused operating frameworks in ways that are aligned with existing capacities at the central bank, as well as the country's enabling environment. Because of its multidimensional nature, this type of analysis cannot lead to a "one-trajectory-fits-all" solution. Instead, the objective of the paper is to provide (i) a conceptual framework which takes into account key features of the monetary policy regimes in place in those countries; (ii) some principles for effective monetary policy given individual countries' initial conditions; and (iii) ways to map the progress made in complying with the specifications and for anchoring monetary policy.

The paper draws on the broad consensus that has emerged among academics and central bankers alike regarding the elements of a monetary policy reform agenda. This includes: the primacy of price stability as the key objective of monetary policy; the need for flexibility with regards to money targets in countries that continue to rely on them; the benefits of forward-looking monetary policy; the importance of developing the in-house capacity for forecasting and policy analysis; and the importance of the central bank's control over short-term interest rates for monetary policy transmission.

At the Fund, these issues have been recently reviewed in a paper analyzing monetary conditionality for countries with evolving monetary policy regimes (IMF, 2014a).The paper recognizes that every country should proceed with monetary policy modernization at the pace deemed appropriate, and that the conditionality set in Fund supported programs should provide the space for such efforts. To this effect the paper proposes enhancing the criteria used to evaluate performance of monetary policy in Fund-supported Programs by introducing a Monetary Policy Consultation Clause instead of setting numerical targets on reserve money or net domestic assets as "performance criteria" in those programs.

At present, the majority of countries whose monetary policy regimes are still "evolving" are low- and middle-income countries (Table 2). As explained in IMF (2014c), these countries can be grouped into three categories: (i) countries with peg regimes considering moving to flexible exchange rate regimes (selected countries in Group A); (ii) countries considering, or having adopted flexible exchange rate regimes in the context of MT, and contemplating moving to more flexible monetary arrangements (selected countries in Group A or B); and (iii) countries with no explicit nominal anchor seeking to clarify their monetary policy framework (selected countries in Group C).

Table 2. Monetary Regimes in Low and Middle Income Countries 1/

	Monetary Policy Framework			
	Group A Exchange Rate Anchor	**Group B Monetary Targeting**	**Group C Other 2/**	**Group D Inflation Targeting**
Conventional Peg and Stabilized Regimes	Aruba, Bahamas, Belize, Bhutan, Cabo Verde, Curaçao, Eritrea, Fiji, Guyana, Iraq, Jordan, Kazakhstan, Lebanon Lesotho, Libya, FYR Macedonia, Maldives, Morocco, Namibia, Nepal, South Sudan, Samoa, São Tomé & Príncipe, Swaziland, Suriname, Turkmenistan, Venezuela, Vietnam	Bangladesh, Burundi, DR Congo, Guinea, Sri Lanka, Tajikistan, Yemen	Angola, Azerbaijan, Bolivia, Egypt, Solomon Islands	
Crawl-like - Other Managed Regimes	Algeria, Botswana, Cambodia, Honduras, Iran, Jamaica, Liberia, Syria, Tonga	China, Ethiopia, The Gambia, Myanmar, Nigeria, Rwanda, Uzbekistan	Argentina, Belarus, Haiti, Lao P.D.R., Costa Rica, Kyrgyz Rep., Malaysia, Mauritania, Pakistan, Sudan, Tunisia, Vanuatu	Armenia, Dominican Rep., Guatemala
Floating and Free Floating Regimes		Afghanistan, Kenya, Madagascar, Malawi, Mozambique, Papua New Guinea, Seychelles, Sierra Leone, Tanzania, Ukraine, Uruguay	India,3/ Mauritius, Mongolia, Somalia, Zambia	Albania, Colombia, Georgia, Ghana, Indonesia, Mexico, Moldova, Paraguay, Peru, Philippines, Romania, Serbia, South Africa, Thailand, Turkey, Uganda

1/ Low and middle income countries according to the World Bank classification.
2/ "Others" refer to regimes with no explicitly stated nominal anchor. The central bank monitors various indicators in conducting monetary policy. This category also includes countries where no relevant information is available.
3/ In March 2015 India formally adopted inflation targeting.
Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions (2014).

II. Choice of a Framework for Countries with Evolving Monetary Regimes

A. General Considerations

The conduct of monetary policy is facilitated by the specification of a framework and of a nominal anchor to guide expectations of economic agents. This requires the adoption of a

well-defined policy objective, as well as clarity on the intermediate and operational targets, and the monetary policy tools (Figure 1 and Table 3). These elements constitute a monetary policy regime in its broader meaning. The underlying assumption is that agents make economic decisions guided by their expectation of what the monetary policy will be or do in the future.

Figure 1. Key Components of a Monetary Policy Framework

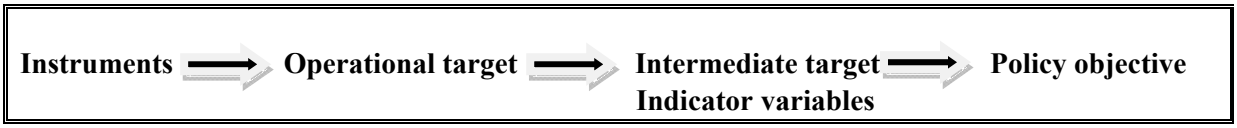


Table 3. Key Features of Conventional Monetary and Inflation Targeting Frameworks

Monetary Framework	Main Instruments	Operational Target	Intermediate Target	Policy Objective
Monetary Targeting	OMOs Standing facilities Reserve requirement	Reserve money 1/	Broad monetary aggregate	Inflation (implicit)
Inflation Targeting	OMOs Standing facilities Reserve requirement	Interest rates	Inflation forecast	Inflation (explicit)

1/ Until the 1980s, several central banks in advanced countries (in particular Germany and Canada) relied on short-term interest rates to achieve the intermediate target.

- *The policy objective* refers to the final goal and main responsibility of monetary policy which, as has been noted, is typically the rate of inflation.

- *The intermediate target* refers to a variable correlated to the ultimate objective that monetary policy can affect more directly and that the central bank treats as it were the target for monetary policy, or as a proxy for the ultimate policy objective. Traditional intermediate targets were the exchange rate and a monetary aggregate. They offered the link between the operational target and the policy objective and thereby helped anchor policy operations. More recently, an inflation forecast from the central bank has served as the intermediate target under IT, as the inflation forecast offers a link between the operational target and the policy objective and reduces the risk that the authorities will spring inflation surprises for the public.[6]

[6] See among others King (1994) and Svensson (1997) on intermediate targets under IT.

- *The operational target* [7] is a variable that can be sufficiently controlled by the central bank that guides the day-to-day operations of the central bank, and can effectively influence the intermediate target and thereby supports the achievement of the ultimate policy objective. The operational target defines the monetary policy stance. Typical operational targets include reserve money, commercial bank reserve balances, a short-term money market interest rate, or the exchange rate.

- *The instruments* are the tools used by the central bank, over which it has full control, to deliver the operational target. Typical instruments include open market operations, standing facilities, and reserve requirements.

- *The nominal anchor.* A nominal anchor is a numerical objective set on a nominal variable that constrains the conduct of monetary policy that policymakers use to tie down the price level or the change in the price level. An explicit numerical objective helps to signal the monetary authorities' commitment to control the inflation generating process. Its role is, mainly, two-fold: (i) help promote price stability and anchor expectations; and (ii) limit the time-inconsistency problem of discretionary monetary policy and anchor policy. In principle, the nominal anchor can involve some measure of inflation, the nominal exchange rate (a hard peg), or the growth rate of some monetary aggregate.

The monetary policy framework most suitable for a country depends on several factors, including the country's political and economic institutions, its main transmission channels of monetary policy, the monetary authorities' technical capacity, and macrofinancial conditions. Monetary policy should be anchored on a sound legal framework and the central bank should seek and obtain political and wider public buy-in to its main mandate. Identifying the transmission mechanism through which policy actions affect aggregate demand and ultimately inflation is most important. This requires undertaking research on the basic relationships among monetary variables, including base money, broad money, interest rates, inflation, GDP growth, the multiplier, and basic impulse response functions. The nature, speed, and intensity of the transmission from the variables under central bank control (short-term interest rates or base money) to variables most directly affecting monetary conditions (loan and deposit rates, asset prices) determine the effectiveness of different monetary instruments and appropriateness of a particular framework (see Appendix III).

Countries undergoing structural changes face particular challenges, and none of the conventional monetary regimes may be immediately applicable or optimal. To be sure, the "best" monetary regime for those countries would have to incorporate elements from the

[7] This is the preferred term in the monetary policy operation literature. Some parts of the academic literature refer to the operational target as the policy instrument or operating instrument, and the policy instruments as tools.

conventional monetary regimes, but the framework will have to evolve, in particular in the transition period. The central bank should ensure that the instruments and targets remain aligned with the transmission channels and the policy objective.

The level of development and sophistication of domestic financial markets also play an important role in the choice of monetary regime. Countries with shallow financial markets, low levels of financial intermediation, and a high inflationary environment have typically relied on some form of monetary targeting (MT) to conduct monetary policy. Countries with deep financial markets and where the interest rate transmission channel is strong, typically rely on central bank's money market operations (usually of short-term tenors) to steer short term market rates, which in turn impact the yield curve and banks' deposit and lending rates. With the appropriate analytical capacity and instruments the central bank is able to rely on an interest rate as the operating target in a fully forward looking manner, where an inflation target within a predefined horizon serves as the nominal anchor, as is the case with IT.

Textbook MT and IT are well-defined monetary regimes that provide a framework to rationalize the decision-making and implementation process. The intermediate money growth target or the inflation target plays the role of nominal anchor. In an MT regime, monetary policy implementation relies on the central bank's control over reserve money, which makes it clear to the central bank when and why to intervene to attain the broad money target. Under IT, the timing and trigger of the central bank's actions is less obvious given the variable lags between the monetary policy actions and their impact on inflation outcomes. Therefore, communication, transparency and accountability to build credibility and influence expectations are more critical for IT than MT.

B. Evolving Monetary Regimes

Neither MT nor IT may be suitable or advisable for countries with evolving monetary policy regimes. Some form of MT has proven to be an effective disciplining tool to achieve monetary and fiscal restraint and lower inflation and its volatility in the earlier stage of a disinflation episode in countries with flexible exchange rates. As inflation comes down, however, exogenous shocks become relatively more important and the short-term trade-offs between price, output, and exchange rate stability are likely to require judgment by policymakers that in turn needs to be supported by appropriate analytical tools. Many countries have found that the key relationships upon which monetary targeting is premised (i.e., stable money multiplier and velocity) become relatively weaker and more unstable in low inflation environments, thereby undermining policy effectiveness.[8] Yet a number of countries without a pegged exchange rate are not in a position to commit to an announced

[8] Two broad factors may lead to instability in the key relationships upon which monetary targeting is based: structural changes in the economy and financial innovations complicating the identification of the most appropriate monetary aggregate to measure money supply.

inflation target within a fixed policy horizon to anchor expectations about future inflation, as required by IT. However, moving to a framework where an inflation objective plays a central role, together with a focus on analysis—rather than strict adherence to a rigid money rule—is a reasonable choice on the account of the evolution of economic and financial infrastructures.

Countries with evolving macro-financial circumstances would be better served by monetary frameworks that strengthen key channels of monetary policy transmission (namely the interest rate and expectations channels), while at the same time continue to provide an effective nominal anchor for inflation expectations. This dilemma is particularly acute in countries with Fund-supported program. Safeguarding Fund resources may require adopting a monetary conditionality framework with many features that resemble MT. However, the limited flexibility for the conduct of monetary policy implied by such frameworks may lead to unduly holding back monetary policy modernization, in particular progress in strengthening monetary policy transmission. Furthermore, responding appropriately to exogenous shocks requires a degree of monetary policy flexibility that may conflict with strict adherence to preset monetary targets. For these reasons, it would seem preferable to formulate and monitor monetary policy using multiple indicators, introduce forward-looking analytical tools, reduce reliance on rigid policy rules, and increase the weight given to discretion and judgment in the conduct of monetary policy.

It is likely, but not necessary, that the "Journey to IT" will be a long one. First, structural transformation can be a lengthy process. Second, building capacity for forward-looking monetary policy requires developing analytical capacity at the central bank, which is only possible, besides improving skills, if the appropriate statistical information is available. Third, putting in place a framework that strengthens policy transmission takes time. In this regard, a transitional regime can be instrumental in allowing the central bank (and market participants) to gain sufficient level of confidence with the analytical and operational tools of the new monetary regime. Fourth, gradualism may be warranted since fulfilling a firm commitment to a numerical inflation target within a predefined policy horizon requires well functioning monetary policy transmission which is a process that may not be under the full control of the central bank. That said, the transition to IT may commence before all pre-conditions are met, provided there is a clear commitment to full implementation (IMF, 2014b).

Countries with evolving monetary regimes seeking to modernize their monetary policy have to make key decisions regarding the role of three main macroeconomic variables in the monetary framework as well as central bank communication.

- *Monetary aggregates.* Depending on the empirical evidence of the country, the role of monetary aggregates may range from being quantitative targets to indicators that supplement the assessment of short-term risks to price stability. Instead of setting a precise numerical target for reserve money or other monetary aggregates, monetary analysis (and especially its credit counterparts) can be used to cross-check the

conclusions from the economic analysis. In fact, the global financial crisis (GFC) has provided further support to the view that the information extracted from money (and credit) should not be excluded a priori for monetary policy analysis, or for financial stability analysis (Trichet, 2013).

- *Exchange rate.* Some degree of exchange rate subordination ("flexibility") is necessary to allow monetary policy an independent role. The central bank needs therefore to allow short and medium-term fluctuations in the nominal exchange rate and increase its understanding of the exchange rate pass-through to communicate the role the exchange rate will play in the conduct of monetary policy.[9] For this, a clear articulation of an intervention strategy in the foreign exchange market is critical.

- *Interest rates.* In operational terms, monetary policy is all about setting the appropriate level of interest rates in the economy. This remains true during the transition. In countries undergoing this process, central banks should try to avoid adhering to a rigid reserve money rule to avoid volatile or overshooting interest rates that can be detrimental to the real economy.

- *Communication.* Central bank communication is essential to anchor inflation expectations in an evolving monetary regime. Communication should be about key macroeconomic variables as well as about monetary policy implementation. Regarding the latter, great care is needed to ensure that what is communicated is both aligned with the way monetary policy is actually implemented and focused on what matters for private sector behavior (i.e., interest rates and future inflation). Beyond communication to market participants, this may also call for actions to raise the financial literacy of the population in general.

III. TRANSITIONAL ARRANGEMENTS: STYLIZED FRAMEWORKS

Countries with evolving monetary regimes typically face three challenges. First, they have to find ways to insulate the central bank from fiscal pressures to protect the institutional and operational independence of the monetary authority and its ability to control its balance sheet, in a context where the government securities market may be undeveloped. Second, they have to develop operating procedures for liquidity management that minimize unnecessary short-run volatility, in a context of shallow money markets. And third, they need to find a range of information variables and analytical tools to help guide the near-term course of monetary policy, while data gaps may still be significant.

[9] See in particular IMF (2014b) on the view that the fear of floating may at times be overstated and that greater exchange rate flexibility can lead to a lower pass-through.

A. When Is Reserve Money Targeting Useful?

Monetary targeting where the reserve money program (RMP) serves as a guide for daily liquidity management remains appropriate in situations where the central bank faces severe constraints, including:

- *Lack of clarity about the objective(s) of monetary policy*. A situation where the central bank is assigned several objectives (for instance, a price stability and a developmental-type objective) should not necessarily lead to maintaining reliance on the RMP. However, this would be the case if such lack of clarity were to lead to an obligation for the central bank to provide credit to the economy, either directly or indirectly via the banking sector, hence potentially making it difficult for the central bank to retain a sufficient degree of control over its balance sheet. Under such circumstances, the RMP provides a framework to ensure that key objectives of monetary policy can be achieved.

- *No formal separation between fiscal and monetary policy.* Absence of a clear demarcation between fiscal and monetary policy prevents the central bank from having sufficient control over its balance sheet. The RMP provides a tool and a framework to protect the central bank from excessive fiscal dominance that could lead to a loss of monetary control.

- *Political pressure to keep interest rates low and directly or indirectly provide inexpensive central bank credit to government.* The RMP helps the central bank counter pressures from fiscal dominance and ensure that market interest rates are kept sufficiently high to contain inflation pressures and maintain economic and financial stability.

- *Very low level of financial intermediation.* This leads to base money mainly made of currency, therefore leaving little scope for monetary policy. In such circumstances, monetary policy has mainly to do with central bank's balance sheet management.

B. Continued Relevance of Monetary Aggregates and Monetary Analysis

While it is true that monetary aggregates are less commonly used as intermediate targets of monetary policy that was the case 20 or 30 years ago, monetary analysis continues to play an important role in the work underlying the assessment of the monetary policy stance in a wide range of countries (see Appendix IV). The following general points can be made:

- *Monetary analysis remains relevant for monetary policy*. Monetary aggregates may contain useful information about both current economic conditions and the nature of the shocks currently hitting the economy, as well as forward-looking information about future inflation. Thus, the understanding of the correlation between monetary

aggregates and inflation dynamics should retain a role in the broader economic analysis surrounding the conduct and assessment of monetary policy.

- *The status of money in the monetary policy strategy depends on the degree of financial markets sophistication*,[10] which in turn affects the stability of the relationship between monetary aggregates and inflation dynamics in the short- and medium-term. Central banks operating in shallow financial markets may be in a position to continue to rely on the information coming from monetary analysis as the main basis for their decision-making process. The weight given to money supply indicators in the analysis may and should decline as the financial and economic structures evolve. This approach is even more appropriate if the analytical and statistical tools available to the central bank are limited.

- *Monetary analysis is relevant for financial stability*. Monetary analysis contains useful information (possibly complemented by analysis of flow of funds in the economy and banking sector) which may contribute to the analysis of risks to financial stability.[11]

Continued relevance of monetary aggregates and monetary analysis for countries with evolving monetary regimes is further supported by the following factors typically present in those countries:

- *Large and more persistent supply shocks.* In many low income countries, headline inflation is considerably more volatile than in advanced economies, including because of higher shares of foodstuff in the CPI, larger domestic shocks to agricultural production, and limited access to price smoothing through international trade in food products. Output and inflation shocks also tend to be negatively correlated (not positively correlated as in advanced economies) and of longer duration. The latter makes the tradeoff between inflation and output stability potentially more severe and complicates the use of traditional modeling tools that rely on a negative correlation between output gaps and inflation for formulating the policy stance. These shocks make it harder to produce reliable forecasts of inflation and achieve the inflation target without undesirably large swings that could lead to excessive exchange rate and output volatility or financial instability. Ultimately, this could undermine the support for and credibility of the framework. These shocks may also make it premature for

[10] King (2002) stresses that the role of money and credit as information variables is reinforced when there are imperfections in the financial sector.

[11] Monetary analysis (complemented by analysis of the flow of funds) conveys information about domestic demand and credit conditions, thus about future risks to financial stability. Monetary analysis from a medium to long-term perspective can also play a cross-checking role with the perspective coming from economic analysis in assessing the outlook for price stability, as is the case at the European Central Bank (ECB, 2011).

the central bank to commit to meeting a formal inflation target within a relatively short time horizon. Under these circumstances, monetary aggregates can provide monetary policy formulations with the longer term anchor.

- *Large real and fiscal shocks to equilibrium interest rates relative to money demand shocks.* These may increase the informational power of monetary aggregates relative to interest rates in predicting inflation, in particular over the medium term.

- *Larger demand shocks, including in particular fiscal shocks, relative to money demand shocks.* A positive demand (fiscal) shock would add pressure to inflation and increase money demand. Under strict monetary targeting, those shocks tend to increase interest rates which would satisfy the Taylor principle if money demand is relatively interest rate inelastic. Simple interest rate rules and conventional DSGE (dynamic stochastic general equilibrium) models that lack an explicit fiscal block may not provide a sufficiently early warning of the risk to inflation from such shocks.

- *More significant information shortages*. A paucity of real-time information about equilibrium interest rates, actual and potential output, and thus the output gap, as well as large shocks to both actual and potential output, may seriously hamper the usefulness of both simple interest rate rules and conventional DSGE models for policy formulations. While these issues pose a challenge for all countries, they are particularly severe in countries where: (i) there is incomplete and/or poor data on past economic developments; (ii) potential output is more difficult to estimate, including because of more frequent and large supply shocks and more rapid structural changes; and (iii) equilibrium interest rates are more volatile and less predictable because of larger demographic and structural changes.

- *Uncertainties regarding the adequacy of the forecasting tools.* They relate to the suitability of the models used to extract economic signals and make projections. Tools used by advanced countries may not adequately capture the complexity and rapidly changing structure of countries with evolving monetary regimes. For example, the absence of an explicit fiscal block in most simple monetary models may pose a more significant risk for LICs that often face larger uncoordinated fiscal shocks compared to advanced countries.

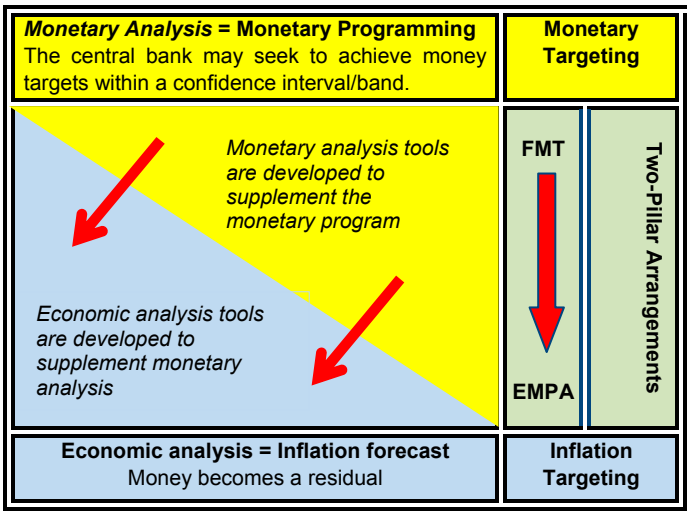
- *Weak macrofinancial building blocks*. Even in cases where it is possible to produce a robust inflation forecast, there may be weaknesses in the macro-financial building blocks that can affect the economy and the balance sheet of the central bank. These

weaknesses would normally not let the central bank to "do all that it takes" to achieve an inflation target within a predefined time horizon.[12]

C. A Conceptual Framework for Transitioning

An appropriate framework for countries with evolving monetary policy regimes may lie anywhere on a continuum from adherence to monetary targets, as is the case under MT, to the constrained flexibility that goes with formal inflation targets, as is the case under IT (Figure 2). Frameworks in between tend to combine elements of monetary and economic analysis (i.e., two-pillar frameworks), with idiosyncratic features taking into account the wide range of countries' initial conditions.

Figure 2. Stylized Transitional Frameworks



While a number of central banks with evolving monetary regimes conduct monetary policy following a flexible approach this is not typically reflected in their communication strategy, which sends confusing signals to market participants and the public at large. The relatively large number of countries in Table 2 whose monetary policy frameworks are classified as "Others" by IMF staff illustrate this problem.

The relative weight ascribed to monetary and economic analysis provides useful criteria to characterize various representations of a transitional framework. Two broad representations can be made, whereby a role for money is retained, with a shift from being used as a target to a focus being placed on analyzing monetary developments, (Table 4):

- *Flexible Monetary Targeting (FMT)*. As discussed below, there are two main options for FMT that would allow for a stronger focus on interest rates in short term liquidity management operations. Option 1 involves retaining targets on reserve money but not as short-term operational targets. Instead targets on total reserves would serve to constrain on average and over a given horizon the volume of monetary operations. The framework would not have a point policy rate, but short-term market interest rates would move within a firmly established interest rate corridor that is periodically realigned to keep market rates away from the hedges of the corridor for an extended

[12] The GFC has shown that factors may affect inflation beyond the chosen horizon to be taken into account for policy decisions. This led most IT central banks to adopt flexible inflation targeting (Woodford, 2013).

period of time.[13] Option 2 focuses solely on broad money as the intermediate target to directly guide interest rate setting, with no reserve money target, and with short-term interest rates as the operational target for the central bank's daily liquidity management.[14]

- *Enhanced Monetary Policy Analysis (EMPA)*.[15] As the inflation forecasting and economic analysis capacity is enhanced, monetary policy formulation centered on the inflation forecasting process becomes more important. Broad money is downgraded from target to indicator, and monetary analysis serves to cross-check economic analysis, as well as to provide useful information to monitor risks to financial stability.

Table 4. Stylized Transitional Frameworks: Key Features

	Main Instruments	Operational Target	Intermediate Target	Policy Objective
FMT	Option 1. OMOs Standing facilities Reserve requirement	Short term: Interest rate (range) Longer term: average total reserves	Broad money	Inflation (implicit)
	Option 2. OMOs Standing facilities Reserve requirement	Interest rate (central bank controls excess reserves to steer market rates to its policy rate)	Broad money	Inflation (implicit)
EMPA	OMOs Standing facilities Reserve requirement	Interest rate (central bank steers market rates to its policy rate)	Inflation forecast Cross-checking role of monetary analysis	Inflation (explicit)

D. A Taxonomy of Transitional Frameworks

Flexible monetary targeting[16]

In the absence of a reliable inflation forecast, central banks in economies with flexible exchange rates may have to continue to rely on monetary aggregates in the formulation of the monetary policy stance. But while doing this, central banks can work in upgrading their

[13] The US Fed during 1979-82 combined non-borrowed reserve targeting with a 500 basis point wide target interest rate corridor for the federal funds rate (Bindseil, 2004). See also Friedman (2000) in the role of interest rates in the US Federal Reserves' policy making.

[14] This framework resembles how monetary targeting was practiced in advanced countries until the 1990s, including in Germany (Batten and others, 1989, Bernanke and Mihov, 1996; Mishkin and Posen, 1997; Benati and Goodhart, 2011), Canada (Batten and others, 1989, Freedman, 2000), Japan (Batten and others, 1989) and UK (Batten and others, 1989, Tucker, 2004). See also Bindseil (2004) for a discussion of this and the rise and fall of the reserve position doctrine. This alternative is also similar to the broad money-targeting interest-rate-instrument rules discussed in among others in McCallum (1981) and Svensson (1997).

[15] This is similar to the ECB two-pillar approach.

[16] See Maehle (forthcoming) for further elaboration.

monetary policy framework. The central bank can make the framework more flexible and interest rate focused. In particular, while the broad money targets derived from the BMP may continue to serve as intermediate targets, reserve money would no longer be the operating target for short-term liquidity management. Instead, short-term monetary operations would be calibrated to steer short-term interest rates.[17] There may still be a role for reserve money targets under Option 1, including for external communication and setting targets in Fund-supported programs, but not under Option 2. However, in order to provide sufficient flexibility to shift the focus of daily operations towards managing liquidity in a manner that helps to steer and stabilize short-term interest rates, reserve money targets would serve as longer term targets or benchmarks that do not dictate, but only guide the longer term evolution of the daily liquidity management operations.

Flexible monetary targeting Option 1

The flexible reserve money targeting can be combined with an interest rate focused daily operational framework by:

- Setting reserve money targets over a pre-specified (e.g., quarterly) period, on average terms, and possibly within a band.

- Deriving a target path for total reserves that are consistent with the longer term reserve money target and longer term forecasts for currencies in circulation. The derived target path for total banks' reserves (not reserve money), would guide, but not dictate, the central bank's short term liquidity management.

- Lengthening the horizon of high-frequency liquidity forecasting on a rolling basis combined with lower frequency forecasting to cover the entire horizon for the reserve money target to help ensure that liquidity management over time is consistent.

- Managing day-to-day liquidity with a primary focus on keeping total reserves on average over the period broadly in line with the target path, while at the same time offsetting autonomous flows and minimizing short-term variations in excess reserves that would cause high-frequency volatility in short-term interest rates.

- Allowing short-term money market interest rates to drift within an interest rate corridor formed by central bank standing lending and deposit facilities as retail deposits, and reserve expansion deviates from the target. A higher (lower) than targeted growth in required reserves would cause excess reserves to be lower (higher)

[17] In the short term, the central bank should accommodate liquidity shocks; by doing so interest rate volatility will be lower. This approach recognizes that it is only for a horizon beyond the short term that monetary policy can influence money demand.

than demanded by the commercial banks and thereby push up interbank interest rates. Under such a framework it would not be advisable to introduce a point policy rate.

- Periodically repositioning the interest rate corridor if short term rates are persistently close to the floor or ceiling. The repositioning of the corridor would serve the same signaling role as a changing the policy rate under a system with a point policy rate as the operational target.

- Periodically reassessing program assumptions and liquidity targets.

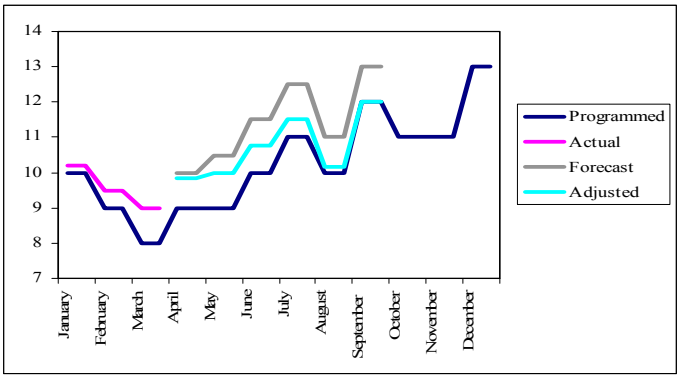
Setting the reserve money targets on longer term average basis (e.g., over a quarter) would provide flexibility to let reserve money vary from day-to-day as needed to keep the short-term market interest rates reasonably stable. Using the implied target path for total reserves, and not reserve money, as the shorter-term operational target would help insulate the interbank money market from daily swings, which can be large, in the demand for currency in circulations and thereby help reduce high-frequency interest rate volatility.

Flexible monetary targeting: Option 2

Another route towards the adoption of flexible monetary targeting consists of dropping the reserve money target and relying on broad money as the intermediate target. This option provides the additional flexibility in liquidity management needed for having a point policy rate as the operational target for the central bank's short-term liquidity management.

In this framework, deviations from targets for broad money do not necessarily, or in a mechanical way, involve a change in the monetary policy stance. Fully accommodating the demand for reserve money on a day-to-day basis may lead to a deviation of broad money from its targeted level. In view of the uncertainties regarding the parameters of the broad monetary program (BMP), this should not necessarily be a matter for concern for the central bank. However, as the financial program's time horizon (typically semiannual or annual) progresses, periodical reviews (for instance, quarterly) of the key BMP parameters should be done to quantify the deviations from the target, and assess the need for a change in monetary policy stance to bring broad money back on track.

Figure 3. Monetary Program and Revisions: A Simple Illustration 1/



1/ In the example, the review of the monetary program takes place in April; forecasts cover a six-month period.

If such a review concludes that broad money has deviated too much from its target and that the initial BMP's underlying assumptions hold (i.e., the deviations carry inflationary or deflationary risks) the central bank should consider changing the policy stance and increase (lower) the policy interest rate and adjust the daily

liquidity management operational accordingly, and communicate its decision to market participants. To bring the BMP back on track the central bank must revise its monetary projections (Figure 3). This should begin with a longer-term liquidity forecasting exercise to estimate how broad money should evolve in the coming months (starting from current values) to ensure that future inflation developments are consistent with the central bank's inflation objectives. The estimated path should then be modified to gradually converge to the desired target. While the central bank would still be using a broad money aggregate as its primary intermediate target to inform the setting of its policy stance, it would change the liquidity management stance and move the interest rate corridor and/or the central bank policy rate to ensure that broad money converge to the desired target (see also Appendix V).

Enhanced monetary policy analysis (EMPA)

Central banks that have developed robust inflation forecasting tools and a capacity for broader economic analysis may downgrade further the role of money aggregates in monetary policy formulation and adopt an EMPA approach. In this approach, the central bank's inflation forecasts would move to the center of the monetary strategy, while the central bank may not, or would not commit to keep inflation close to a published numerical target within a preset policy horizon. The analysis is supplemented with an auxiliary reference range for broad money to anchor monetary policy.

The EMPA exercise takes the role of the periodic reviews of broad money target that are required under flexible monetary targeting. It involves analyzing the underlying economic situation based on additional tools adapted to the analytical capacity of the central bank and its technical ability to formulate monetary policy (see Appendix V). EMPA can be construed as a dual intermediate targeting regime where the importance given to the money versus the inflation forecast will vary over time depending on the confidence the central bank has on each pillar. The inflation forecast would be more prominent in countries where the central bank has a good grasp of the drivers of inflation or when inflation trends are more persistent, which will also allow the central bank to be sufficiently transparent about the analytical tools utilized in its economic pillar. Reference values or benchmarks for monetary aggregates would be more important when money demand is found to be relatively more stable and predictable than inflation.

IV. Mapping Options and Conformity with Practices

Countries with evolving monetary regimes that are considering embarking on "the Journey to IT" must first assess their degree of conformity with best practices for effective monetary policy. The wide spectrum of countries' initial conditions leads to a continuum of situations: at one extreme, limited conformity calls for strict monetary targeting; at the other extreme, high conformity places a country in a position to adopt IT; most countries are a "land in between". The assessment of the level of conformity should lead to an action plan to strengthen conformity.

A. Building Blocks for Effective Monetary Policy

The best practices for effective monetary policy can be grouped into three building blocks: (i) the institutional set up for the central bank, most notably a governance framework with price stability as the *de jure* primary objective of monetary policy; (ii) macro and financial development and stability, including clear separation between monetary and fiscal policy, the ability to articulate the role of the exchange rate and an intervention strategy, and a stable financial sector; and (iii) data and analytical capacity to identify the transmission channels, a liquidity forecasting capacity, an organization of the central bank that supports policy implementation, and an effective communication policy (Table 5).

Developing the building blocks involves a long-term commitment from the country's authorities, not just the central bank. The central bank should play a catalytic role, but several issues lie outside its direct responsibility and control. Moving away from strict monetary targeting may be appropriate early on in the process and may be done unilaterally, but a firm commitment by the government is necessary to strengthen the building blocks.

Institutional Best Practices

Table 5. Building Blocks for Effective Monetary Policy

Specifications		Rationale - Comments	Responsibility
Institutional	Price stability enshrined in law as primary objective of the central bank (CB).	Prevent developmental objectives from undermining ability to achieve price stability.	Parliament. Requires consensus in society
	De facto & de jure CB independence & matching level of transparency/accountability.	Improve independence, transparency and accountability, pillars of central bank governance regardless of regime in place.	Parliament. Requires consensus in society
Macro Financial	Clear separation between monetary and fiscal policy.	Curtail fiscal dominance to contain uncertainties in monetary policy conduct.	CB and Ministry of Finance (MOF)
	Clarity about role of exchange rate in the monetary regime.	Clear objectives/strategy for intervention consistent with regime in place.	CB
	Stable and sound financial sector.	Improve central bank ability to manage aggregate liquidity (allocation among banks via interbank market), and help build stable/strong policy transmission	CB, financial regulator and MOF
	Credit culture supportive of monetary policy transmission	Support the interest rate transmission channel	CB, financial regulator and MOF
Data and Analytical Capacity	Effective liquidity forecasting framework.	Ensures stable liquidity conditions in the money markets by the CB.	CB
	Adequate statistical data.	Specifications based on regime in place.	CB - Statistics office
	Effective communication strategy	Specifications based on current operational arrangements.	CB
	Proven CB analytical capacities to support an understanding of the transmission channels.	Ability to assess the role of money, interest rates, and the exchange rate, as needed in view of regime in place.	CB
	Clear decision-making process.	Specifications based on regime in place.	CB
	CB organization suited to support policy implementation.	Specifications based on regime in place.	CB

B. Mapping Exercise

The appropriate path to implementing a two-pillar framework depends on the level of progress achieved in developing the practices associated to the building blocks. A high degree of conformity should not be seen as a pre-condition for a move. Ultimately, the move entails judgment by the authorities, together with the firm commitment to take the required steps to strengthen conformity. Table 6 provides guideposts to prevent undesirable outcomes which could arise during the process due to (i) premature shift to interest rates as the operating target for monetary policy, which could lead to the loss of an effective nominal anchor; and (ii) rigid reliance on reserve monetary targets, which could delay the modernization process. Some countries may not be willing, or able, to move beyond a certain point in the continuum.

Institutional building blocks

The institutional building block includes features that are desirable for any framework.[18] They sum up the consensus view with regard to the primary objective of monetary policy and the associated governance framework for the central bank. The adoption of an EMPA framework requires a high level of conformity with all institutional specifications. On the other hand, reliance on the central bank's broad monetary program (BMP), possibly supplemented with a flexible implementation of the reserve money program (RMP), can provide safeguards against the risks associated with the lack of a clear primary objective for monetary policy, or limited autonomy in policy formulation. Yet, in all cases, there is a need to ensure sufficient balance sheet capacity at the central bank to implement monetary policy: the central bank should be adequately capitalized and able to rely on an adequate income stream to manage the costs of conducting monetary policy (Archer and Moser-Boehm, 2013).

The more the central bank moves away from reliance on money targets or indicators, the more emphasis it needs to place on transparency and its communication strategy. A commitment to transparency can provide an incentive to clearly articulate to the public monetary policy objectives, measures, and results. Ultimately, it enhances central bank credibility, protects its independence as it supports accountability and is a deterrent to pressures from government or other pressure groups.

[18] See Laurens and others (2009) for a comprehensive review of the literature and country practices.

Table 6. Mapping Options with Country Specifications

Specifications			FMT	EMPA
Institutional	Independence	Price stability de jure primary objective of CB.	Highly desirable.	Required.
		Independence of CB in policy formulation and in setting the policy rate.	Highly desirable.	Required.
		De facto operational autonomy (i.e., financial capacity to conduct monetary operations).	Required	Required.
	Accountability	Framework making the CB accountable to society (i.e., Parliament or Executive Branch).	To be assessed based on CB independence level	Required.
	Transparency	Adequate level of CB disclosure and publications.	Country specific.	Country specific.
Macro Financial	Fiscal policy	Sound financial relationship between the CB and the government, involving no direct or indirect monetary financing of the budget or quasi-fiscal activities by the CB.	As minimum, limits to monetary financing monitored in the BMP.	Ability of the government to finance all its needs in the market without CB resources
	Foreign exchange policy	Articulate role of the ER in monetary strategy and related intervention policy.	ER flexibility increased. Increased use of monetary tools to influence ER. ER is market clearing. ER policy subordinated to monetary policy.	ER market clearing and ER policy subordinated to monetary policy.
	Financial sector	Stable financial sector, supported by a robust credit culture.	No systemic weaknesses that may lead to loss of monetary control.	Efficient financial sector, including robust policy transmission channel.
		Well functioning interbank market.	Desirable for ST maturities.	Desirable for ST maturities.
Data and Analytical Capacity	Systemic liquidity management	Effective financial market infrastructure for the settlement of interbank transactions.	Highly desirable.	Required.
		CB makes liquidity forecasts. Government produces cash flow projections.	Framework being introduced and tested.	Framework fully operational.
		Define a set of appropriate monetary and foreign exchange instruments for policy implementation.	Framework being introduced and tested.	Framework fully operational.
	Analytical and research	High-frequency data (monthly for key economic indicators; quarterly for national accounts)	Not required, except for money data	Required.
		Statistical tools and short-term forecasting instruments able to support a comprehensive analytical framework. Minimum specifications based on the transitional arrangements	Short-term monetary analysis money-based inflation forecasting.	Model-based inflation forecast. Cross-checking of economic and monetary analysis. Analysis of channels of transmission.
	Decision-making	Minimum specifications based on the transitional arrangements	Flexible and various arrangements possible.	Integrate economic & monetary analysis into the decision-making process.
	Organization	Minimum specifications based on the transitional arrangements	Country specific.	Country specific.

Required	Desirable - Highly desirable	Country specific

Macrofinancial building blocks

Effective monetary policy calls for a sound financial relationship between the central bank and the government. For countries with a history of fiscal dominance, the main challenge is to restrict the ability of the government to rely on direct or indirect credit from the central bank. Countries facing such challenges will need to rely on the RMP, and those able to introduce flexibility in the implementation of the RMP may adopt a flexible monetary targeting framework. Except for countries that formally adopt an exchange rate peg, where all monetary policy objectives are subordinated to the exchange rate target, adoption of a transitional framework requires articulating a strategy for official intervention in the foreign exchange market. Retaining some role for the exchange rate may be warranted as an indicator, or supplementary monetary policy instrument, but not as a nominal anchor, and caution is needed to avoid a conflict of objectives or the perception of it. Furthermore, given that anchoring market expectations will increasingly rely on policy actions, care is needed to ensure actual policy actions are consistent with announced policy. Central bank credibility in that regard can benefit from adopting rules-based mechanisms for foreign exchange interventions, while retaining the right to unannounced interventions in case of extreme market conditions.

A reasonably sound financial sector is critical to support monetary policy transmission. Under a two-pillar arrangement, the central bank should be able to rely on the interbank market for the redistribution among banks of the system's liquidity. A number of factors may hinder the efficient functioning of the interbank market, including actual or perceived balance sheet weaknesses of participating financial institutions. Weak financial institutions may distort the interest rate and credit availability transmission channels in other ways. In particular, these financial institutions may have an incentive to react to an increase in interest rates (that, other things being equal, will dampen the demand for credit) by lowering their credit standards to continue lending. They could also bid up the interbank rate, which would reflect only a change in their risk premium and not tighter overall liquidity conditions.

Poor credit culture, the associated weaknesses in creditor rating systems or credit bureaus, and contract and collateral enforcement are major impediments to improving the interest rate channel. Further impairing transmission through this channel may be poor payments infrastructure, lack of "bankable" projects; and weak accounting and auditing practices in the nonfinancial private sector. All of these may obstruct the transmission from short-term money market rates to banks' deposit or lending rates.

Data and analytical capacity building blocks

The specifications associated with the data and analytical capacity building blocks are for the most part within the control of the central bank. To strengthen them, it is necessary to enhance the central bank capacity in (i) liquidity forecasting and management operations; (ii) identifying the transmission channels; and (iii) conducting analyses and research. The

main challenge is to ensure that capacity building in those closely related areas takes place concurrently.

Regarding reliance on interest rates as the operational target for monetary policy, a "range" for the central bank policy rate, rather than a "discrete/point" rate, may be considered in the initial stage of the monetary policy modernization.[19] The relationship between quantity and interest rates may be unclear during the transition, since money demand and multiplier relations may become unstable, making it difficult to identify general patterns between changes in short-term interest rates, monetary aggregates, and inflation. In that context, the adoption of a range for the policy rate can provide the central bank some operational flexibility to respond to market developments, and absorb forecasting errors, with the policy range narrowed over time with improved understanding of the key relationships, eventually leading to the adoption of a "point" central bank policy rate (see Appendix V).[20]

In terms of capacity to support monetary policy with analytical work, it is important to make a distinction between economic analysis and research-oriented economic modeling (see Appendix IV). Such a distinction allows to separate the recurrent analysis that is necessary to conduct and assess monetary policy (economic analysis), from the work aimed at improving the understanding of the causes of changes, or test policy changes or new equilibrium and their impact on the economy (policy and research-oriented economic modeling).

Building the analytical capacity to support a forward-looking approach to monetary policy is likely to be a multi-year effort.[21] Taking into account countries' conditions, this effort could involve an initial phase of enhancing financial programming (in particular in cases where an FMT framework may remain relevant), and a move towards macroeconomic modeling. Anchoring capacity building efforts in a properly thought out medium-term program focusing on, and developing all of the aspects of the policy formulation process can be beneficial. What is critical is to sequence the capacity building efforts properly, building the capacity from the ground up, and not early on focus solely state-of-the art tools. It is also critical to ensure that the analytical tools developed are aligned with the policy framework in place, so that capacity building actions in these areas do not force the authorities to change their policy framework before they are ready for a change of monetary regime, and they have made sufficient progress in the other areas, in particular monetary policy implementation (e.g., the short-term liquidity management framework).

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[19] This would amount to using the "corridor" (i.e., the combination of a credit standing facility with a deposit standing facility) as central bank policy rate.

[20] See Laurens (2005) for a discussion on the mix of monetary tools at different stages of market development.

[21] Bank of England (2012) provides a survey of models and forecasts used by IT central bank. Except for a limited number of countries, most IT central banks rely on multiple types of models and forecasting tools.

The specifications related to the decision-making process and organization of the central bank will have to be tailored to the way monetary policy is actually implemented. Progress in these "soft" areas can be swift. However, there would be no tangible benefit from making progress in these areas ahead of progress achieved in the actual implementation of monetary policy. The risk would be to develop processes that are not well aligned with actual monetary policy implementation, potentially diverting scarce resources to this endeavor that could be used more effectively in other priority areas.

V. SUMMARY AND CONCLUSIONS

This paper seeks to contribute to a debate started long ago about the desirability and applicability of inflation targeting in countries with evolving monetary regimes. It provides a conceptual framework to guide policy makers establish a road map for the "Journey to IT" based on a careful assessment of the country's economic and financial environment, as well as the analytical and operational capacity at the central bank.

The paper argues that during "the Journey to IT" some countries may benefit from adopting a transitional arrangement combining monetary and economic analysis tools, and operational arrangements that at an early stage place greater emphasis on interest rates. In particular, easing the binding nature of monetary aggregates in the short term allows the central bank to stabilize short-term money market interest rates, which in turn supports market development and strengthens monetary policy transmission.

The paper also argues that the constraints normally faced by countries with evolving monetary regimes tilt the balance towards a more pragmatic approach to modernization of the policy framework, as that approach:

- *Allows the central bank to buy tim*e, most notably for establishing the technical building blocks for effective monetary policy (including effective liquidity management and economic analysis capacity).

- *Supports transparency in central bank communication*. An explicit reference to the monetary regime along the continuum from strict monetary targeting to IT allows the central bank to communicate clearly its final objective and instruments. The positioning along the continuum depends on progress made in establishing the building blocks for effective monetary policy.

- *Reduces the potential for undesirable outcomes along the road,* including the loss of an effective nominal anchor (due to premature switch to IT), or undue delay of monetary policy modernization (due to rigid reliance on monetary targets).

The paper presents two stylized representations of transitional arrangements (described as a two-pillar arrangement) based on the relative weight given to monetary and economic analysis:

- *Flexible Monetary Targeting-FMT*. Under this approach broad money is retained as the intermediate target. Liquidity management is aimed at stabilizing short-term interest rates, with the support of a corridor arrangement. Reviews of performance vis-à-vis the benchmark allow assessing the need for adjusting the stance of monetary policy.

- *Enhanced Monetary Policy Analysis (EMPA)*. Under this approach the inflation forecast and related enhanced monetary policy analysis takes center stage. Liquidity management is aimed at ensuring that short-term interest rates are well aligned with the central bank's policy rate. The monetary pillar evolves towards cross-checking the economic pillar, and it also provides useful information to monitor risks to financial stability.

The paper discusses a set of specifications and practices associated with the building blocks for effective monetary policy. These specifications are expected to help country authorities (going beyond the central bank) define a road map for enhancing compliance with the building blocks, therefore limiting the potential for undesirable outcomes along the road. Following such an approach reflects our view that the "Journey to IT" should be seen as a process. For some countries the Journey may be a short one, while for others it may be a long and arduous one.

APPENDIX I. KEY CONCEPTS

Broad monetary program (BMP). The BMP is the quarterly, semiannual, or annual framework where broad macroeconomic objectives are set in term of fiscal, monetary and balance of payments. These broad parameters, consistent with an underlying inflation objective (and growth in some countries) and based on a statistical relationship over the medium term between money and the price level in the form of a money demand equation, provide projections of monetary aggregates.

Evolving monetary regimes. Evolving monetary regimes combine elements of MT and IT, with more focus on analysis rather than a pre-set money rule. Such monetary regimes have developed in response to large exogenous shocks and a changing financial landscape due to financial liberalization and innovation, and leading to instability in money demand function. These changes have prompted countries to migrate to proactive and increasingly forward-looking monetary policy in which there is flexibility with regards to money targets and central bank develops skills in monetary and economic analysis to better inform monetary policy decisions. The central bank is also subordinating the exchange rate to the monetary policy objectives and is allowing more of a role for the market to determine the exchange rate. There is therefore a need to incorporate the impact of increasing exchange rate flexibility into policy analysis, recognizing that as time goes on and as robust estimates of inflation are available, the exchange rate pass through may also decline allowing for a lesser role for central bank interventions in the foreign exchange market.

Flexible Inflation Targeting. Following the GFC, most—if not all—IT central banks have adopted what has become known as flexible IT, whereby the central bank aim at keeping inflation near the target rate over the medium run. In policy implementation the central bank may take into account the impact on output, interest rate, or exchange rate volatility, and financial stability in setting the pace of adjustment back to the medium-term policy objective. Additional stabilization goals may be pursued in the short-run, subject to the constraints that the overall policy stance is consistent with the medium-run inflation target (Woodford, 2013).

Forward-looking monetary policy. In this paper forward-looking monetary policy refers to an approach to monetary policy making which uses information coming from new observations into the economic forecast that is used in the decision making process. When conducting a forward-looking monetary policy the central bank relies on statistical and forecasting tools that attempt to incorporate changes to expectations coming from new observations in the assessment of the risks to price stability. This definition would thus be closer to the optimal decision procedure for monetary policy than the purely forward-looking one as discussed in the academic literature (i.e., Woodford, 2000), which often assimilates forward-looking with IT. The concept of forward-looking process discussed in this paper is therefore broader than the commonly referred to in the IT literature. In this context, conventional monetary

targeting, by assuming a stable money demand on the basis of relationships that are unable to take account of possible structural breaks, would be seen as backward looking by nature since any adjustment would be derived solely from past observations. Flexible monetary targeting (FMT) qualifies as forward-looking monetary policy since (i) the periodic reviews in the context of FMT Type 1 incorporate some elements of a forward-looking approach to monetary policy as the desirability to adhere to the monetary program is assessed on the basis of information that goes beyond past observations; and (ii) FMT Type 2 incorporates the key elements of a forward-looking approach to monetary policy.

Inflation targeting (IT). IT regimes have in common that a published numerical inflation target within a predefined policy horizon prevails over any other policy objective; it becomes the nominal anchor. Policies should be set so that the inflation forecast credibly returns to the target over the policy horizon, absent further shocks. Central banks that already enjoy a high level of credibility may miss the target without incurring credibility losses, provided the target misses can be explained in a credible manner. This may not be the case for central banks with low levels of credibility. Monetary policy is conducted in a market-based and transparent manner that fosters accountability. Monetary policy decisions are communicated in terms of a reaction to deviations of inflation forecasts (or expected future inflation) from the desired target. IT relies on a broader range of economic variables, indicators, and modeling capacities; it allows a forward looking and pre-emptive monetary policy.

Inflation targeting lite (ITL). ITL countries float their exchange rate and announce an inflation target, but are not willing to maintain the inflation target as the foremost policy objective (Stone, 2003). ITL can be viewed as a transitional regime aimed at buying time for the implementation of the structural reforms needed for a single credible nominal anchor.

Monetary targeting (MT). Monetary targeting is based on the financial programming framework, a simple model, an essential part of which is a demand for money function. It comprises a BMP and the RMP. A monetary target is derived on the basis of assumptions regarding the income velocity of money and real GDP growth, and a target rate, or path, for inflation. The RMP, derived from the BMP, is based on a reduced form statistical relationship between broad money and reserve money (the money multiplier). With regard to liquidity management, the reserve money target provides an operational guide (quarterly and monthly) to calibrate the central bank's monetary operations. The central bank manages liquidity to meet the targets for reserve money over the target period (at times within a band to absorb short-term liquidity shocks) with the aim to achieve the underlying inflation objective.

Nominal anchor. A nominal anchor is a numerical objective set on a nominal variable that constrains the conduct of monetary policy and that policymakers use to tie down the price level or the change in the price level. It reflects the monetary authorities' commitment to control the inflation generating process. Its role is mainly two-fold: (i) help promote price

stability and anchor expectations; and (ii) limit the time-inconsistency problem of discretionary monetary policy. A credible nominal anchor is important to control inflationary expectations and provide confidence in monetary policy whereby agents can distinguish between movements in relative prices (that are necessary for consumption and investment decision making) and those associated with the price level. In principle, the nominal anchor can involve some measure of inflation, the nominal exchange rate (a hard peg) or the growth rate of some monetary aggregate (but not nominal interest rates), as long as the monetary authorities actively take the required steps to achieve the target.

Reserve money program (RMP). The RMP, derived from the broad monetary program (BMP), is based on a statistical relationship between broad money and reserve money in the form of the money multiplier. With regard to liquidity management, this relationship provides an operational target (quarterly and monthly) to calibrate the monetary operations, whereby the central bank conducts monetary policy with the objective of meeting the targets for reserve money in the short term with the aim to achieve ultimate objective of price stability. The central bank may strive to achieve the reserve money target on average over the period and within a band to absorb some short-term liquidity shocks.

Two-Pillar Framework. A framework combining elements of MT and IT, namely a monetary and an economic pillar. Two ways of operating such arrangements can be distinguished on the basis of the relative weight that it given to the monetary pillar versus the economic pillar, while both perspectives are an integral part of the framework.

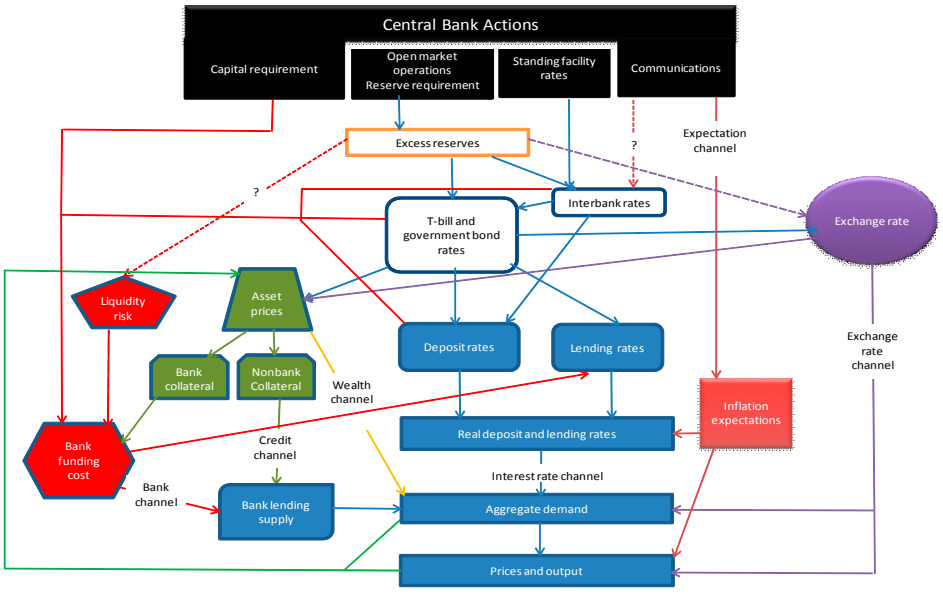
- Flexible Monetary Targeting (FMT). The monetary pillar retains a dominant role, and broad money continues to be the intermediate target. However, the degree of adherence to the target depends on an assessment of the policy stance that incorporates inputs from monetary analysis, as well as elements of an economic analysis (when and if available). With regard to liquidity management excess reserves becomes the operating target, and the central bank should not try to achieve a reserve money target in the short-term. Interest rate volatility can be managed with reliance on a corridor arrangement.

- Enhanced Monetary Policy Analysis (EMPA). The inflation forecast and the related enhanced monetary policy analysis takes center stage; the monetary pillar plays a cross-checking role (i.e., the status of monetary aggregates is downgraded to one of reference value/benchmark). Liquidity management aims at tightly steering short-term interbank market rates around the central bank's policy rate.

APPENDIX II. TRANSMISSION CHANNELS OF MONETARY POLICY[22]

A robust transmission mechanism through which policy actions affect aggregate demand and ultimately inflation is critical for effective monetary policy. Analysis of the transmission channels requires undertaking research on the relationships among relevant variables (base and broad money, interest rates, inflation, growth, money demand, the multiplier, basic impulse response functions in a VAR setting). The nature, speed, and intensity of the transmission from the variables under central bank control (i.e., short-term interest rates or base money) to variables most directly affecting nonfinancial sector conditions (loan and deposit rates, asset prices) determine policy effectiveness, and the monetary instruments that can be used. A number of factors are at play: (i) banking sector competition, (ii) the extent of access to alternative funding sources, (iii) the depth of financial markets, (iv) the extent of government involvement in financial markets, (v) the level of financial intermediation, (vi) the exchange rate regime, (vii) the degree of current and capital account openness, and (viii) the importance of financial markets developments in the decisions of economic agents. They influence the speed and intensity of the transmission channels, hence the effectiveness of monetary action in transmitting policy signals (Figure 4).

Figure 4. Transmission Channels



Source: Maehle (forthcoming).

Monetary policy mainly works through interest rates and the exchange rate.[23] The central bank's ability to influence the economy, and the money supply that matters for the behavior

[22] This appendix is based on Maehle (forthcoming).

[23] This does not mean that the (narrow) "interest rate channel" dominates or is particularly strong, but that almost all of channels work through interest rates or amplify the effect of changes in interest rates and other yields on real demand and supply.

of the nonfinancial private sector (broad money) stems from its monopoly over bank claims on the central bank (reserve balances), which in turn influences the money and foreign exchange markets on the broader set of interest rates and asset prices, all of these interrelated through arbitrage and competition for reserve balances. Monetary policy affects the real economy provided that this arbitrage works (interest and exchange rates need to be sufficiently flexible and market determined), and the impact of changes in interest and exchange rates on aggregate demand and inflation is sufficiently strong.

The following "narrow" transmission channels have been identified in the literature, especially in countries with deep financial markets:

- *Interest rate channel*. Monetary transmission through this channel—often regarded as the main one—refers to the effect of monetary policy on the level of interest rates in the economy, leading to changes in investment/savings and thus in aggregate demand. Predictability of the response of lending/deposit rates to changes in money market rates depend on the degree of competition in the banking sector, the extent of access to alternative domestic funding sources, and the depths of money and capital markets.

- *Exchange rate channel.* Monetary transmission occurs when changes in the monetary policy stance lead to changes in the exchange rate, affecting the relative demand for domestic and foreign goods and services. This channel does not exist under a peg regime, and works better with high level of exchange rate variability and high substitutability between domestic and foreign assets.

- *Asset price channel*. Monetary transmission occurs when changes in monetary policy affect asset prices. In particular changes in the value of equity or collateral will in turn induce changes in consumption and investment. The main factor influencing the strength of this channel is the development of bond, equity, and real estate markets.

- *Availability of credit channel.* Monetary transmission occurs when monetary policy affects the quantity of available credit, regardless of (or in addition to) what happens to interest rates. It reflects how asymmetric information and the cost of enforcing contracts may create agency problems in markets. The financial condition of the banking system is an important factor influencing the strength of this channel.

- *Inflation expectations channel*. Inflation expectations are important for firms' price-setting behavior and wage formation. They are a measure of the public's confidence in the central bank to attain the inflation target. Inflation expectations above the central bank's target suggest that the public does not believe that the central bank will keep inflation in check. This may lead to a need to raise the policy rate more rapidly than would be otherwise the case.

APPENDIX III. ROLE OF MONEY IN MONETARY POLICY: THE CONCEPTUAL DEBATE

The debate about the role of money in monetary policy making is related to the question about the endogeneity vs. exogeneity status of the money supply from conceptual and theoretical viewpoints. The debate can be reduced to the diverging views between the post-Keynesian theorists, for whom endogenous money is a central component, and the monetarists, arguing that money supply should be exogenous to control inflation. In Moore (1988)'s terminology the former are seen as Horizontalists by assuming a perfectly elastic money supply function, whereas the latter as Verticalists (also including Neoclassical Synthesis Keynesians and New Keynesians to a large extent) assume a perfectly inelastic money supply function.[24] Hence, in the former case the central bank would accommodate money demand at the exogenously set interest rate; in the latter case the interest rate would result from the exogenous money supply determined by the central bank.

The evolution of the role of money in modern central banking can be analyzed against the background of this theoretical debate. Evolving specificities of the economy—thereby impacting the features of money supply and demand for liquidity—has gradually led central bankers to adjust their policy strategy (and its implementation) through time reflecting developments in the literature. For example, it is widely recognized that if money supply is not perfectly inelastic, the central bank would tend to accommodate at least partially (possibly short-term) changes in agents' demand for liquidity in order to stabilize market interest rates even if money supply is considered stable over time. In the same vein, changing conditions in the economy or structural changes in the functioning of the economy and financial markets—thereby increasing the likelihood of discrepancies between money supply and money demand—may erode the effectiveness of strict monetarist (or Verticalist) approach over time at the benefit of a policy allowing more discretionary adjustments.

Economic history has shown that a strict application of both approaches has its own shortcomings. On the one hand, accommodative approach suggested by Horizontalists (without proper analysis of risks to economic growth and price outlooks) may lead to negative economic outturns. Two striking examples (one with an independent central bank and another in the absence of central bank independence) can be recalled in this regard. The case with an independent central bank relates to market intervention by the Reichsbank in order to stabilize the exchange rate in early 1923 to overcome (then assumed temporary) adverse fiscal news, which proved eventually long-lasting. The example with a non-independent central bank is the accommodating policy approach pursued by the Federal Reserve between the onset of World War II and the 1951 Treasury-Federal Reserve Accord. In both cases, monetary policy led to high and volatile inflation regime (Durré and Smets,

[24] From this perspective, the main difference between monetarists and "mainstream" Keynesians would not be on the assumption of exogenous money (that they both agree with) but rather on the role of fiscal policy to explain macroeconomic outcomes. See the related discussion in Davidson (2006).

2013). On the other hand, it is widely recognized that innovations in financial structure, products/instruments, and regulation has altered the expected close relationship between the average annual rate growth of the money stock, and the average annual rate of increase of prices (Rudebusch (1998), Hauser and Brigden (2002) among others).[25]

The historical experiences have encouraged policymakers to adjust the conduct of monetary policy in a pragmatic manner oscillating between these two paradigms across time. The pure monetarist (or more broadly the Verticalist) view has triumphed on the account of the evolution in the thinking on central banking, leading to growing criticisms by academics in the 1970s about political control over central banks which usually led to high inflation and an inefficient allocation of credit. Later on, this view was questioned during the 1980s in light of growing instability observed in the relationship between monetary aggregates and economic growth. The Federal Reserve was the first central bank to initiate a change as regards the monetary targeting which was followed by other central banks over time. Although the role of money as a policy target has clearly diminished[26], in most industrialized countries monetary analysis continues to play a key role in the analysis underlying the assessment of the monetary policy stance.

As stated in Uhlig (2008) and Woodford (2008), some kind of paradox prevails today in the literature since "we are all monetarists now…" even if money has lost its prominent role in the monetary policy strategy. This can be explained by a change in the status of money, moving from an explicit (intermediate or final) policy target to a prime indicator for forecasting inflation. This particular place that money has always occupied for the conduct of monetary policy (although with various degrees of importance) can be explained by at least three main intrinsic features as recalled in Masuch et al. (2003): (i) monetary aggregates can be useful proxies for variables not easily observable or only observable with time lags; (ii) money has an important structural role by nature in the transmission of monetary policy;[27] and (iii) money is a well-defined indicator which may serve as nominal anchor for the economy. Therefore, neglecting monetary dynamics would deprive the central bank of a valuable source of information.

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[25] As recalled in Grant et al. (2004), the introduction of cash-saving technologies such as credit and debit cards as the growing network of automated teller machines contributed to a prolonged upward shift in narrow money velocity towards the end of the 20th century.

[26] Even the European Central Bank has abandoned the intermediate monetary aggregate targeting (then still followed by the Deutsche Bundesbank) at the benefit of a "two-pillar" strategy when adopting the euro.

[27] King (2002) stresses that the role of money and credit as information variables is reinforced in the case of imperfections in the financial sector (through borrowing and liquidity constraints) permitting changes in balance sheets affecting yields and spreads that are relevant for intertemporal behaviour of economic agents as regards consumption, saving, and investment decisions.

In recent decades, several elements have contributed to the renewed interest in the monetary analysis in all major central banks of industrialized countries.

- *First*, strengthening of both theoretical and empirical research has confirmed the role of money in the inflation dynamics in the long run.[28] Academic research has focused on new approaches or instruments to overcome the unstable velocity in monetary aggregates, without questioning the relevance of monetary analysis.[29]

- *Second*, central banks have a monopoly for issuing their own liabilities, allowing a control of the money initially injected in financial markets at least at the very short end. This point has been recalled by the GFC where an active use of the central bank's balance sheet proved to be useful in a zero lower bound environment.[30]

- *Third*, the recent emphasis placed on macroprudential tools by policy makers, with the propensity to entrust this task to the central bank has led to a renewed interest for monetary analysis in a broad sense, notably—and admittedly not exclusively—through a careful scrutiny of the counterparts of monetary aggregates (Borio (2011)). This point was explicitly expressed in Mersch (2013) when stressing that: "*[…] the ECB's policy analysis for price developments can contribute to financial stability surveillance. Here, I have in mind our monetary analysis, which focuses on money and credit developments. Exaggerated dynamics in such aggregates can help identify dangerous trajectories that could threaten financial stability. We will have to reflect […] on how best to have the broader financial stability assessment benefiting from tools or insights from the monetary analysis*."

All these elements therefore explain that "all central banks monitor monetary developments closely but the approach to monetary analysis can differ […]" as concluded in Pill (2001), which was strengthened by the GFC. As noted by Trichet (2013), "*It is more largely accepted by academia that there is indeed information contained in money and credit dynamics that is important for monetary policy, even if the information is difficult to extract and decipher*". The debate seems more about *"…how to extract the pertinent information from monetary and financial data, and how to process this information in order to have the best informed monetary policy decisions"*.

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[28] Klöckers and Willeke (2001), Kimura (2001), Hauser and Brigden (2002), Masuch et al. (2003), Bank of England (2010) or Arestis et al. (2010).

[29] See the discussion related to the estimation of "money-augmented" or "two-pillar Phillips curves" pioneered by Gerlach (2004)—and debated in Fischer et al. (2008) and Woodford (2008) among others—or, the developments of new measures derived from monetary aggregates (Hancock,2003, and Grant et al.,2004).

[30] Durré and Pill (2012) argue that, beyond the traditional portfolio-balance channel approach in the literature, the market substitution by central banks through an active use of their balance sheet was equally important to stabilise the banking system. See also Yates (2003).

APPENDIX IV. GUIDING PRINCIPLES FOR MONETARY POLICY FORMULATION

Monetary policy is conducted in a changing economic environment involving a degree of uncertainty but a forward-looking approach supported by an appropriate analytical capacity at the central bank can help address this problem. Monetary policy must absorb (and adapt to) the impact of shocks arising from major new macro and/or microeconomic imbalances, while recognizing that central bank's assessment based on past economic relationships may be altered by structural changes in the economy. Therefore, analytical work that focuses on understanding the transmission of monetary policy actions to inflation outcomes is at the center of the forward-looking monetary policy framework. This explains that analytical work has always existed within central banks to allow developing an understanding of (i) the linkages between monetary, financial, price growth and economic performance to calibrate the macroeconomic framework used for the monetary program when it is retained; (ii) the factors affecting price dynamics; and (iii) the interaction between the nominal and real variables, as well as of the monetary policy transmission mechanisms. Ultimately, the objective is to assess how a change in the policy instrument will impact the final objective of monetary policy. This could require continuous efforts to overcome possible statistical and methodological obstacles while addressing human resource constraints.[31]

The form and degree of sophistication of central bank analytical work will depend on the degree of maturity of its economic and research units, the quality of the statistical tools, the profile of its staff, and data quality and coverage (IMF, 2014a). Central bank analytical work is usually more oriented toward applied/empirical rather than theoretical research as it aims to inform the monetary policy decision making process. For many theoretical issues academic research is often a useful source of information. However, sometimes theoretical research in universities does not cover all the areas of interest to the central bank. In such cases some theoretical research may be needed and indeed undertaken most likely by central bank research units that have reached an advanced level of maturity.[32] However, in an environment of relatively less developed financial markets and analytical capacity at the central bank,[33] starting with an economic analysis (focusing on short-term economic developments) may appear sufficient in first instance before moving to a comprehensive

[31] During early stages, enhancing cooperation with outside agencies involved in research on issues relevant to monetary policy can facilitate the buildup of in-house capacity, and help alleviate related resource constraints.

[32] Among possible topics, one may mention theoretical models to explain the banks' behavior in relation to forming required reserves; potential tradeoffs with the dynamics of the money market.

[33] In FMT the short-term analyses may be limited to the monetary and credit information in relatively high frequency (weekly or monthly) and macroeconomic variables in low frequency (e.g. on annual basis). By contrast, the move to EMPA requires the availability of macroeconomic variables in higher frequency (i.e., national accounts on quarterly basis and soft economic indicators on monthly basis).

analytical framework including long-term economic analyses, and setting policy scenarios (through a proper research function).

The practice for structuring analytical work in major central bank leads to a distinction between economic analysis and research-oriented economic modeling.

- *Economic analysis* refers to short-term, recurrent analysis needed for monetary policy conduct and its assessment. It covers the analysis of financial, monetary, and economic indicators, as well as the production of forecasts *with a view to determining the stance of monetary policy and to decide on policy actions*. It is usually based on the assumption that the structural macroeconomic framework remains broadly unchanged. It encompasses a wide range of tools including economic indicators, statistics and surveys, as well as forecasting models used to produce short-term or longer-term inflation forecasts. Central banks typically rely on a suite of models for the forecast, including econometric models (ARIMA, VAR, VECM…), macroeconometric models and small scale DSGE models.

- *Research-oriented economic modeling* refers to a theoretical or empirical endeavor to gain some distance from short-term events (i.e., improve understanding of the causes of changes), or test new equilibrium and their impact on the economy. This is usually conducted within a general equilibrium framework (like the DSGE models).The objective is rather to estimate structural (possibly new) economic relationships. In major central banks, such models are essentially estimates to test the impact of new economic relationships and thereby the most appropriate policy reactions.[34] *This helps elaborate policy scenarios in the presence of economic shocks*, with a view to beef up the discussion among the policy makers.

- *Expert judgment of forecasters and of those involved in the monetary policy decision making process is a key component of the forecasting process*. Models are essentially simplified and incomplete representation of economic mechanisms. They are alone unable to translate all the complexity of economic adjustments..

Over time, enhanced economic analysis may lead to a research function. Three main factors may justify having a proper research function alongside an economics function.

- *First,* it is important for a central bank to understand the economic environment, specifically by means of long-term fundamental analyses that regularly test the

[34] These models can be used to simulate policy reactions to beef up the policy debate rather than making economic projections to formulate policy recommendations. This is especially the case at the European Central Bank (ECB), where analyses and simulations based on DSGE models are not necessarily part of the material provided to support the policy recommendations. In many major central banks (the US Fed, ECB, and Bank of England in first instance) the financial crisis has highlighted the limitations of DSGE models for projections. This was partly due to the absence of financial frictions in standard DSGE models.

stability of the major macro and microeconomic balances. That prevents the central bank from falling behind the curve, therefore giving the impression that it is a passive onlooker, rather than an institution that anticipates events.

- *Second*, the central bank cannot rely solely on academic research. Some practical issues relating to policy implementation are not covered by academic research, either because they are viewed as being one-off, or because they are considered to be issues of internal concern only (and/or not known outside the central bank).[35] Therefore, central bank research must not be a substitute for academic research, but complementary to it to meet the needs of the central bank. To a certain extent, central bank research may compete with academic research on some issues by bringing to it the insider viewpoint. But again, in this case, this helps improve the economic debate.

- *Third*, high-quality research contributing to the external visibility of the central bank may also help enhance its credibility which eventually should improve the reputation of the institution through an appropriate communication.

[35] The typical example is the absence of academic research on the money market and the operational framework of monetary policy before the GFC (except for a few papers for the United States and Europe produced by central bank researchers).

APPENDIX V. LIQUIDITY MANAGEMENT IN THE TRANSITION[36]

Short-Term Liquidity Management: Operational Considerations

Two-pillar operational frameworks rely to a varying degree on both price and quantity-based targets and signals. The challenge is how to combine in practice those targets and signals to ensures that short-term liquidity management, the formulation of the medium-term monetary policy stance, and communication are mutually consistent, and aligned with the overall economic structure (including the state of the country's financial sector) as well as with the analytical and operational capacity at the central bank.

Short-term liquidity management by the central bank must aim at stabilizing short-term interest rates, including for countries that rely on monetary aggregates for guiding policy formulations (such as under FMT). Although the longer term development of market interest rates is endogenous under monetary targeting, focusing short–term liquidity management on reserve money instead of banks' reserve balances and short-term interest rates is likely to result in unwarranted short-term interest rates volatility that muddles the policy signal and hamper its transmission to longer-term interest rates. Thus, containing the high-frequency (day-to-day) volatility of short-term interest rates is essential for anchoring the yield curve, strengthening the transmission along the yield curve to other rates, and enhancing monetary policy transmission more broadly.

A number of configurations for short-term liquidity management aimed at stabilizing short term interest rates are possible. Besides improving short-term liquidity forecasting to fine-tune their open market operations (OMOs), central banks can use standing lending and deposit facilities to form a corridor for the interbank rate to move within. Besides capping interbank rate volatility, interest corridors reduce the interest rate sensitivity of the commercial banks demand for central bank balances, and thus make the market less sensitive to liquidity forecasting errors. Central banks can also use other tools such as reserve requirement averaging provisions to flatten the demand for reserves. The configuration of a country's liquidity management system generally should evolve over time as country circumstances change: there's no "best configuration" that fits all.

How to operate an interest rate corridor system (with or without the use of some form of formal policy rate) is a critical issue for countries with evolving monetary policy regimes. In all corridor systems, a short-term (overnight) lending standing facility is combined with a deposit standing facility to providing a corridor for market rates. Central banks may also carry out OMOs to influence the level of the market rate within the corridor. The options available to the central bank differ based on its liquidity forecasting capabilities; the overall development of money markets; and the overall monetary policy framework.

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[36] This Appendix is based on Maehle (forthcoming).

An important issue to consider when setting up a corridor relates to the suitability of introducing a formal policy rate. Introducing a policy rate can help strengthen policy signaling and guide interbank rates. However, certain conditions have to be met for successful implementation.[37] In that regard, three configurations can be considered:

- *A corridor with no official policy rate*. This framework fits countries that rely heavily on reserve money as a near to medium-term operational target wanting to start transitioning towards an interest-rate based framework (countries relying on conventional monetary targeting). The lack of a policy rate to anchor market expectations may make it harder to stabilize interbank rates within the corridor. However, this configuration provides the flexibility to ensure that day-to-day (short-term) monetary operations are consistent with the (longer term) reserve money targets. This is because interbank rates are allowed to fluctuate within the corridor without being inconsistent with the stated (money-based) policy stance. Yet, persistent drifts under strict reserve money targeting should trigger a shift of the corridor in the same direction, and under flexible monetary targeting a reassessment of the targeted longer term reserve money path.

- *A floor system where the standing deposit facility rate serves as the target for interbank rates and as official policy rate*. Such a system reduces the need for fine-tuning operations (to steer market rates to the policy rate), making it attractive for countries with weak liquidity forecasting capacity and/or structural liquidity surpluses. However, floor systems also provide fewer incentives for banks to engage in interbank trading.

- *A mid-rate corridor system where the policy rate is an announced target for the interbank rate.* This also involves a commitment to use OMOs to steer interbank rates close to the target. Mid-rate corridor systems are more demanding to operate than floor systems: they require better liquidity forecasting frameworks, more frequent OMOs, and supporting measures such as reserve requirements with reserve averaging to properly steer interbank rates and contain volatility. However, they provide stronger incentives for interbank trading.

[37] In particular the central bank should successfully demonstrate its ability and willingness to consistently steer the interbank money market rate close to the policy rate.

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