



Monetary and Capital Markets Department
TECHNICAL ASSISTANCE HANDBOOK

Monetary Policy Frameworks

Choice of Exchange Rate Arrangement

Prepared by the Monetary and Macprudential Policies Division (MCMMP)

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THIS ONLINE HANDBOOK

This handbook aims to distill, document, and make widely available, the lessons learnt from Monetary and Capital Markets Department (MCM) technical assistance (TA) over a long period while also incorporating lessons learnt globally. It covers a wide range of central banking topics pertaining to governance and risk management, monetary policy, monetary and foreign exchange operations, and financial market development and infrastructures, while highlighting, where relevant, specific issues for low-income resource-rich countries. It is intended to document and promote good practices and support the consistency of advice over time. It is, however, stressed that one size solutions cannot fit all, and all advice therefore needs to be tailored to country-specific circumstances. The handbook comprises self-contained, issue-specific chapters with cross-references on overlapping issues where needed. It is targeted at those who provide TA (both IMF and non-IMF personnel), and practitioners in central banks and other relevant institutions.

THIS CHAPTER: CHOICE OF EXCHANGE RATE ARRANGEMENT

Choosing a suitable exchange rate arrangement is one of the central topics of open economy macroeconomics. An exchange rate arrangement—e.g., a free float, peg, or some intermediate form of managed exchange rate—should be selected carefully and needs to be appropriate for a country's characteristics. Otherwise, it can amplify the impact of adverse shocks, impede the control of inflation, undermine economic growth, and increase risks to financial stability. The choice of exchange rate regime is not merely a technical matter and involves important choices in other policy areas as well. The arrangement needs to be consistent with a country's overall policy framework. This handbook chapter discusses the key questions that one should ask when assisting country authorities in thinking about regime options and develops a set of criteria that can help to inform the choice of an exchange rate arrangement.

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Glossary

AREAR	Annual Report on Exchange Arrangements and Exchange Restrictions
CD	Capacity Development
CFM	Capital Flow Management Measure
EBA	External Balance Assessment
EMDE	Emerging Markets and Developing Economies
ERM	Exchange Rate Mechanism
FSAP	Financial Sector Assessment Program
FX	Foreign Exchange
FXI	Foreign Exchange Intervention
IEO	Independent Evaluation Office
IMF	International Monetary Fund
IPF	Integrated Policy Framework
MCM	Monetary and Capital Markets Department
MPM	Macprudential Measure
OCA	Optimal Currency Area
OMO	Open Market Operation
TA	Technical Assistance

Executive Summary

Choosing a suitable exchange rate arrangement is one of the central topics of open economy macroeconomics. At times, countries may need to consider whether an alternative exchange rate arrangement might better suit their needs and goals. An exchange rate arrangement that is inconsistent with a country's characteristics can amplify the impact of adverse shocks, impede the control of inflation, undermine economic growth, and increase risks to financial stability. These issues have been discussed by academics and policy makers for decades. While a full consensus has not emerged, many of the key factors relevant to the choice of exchange rate arrangement have been identified. Country authorities have regularly sought the views of IMF staff on these issues.

Good arguments can be made for both fixed and floating exchange rate regimes. A key potential benefit of a fixed exchange rate is that it reduces trading costs associated with frequent changes in exchange rates, thereby facilitating trade. Provided that foreign exchange reserves are adequate, fixed exchange rate regimes are also relatively simple to operate and provide an effective nominal anchor by “borrowing” the credibility of the central bank of the anchor currency. Owing to these benefits, fixed exchange rates can be attractive to small economies that depend heavily on international trade, and even more so if institutional capacity is limited. On the other end of the spectrum, a freely floating exchange rate will normally be associated with higher trading costs, especially if foreign exchange (FX) hedging markets are underdeveloped. It also requires an alternative nominal anchor (such as an inflation target), which can be more demanding in terms of institutional capacity at the central bank and often requires many years of preparation. However, once achieved, a flexible exchange rate can act as a useful shock absorber. A flexible exchange rate also allows for an independent monetary policy that can be set based on the needs of the domestic economy, thereby allowing for better macroeconomic management. As a result, flexible regimes can achieve more stable macroeconomic conditions over time. A flexible exchange rate also reduces (and often eliminates) the need for costly currency defenses.

The choice of the exchange rate arrangement is more than a technical issue. The choice is a core element of the authorities' overall economic policy framework, with important implications and trade-offs for other key policy areas. The IMF area department will thus usually play the leading role in making any policy recommendations. Capacity development can support the formulation of recommendations and advise on their implementation.

The exchange rate arrangement and the overall policy framework need to be consistent. From a macroeconomic perspective, the link is provided by the so-called impossible trinity (also known as the trilemma), which states that countries can only achieve two of the following three at any given time: a fixed exchange rate, free capital movements, and an independent monetary policy. Fixed exchange rates imply tighter constraints to conducting independent monetary policy as openness to capital flows increases.¹

Any advice on the choice of an exchange rate arrangement should be country specific. It needs to identify and address a country's particular economic challenges, carefully assessing trade-offs among

¹ Given strong global financial interconnectedness, some economists have even argued that the trilemma has become a dilemma, since it is impossible to escape the influence of global financial conditions.

goals such as achieving price stability and sustained economic growth, reducing crisis risk, easing external adjustment, encouraging integration, and securing broad systemic stability. For example, although a flexible exchange rate typically acts as a shock absorber, some empirical evidence suggests that there are also circumstances in which a flexible exchange rate may amplify some shocks rather than mitigate them.

There are three main approaches to the choice of exchange rate arrangements. First, the optimal currency area (OCA) theory relates the choice of arrangement to the country's trade concentration and openness, and the size and type of shocks that are prevalent. Second, according to the financial view, the key determinants of the choice are the degree of capital mobility (based on the impossible trinity) and the extent of currency mismatches, which expose the economy to detrimental balance sheet effects following sharp depreciations. Third, the political view holds that an exchange rate anchor can help to compensate for the authorities' lack of policy credibility.

Combining these three approaches yields a comprehensive set of criteria that can help to inform the choice of an exchange rate arrangement. These criteria can be organized into three groups: (1) macroeconomic initial conditions, such as inflation, foreign exchange reserve adequacy, and fiscal and external imbalances; (2) structural characteristics of the economy, including its size and openness, mobility and flexibility of factors of production, and type and frequency of shocks; and (3) institutional features and prospects for their development.

The choice of exchange rate arrangement has implications for all other aspects of the policy framework. These include the design and use of intermediate targets, operational targets, and central bank instruments. In addition to domestic monetary operations and foreign exchange interventions, instruments may also include capital flow management measures and macroprudential measures. The IMF can provide capacity development on all aspects of the chosen policy framework, covering both design and implementation.

I. Introduction

This chapter provides guidance for issues surrounding the choice of an exchange rate arrangement. While these issues frequently come up in the context of capacity development (CD) missions, the choice of arrangement is more than a technical issue, and the IMF area department will normally play the leading role in providing overall policy recommendations. CD can support the development of the detailed policy framework and advise on its implementation. The choice of arrangement is also a complex issue. There are no simple answers, and even an in-depth analysis of country-specific factors may often not lead to a definitive conclusion about the optimal arrangement. Therefore, this chapter emphasizes conceptual and methodological considerations rather than precise prescriptions.

Issues related to the transition to greater exchange rate flexibility are taken up in a separate Handbook chapter.² These include the choice of a nominal anchor, the detailed design of the exchange rate arrangement, and key reforms needed for successful implementation.

II. Institutional and Analytical Background

A. POLICY OPTIONS AND ROLE OF CAPACITY DEVELOPMENT

Monetary and exchange rate policy frameworks should provide a nominal anchor. Without a nominal anchor, the price level in the economy is undetermined. This could lead to unchecked inflation (or deflation) and cause macroeconomic and financial instability. In addition to jeopardizing price stability, the lack of a nominal anchor would also weaken the transmission of monetary policy, hindering the ability of the central bank to affect macroeconomic and financial conditions and effectively counteract adverse shocks to the economy.

The range of available options can be characterized in terms of increasing exchange rate flexibility, going from a peg to a free float. These two regimes represent the two corner solutions. Under a peg, the exchange rate serves as the nominal anchor for monetary policy. A free float requires an alternative nominal anchor, such as an inflation target. A range of available intermediate options capture some of the benefits and costs of the corner solutions, although to different degrees. Starting from a peg, some intermediate arrangements entail a more flexible exchange rate, which still plays the role of nominal anchor. Such regimes may involve pegging to a basket of currencies (rather than to one single currency), widening the fluctuation bands around the central parity, or letting the peg adjust over time along some predetermined path (a “crawl”). In policy frameworks that use a nominal anchor different from the exchange rate (mainly monetary-aggregate and inflation targeting), the exchange rate can sometimes still be actively influenced through foreign exchange interventions (FXI), under a “managed” arrangement instead of a (free) float.

The choice of exchange rate arrangement lies with country authorities, but the IMF can play an important supporting role. In their regular surveillance activities, IMF staff may advise member country

² For further details, see the chapter on: “Moving to Greater Exchange Rate Flexibility.”

authorities on whether the current exchange rate arrangement is sustainable and appropriate, and provide relevant policy recommendations. IMF area departments have primary responsibility for policy recommendations on the choice of the exchange rate arrangement. The underlying analysis should be country-specific and provide a concise and clear account of the overall monetary and exchange rate policy framework, economic developments, and challenges, as well as related policies. In particular, it should apply the considerations and criteria set out below to the specific circumstances of the country.

Issues related to the choice of an exchange rate arrangement often feature in CD. The IMF's Monetary and Capital Markets Department (MCM) is frequently called on by country authorities to provide CD relating to the policy framework—including in the context of transitions—and to advise on its implementation. In the context of such CD, having a thorough understanding of alternative framework options and their implications is essential. CD can also sometimes help the authorities conduct their own analysis and assess various exchange rate regime options. Area departments, CD missions, and experts should draw as appropriate on guidance, tools, and data developed by the IMF for use in the analysis of exchange rate policy and help country authorities to adapt these methods for use in their policy analysis.

B. ECONOMIC FOUNDATIONS

The academic literature has identified various criteria that are relevant to choosing an exchange rate arrangement. This section focuses on the key studies of the last 20 years. During this time, views and policy prescriptions have changed significantly in both official and academic circles. Oftentimes, initial simple and clear-cut prescriptions have made way for more nuanced views.

Between the Asian crisis of the late 1990s and the Global Financial Crisis, the mainstream view was largely "bipolar," supporting the adoption of either free floats or hard pegs. Intermediate regimes were viewed skeptically as it was thought that they could not provide the same macroeconomic benefits and involved important shortcomings, for instance, being more prone to crises. The past decade has seen a growing appreciation of the need for adequate exchange rate flexibility and of the benefits of inflation targeting, while also recognizing that exchange rate overshooting and financial vulnerabilities may require more active management of the exchange rate. As a result, the assessment of intermediate regimes has significantly changed, as they seem able to deliver some of the benefits of both pegs and free floats by limiting undue exchange rate volatility without significantly distorting the level of the real exchange.

There are three main approaches in economic theory to explaining the choice of an exchange rate arrangement.³ First, the OCA theory is based on the Mundell-Fleming framework and relates the choice to the country's trade concentration and openness, and the size and type of the prevailing shocks. Second, the financial view emphasizes the degree of capital mobility (based on the impossible trinity) and currency mismatches, which expose the economy to detrimental balance sheet effects following sharp depreciations. Third, the political view argues that using an exchange rate anchor is a way to compensate for a lack of policy credibility. The next section will discuss how in practice these three approaches can

³ The theoretical underpinnings of modern thinking on fixed versus flexible exchange rates date back to Friedman (1953). This contribution was followed until the 1990s by a large number of studies developing theoretical approaches to identify the optimal exchange rate arrangement. Since the early 2000s, the literature has focused more empirically, testing the predictions of the different existing theories.

inform the choice of regime. Detailed reviews of the approaches themselves may be found in Ghosh and others (2003) and Levy Yeyati and Sturzenegger (2010).

III. Choosing the Exchange Rate Arrangement

A. CRITERIA FOR CHOOSING AN ARRANGEMENT

The three main theoretical approaches can be combined to develop a comprehensive set of criteria (Table 1). The OCA theory and the financial view suggest that fixed exchange rates are preferable if inflation and capital mobility are low, reserve levels and trade integration are high, labor markets and fiscal policy are flexible, production and exports are diversified, and shocks are nominal in nature and symmetric with the anchor country.⁴ The political view suggests that countries with low policy credibility could adopt a fixed exchange rate to borrow monetary policy credibility from the anchor country and commit to nominal stability. A review of the empirical literature on the validity of the three theories (and their associated criteria) is found in Appendix 1.

Table 1. Key Criteria for Choosing an Exchange Rate Arrangement		
Macroeconomic Initial Conditions	Characteristics of the Economy	Types of Shocks to the Economy
Level of inflation	Size of the economy	Real shocks
Size of external imbalances	Openness	Volatile capital flows
Foreign exchange reserves	Diversification of exports and output	
Financial system vulnerabilities	Trade and political integration	
Fiscal position	Flexibility of labor markets	
Other macroeconomic policies	Mobility of capital	
	Dollarization	
	Financial system development	

Source: IMF staff.

All of these criteria should be analyzed to inform the choice of an exchange rate arrangement. More detailed considerations in conducting and applying this analysis are discussed in what follows. The goal is to develop an overall view of the pros and cons of different exchange arrangements in a given country. In doing so, the CD provider should understand the analytical concepts and methods described in this chapter while exercising good policy judgment. In the following sections, we will discuss each of the criteria in more detail.

⁴ Frankel (2012) provides a discussion of the country characteristics that bear on the choice of the exchange rate arrangement.

B. MACROECONOMIC INITIAL CONDITIONS

Inflation. The more domestic inflation diverges from that of trading partners, the greater the need for frequent exchange rate adjustments. For example, if under a fixed exchange rate regime, domestic inflation is consistently higher than that of trading partners, the real exchange rate will quickly become overvalued, resulting in a widening current account deficit, and ultimately threatening the sustainability of the peg. This issue may be addressed by a credible and permanent adjustment of monetary policy. If that is difficult, the adoption of a more flexible exchange rate arrangement, such as a free float, a crawling peg, or another other type of adjustable peg may be preferable. If the structural characteristics of a country otherwise favor a less flexible exchange rate arrangement, steps would normally first need to be taken to sustainably reduce inflation to a rate more in line with its trading partners, thus making the peg more sustainable. That said, some countries with very high inflation or hyperinflation, where inflation inertia is low and money demand is unstable, have at times adopted a hard peg exactly to support rapid disinflation and help reestablish policy credibility. Such a strategy can work if a high level of credibility can somehow be given to the peg, e.g., by backing the full money supply with foreign currency reserves. This was, for example, the experience of Bulgaria, which adopted a currency board in 1997.⁵

External imbalances can have a variety of causes, most commonly a substantial misalignment of the real exchange rate, which in turn often reflects overly loose fiscal or monetary policy. Structural rigidities or demographic factors may also contribute. While a first-best approach would be to take appropriate policy measures to address the root causes of imbalances (see also below on the macroeconomic policy mix required for sustainable pegs), in the absence of such measures, it will often be desirable to allow for greater exchange rate flexibility by adopting a float or a free float, or a crawling peg.

FX reserves. An adequate level of FX reserves, which enable direct interventions in the FX market, is necessary to maintain an exchange rate peg or keep the exchange rate within narrow bands. When the level of FX reserves falls below a critical level—typically against the background of persistent underlying depreciation pressures—this may trigger a speculative attack on the peg. The experience with the Exchange Rate Mechanism (ERM) in western Europe in the early 1990s showed that seeking to defend an unsustainable exchange rate parity through high interest rates or unlimited FXI is unlikely to be successful. The former lacks credibility owing to collateral damage to the domestic economy. The latter leads to an even more rapid depletion of FX reserves, further reinforcing the attack on the peg. In these circumstances, timely exchange rate adjustment or the adoption of a more flexible exchange rate arrangement will usually be better options.

Financial vulnerabilities can play a crucial role in the choice of an exchange rate arrangement, but the implications largely depend on the source of risk. Unhedged currency mismatches in the balance sheets of financial intermediaries, firms, and households (e.g., due to liability dollarization) make the economy vulnerable to large exchange rate fluctuations. There are many examples of major crises caused by the interplay of such financial vulnerabilities and the exchange rate arrangement. These experiences tend to illustrate that, after shocks, a fixed—or at least less flexible—exchange rate may be more desirable for economies characterized by large unhedged if FX debt. However, as this choice effectively insures the private sector against all exchange rate risk (at least as long as the arrangement is sustainable), it is likely

⁵ Other countries using a currency board to help reduce high inflation include Estonia in 1992 and Lithuania in 1994. Similarly, in 1995, Latvia adopted an exchange rate arrangement with some features of a currency board.

to hinder the development of hedging markets that are required for a successful transition to greater exchange flexibility.⁶ More broadly, in cases where unhedged FX debt does not represent a threat to financial stability, a flexible exchange rate would typically provide greater benefits by allowing the country to conduct an independent monetary policy. The central bank would then be able to support the economy, including through the exchange rate channel, and could also address financial vulnerabilities by acting as a lender of last resort.

Fiscal position. The sustainability of public finances is necessary to successfully maintain a fixed exchange rate regime for several reasons. First, if a country opts for a fixed exchange rate arrangement, the impossible trinity will imply that monetary policy would not be able to contribute to stabilizing macroeconomic conditions. As a consequence, the burden to implement countercyclical policies would fall fully on fiscal policy. Second, the exchange rate instrument would stop acting as a shock absorber, likely forcing more frequent and sizeable policy interventions to counteract domestic and external shocks. Finally, unsustainable fiscal policy would lead to an outflow of FX reserves, negatively affecting confidence in the exchange arrangement and eventually threatening its survival. In light of these considerations, the sustainability of a fixed exchange rate arrangement cannot abstract from sound fiscal conditions and discipline.

Other macroeconomic policies. At the end of the day, all exchange rate arrangements require consistent and responsible macroeconomic policies to be sustainable over time. This said, pegged arrangements typically impose tighter constraints, and not all countries have been able or willing to commit to the demanding policy mix needed to maintain a peg over the medium and longer terms. To avoid a crisis and a disorderly exit from the peg, countries have at times opted for wide-ranging Capital Flow Management Measures (CFM) and exchange restrictions. These measures, however, can reduce access to international financial markets, impede the development of the financial sector, give rise to a parallel FX market, and more generally, lead to a misallocation of resources.⁷ Advice on the choice of an exchange rate arrangement needs to take into account how a country's political economy and institutions are likely to affect policy choices, not just at the time of the adoption of a particular arrangement, but also in the future.

C. CHARACTERISTICS OF THE ECONOMY

Size of the economy. The larger the economy, the stronger the case for a flexible rate. Larger economies will benefit from a flexible exchange rate because it provides increased room to maneuver for domestic fiscal and monetary policies and acts as a shock absorber. By contrast, small open economies may find it difficult to conduct fully independent monetary policy, forcing them to choose between a peg or a float that must be combined with CFMs (Rey, 2015). Large economies will typically have the requisite technical and organizational capacity to implement a flexible exchange rate arrangement and the associated independent monetary policy, as well as effective financial regulation and supervision. In addition, the size of an economy is often related to other features (such as a lower degree of openness) discussed below. Large economies tend to be less open, which argues for a flexible exchange rate arrangement. They are also often more economically diversified, which tends to mitigate potential

⁶ See the chapter on “Transition to Greater Exchange Rate Flexibility.”

⁷ The strength and duration of these adverse effects remains an unsettled empirical question.

adverse effects of exchange rate fluctuations. In fact, among the world's largest economies, most have a freely floating exchange rate (Euro Area, Japan, Russia, United Kingdom, United States), while other large countries combine a float with varying degrees of FXI (Brazil, India, Indonesia). Small economies often feature exchange rate pegs.

Openness. The role of openness in the choice of the exchange rate arrangements is not straightforward. In fact, small economies with high trade openness face a complicated trade-off. On the one hand, a fixed exchange rate would involve significant benefits through reduced trading and transactions cost, which are typically high for this type of economies given their high share of transactions with the rest of the world. In open economies, frequent exchange rate adjustments or large exchange rate fluctuations can be disruptive to international trade and financial flows, with adverse effects on domestic activity and prices. Often, a country therefore might peg its currency to its largest trading partner (e.g., Denmark has a peg to the euro), and in fact, this was one of the main economic reasons behind the creation of the euro. Highly open economies will often also be more vulnerable to external shocks. Singapore, one of the most open economies in the world as measured by the share of trade in GDP, provides an interesting example of a successful heavily managed intermediate arrangement, which has in recent years empirically resembled a crawling peg or even a fixed peg. For some small open economies, the benefits associated with reducing trading and transactions costs therefore outweigh the costs. On the other hand, more advanced small open economies that benefit from more developed hedging markets may assign a higher value on the exchange rate flexibility that would allow them to cushion external shocks and provide monetary independence. Indeed, several of such countries (e.g., Canada, New Zealand, Sweden) have been trailblazers in the transition to more flexible exchange rate regimes.

Diversification of exports and output makes a country less vulnerable to terms-of-trade shocks, reducing (all things equal) the need for exchange rate flexibility. However, the relationship between the exchange rate arrangement and economic development and diversification is complex. A fixed exchange rate can disincentivize financial risk management and impede the development of deep and liquid financial markets, which in turn can be a drag on economic development and diversification. On the other hand, particularly in commodity-exporting countries, exchange rate movements that are too large can give rise to further complicated trade-offs (see also below).

Trade and political integration. The higher the extent of trade and political integration with partner countries, the stronger the case for a peg or even a common currency. These issues have been extensively debated in the literature on OCAs. However, as the experience of the euro area since 1999 has shown, despite the existence of a common market in goods and services, significant tensions can emerge under a single currency owing to divergences in fiscal policy and external competitiveness in member countries. Such tensions may also exacerbate risks to financial and price stability.

Flexibility of labor markets. Since domestic and external adjustment can, to some extent, substitute for each other in the response to shocks, the less flexible the labor market, the stronger the case for more flexible exchange rates. The mechanisms are complex and have been discussed extensively in the economic literature. Among the most important is that without exchange rate flexibility, the correction of severe misalignments in the real exchange rate could require infeasible reductions in nominal wages.

Mobility of capital. In general, a higher capital mobility supports the adoption of a flexible exchange rate regime. In fact, according to the impossible trinity, a fully open capital account together with a fixed

exchange rate implies the loss of monetary policy independence. As a result, the country will face a reduction in its capacity to respond to adverse shocks and maintain macroeconomic stability, especially if the domestic economic and financial cycles are not aligned with those of the country issuing the currency to which the exchange rate is pegged. By contrast, a flexible exchange rate would work as a shock absorber against external shocks (see Carriere-Swallow and others, 2021; Ben-Zeev, 2019) and provide room to maneuver to the central bank to further counteract this type of shocks. In this respect, empirical findings suggest that the transmission of a monetary policy shock to output and prices becomes stronger in the presence of a flexible exchange rate thanks to the amplification mechanism through exchange rates (Brandao-Marques and others, 2020).⁸

Dollarization. Another factor in the choice of an exchange rate arrangement is the degree of dollarization in the economy (related to the issue of financial vulnerabilities discussed earlier). The term dollarization includes not just the domestic use of the US dollar, but of any foreign currency. Dollarization can take a variety of forms. In the banking system, for example, deposits or loans can be dollarized to different degrees, with shares above 30 or 40 percent usually considered as high dollarization.⁹ Dollarization may affect all three classical functions of money, namely as a means of transaction, store of value, and unit of account. High dollarization may be an impediment to the adoption of greater exchange rate flexibility, as it can increase the vulnerability to exchange rate risk in the financial system and other sectors of the economy and hamper the transmission and traction of monetary policy.¹⁰ Durably reducing dollarization requires a credible policy of low inflation, supported by various regulatory measures that reduce incentives for the use of foreign currency.¹¹

Financial system development. The depth of FX and hedging markets is an important factor in determining the optimal exchange rate regime. While markets could be developed, the choice of the exchange rate arrangement can play an important role in incentivizing (or disincentivizing) such development. Fixed exchange rates help shelter mismatched balance sheets from exchange rate changes in the short term, weakening the incentives for the private sector to hedge their FX positions. Similarly, frequent FX interventions by the central bank would reduce the room for other actors to engage in bilateral transactions that do not involve the central bank. The resulting underdeveloped markets amplify negative shocks and cause larger problems if the peg has to be abandoned at a later stage. For

⁸ Although a flexible exchange rate typically works as a shock absorber, the literature and central bankers have also identified several circumstances in which a flexible exchange rate may amplify some shocks rather than mitigate them. These considerations especially apply for emerging markets and developing economies, where the link between exchange rates and domestic macro-financial conditions may create a difficult trade-off between inflation and output stabilization that typically does not arise in advanced economies. In this environment, several policy responses may be needed to effectively deal with large and volatile international capital flows, including FXI, financial regulation and supervision, and CFMs.

⁹ Ize and Levy Yeyati (2003) see financial dollarization primarily as a rational response to macroeconomic instability. However, dollarization may be a cause and not just a consequence of macroeconomic and financial instability and vulnerability. Relatedly, dollarization may be high under both fixed (e.g., "official dollarization") and more flexible exchange rate arrangements.

¹⁰ For a treatment of the challenges that dollarization poses to the conduct of monetary and exchange rate policy, see Baliño and others (1999). Brandao-Marques and others (2020), however, find that interest transmission can still be effective in economies with a high degree of dollarization.

¹¹ De-dollarization policies are reviewed in Kokenyne and others (2010).

this reason, these vulnerabilities should normally be addressed whenever possible to ensure an ordered transition from a peg to a float.

D. TYPES OF SHOCKS TO THE ECONOMY

The choice of exchange rate arrangement is also affected by the size and types of shocks affecting a country's economy. Shocks may be of external or domestic origin and may be nominal or real. External shocks are generally seen as exogenous, with a large unpredictable component, and may be short lived or longer lasting.

External shocks are usually most directly relevant to the choice of the exchange rate arrangement. This is because the exchange rate is the key relative price linking the domestic and foreign economies. Among the most important (real) external shocks are fluctuations in global commodity prices, which directly affect a country's terms of trade (relative prices of exports and imports). Other important external shocks include changes in the volume and composition of international capital flows, or in nominal interest rates in major countries.

All else equal, larger and more frequent foreign shocks argue for greater exchange rate flexibility. For example, the impact of an adverse terms-of-trade shock (say an increase in prices for important imported factors of production such as energy or machinery) would be offset by exchange rate depreciation that helps to maintain the international competitiveness of domestic industry (see Broda 2001 for an empirical assessment).¹² Similarly, as also noted in the earlier discussion of policy responses to capital mobility, financial shocks such as a capital inflow surge can also be dampened by appreciation of the exchange rate. This makes domestic assets more expensive and less attractive to foreign investors, especially if those investors expect that the exchange rate will depreciate again. And finally, whereas under a pegged exchange rate, an increase in interest rates in the anchor currency country will need to be broadly matched by an increase in domestic interest rates, a flexible exchange rate offers greater scope for an independent domestic interest rate (or monetary) policy.

E. SPECIAL CONSIDERATIONS FOR COMMODITY EXPORTERS

The choice of exchange rate regime poses a particular problem for commodity exporters. Commodity exporters often have a combination of characteristics, some of which may favor a fixed exchange rate, while others favor a flexible exchange rate. Features that argue for a peg include (often) small size, openness to trade, and in many cases relatively undeveloped financial markets. On the other hand, important features favoring a flexible exchange rate include typically relatively undiversified output and the susceptibility to large and frequent terms-of-trade shocks.

The literature has proposed several alternative arrangements for commodity exporting countries. One proposal is to target the real exchange rate. However, the broad consensus in the literature is that a real peg is inconsistent with maintaining price stability over the long run, and thus does not provide the

¹² The traditional literature following Poole (1970) emphasized the distinction between domestic money demand shocks and real shocks. If the former prevails, a fixed exchange rate regime is advantageous since it automatically stabilizes output (the change in money demand is met so as to sustain the peg). By contrast, the prevalence of real shocks argues for flexible exchange rates.

needed monetary policy anchor (e.g., Uribe, 2003). Another proposal, introduced in Frankel (2003, 2005), is to “peg the export price” by fixing the price of the main export commodities in terms of domestic currency—no country has so far, however, adopted this proposal.

Commodity exporters considering a peg need to be aware that this choice may deliver price stability in the medium and long run, but inflation will likely remain volatile in the short run.

Exchange rate anchors allow a country to import the monetary policy and credibility of foreign central banks, along with their price stability. At the same time, an exchange rate anchor limits the domestic monetary policy response to short-term shocks, generating more volatile price dynamics. Although this consideration holds especially for hard pegs, all policy frameworks that aim at stabilizing the exchange rate may suffer from this drawback. While this issue is not exclusive to commodity exporters, these countries may observe particularly large swings in short-run inflation owing to frequent large shocks in commodity export prices. Moreover, the associated real exchange over- and undervaluation will tend to hamper the allocation of resources in the economy and dampen growth.

There are also specific challenges associated with choosing a more flexible exchange rate arrangement in resource-rich countries. While more exchange rate flexibility can in principle be desirable in many such countries, central bank capacity constraints or political economy considerations may raise obstacles to their adoption. Resource-rich countries may indeed suffer from “Dutch disease,” where an increase in global commodity prices translates into an appreciation of the real exchange rate that adversely affects the viability of other export industries and economic diversification. A fiscal rule along with effective sovereign wealth management will often be desirable to prevent excessive real exchange rate appreciation during commodity price booms. However, such a rule can also dampen real exchange rate depreciation during a commodity price bust, which could impede economic development and diversification, owing, inter alia, to large increases in the domestic currency cost of imported investment goods.

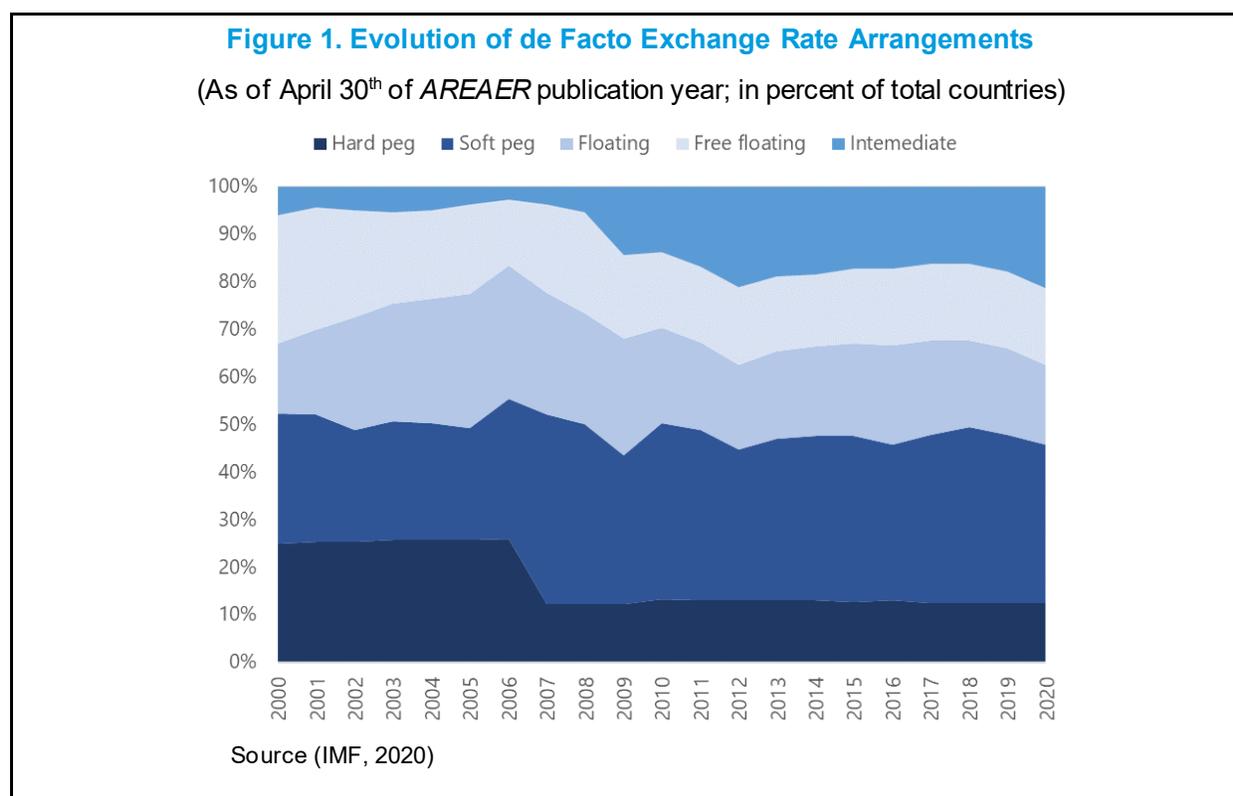
All in all, there is no consensus on the optimal choice of framework in resource-rich countries, and trade-offs need to be considered on a case-by-case basis. Theoretical considerations need to be complemented by in-depth analysis of country-specific circumstances when giving advice on the choice of an exchange rate arrangement in commodity exporters.

F. INTERMEDIATE EXCHANGE RATE ARRANGEMENTS

About four-fifths of IMF member countries have adopted either a market-determined exchange rate (float or free float) or a hard peg (Figure 1). The criteria discussed in this chapter will usually suffice to support analyses on whether a flexible or fixed exchange rate is appropriate. However, for some countries an intermediate arrangement could be an appropriate choice. An intermediate arrangement could be considered if country characteristics do not clearly support the choice of either a float or a peg.

The two main types of intermediate arrangements in contemporary practice are crawls and so-called “other managed” arrangements. Crawls are subdivided by IMF staff into de jure crawling pegs and “crawl-like” arrangements. Other managed arrangements are a residual that does not fit into any other category, and usually exhibit a moderate but varying amount of exchange rate flexibility, but without the exchange rate being fully market-determined.

Crawling pegs and crawl-like arrangements are often used by smaller and lower to middle income countries without highly developed financial systems. The 2020 Annual Report on Exchange Arrangements and Exchange Restriction (AREAER) documents that 26 IMF member countries use various kinds of crawls (IMF 2020). Three countries have de jure crawling pegs (Botswana, Honduras, Nicaragua) and have maintained these for many years. Some other countries have maintained crawl-like arrangements for long periods, notably Ethiopia, Haiti, Laos, Rwanda, Tunisia, and Uzbekistan. For all these countries, a formal or informal crawl combines the operational simplicity of an exchange rate anchor, while providing greater room to maneuver for domestic monetary and fiscal policies. In terms of the criteria for the choice of an arrangement, many of these countries have some, but not all, of the characteristics that would favor either a fixed or floating exchange rate.



The 15 countries in the "other managed" category are also mainly smaller and lower to middle income countries, although there are important exceptions. Indeed, a few large economies (Argentina, China, Pakistan) exhibit this type of heavily managed arrangement, and some significant commodity exporters (Angola, Kuwait) do as well. The reasons for the adoption of these kinds of arrangements are diverse and country-specific, and often cannot be explained by a straightforward application of the criteria set out in this chapter. More in-depth analysis of these arrangements and their performance is needed. IMF country staff reports are a good starting point for information on these issues.

IV. Additional Considerations

A. ELEMENTS OF THE POLICY FRAMEWORK

The choice of an exchange rate arrangement cannot be separated from the broader policy framework. This section sets out the standard elements of the monetary and exchange rate policy framework and discusses the consistency of policy frameworks.

The specification of a monetary and exchange rate policy framework should normally include certain standard elements. These are (i) the main objectives of policy, (ii) the intermediate targets, (iii) the operational targets, and (iv) the instruments used to implement policy. Table 2 provides a stylized representation of various policy frameworks using these standard elements. Importantly, while the set of potential instruments used in monetary and FX operations can be broadly similar under many policy frameworks, their relative roles and the way in which they are used will be very different.

Monetary and exchange rate policy frameworks should always provide a clear nominal anchor. Without a nominal anchor, the price level in the economy is typically neither well defined nor determinate. In addition to undermining price stability, the lack of a nominal anchor can also make monetary policy less effective in counteracting transitory shocks to the economy.

Table 2. Selected Monetary and Exchange Rate Policy Frameworks

Framework	Objective	Intermediate Targets	Operational Targets	Instruments
<i>Exchange rate anchor</i> ^{1/}	Stability of the currency (indirectly providing price stability)	Exchange rate	Exchange rate, interest rate	FXI, Open Market Operations (OMOs), standing facilities, reserve requirements
<i>Monetary targeting</i>	Inflation (implicit)	Broad money	Interest rate, various options for reserves	OMOs, standing facilities, reserve requirements
<i>Inflation targeting</i>	Inflation (explicit)	Inflation forecast	Interest rate	OMOs, standing facilities, reserve requirements

^{1/} Examples of these frameworks include hard pegs, but also flexible exchange rate anchors, such as crawling pegs and pegs to currency baskets.

Actual policy frameworks will often be more complex than this simple typology suggests. For example, there are many variants of inflation targeting, and FXI may play an important role under many of

these.¹³ There are also many variants of monetary targeting, ranging from monetary programming to flexible broad money targeting to the use of money as an indicative target (IMF, 2015c; Laurens and others, 2015).

Exchange rate arrangements and monetary policy frameworks should be consistently defined.

The terminology used in CD should follow standard IMF practice, as discussed in Appendix 2.

B. CONSISTENCY AND INTEGRATION OF POLICY FRAMEWORKS

The exchange rate arrangement, the monetary policy framework, and other economic policies need to be clearly defined and consistent.

- Regarding *macroeconomic consistency*, an implication of a large class of models is the "impossible trinity", which states that only two of the three following characteristics of a monetary and exchange rate policy framework can be achieved at the same time: a fixed exchange rate, free capital movements, and an independent monetary policy.¹⁴ Some authors, notably Rey (2015), argue that the constraints imposed by the global financial cycle reduce the impossible trinity to an "impossible duality," so that independent monetary policy requires the implementation of CFMs.¹⁵
- Each pillar of the impossible trinity corresponds to a set of policy instruments, and there is thus also a need for *instrument consistency*. The instruments are usually grouped into (1) domestic monetary operations, (2) FXI, and (3) exchange controls and CFMs. The effectiveness of each category of instruments imposes a constraint on the ability to achieve different combinations under the impossible trinity. For example, if exchange controls and CFMs can be easily

¹³ The case of Singapore is of particular interest in this connection, as it combines the objective of price stability with a flexible crawling peg. The Monetary Authority of Singapore (MAS) describes its framework as follows: "In a small and open economy such as Singapore, where gross exports and imports of goods and services are more than 300 percent of GDP and domestic expenditure has a high import content, the exchange rate has a much stronger influence on inflation than the interest rate. Accordingly, MAS' monetary policy framework is centered on managing the Singapore dollar against a trade-weighted basket of currencies." While this type of framework could in theory be beneficial to other countries, implementing it well requires a high standard of central bank analytical and operational capacity.

¹⁴ A theoretical underpinning of the impossible trinity is the concept of (uncovered) interest rate parity, that is, that expected movements in the nominal exchange rate are equal to the interest rate differential between two countries. This implies that under a fixed exchange rate and with free capital movements, the interest rate in the country pegging to a foreign currency needs to set domestic interest rates (or allow them to form in the market) in a manner consistent with the maintenance of a fixed exchange rate. Hence, with free capital movements, there is little or no scope for an independent interest rate policy under a peg. As an empirical matter, interest rate parity does not hold precisely, owing to various frictions and uncertainties that impede complete arbitrage. Indeed, under certain conditions, carry trades can be destabilizing, see for example, Plantin and Shin (2018).

¹⁵ As a practical matter, in order to be effective for more than a relatively short time, CFMs need to be comprehensive and strongly enforced. It is generally not possible to achieve monetary policy independence under a pegged exchange rate using only a few targeted CFMs. The use of comprehensive and strongly enforced CFMs can, however, also have significant negative side effects on financial market functioning and development.

circumvented, a country may have to choose between a fixed exchange rate and room to maneuver on domestic monetary policy.

In recent years, there has been growing interest in integrated policy frameworks. In addition to combining the three categories of instruments mentioned above, these frameworks also include other policy areas, notably macroprudential policies and sometimes also fiscal policies. The objective is to achieve full consistency and higher effectiveness in macroeconomic policy making by recognizing key frictions absent in traditional Mundell-Fleming-type models. These include shallow FX markets, FX mismatches, and imperfect monetary policy credibility, and encompass a broad set of relevant policy instruments. For example, given that financial vulnerabilities and instability can interfere with the achievement of monetary and exchange rate policy goals, macroprudential measures (MPMs) will also need to be deployed. Country authorities generally understand the potential benefits of integrating and coordinating various policy areas and instruments within an overall framework. However, a fully worked out and generally accepted paradigm—and practical methodology—for doing so had until recently, not been available. The IMF has been making progress in filling this gap.¹⁶

When examining how a given policy framework operates in practice, it is useful to consider where it lies along several dimensions: (i) how much weight does the framework place on the exchange rate versus other targets; (ii) how much does it operate based on rules rather than discretion; (iii) how much disclosure, transparency, and communications are there; and (iv) to what extent are policy instruments market-based rather than administrative? The first of these is essentially the choice of exchange rate arrangement. The remaining three relate to how the framework is implemented. These four dimensions cannot be chosen independently but must be consistent with one another. For example, a peg requires sustainable fiscal policy and sufficient reserves for intervention. Other frameworks have their specific requirements as well, and only in rare cases, the optimum is reached at the extremes (e.g., complete transparency, zero discretion). Especially in advising on the design of various kinds of intermediate or hybrid policy frameworks, it is essential to carefully consider these issues in light of country-specific circumstances, and to find a workable mix.

In practice, the classification and assignment of policy instruments can be complex. Some policy instruments have strong effects in more than one domain, and there may be ambiguities and overlaps in how they are classified and used. A discussion of these issues is provided in Appendix 3.

V. Approach and IMF Tools

A. ANALYTICAL INSTRUMENTS

The application of the considerations and criteria set out above will usually require additional analytical work. The assessment of the different factors at play and the identification of the exchange rate regime that best suits each country can be challenging. To effectively address this issue, central

¹⁶ IMF staff have been developing open-economy macroeconomic models that examine the interactions of interest rate policy, FXI, CFMs, and macroprudential policies that guide the IMF's emerging Integrated Policy Framework (IPF). For further information, see <https://www.imf.org/en/Topics/IPF-Integrated-Policy-Framework>.

banks and other country authorities may need to increase their capacity. CD could significantly contribute to this goal, together with the analytical work that is routinely performed by area departments.

The IMF provides a range of tools that can help inform the choice of exchange rate arrangement. A more in-depth discussion of the various tools related to external stability can be found in the *2015 Guidance Note on Article IV Surveillance under Article IV Consultations* (IMF, 2015b). MCM staff and experts involved in the provision of TA on exchange rate policy should familiarize themselves with these tools, including newer iterations, and with the assessments that are produced using them.

- **External balance assessments (EBA).** EBA (Cubeddu and others, 2019) and EBA-Lite (IMF, 2019b). The "lite" version of the methodology is more readily applicable in low-income and other developing economies.
- **Nominal and real effective exchange rates.** Data for many countries are published in *International Financial Statistics* (IMF, 2019a), and additional confidential data on some countries are maintained in an internal database accessible to staff.
- **Debt sustainability analysis.** Different [methods](#) have been developed for low-income countries (updated in 2017-18) and market access countries (update expected late 2020).
- **Reserve adequacy metrics.** Key papers (notably IMF, 2014) can be found at the following [link](#).
- **Financial Sector Assessment Program (FSAP).** Links to country reports can be found [here](#). Detailed technical notes on stress testing are often confidential and not published.
- **MCM Technical Assistance Logical Frameworks.** The logical frameworks ("logframes") most relevant for the purposes of this chapter cover inflation targeting; monetary policy communications; FX policy and operations; monetary policy implementation; and central bank governance.

B. IMF POLICIES

Any advice on the exchange rate arrangement should be consistent with applicable IMF policies. The legal basis for IMF advice on exchange rates is provided by the Articles of Agreement and the 2012 Integrated Surveillance Decision. Article IV, Section 3(a) instructs the IMF to "oversee the international monetary system," while Section 3(b) mandates "firm surveillance of the exchange rate policies of members". The 2012 Surveillance Decision *does not prescribe what type of exchange rate arrangement a member country should choose*. Rather, it specifies that each member should adopt policies, including exchange rate policies, that "promote its own balance of payments stability and domestic stability" and that such policies should not give rise to disruptive exchange rate movements. Accordingly, the 2012 Surveillance Decision mandates that exchange rate policies will "always be the subject" of bilateral surveillance, along with monetary, fiscal, and financial sector policies. In the multilateral context,

exchange rate and other policies should also be consistent with the "effective operation" of the international monetary system.¹⁷

The *Guidance Note for Surveillance under Article IV Consultations* (IMF, 2015b) defines issues related to exchange rate policies in further detail. Article IV staff reports are expected to “assess the adequacy of the de facto regime for maintaining stability” and “take into account the authorities’ views, and their readiness and capacity to implement changes,” when discussing alternative regimes. The consistency of the exchange rate arrangement with the policy mix (fiscal stance, monetary objectives, and financial regulation) should be considered.¹⁸ Exchange rate policies should not be addressed in isolation, but as part of a broader analysis of "(i) current accounts, (ii) real exchange rates, (iii) capital flows and policy measures, (iv) FXI and reserve levels, and (v) external balance sheets." The guidance note spells out the methodologies and tools relevant to this analysis.

Although the IMF does not have a formal position on the choice of an exchange rate arrangement, advice provided by staff has at times, raised concerns that should be borne in mind. The IMF's Independent Evaluation Office (IEO) notes in 2017 that several Directors, representing a significant number of member countries, expressed concern about the IMF recommending that members introduce more flexibility in managing their exchange rate regimes, particularly in the context of programs, without enough attention to country circumstances or to the capacity of the country to manage this shift. In the provision of CD, these concerns need to be addressed by ensuring that advice to change the exchange rate arrangement is given only on the basis of a thorough analysis of the country's specific circumstances, that the necessary analytical and operational capacity in the central bank and other relevant official agencies has been put in place, and that the chosen framework also enjoys sustainable buy-in from relevant stakeholders.

¹⁷ The international monetary system is considered to be operating effectively when the areas it governs do not exhibit symptoms of malfunction, such as persistent significant current account imbalances, an unstable system of exchange rates including foreign exchange rate misalignment, volatile capital flows, the excessive build up or depletion of reserves, or imbalances arising from excessive or insufficient global liquidity.

¹⁸ In small developing states, reports should also consider the desirability and feasibility of exchange rate adjustment, among other measures, to improve competitiveness.

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Appendix I. Empirical Literature on the Choice of an Exchange Rate Arrangement

Empirical work has examined all three theories of the choice of an exchange rate arrangement (OCA, financial view, political view). Using a de facto classification, Levy Yeyati and others (2010) identify the main drivers of the choice of exchange rate arrangement, highlighting important differences between emerging markets and developing economies (EMDEs) and advanced economies. While the implications of the OCA theory seem to apply to all countries, financial integration tends to have different effects on the two groups of countries. Higher financial and trade integration promotes flexible regimes in advanced economies, supporting the impossible trinity view. By contrast, financial integration seems to favor the adoption of pegs among EMDEs, possibly because of large foreign currency-denominated external liabilities and the associated currency mismatches. Regarding the political view, pegs appear more likely when the country lacks adequate institutional credibility and capacity, but less so if the government seems unable or unwilling to commit. Similarly, Davis and others (2018) show that the probability of adopting a fixed exchange rate regime increases with trade openness and decreases with the level of central bank credibility or independence.

A large strand of the literature studies the effects of choosing an exchange rate arrangement. This work is complementary to studies of the drivers of the choice: consequences and drivers are essentially flip sides of the same coin. Over the past two decades, the IMF has produced three major analytical studies on the effects of the choice of exchange rate regimes. These reviews were conducted in 1999, 2003, and 2009 and subsequently published as Mussa and others (2000); Rogoff and others (2004); and Ghosh and others (2010). The reviews drew on the existing empirical literature both inside and outside the IMF (Ghosh and others, 1997; Ghosh and others, 2002; Levy Yeyati and Sturzenegger, 2003; and Reinhart and Rogoff, 2004).

The findings reflect the evolution of views on the optimal choice of the exchange rate arrangement. Based on de jure arrangements, the 1999 study supports the so-called bipolar prescription (or corner hypothesis) articulated by Fischer (2001), who argues that countries should adopt either hard pegs or free floats, on the grounds that intermediate regimes do not provide the same benefits as corner solutions and involve important shortcomings, such as being more prone to crisis. The 2003 review, which used a de facto instead of a de jure classification, finds that pegs provide little benefit to EMDEs in terms of either inflation or growth performance. Because such regimes are associated with a greater likelihood of currency or financial crises, the review concludes that EMDEs should adopt freely floating exchange rates once sufficient financial integration has been achieved.

The third IMF review of 2009 represents a turning point in several respects. First, the findings suggest that both de jure and de facto regimes matter. For instance, by using both de jure and de facto classifications, the study shows that the poor macroeconomic performance associated with pegs found by previous reviews seems to be driven by de facto pegs without a de jure commitment. This type of regime does not deliver the same benefits in terms of price stability, as it lacks the credibility of a formal commitment by the central bank. Second, intermediate regimes, especially managed floats, deliver the best macroeconomic performance, at least in terms of growth. By combining the benefits of still relatively low exchange rate volatility with a competitive level of the real exchange, intermediate regimes capture

the benefits of both pegs and free floats. Finally, the findings underscore that the key trade-off is not between inflation and growth, but rather between performance along these dimensions, and the greater risk of crisis and delayed external adjustment, on the other.

The 2009 review provides support for a more nuanced approach to the optimal choice of the exchange rate arrangement and continues to inform IMF policy advice. Rather than one-size-fits all prescriptions, the approach over the past decade has been to take into account country-specific circumstances. Countries would therefore choose the arrangement best suited to its particular economic conditions, based on an evaluation of trade-offs among different objectives, notably nominal stability, economic growth, reduced crisis risk, external adjustment, and fostering integration.

A key finding in the past decade is that floats can work better when accompanied by FXI. The relevant literature is large and continues to grow quickly. Interestingly, Fischer (2008) qualifies the bipolar view by adding managed floats to the safe end of the spectrum, rather than to the class of risky intermediate regimes. More recently, Martin (2016) and Obstfeld and others (2019) find that flexible regimes, including managed floats, contribute to insulating the economy from global financial shocks and promote a faster correction of current imbalances. According to Ghosh and others (2015), floats are the least prone to economic and financial crises, while intermediate exchange rate regimes are the most susceptible. Crucially, central bank intervention to prevent overvaluation appears to be the key to avoiding crises.

In sum, there is by now considerable empirical support for the view that free floating is only one path to greater exchange rate flexibility, and that other flexible arrangements may also perform well. Using FXI to dampen excessive movements in the exchange rate can be the preferred approach for a broad range of reasons. Hofman and others (2020) provide an up-to-date and comprehensive review of the arguments and relevant literature.

Appendix 2. Describing Exchange Rate Arrangements and Monetary Policy Frameworks

In describing exchange rate arrangements, CD should use the terms defined in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*. The classification scheme is described in the introduction to the AREAER and is explained in detail in Habermeier and others (2009).¹ The typology of arrangements is similar to that found in the academic literature: it ranges from those that are less flexible (such as currency boards and fixed pegs) through intermediate arrangements (such as crawling pegs or other managed arrangements) to market-determined flexible exchange rates (floating and free floating). An important characteristic of the classification methodology is its systematic distinction between the arrangement officially announced by the authorities (*de jure*), and the classification based on the observed characteristics the arrangement (*de facto*). The classification exercise is conducted on an ongoing basis by IMF staff as part of multilateral and bilateral surveillance. The classification of individual countries is a staff classification and while endorsed by management, does not necessarily reflect the views of the IMF's Executive Board.

The AREAER also provides a cross-classification of monetary policy frameworks with exchange rate arrangements. The categories used are (1) exchange rate anchors (with subcategories for the US dollar, the euro, a composite, and others); (2) monetary aggregate targets; (3) inflation targets; and (4) others. These broad categories are useful for tracking developments in monetary policy frameworks in IMF member countries. This said, monetary policy frameworks are substantially more varied and complex than these categories suggest and need to be characterized in greater detail in the context of TA.

¹ This reference is based on an unpublished IMF Board paper (IMF, 2008).

Appendix 3. Classification and Assignment of Policy Instruments

The classification and assignment of policy instruments can be complex. Some policy instruments have strong effects in more than one domain, and there may be ambiguities and overlaps in how they are classified and used. In designing monetary and exchange rate policy frameworks, these cross-effects and cross-classifications need to be considered. It is also necessary to take account of which agencies beyond the central bank are involved in various areas of policy, and how their responsibilities and instruments are defined. Finally, categories of instruments such as CFMs and MPMs include a broad range of very different tools.

The roles of different instruments within the policy framework need to be clearly specified.

Instruments will typically have a greater effect on some objectives than on others and will therefore need to be assigned first-order and lower-order roles. Doing so will strengthen the efficacy of a central bank's internal decision-making process. A clear specification of the roles of different instruments also underpins effective communications that support policy transmission through an improved public understanding of policy objectives and what the use of particular instruments is intended to achieve. In particular:

- **Interest rates and OMOs.** These are usually considered to be a tool for domestic monetary control (or monetary policy instrument). However, OMOs can also be used to provide or withdraw foreign currency liquidity, and in that case, can serve to affect the exchange rate, and thus also be considered as FXI. Similarly, under an exchange rate anchor, policy interest rates need to be set in a manner consistent with the level of the exchange rate, and under pegged arrangements, interest rate adjustments are often an important form of "indirect" FXI.
- **Reserve requirements.** These are also usually considered to be a monetary policy instrument. However, they can be used as a prudential policy instrument (either microprudential or macroprudential), as a CFM when differentiated by the residency of the account holder, and as FXI when differentiated by currency and serving to affect the exchange rate.
- **CFMs and MPMs.** CFMs serve to influence capital flows, and MPMs to influence systemic financial risk. In addition to their primary aims, both categories of instruments can serve other purposes. Delineation can be difficult in practice: is a measure a CFM only, an MPM, or a CFM/MPM? The classification is also affected by the different legal and conceptual frameworks used by the IMF (IMF, 2015a) and the OECD (Blundell-Wignall and Roulet, 2016). In applying the Institutional View in Article IV surveillance (IMF, 2012), these distinctions have at times led to disagreements between IMF staff and country authorities (IEO, 2020).
- **FXI.** There is no single definition of FXI endorsed by the IMF Executive Board. Staff consider FXI to be any official action that serves to affect the exchange rate. Intervention most commonly involves outright purchases/sales of FX or FX derivatives by the central bank, the ministry of finance, or others working on behalf of these or other governmental or public sector authorities or agencies. Though distinct from intervention, other policies (whether foreign or domestic) that have an equivalent effect on the exchange rate and that are conducted for this purpose, for example, the use of FX regulations and monetary policy to influence the exchange rate, are sometimes referred to as "indirect intervention" and are considered as tantamount to intervention for the purpose of classifying exchange rate arrangements (IMF, 2008).