Chapter 1: The main tendencies in modern central banking[1]

1. Introduction

Today, central banks are public policy institutions whose main goals are to preserve monetary stability and promote financial stability. They provide the core components of payment systems: banknotes for use by the general public and settlement services for banks via accounts at the central bank. They also often manage the country's gold and foreign exchange reserves. In cooperation with other authorities, central banks also play a major role in the oversight and development of the financial system.

Central banks have performed a multitude of other tasks, several of which remain part of the central bank's functions in many countries. They often supply banking services and asset and debt management services for the state; and they sometimes provide analysis and advice regarding economic and development policies more generally.

The design of effective governance arrangements for central banks, especially for their core functions, can be quite complex. The process frequently requires making choices and compromises between competing societal objectives. The trade-offs, and the compromises they require, differ from one country to another. Yet there are common features. In recent decades, most notably in the monetary policy area, much has happened to:

- clarify objectives, especially for the monetary policy function, where price stability now is usually the paramount macroeconomic objective;
- embed appropriate monetary policy powers and effective decision-making structures in statute, including safeguards against influence from vested interests, either private or public. Typically this has meant increasing the formal independence of the central bank from executive government, at least with respect to monetary policy decision-making; and
- align the incentives of central bank decision-makers with the public interest. Formal and informal accountability has been boosted by greater transparency in the conduct of monetary policy and operations. Whereas secrecy was once a hallmark of central banking, openness is now more widely seen as contributing to sustained success.

The current crisis has raised important questions about the role of the central bank in the prevention, management and resolution of financial crises. Some of the leading central banks have engaged in new and unusual transactions with a far wider range of counterparties than ever before, and done so on a scale that is virtually without precedent. As a result, the composition and size of their balance sheets have changed dramatically, and they have assumed significant financial and reputational risks.

Once the now urgent questions of deciding how to manage and resolve the current crisis have been fully addressed, the question will arise about what role the central bank should play in reducing the risk of future crises, and in the management and resolution of the ones that do occur.[2] How any change in future roles will affect the formal responsibilities of central banks and their position in government and society

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[1] This chapter was prepared mainly by David Archer and Gavin Bingham.

[2] See, for example, Brunnermeier et al (2009).

remains to be seen. However, some governance issues have already been raised by observers.

The first such issue is the role the central bank will play in promoting financial stability. This issue, which was unsettled before the outbreak of the crisis, is an even livelier one now. Even the definition of financial stability has been a matter of debate. It is therefore hardly surprising that there is much less clarity and precision about the central bank's objectives and powers in this area than in the monetary domain. Some observers argue that the central bank should be given a mandate that pays explicit heed to systemic risks within the financial system. According to this view, central banks are better placed to meet such a mandate than others because of their macro-economic orientation and their concrete knowledge of financial markets. This permits them to understand how the actions of individual financial institutions affect the financial system as a whole. Providing such a mandate could lead to important questions that remain to be addressed: Do central banks need new tools for such a purpose? If so, what tools? Should central banks on occasion use their monetary policy tools – over and above what current objectives would imply – to counteract threats to financial stability? Is there a risk that at times the two mandates (monetary stability and financial stability) would come into conflict?

A second major issue, closely related to the first, is how to structure decision-making on financial stability matters. Central banks generally make monetary policy decisions autonomously using procedures that are now fairly well honed. Decisions on financial stability matters require different information and expertise. They sometimes need to be made urgently and frequently require consultation and collaboration with other authorities. If the central bank is given an explicit systemic financial stability mandate, does that imply a need for more specialised and consultative governance arrangements?

Thirdly, how would the sizeable financial and reputational risks that arise from central banks' financial stability operations be handled? Operations that constrain risk-taking would be very difficult to calibrate in advance of a crisis. This suggests that the prior design of macro-prudential "rules" (entailing some relation to the economic cycle) would be hard. Allowing discretion may create challenges, since prudential restrictions can also be unpopular in periods of euphoria. Would this require greater safeguards so that the central bank could pursue its mandated objectives?

Finally, the expansion of the scope and scale of central bank operations has increased their exposures to loss. In addition to issues of appropriate decision-making arrangements, these greater exposures raise questions concerning how losses will be borne should they occur, about indemnification, and about the amount of capital central banks should normally have. Should large-scale losses occur or policy actions be seen to have failed in achieving their objectives, the reputation of central banks as effective public policy agencies could be damaged.

2. The role and objectives of the modern central bank

We begin with an overview of the role and objectives of central banks – specifying tasks and setting objectives are at the core of any governance arrangement. Tasks and objectives cluster around central banks' macroeconomic and financial stability objectives. At the same time, central banks have to be organised to carry out various other public policy and service tasks that variously meet the needs of government, the financial system and the public.

2.1 Governance arrangements for the monetary policy function

One of the most challenging tasks in central bank design is to organise the governance structure in a manner that permits policymakers to meet their macroeconomic stabilisation objectives while remaining accountable for their actions. Looking around the world, we see that this has generally been done through mechanisms that grant decision-making independence, clarify the specific objectives that central bankers are expected to meet, and ensure a suitable level of accountability (on which, see Section 7 of this chapter, and Chapter 7 of this Report).

- ***Delegation of independent authority:*** Monetary policy actions can be politically sensitive. For this reason, it is now typical to insulate them from political pressure by assigning them to an independent agency. Independence is granted to the central bank in a manner assuring that the central bank's powers are used to promote public welfare and that the central bank is accountable. This is done within a legislative framework that determines the roles and responsibilities of different authorities, including the government and the central bank.

- ***Setting objectives:*** Price stability is the primary objective in most central bank legislation enacted over the past decade. This uniformity results from a broad social and intellectual consensus that low, stable inflation provides the foundation for high, sustainable real growth and that this is a goal central banks can reasonably be expected to achieve. Nevertheless, there are mechanisms, such as varying the horizon over which policymakers are asked to achieve their price stability objective or specifying tiered objectives, which allow real economic effects or the exchange rate or financial stability considerations to play a role. Some legislatures make the role of these other objectives explicit; some leave considerable room for judgment; and still others limit the scope for other considerations to affect the pursuit of price stability by tightly specifying that the sole objective is price stability.

- Tightly specified objectives can insulate decisions from political influences at the same time that they limit the effective power, concentrate the focus and improve the accountability of independent central bankers. Yet, objectives specified too tightly reduce flexibility to adapt policy responses to different circumstances. An increasing number of countries are using formal public statements of policy strategy to increase the specificity of statutory objectives but in a manner that allows some flexibility. These policy statements may be agreed between the central bank and the government, or they may be the central bank's or the government's unilateral interpretation of the monetary policy task, consistent with the law and the current state of knowledge of what is achievable with the instruments available.

- ***Exchange rate regime:*** The choice of a monetary policy framework is closely intertwined with the choice of an exchange rate regime. And monetary policy decisions within the chosen framework may be affected by exchange rate policy decisions. Even so, it is not uncommon for the monetary policy role given to a central bank to differ from its exchange rate role. The potential for inconsistency between these two aspects of macroeconomic policy is well known, but in most cases it has not been explicitly resolved when specifying the central bank's objectives. Central banks almost always participate in the choice of exchange rate regime and in exchange rate policy, but rarely do they have formal authority to make those decisions unilaterally.

- The central bank is in most cases designated as the agency for exchange rate policy implementation, given its closeness to financial markets and its technical expertise. It may also manage the stock of foreign currency assets used to provide an intervention reserve. In the few cases where an agency other than the central bank acts as reserve manager, a more explicit statement of objectives – eg giving priority to liquidity rather than to income – may be developed for the sake of aligning expectations across institutional boundaries. Countries that now hold reserves far bigger than are likely to be needed for intervention or precautionary purposes often transfer management of the excess to another agency or create special governance structures to support income-oriented objectives.

2.2 Governance arrangements for the financial stability function

Financial stability is usually another main objective of central banks. However, compared to the goal of price stability, the financial stability objective is less often formalised in legislation; the understanding of what it entails is more diffuse; and the potential range of functions implied by it is broader. At a minimum, it involves managing banking system reserves with an eye to stability considerations and standing ready to provide emergency liquidity assistance. In addition, it usually involves promoting the stability of the payment system. Many central banks are also involved in the development of prudential policy and the regulation and supervision of institutions and markets, the analysis and dissemination of information on financial stresses, and measures to foster the development of the financial system.

- ***Management of financial system liquidity and lender of last resort:*** In periods of financial stress, even as routine liquidity management adds reserves to the overall financial system to keep monetary conditions as intended, the risk rises that a financial institution will become unable to obtain sufficient funds from the interbank market. In some cases, this could precipitate a failure. The central bank will usually be the first public sector agency to become aware of such a situation, and it is well positioned to deal with the problem in the first round, including possibly by extending emergency liquidity assistance.

  The potential to extend emergency liquidity – the lender of last resort role – is common to all central banks, though it is understood and implemented in different ways. In the current crisis, central banks have provided exceptional amounts of liquidity to the financial system, helping to stabilise the situation and avert the insolvency of illiquid institutions. These actions have involved central banks both as system liquidity managers and as lenders of last resort. In consequence, the distinction between the two roles has become somewhat blurred, which raises some challenging governance issues. Large-scale liquidity support may exhaust the availability of good collateral, leading the central bank to accept risks which could in time weaken its balance sheet and eventually even public finances. By providing financial resources and time, emergency loans may facilitate a further drain of funds from the institution in difficulty. That further loss could in turn increase the costs faced by final creditors, such as the deposit insurance agency, or by the government should its support be deemed necessary. The availability of emergency loans might increase the probability that taxpayer funds will actually be used and so would call for countervailing regulation. For all these reasons, governments and treasuries have a vital interest in the decisions central banks make to extend credit to institutions in distress. Yet there are widely differing views and traditions with respect to government involvement in central bank decisions on whether to provide liquidity. In some jurisdictions – notably in continental Europe – the law protects the autonomy of the central bank in its decisions on emergency loans. In others, the provision of liquidity is closely coordinated with the government, especially as the size and materiality of the lending escalates.

- ***Stability of the payment system:*** Central banks are at the centre of the payment and settlement process. Oversight of payment and settlement systems is almost always a function assigned to the central bank, though aspects may be shared with other authorities. The assignment of responsibility to the central bank is usually explicit, often contained in the law; but it may sometimes be implicit, resulting from the proximity of the central bank to payment and settlement and the absence of an explicit assignment of the function to another agency.

  Regulatory powers can be used to require private owners and operators of payment systems to conform to policy interests. However, persuasion is the most commonly used technique. Another approach used in many jurisdictions is for the central bank to own and operate key payment systems – out of concern that private owners might place short-term profits ahead of system robustness.

- ***Financial stability:*** Formal central bank responsibility for the stability of the financial system as a whole – as distinct from oversight and supervision of specific institutions or markets or service providers – is becoming increasingly common. Only a minority of central banks are assigned such a responsibility within their own law. Nonetheless, given the public importance of financial stability, the absence of any other agency with responsibility for it, and the collection of related functions undertaken by central banks, virtually all central banks without the responsibility in law assume that they have it in practice.

  Governance arrangements for the financial stability function are generally less settled than for the monetary stability function. This reflects various issues that create challenges for defining the task. The specification of objectives is itself difficult. The interaction between the stability of the system as a whole and its individual parts is also imperfectly understood. Also, apart from the lender of last resort function and various regulatory powers, there are no central bank policy instruments that are uniquely suited to ensuring systemic financial stability. Instruments that might influence financial stability have other primary roles: interest rates for monetary stability; financial regulation for market efficiency, consumer protection and institutional or micro stability; prudential supervision for institutional soundness. Using such instruments for ends other than their primary purpose inevitably involves trade-offs.

  Responsibility for this function is by necessity shared with governments – thus the overlapping interests of different state agencies and their interaction with government decision-makers must be managed, especially as they relate to the potential use of public funds. Effective coordination mechanisms are particularly important for crisis management, but they are also relevant to crisis prevention. Formal, structured coordination mechanisms have become more prevalent – although their modalities may need to be altered in response to the exigencies of crises which are unpredictable in origin and form.

- ***Financial regulation, prudential policy and prudential supervision:*** Beyond advising on the design of regulations for the financial system, central banks have also tended to have some degree of responsibility for bank supervision, in part because of their need to assess counterparty risk in their own transactions. That assignment has often been informal rather than a matter of law. Other types of financial intermediaries (savings institutions, credit unions, stockbrokers, insurance companies, etc) that do not normally receive credit from central banks have usually been supervised by other agencies. In recent decades, prudential supervision duties have often been formalised and embedded in statutes, and some countries have moved to integrate the supervision of financial institutions of various forms within a single agency, which is sometimes the central bank but more commonly not.

The current crisis has raised questions about the extent to which central banks should be involved in oversight of financial institutions. Central banks have been on the front line in the response to tensions in the financial system, providing sizeable amounts of support. However, decisions to lend on exceptional terms, and managing the resulting exposures, require insights that may not be obtainable except through the kind of close relationship entailed by supervision. If central banks are to play a key role in dealing with systemic risk when applying a more macroprudential approach, they may also need to have closer oversight of systemically significant institutions. Yet the various issues that have led some countries to separate supervision from the central bank also remain relevant. And numerous governance decisions follow from the placement of institutional regulation and supervision in the central bank. In particular, the relationship with government and other public sector agencies (for coordination, reporting and accountability) will differ from that for the monetary policy function.

2.3 Governance arrangements for other functions

Central banks often perform functions apart from the pursuit of their financial stability and monetary policy objectives. These include provision of banking services to commercial banks and fiscal agency services to the government; the provision of financial infrastructure; the development and promotion of the financial sector; and consumer protection related to individuals' financial contracts. Some of these functions are a legacy of the past, and many of them are complementary to the basic objectives.

Reflecting a generally sharper focus on core objectives, many countries apply strict criteria when determining whether a function will be performed by the central bank and if so, to what extent and in what manner. The principal criteria are:

- the degree to which the activity is essential to achieving basic central bank objectives;
- the comparative advantage of the central bank in performing the function;
- the extent to which pricing of services can be designed to offset potential market distortions; and
- the existence of an exit strategy if the activity, such as a financial sector development programme, is undertaken temporarily.

Of the long list of potential central banking functions, three are featured below because of their historical significance and importance for central bank governance: government banking, financial sector development and consumer protection activities.

- ***Government banking:*** Almost all central banks perform banking services for the government, ranging from receiving only final government balances through to providing full services. Seasonality and unpredictability in the timing of government business cause variations in banking system liquidity. The government's debt issuance and investing activities also have an impact on the financial markets and financial prices through which monetary policy actions are transmitted. For both reasons, central banks historically have had some degree of involvement with government funding activities at both short and long maturities. Conflicts between monetary policy and government funding interests can arise. The central bank may want to hold short-term interest rates at a given level for policy reasons while the treasury would prefer cheaper financing. Treasury debt managers may also have a view on the future path of the exchange rate (relevant for the balance between local and foreign currency funding) or long-term interest rates (relevant for the interest rate sensitivity of the debt issued) that differs from the central bank's view.

Widespread adoption of the norm that the government borrows entirely on open markets, at market rates, has allowed separation of government funding from central bank liquidity management. Central banks may still provide debt management services to governments under agreements that provide for separation of interests. Many governments have set up specialised debt (and sometimes asset) management offices. Whether such offices are also assigned the government's cash management function varies between countries. Here, too, formal understandings or agreements are used to manage conflicting interests.

- ***Financial sector development:*** Central banks have typically been the leading public sector agency promoting and supporting the development of the financial system. Financial deepening not only helps the wider economy, but it can also improve the effectiveness of monetary policy itself. In some cases the role is explicitly defined in the law, but in most cases it is not. Even where the role is established by statute, specific objectives are rarely stated. In some instances, this has led to uncertainty as to how far the promotional role should go. Guarding against the appearance of capture by financiers also affects the way that central banks structure the relevant decision-making arrangements.
- ***Consumer protection:*** In many countries, central banks have a major role to play in the protection of consumers of financial services, ensuring access to relevant information, fair dealing and education. In some cases their role extends also to issues of unbiased access to the services themselves.

3. Political framework and legal status

Most central banks created in modern times are state entities, wholly owned by the state. Some older central banks grew out of private commercial banks and to a greater or lesser degree retain private shareholding. In all such cases, however, all important policymaking powers are shielded from private shareholder influence. Moreover, shareholders rarely have a say over financial arrangements, since financial and policy objectives can conflict.

In most cases, central banks are constituted under a specific piece of legislation, although their powers and responsibilities may also be affected by other laws, including constitutional provisions. In a few cases, the relevant law is contained in an international treaty. Central bank laws codify the roles and responsibilities of the central bank, set out objectives, specify the degree of independence, and establish the nature of the central bank's accountability. They also specify the powers of the central bank – including the power to enter into transactions and take administrative actions such as issuing regulations and levying charges and fines. And they determine the central bank's relationship with the government and its degree of autonomy.

Although safeguards that are contained in statutes may be more durable than those that rest on the current political consensus, central bank autonomy is ultimately grounded in a broad agreement within society about the proper role, objectives and modus operandi of the central bank. There are instances in which such broad agreement has provided the basis for central banks to perform well with de facto powers not enshrined in legislation. Such conditions help to create a climate for consistency among monetary, exchange rate, fiscal and structural policies. The current crisis could affect the broad agreement in society about the role of the central bank and the interaction among different types of economic policies, but it is too early to know whether such changes will take place and, if they do, what shape they will take.

- ***Compatible macroeconomic policy arrangements:*** The independent authority to run monetary policy can be compromised or nullified by decisions on other areas of economic policy. First, exchange rate policy decisions can significantly constrain options for monetary policy. In most countries, tacit understandings rather than formal arrangements provide compatibility between the two policies.

  Second, the dominance of fiscal policy over monetary policy has been a problem in many countries. Reforms of monetary policy arrangements designed to enhance the central bank's ability to maintain price stability have not always been accompanied by reforms that bring greater discipline to fiscal policy.

- ***Restrictions on monetary financing of the government:*** Restrictions on inflationary financing of the government are a means of deterring fiscal dominance. Legislation in a number of countries either forbids direct central bank lending to the government, restricts it to highly exceptional circumstances or sets clear quantitative limits. Often, restrictions are implied by the central bank having policy independence and no obligation to lend to the government.

- ***Autonomy in decision-making and the right to be consulted:*** One safeguard provided by legal provisions is to make it an offence to seek or take instructions from a governmental or private body when performing central bank functions. Alternatively, provisions requiring any such action to be taken in full public view reduce the threat of unjustified pressure.

  Providing the central bank with the right to be consulted about legislation affecting it reduces the risk that a new law will harm its ability to achieve its mandated objectives. Most importantly, such consultative rights often specify that central banks are to be involved in decisions on the choice of the exchange rate regime and on measures to safeguard the financial system, even when the decisions are made by others.

- ***Appointment procedures:*** How central bank officials are selected; to whom they feel they owe their allegiance; and the grounds on which they may be dismissed, and by whom - all are important factors affecting the autonomy of the central bank. For this reason, appointment and dismissal arrangements are usually specified in legislation. Most countries have provisions that require senior central bankers to be professionally and personally qualified and to refrain from activities that would generate a conflict of interest. Another commonly used safeguard against inappropriate appointments is a two stage, "double veto" procedure whereby central bank governors and others involved in the policymaking process are nominated by, say, the head of government but then must be confirmed by the national legislature. Almost everywhere, the appointment of a governor represents a political as well as technical choice and therefore involves the government. Once appointed, the governor and other senior central bankers are expected to work towards the institution's mandated objectives.

- ***Security of tenure:*** Security of tenure for decision-makers helps protect them from unwarranted external influence by reducing an individual's sense of vulnerability to political pressure.

  In general, terms of office for governors and other decision-makers are longer than electoral terms – the most common central bank term is five years – and they are often renewable. Staggering of terms, which is widely practised, can create for the group the incentives that come from long, protected terms while leaving individual terms short enough to provide renewal.

  Protection from unwarranted influence also comes from restrictions on the grounds for dismissal. Most central bank statutes provide for the dismissal of governors or board members in the event of gross negligence in the performance of duty, criminal activity or unethical behaviour. By contrast, in only a few central banks can governors be dismissed on policy-related grounds. Such protections reinforce policy autonomy but simultaneously remove one instrument of policy accountability, requiring other instruments to carry a bigger load. Where no limitations on grounds for dismissal are provided, dismissal processes (eg double veto arrangements and rules relating to the openness of the process) may provide protection.

4. Decision-making structures

Group decision-making is one of the hallmarks of the modern central bank. Although executive management formally remains the province of the governor in the majority of central banks, most central banks make monetary policy decisions in a committee, and in most cases management is supervised by an oversight board.

Decision-making by committee permits a greater range of expertise and views to be brought to bear. It imparts greater legitimacy to decisions and augments their credibility. Moreover, a body of decision-makers that acts collegially is better able to stand up to unwarranted external pressure. Bringing in outsiders may also add diversity. This can serve to guard against a tendency towards "group think". Yet bringing in outsiders is not without complications. External members that are affiliated with particular sectors of the economy or society may represent short-term or sectional interests that diverge from society's long-term interests. For small countries, the availability of a pool of external members with sufficient expertise to engage successfully with the technical aspects of the task is a perennial issue.

Policy committees differ with respect to their mandates, size, composition and operating procedures. Although most policy boards are multifunctional, there is a growing number of specialised boards, in most cases dedicated to interest rate decisions but in other cases also to financial stability or oversight of payment systems. With specialisation, governance relationships can be tailored. An important illustration is the common preference for an arm's length relationship between the central bank and the government on monetary policy decisions but for joint or consultative decision-making in a financial crisis.

A major choice is whether to make individuals or the collective bear the responsibility for decisions. In practice most central banks have some form of collective responsibility. Relatively few central bank arrangements feature formal public voting. When decisions are represented to the outside world as being collective, the release of minutes that attribute views to individuals is rare. Central bank decisions are almost always made in the context of considerable uncertainty, placing a premium on the testing of alternative ideas. The exploration of alternative ideas may be more wide-ranging when it takes place out of the public eye.

Central bank decision-making bodies range from three to about 20 members, with an average of around seven. Two related considerations seem to influence the size of the board: regional makeup and size of the country. For multistate and federal systems – such as the Eurosytem (the group of European Union Member States that have adopted the euro) and the Federal Reserve System – boards are large to ensure adequate representation. And larger currency areas with relatively large populations also tend to have larger boards. Other choices on board structure and process may also bear upon the size of the board (eg forming a consensus within a large group can be more difficult than within a smaller, more cohesive group).

5. Relations with the government and the legislature

Independent central banks interact regularly with their governments and their legislatures. In industrialised countries, it is more common for the governor and the minister of finance to meet one-on-one or in a small group than it is in emerging market economies. By contrast, in emerging market economies, it is far more common for a government representative to participate in meetings of the central bank's board or for the governor to participate in cabinet meetings. Senior central bank officials meet with government counterparts about twice as often in emerging market economies as in industrialised countries, a pattern in part reflecting a wider range of functions in the former than the latter. Moreover, about half of the central banks in industrialised countries and two thirds in emerging market economies have a legal obligation to provide advice on economic policy to the government. Other central banks have the right to provide such advice if they deem it appropriate, or they may provide it on request.

Central banks also typically engage regularly with legislatures by reporting to, or being examined by, elected representatives as a part of formal accountability arrangements. In industrialised economies, reports at an annual frequency are commonly required; the frequency of reports is higher in many emerging market countries. It is not uncommon for central banks to volunteer reporting that is more extensive than is required by law in order to build a constituency of understanding – if not support – for those occasions on which unpopular decisions must be taken. Extensive reporting to legislatures also provides an additional platform, or channel, for communication with markets and the general public.

6. Financial resources and their management

Central banks need money to run the organisation and a capacity to engage in the financial transactions required to execute monetary policy, operate in interbank markets and serve as lender of last resort. Such needs have been met by establishing the central bank as a special type of bank, with a formal balance sheet.

Central banks differ significantly in the composition of their assets and liabilities. Most hold a large share of their assets in foreign currency denominated instruments, but there are numerous exceptions in which domestic currency assets (government debt or loans to banks) are held as the backing for the currency.

Because some of the central bank's liabilities are accepted as money and thus are willingly held even though they earn no interest, revenue from assets generates independent income. The amount and pattern of variation regarding net income from assets depends on choices made in the course of implementing policy. Sometimes significant costs can be incurred when implementing monetary policy, intervening in the foreign exchange market, or extending emergency liquidity assistance. Substantial surpluses can be generated with higher inflation. All in all, governance arrangements are typically constructed with the objective that this independent, policy-sensitive stream of income not be a distraction from achieving policy objectives.

Various devices are used to separate policy decisions from financial incentives and to ensure effective resource management, including:

- clear policy objectives that have primacy over other considerations;
- differentiating accountability for the central bank's management of resources from its accountability for policy;
- structured processes for agreeing on appropriate resource use; and
- specific arrangements for the disposition of surplus income and rectification of deficiencies that are consistent with the separation of policy from funding and expenditure considerations.

Central banks hold capital as a buffer against variations in net income, such as those arising from revaluations, and against credit losses, including those generated by emergency liquidity loans that are not repaid. But the amount of capital held differs widely across central banks. In a small but representative sample of central banks, capital ratios ranged from –30% to nearly +50% of the balance sheet total, a variation reflecting differences in risk exposures and revenue sharing arrangements. The existence of negative capital ratios highlights the fact that central banks are not subject to the same solvency test as private corporations. But that does not mean that capital levels are irrelevant for central banks – as a rule, those that hold foreign exchange reserves on their balance sheets have larger amounts of capital, reflecting the structural mismatch between their assets and liabilities. The recorded impact on capital arising from structural mismatches depends on the accounting conventions used. Mark to market conventions are often used for the valuation of foreign currency assets and liabilities, which amplifies recorded variations in net income if unrealised gains and losses are recognised. The amount of capital provided to the central bank, and the rules for the recording and disposition of surplus income that are embedded in the central bank law, have not always been adjusted to match changes in accounting conventions, leading to greater risk of negative capital outcomes. Nor have decisions on the amount of capital always anticipated the full range of policy actions that the central bank might be obliged to take in pursuit of policy objectives – an issue that may be particularly relevant for those crisis-hit countries in which the central bank traditionally has little or no capital.

7. Accountability, transparency and oversight

As central banks have been given greater independent authority, so have accountability mechanisms been enhanced. The following challenges have been encountered in designing suitable accountability mechanisms:

- clear, measurable and non-conflicting targets may be difficult to define, in both the policy and the resource use areas;
- outcomes are observable only with considerable delay and are influenced by outside forces; and
- individual contributions may be difficult to observe in the case of closed-door settings chosen to facilitate the consideration of uncertain policy choices.

Recognising these complexities, most countries have chosen to rely less on formal ex post accountability mechanisms and more on an obligation for decision-makers to be transparent about the basis for their actions, more or less at the time the decision is made. In many cases, obligations to be transparent are understood and implied rather than formally mandated.

The move to greater transparency is part of a wider change in public sector governance that includes various forms of "government in the sunshine" legislation. In most cases, such legislation also applies in part or in full to the central bank, although most central banks have specific provisions requiring certain public disclosures. Transparency is also a means to safeguard against covert pressure from whatever source. However, transparency still needs to be complemented by one or more oversight mechanisms.

- ***Legislative committees:*** Reports to the legislature are a standard feature of the modern central bank. The focus of such reports is on the conduct of policy, though the receiving committee will have access to the central bank's financial reports and may take note of them. Typically, the governor or other policymakers will appear before the legislature, often under legal mandate. Oversight by legislative committees complements that of supervisory boards, which typically focus more on administrative matters. It also complements accountability to the public through disclosure and transparency. Moreover, it secures a place for the central bank outside the executive branch of government and thereby helps to impart a suitable degree of autonomy.

- ***Supervisory boards:*** Central banks often have supervisory boards, mostly comprising non-executive directors, which play a role in ensuring effective administration of the bank. Typically, a board will approve the operational budget of the central bank; review and approve the accounts and oversee the audit process; and promote the use of structured planning and management frameworks. They often play an important role in remuneration decisions for key officers and in the design of remuneration systems for staff.

  With a supervisory board, a choice has to be made on the extent of its authority to monitor decision-makers and to hold them to account. One constraint in around half of the cases is that, by law, the governor chairs the supervisory board. A choice also needs to be made between a board of experts and a board of generalists with wide experience in different fields.

- ***Judicial review:*** The potential for judicial review is particularly important in areas like supervision, where other accountability mechanisms (such as a clearly specified objective and transparency) are difficult to apply. Judicial review generally relates to the *process* by which decisions are made and actions taken and does not extend to an assessment of the policy pursued. There is usually specific but circumscribed legal protection for central bankers who act in good faith in the discharge of their duties, which is particularly important in countries where financial incentives and ease of access to the courts make legal challenges commonplace.

- ***Ad hoc reviews:*** Ad hoc reviews of central banks are occasionally undertaken by government commissions, panels of experts and international financial institutions. Many important examples of changes in governance arrangements have flowed from such reviews.