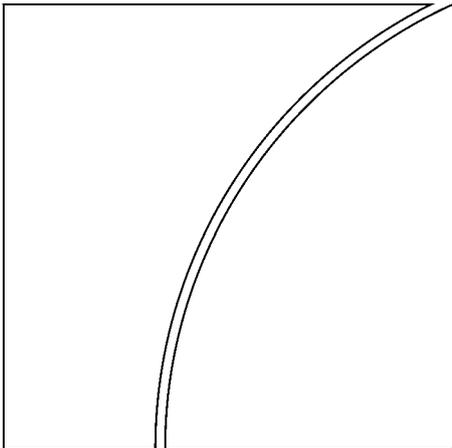




BANK FOR INTERNATIONAL SETTLEMENTS



Issues in the Governance of Central Banks

A report from the
Central Bank Governance Group

Chair: Guillermo Ortiz, Governor of the Bank of Mexico

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Project Origins and Contributors

Origins

This project and report were initiated by the Central Bank Governance Group. The report draws heavily on an extensive body of survey data and other information contributed by central banks and monetary authorities belonging to the Central Bank Governance Network (currently 47 members – see the Annex for a list).

Under the guidance of the Governance Group and an advisory panel, the report was prepared by the Secretariat of the Central Bank Governance Forum (which comprises the Group and the Network) together with consultants engaged by the Bank for International Settlements.

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Preface

This report presents issues that arise when decisions need to be made on the governance of central banks. It draws on a large body of information on the design and operation of central banks that the BIS has brought together since it initiated work on central bank governance in the mid-1990s. Preparation of the report required resolving several issues. One issue is that central banks differ significantly – in the scope and nature of their functions, in their history and in the political and economic conditions in which they operate. What is suitable for one country will not be for another. Hence, setting down a single set of “best practices” is not feasible. The report therefore eschews such an endeavour and instead seeks to present information that will help decision-makers set up governance arrangements that are most suitable for their circumstances. A range of governance practices is presented – including some less commonly used – but presentation does not imply endorsement.

A second issue is the evolving nature of central banking. The role of central banks has changed significantly since the first one (the forerunner of today’s Sveriges Riksbank) was established in 1668. Changes have often taken place in response to severe crises or persistent policy problems. For example the need to deal with chronic inflation in the 1970s and 1980s prompted the identification of price stability as a formal central bank objective and led to a significant reworking of governance arrangements. The global financial crisis that is now unfolding could well have equally important implications for central banks, particularly with respect to their role in fostering financial stability. These issues are discussed in the report, but it is far too early to know how central banking will change as a result of the current crisis. What is clear is that as the broad environment for central banking changes, the role and governance of central banks will continue to evolve.

A third issue concerns the appropriate amount of detail to include. Central banks are complex institutions. Providing a full complement of information relevant for all the operations of central banks would risk burying the essential features in a mound of detail. Accordingly, the report is selective, covering eight strategic topics sequentially and in depth in Chapters 2 to 9. To further ease access, the report begins with a layering of overview material: the first layer is a “road map” of topics to guide readers to the chapters that may be of greatest interest to them; the next is a set of “highlights” – a brief summary of the report’s main themes. Thereafter, Chapter 1 offers an overview of the most important elements of central bank governance covered in the rest of the report. Even more detailed information on governance matters is available to central banks in the extensive database that underlies this report.

Much of the information has been provided by the 47 central banks and monetary authorities that belong to the Central Bank Governance Network, which, together with the Central Bank Governance Group, forms the Central Bank Governance Forum. Over the past decade, members of the Network have participated in several surveys on governance and other organisational matters. Through a new survey conducted specifically for this report (BIS (2008b)), Network members graciously provided updates of essential data.

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A road map of the report

This report is aimed at countries wishing to upgrade their arrangements for central bank governance. It surveys the range of relevant practices around the world and seeks to identify the reasons for patterns that can be observed.

This “road map” is intended to help readers with varying concerns quickly access parts of the report that may be of greatest interest to them.

Most readers will find it useful to first read the coloured pages at the beginning of the Report, consisting of the Highlights, which capture the principal themes of the report, and Chapter 1, which surveys Chapters 2 to 7.

The report by topic

The central banking topic closest to today’s headlines – the ***implications of the current financial crisis for central bank governance arrangements*** – is not yet fit for a comprehensive analysis. In Chapter 1, the report takes the important first step of identifying the governance questions that the crisis has generated and thereafter follows up with a deeper discussion of crisis-related issues, especially in Chapter 2 (impact on functions and conflict among objectives) and Chapter 6 (financial consequences).

For readers concerned with ***central bank autonomy*** – a frequent headline item concerning central banks – Chapters 3, 4 and 7 may be of most interest; together they illustrate that central bank autonomy is a means to an end, not an end in itself.

Readers most drawn to matters of ***central bank communications*** and ***transparency*** may wish to focus on Chapters 4 and 7.

Readers concerned with the ***division of responsibilities*** among the central bank, other agencies and government may be most interested in Chapters 2 and 5.

And readers focusing on ***good management practices*** and related aspects that make central banks different from commercial enterprises may find the most relevance in Chapters 6, 8 and 9.

The report by chapter

Chapter 1 (coloured pages) surveys Chapters 2 to 7, each in turn. In doing so it identifies the main tendencies visible in ***reforms*** of central bank governance in the past three decades, along with the most important ***questions*** to be confronted and the ***choices*** that are available when considering such reforms. Because context and history matter, not all options are relevant to each central bank, and the discussion therefore emphasises generic considerations.

The objectives of the chapter are to (1) present a high-level, integrated view of key questions to be addressed when designing, reforming or reviewing the governance of a central bank and (2) use enough detail and real experience to bring matters to life in a non-prescriptive manner.

Chapter 2 examines the range of ***functions*** historically and currently undertaken by central banks and the specification of objectives for their main policy functions. Determining tasks and setting objectives are key aspects of governance.

Chapter 3 considers the ***legal frameworks*** used by countries to delegate state powers to the central bank and systems of safeguards, or checks and balances, that have

been devised to make that delegation both meaningful in practice and acceptable for open societies.

Chapter 4 looks at the design of **decision-making arrangements** and is motivated by the fact that an increase in the delegation of power to the central bank has often been accompanied by a move to group decision-making.

Chapter 5 considers various ways of constructing **working relationships** between the central bank, the government and the legislature so that the central bank's delegated authority is not diverted in the pursuit of effective coordination.

Chapter 6 surveys **resource issues** of central banks, including those arising from the fact that profit-making is not their primary objective.

Chapter 7 examines how central banks are made **accountable** for the manner in which they exercise their powers, including via the transparency of their decision-making. This chapter is thus the major counterpart to the discussions in Chapters 2 to 6 regarding the powers and resources granted to central banks.

Chapter 8 deals with the **management of risk**.

Chapter 9 discusses the design of **management structures and staffing** arrangements.

Highlights

Central banks vary substantially in structure and purpose, but they all have important responsibilities for monetary policy, the stability of the financial system and core elements of the financial infrastructure. Complex issues are encountered in designing effective governance arrangements for each of these major functions. However, in broader terms, effective governance of any institution, including a central bank, requires:

- clear and well-specified objectives;
- appropriate powers and resources; and
- close alignment of objectives and incentives.

In what ways are today's central banks accommodating these requirements?

1. Objectives

Price stability is now the primary objective of most central banks, either because of an explicit legislative mandate or because more general objectives have been interpreted to require it. Yet all central banks take other economic considerations into account to some degree.

Clear objectives for the financial stability function are more challenging to devise; central bank legislation tends to be less specific about those objectives, even though elements of the task (eg lender of last resort and oversight of the payment system) have long been central bank functions. A number of countries are now re-examining the appropriate role of the central bank in the area of financial stability.

2. Powers and resources

Legislation usually seeks to structure the appointment process and tenure for central bank governors in a manner that supports the autonomy of the central bank. That is often done by requiring the involvement of more than one branch of government in the appointment process – which also advances the goal of choosing qualified candidates – and by providing longish, staggered terms of office so as to protect appointees from inappropriate influence, whether political or private.

Collegial decision-making is a hallmark of modern central banking that both augments the independence of the decision-making process and enhances the quality of decisions. In the vast majority of the world's central banks, boards or committees are responsible for making policy decisions; in most cases, boards also oversee the operation of the bank. Collegial decision-making is better able to stand up to unwarranted external pressure. Committees also permit a wider range of perspectives to be brought to bear, which adds to the legitimacy and credibility of central bank decisions.

Regarding financial resources, central banks normally generate sufficient revenue to cover their operating costs and to set aside contingency reserves. Those revenues, together with rigorous budgeting procedures that make central banks accountable for their use of resources, provide them with financial autonomy. Revenue surpluses are transferred to the state in accordance with clearly specified rules.

3. Objectives and incentives

Transparency about objectives, procedures and the stewardship of resources plays a prominent role in the alignment of objectives and incentives. Announcing a clear objective exposes those responsible for achieving it to reputational risk. Compared with their predecessor institutions, modern central banks release much more information about their decisions and the reasons for them, and about their financial position and use of resources. Such information is employed in a wide range of accountability mechanisms involving reports to the legislature, oversight by supervisory boards, assessments by independent commissions, and legal recourse through ex post judicial review.

Chapter 1: The main tendencies in modern central banking¹

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

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 Eurosystem (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.

Chapter 2: Roles and objectives of modern central banks³

The Main Issues

The central bank is nowadays primarily an agency for monetary policy. It usually also has important financial stability functions, and those become more prominent during times of financial turmoil. The structure of those roles, the responsibilities given, and the range of other functions allocated vary between countries. The main issues are as follows:

- What degree of independent authority does the central bank have to design policy, make policy decisions, and implement those decisions? This question also relates to the degree of influence over exchange rate policy and the setting of objectives for both monetary and exchange rate policies.
- What degree of responsibility does the central bank have for financial stability? Does it have the instruments commensurate with that responsibility? What tasks are given to the central bank with respect to the regulation of financial activity and supervision of financial institutions? How well do those roles fit with others? How are objectives set?
- How does the central bank go about ensuring the efficiency and robustness of the various infrastructure systems that support payment and settlement? How does ownership and operation of such systems sit with the oversight, supervision and regulation of private providers?
- What other functions fit well with the core monetary policy and financial stability tasks? What are the relevant criteria? Do they differ between mature and emerging financial market environments?

1. Introduction

The variation in circumstances surrounding the origins of central banks means that their roles and functions have not all evolved in the same way (Box 1). Some started life as special purpose government banks constructed to bring some order to the issuance of banknotes. Some were established to act as funding conduits for the government. Some were large commercial banks, whose dominance was subsequently boosted by the granting of monopoly rights to issue banknotes. The majority were, however, created in the 20th century (Box 1, Figure 1) specifically as central banks – public policy agencies for central banking functions.

The bundle of functions that constitutes a central bank is not fully defined beyond the basic point that a central bank is the agency that conducts monetary policy and provides the means of settlement. Nor can the definition always be inferred from the functions allocated to central banks established in the 20th century, since the bundle of functions often differed substantially from country to country.

This chapter explores the global diversity of functions assigned and objectives specified, noting implications for the array of governance practices observed. Some common themes are worth noting at the outset. First, in the past few decades, a more focused concept of the role and responsibilities of the central bank seems to have emerged. Objectives have become better identified and used more actively as a means to shape the performance of the central bank. However, objectives for some functions

³ This chapter was prepared mainly by David Archer.

– including the important financial stability function – remain to be spelled out clearly, limiting the completeness of governance arrangements. Second, difficult trade-offs often must be made between multiple objectives in relation to specific functions and between objectives for different functions. Those trade-offs complicate the related governance structures as well as the performance of the tasks. But just as a clear picture of the archetypical central bank seemed to be emerging, events moved the image out of focus. The current financial crisis has brought various unsettled issues to the fore (including incomplete objectives and trade-offs) and has thus renewed some uncertainties about the future shape of central bank functions and objectives.

2. Functions and objectives: chickens and eggs?

In principle, constructing an organisation to undertake certain functions should involve specifying the objectives underlying those functions. Likewise, charging an organisation with the pursuit of specific objectives should map directly into the choice of functions. Functions and objectives are, from this theoretical perspective, integrated.

Historically, however, it would seem that central banks have been understood more in terms of their functions than their objectives. Thus, older treatises on central banking had a lot to say about functions but relatively little about objectives; the same was the case for legislation.^{4,5} Even today, functions that are widely regarded as core elements of central banking are not always tied to statements of the relevant objectives. For example, as will be discussed later, the objective associated with the important financial stability function is to date typically less well specified than the monetary policy objective. At the same time, objectives for some functions have been fundamentally altered as the understanding of what is feasible has changed.

We start with a discussion of objective setting with respect to the main policy functions before elaborating on the range of functions undertaken by central banks.

3. Objectives

While new functions were acquired as central banks evolved into public policy agencies, the accompanying change in underlying objectives was rarely explicitly stated. Given the context, one could infer that the objective underlying all functions was “for the economic interests of the nation, consistent with government economic policy”. Indeed, that is the type of general statement found in each of the 20th century statutes that both created a central bank and stated its objective.

⁴ This is not to say that discussions of objectives cannot be found in the historical record. The establishment of the Federal Reserve in the United States involved the identification of “elasticity” in the money supply as an objective for the function of regulating the supply of currency.

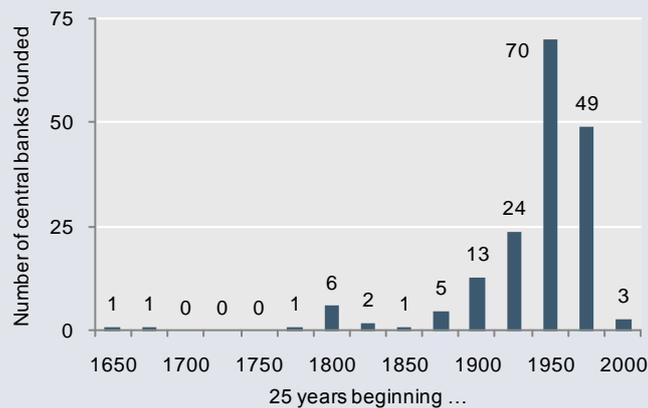
⁵ Some central bank laws provide a statement of the “purpose” for which the central bank performs a certain function but in a manner that does not establish the objective by which the performance of that function should be guided. Thus, the Saudi Arabian Monetary Agency has a function whose purpose is “to regulate commercial banks and dealers”, and the Central Bank of Chile has functions whose purpose is “to look after the normal functioning of the internal and external payment systems”.

Box 1 An historical overview: original central bank functions and their evolution

To some extent, the functions and character of modern central banks reflect history. But the majority of central banks are comparatively new (Figure 1), having been created by governments to fulfil a range of tasks befitting a mid-20th century concept of economic management. And key older functions of central banking, such as monetary policy, are now somewhat different than they were in the early days of central banking.

Figure 1

Founding dates of central banks



Source: Central bank websites; 2008 Morgan Stanley Directory; BIS (2008b).

The earliest progenitor central banks were the dominant **issuers of banknotes and bankers to the government**. Indeed, often these functions went hand in hand. Dominance over note issuance – which frequently resulted from privileges bestowed by governments – usually gave these central banks sufficient scale to be the natural choice for government banking business. And scale also provided the ability to onlend a fraction of the issuance proceeds to government.

The Austrian National Bank, the National Bank of Denmark, the Bank of France, the Bank of Italy, the Bank of Portugal and the Bank of Spain, among others, were founded in efforts to restore monetary stability and the credibility of banknotes after periods of overissuance and collapses of convertibility. Pursuit of **monetary stability** and a credible currency system indeed lay at the heart of early central banks, though in a somewhat different manner than now. Interest rates were adjusted by these banks in a way that preserved stability, but the motivation was survival – to maintain the fraction of notes backed by specie and thus remain sufficiently liquid to service all obligations – rather than some wider macroeconomic interest. On the few occasions when convertibility was suspended as a matter of regime choice rather than expediency, attempts at active monetary policy management foundered more on lack of knowledge than anything else (Flandreau (2007)).

Over time, these dominant banks became bankers to the banking system. For commercial reasons, the dominant bank would occasionally lend to customer banks to cover temporary shortfalls in liquidity, an activity that brought with it a natural interest in the health of the customer banks. Both these **lender of last resort** and the informal **banking supervision** functions fell somewhat short of what we now understand by the terms, since they were driven by commercial self interest rather than some a public-good objective.

Fundamental changes in the late 19th and early 20th century linked these original central banking functions more directly with public policy objectives. The transformation of objectives, rather than functions, was the key change. To be sure, early central banks were often established for public-good reasons. Besides restoring monetary stability after a crisis, such reasons were to integrate fragmented private note issuance (for “good order” or efficiency of exchange reasons or, as in Germany and Italy, to support political integration); to

promote financial development (eg in the case of the Sveriges Riksbank, sustaining the emergence of banking); and to improve trade financing in Belgium and the Netherlands. However, these public goods were not their sole purpose.

Discussions of central banks during the 19th century increasingly emphasised their impact on the national welfare. Bagehot's treatise on the lender of last resort function focused on rules of the game that would work in the interests of the system as a whole. The introduction of the gold standard clarified the expectation that the central bank would ensure convertibility for the good of the nation, an objective that gradually came to include international cooperation among leading central banks.

Associated with this transformation was the dropping of commercial objectives. Before the 20th century, central banks were all established as profit-making entities. The potential for conflict between public policy objectives and financial interests was clear. Last resort lending raised the issue of neutrality in dealing with one's commercial rivals. Similar issues arose in terms of monetary management, as it became evident that the dominant banks were usually more profitable during periods of monetary and financial instability. Most 19th century central banks had withdrawn from, or been excluded from, commercial business by early in the 20th century, although the Bank of France and the Netherlands Bank continued to conduct extensive commercial business through to the end of the 19th century.

Prompted by economic crises between the wars, the breakdown of the gold standard, and changes in thinking about the role of government in economic management, the transformation of central banks into public policy agencies was completed by the early 20th century. Central banks were to manage the new monetary order, though without a mechanical standard to adhere to. Despite the as yet unproven ability of central banks to restore monetary stability, countries that did not yet have them were urged to create them as an essential part of the state's macroeconomic toolkit. And nationalisation of the central bank followed in many countries where it was not already owned by the state.

As the public policy focus came to predominate, the breakdown of the gold standard caused the nature of the **monetary policy** function to change. Without convertibility rules or limits, countries came to have the choice – via their central banks – of how best to maintain internal and external values of their national currencies. How that choice is exercised is at the core of the modern central bank.

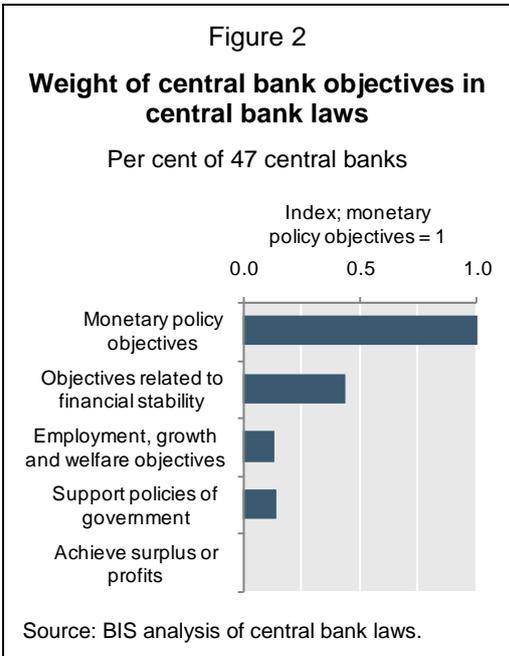
The **oversight and regulation** function became increasingly formalised and direct, pushed also by shifting attitudes towards the role of government in intervening to regulate and guide economic activity. The creation of the Federal Reserve System in the United States, with extensive regulatory and directive powers, owes much to these considerations. In Europe, especially after the Second World War, central banks such as the Austrian National Bank, Bank deutscher Länder (the forerunner of the Deutsche Bundesbank), the Bank of Italy and the Netherlands Bank were given formal responsibility to oversee banks (through required balance sheet ratios and other directives).

Changing attitudes towards the role of government and of direct intervention also led to the acquisition of an **economic development** function. Both directly and via the banking system, many central banks began to subsidise the financing of economic sectors that were targeted by governments seeking more rapid industrialisation. Often, preferential treatment involved the direct provision of banking services – especially capital and trade financing – to enterprises in targeted sectors and in particular, state-owned enterprises.

Compared with the situation in which objectives straddled both commercial and public policy dimensions, such a statement substantially increased the clarity of the guidance provided to central bankers. A sense of purpose had been identified. Their role was to discharge their functions in a manner consistent with the public interest, taking into account functions of other state agencies and coordinating with them if necessary. To the extent that the public interest could be served by adding functions not formally assigned, all to the good. Thus, progressively, many central banks began to assume responsibility for the development of the financial sector; oversight of the payment

system (beyond those parts that the central bank itself operated); and oversight of the operation of money, foreign exchange, debt and capital markets.

From today’s perspective, such a general public interest objective is open to wide interpretation and offers little guidance as to what to do when functions, or views as to what is in the interest of the nation, conflict. Only in relatively recent times has much attention been given to the question of identifying specialised objectives for individual functions and to the potential for objectives to conflict.



A trend towards specifying objectives, rather than only assigning functions, may have begun to emerge, but numerous central bank functions are still not guided by legally stated objectives. Figure 2 shows that objectives related to monetary policy are far more frequent in central bank laws than are objectives related to other functions.

3.1 Monetary policy objectives

For monetary policy objectives, the increase in clarity has generally taken the form of a narrowing towards a single or dominant objective – most commonly, price stability – in clear priority over others. Monetary policy objectives extracted from the legislation of nearly 50 central banks are tabulated below (the left-hand side of Table 1) and categorised by the focus of the objective and the level of the law in which the objectives statement is found. On the right-hand side of the

tabulation, extra-statutory statements of monetary policy objectives are also listed if they have a status sufficient to be recognised as the basis for the policy framework. In most cases, these extra-statutory statements contain a specification of inflation targeting.

The tabulation reveals that comparatively few countries now have central bank laws without price stability as a specific element of the central bank’s objectives (Australia, Brazil and Malaysia; though Malaysia’s legislation singles out monetary stability as a specific objective). There are, however, numerous instances in which the objective specified in the law involves multiple elements that may in some circumstances be inconsistent. Potential conflicts will be discussed shortly.

Price stability is usually the dominant monetary policy objective specified in legislation. Price stability – or its equivalent, stability in the domestic purchasing power of the currency – appears as the dominant or one of the dominant legal objectives in 33 of the 45 central banks listed in Table 1 (“Objectives that include price stability”). In most cases it is a singular objective or is superior to other macroeconomic objectives specified in the law (as is made clear, for example, in mandates such as those requiring central bank support for the government’s general economic policy without prejudice to the central banks’ primary price stability objective).

Table 1
Monetary policy objectives of central banks

	In the law			Extra-statutory	
	Constitution	International treaty	Statute	Published statement not having the force of law	Accepted practice
Objectives that include price stability					
Price stability	DE		BR, HU, IS, JP, KR, NZ, PH, SE, TR	CA, CL, HU, ID, IL, JP, MX, NO, PH, SE, ZA	
Price stability with subsidiary macro objectives	CZ	AT, BE, BG, DE, (ECB), ES, FI, FR, GR, IE, IT, NL, PT, SK (all part of Eurosystem)	AT, BE, BG, CH, CZ , DE, (ECB), ES, FI, FR, GR, IE, IT, NL, PL, PT, TH, UK	AU, CZ, NZ, PL, UK (Eurosystem)	US
Price stability alongside other macro objectives			CA, US		
Objectives that are equivalent to price stability					
Domestic purchasing power	MX		AR, BR, IL, MX		
Objectives that do not expressly refer to price stability					
Monetary stability			IN, MY, SG, TH		
Value/stability of currency	ZA, PL, RU		AU, BR, CA, CN, CL, ID, IL, HK, MY, RU, ZA		
General welfare, general economic health, growth, development	CH		AU, BR, IL, MY,		

Note: Country abbreviations are translated in the Annex. The translation of the typographical coding and of the multiple placements of countries is as follows: (1) Inflation targeting countries (defined either in law or in practice) are in bold characters. The European Central Bank (ECB) and the Bank of Japan (JP) are not counted here as inflation targeters, although they have identified a numerical inflation rate that would be consistent with desirable policy outcomes. (2) Countries with multiple objectives set down in one or more laws or commonly accepted extra-statutory official statements appear in more than one cell. (3) Countries whose multiple objectives have the potential to conflict appear in red.

Source: BIS analysis of central bank laws.

In contrast, when price stability or its direct equivalent is not legally specified as one of the prime objectives of monetary policy, objectives that are legally specified tend to become more general in nature (or to be defined in more general terms). Indeed, when price stability is not specifically stated as an objective in the law, there is generally no legally dominant objective, and instead a broad definition of currency value is used.

However, among the jurisdictions that do not follow this broad pattern are China, Hong Kong SAR, Indonesia, Russia and South Africa: they all operate under a legally dominant objective even if they have no price-related one. In Hong Kong SAR, for example, the primary objective is expressed in terms of the exchange value of the currency.

Potential conflicts arise when different monetary policy actions are motivated by different objectives. A particularly important example of potential conflict concerns multiple objectives regarding price stability and real economic variables. The laws in Malaysia and the United States contain elements of both price and real economic objectives in a manner that would seem to make these separate objectives potentially of equal rank.

Another example concerns floating exchange rate regimes – domestic price stability and exchange rate stability can call for interest rate adjustments in opposite directions. This potential conflict raises issues for the interpretation of legal objectives in a number of countries where both price stability and currency stability are specified as monetary policy objectives.

Of course, were currency stability in fact equivalent to price stability, the potential for conflict would be removed. The issue is relevant for China and South Africa, for example, where stability in the value of the currency is stated in the law as the singular objective, but it is unclear whether the “value of the currency” is intended to refer to the domestic purchasing power, the external exchange value of the national currency, or both.

There are various ways in which potential conflicts are resolved.

- One way is to make clear the order of precedence among multiple objectives. Such a hierarchy is specified in the EU Treaty (ie the 1992 Treaty on European Union, also known as the Maastricht Treaty) and therefore applies to countries that are part of the euro area.
- A second way is to recognise that lower levels of law may serve to interpret and clarify higher levels of legislation. References to central banks and monetary policy in constitutions are typically brief and high level, establishing broad principles. The statute governing the central bank, in contrast, is more detailed and provides the legislature’s interpretation of the principles established by the constitution. Thus, in Poland, for example, Article 227 of the constitution states that the National Bank of Poland is responsible for the value of Poland’s currency, whereas Article 3 of the act governing the National Bank of Poland states that the basic objective of its activity is to maintain price stability. The wording of the constitution alone would leave open the possibility of interpreting the task of the central bank as being to stabilise the exchange rate, but the legislative act makes it clear that the accepted interpretation is that currency stability also means price stability. Moreover, this interpretation has been strengthened by judicial decisions of the Polish Constitutional Tribunal.
- A third approach is to use extra-statutory statements or agreements (right-hand side of Table 1) that provide a working interpretation of the law on which both the central bank and successive governments agree. Examples of such an approach are to be found in Australia, Brazil, Canada, Chile, Israel, Norway, the Philippines and South Africa. In these cases, inflation targeting has been adopted by the issuance of a statement – sometimes unilaterally by

either party, sometimes jointly – clarifying the working understanding of what the central bank is required to do under the law (and is consistent with issues of technical feasibility).⁶

The use of extra-statutory statements to establish objectives has advantages and disadvantages. Extra-statutory statements allow greater flexibility to adapt the objective to changes in circumstances or changes in understanding about the working of monetary policy without needing to negotiate the full legislative process – which in some countries is very costly and difficult to contain to the specifics of the desired changes. Extra-statutory statements allow the authorities to provide additional information on how trade-offs inherent in monetary policy or embedded in legislation would be treated. The language of such statements, more discursive than is typical of that in legal codes, allows for a prescription of policy reactions along a spectrum of situations (as has recently been provided by the Central Bank of Norway) while avoiding the more mechanical representations of policy that would result from trying to embed complex policy structures in legislation.

Extra-statutory statements also allow for numerical targets to improve clarity – both for the decision-makers in the central bank and the general public – without locking them down in legislation. This use can provide an important bridge between the incompletely specified term “price stability” and specific issues to do with establishing it: those aspects of prices considered to be important for the stabilisation task; index choice; allowance for index biases and for frictions; and the time frame over which stability should be assessed. At times, these specifics can take on a high level of importance (witness the recent debate within the Federal Reserve System about the appropriate inflation norm).⁷

However, the greater flexibility of extra-statutory statements may provide insufficient commitment, and thus insufficient certainty, in some cases. Extra-statutory statements that have the potential to be inconsistent with legally mandated objectives may be subject to challenge. Finally, extra-statutory statements are usually optional. Should a new set of officials decide to withdraw an extra-statutory statement, they could be within their legal rights even though the transparency of policy would be damaged in the process.⁸

⁶ Inflation targeting statements are also to be found in the Czech Republic, Hungary, Mexico, New Zealand, the Philippines, Poland, Sweden, Thailand and the United Kingdom. But in these cases the inflation target can be seen as an elaboration and clarification of a fully consistent price stability objective contained in legislation, rather than an interpretation of a potentially conflicting legal objective. Although the ECB and the Bank of Japan are not inflation targeters, they have nevertheless issued statements about the specific values of inflation that are regarded as consistent with desired policy outcomes, statements which serve a similar elaborative and clarifying purpose.

⁷ Specific inflation targets are set in legislation only in Colombia. In the Central Bank of Iceland law, inflation targets are mentioned, but in a permissive rather than obligatory manner and without numbers attached.

⁸ The laws in New Zealand and the United Kingdom require an extra-statutory statement to be promulgated. In New Zealand, the Policy Targets Agreement (PTA) must be agreed between the Governor and the Minister of Finance, thereby creating a double veto arrangement. Both parties have the legal obligation to ensure that the PTA is consistent with the legal objective (price stability), although the Minister has the power (after due process) to override that objective temporarily but publicly. In the United Kingdom, the Chancellor of the Exchequer is required to set the inflation target to be pursued by the Bank of England.

Given the popularity of extra-statutory statements, in particular for inflation targeting but also for monetary policy frameworks such as those used by the Eurosystem, the Bank of Japan and the Federal Reserve System, it would seem that advantages are judged to outweigh disadvantages. Where the central bank law has recently been reformed, this revealed preference is clearly more than a legacy of history. In those cases it would have been possible to include the targeting statement in the new law, but the option was taken instead to use incompletely specified language (eg “price stability”). Clarification of price stability was in most cases left for the more flexible device of the extra-statutory statement.

- A fourth way of resolving potential conflicts between legal objectives involves the consideration of the technical feasibility of each. It is not technically feasible for monetary policy to accelerate growth beyond the rate consistent with approximate price stability, except temporarily (and then at a cost to performance against other objectives); therefore, it is reasonable to infer a dominance of the price stability objective. Likewise, if domestic price stability is technically more feasible to maintain than exchange rate stability or is achievable at a lower cost to other objectives such as the general welfare, then the domestic price stability objective might reasonably be taken to dominate. Those are the bases on which price stability is presumed to dominate other objectives in some of the examples of potential conflict discussed above (including Australia, Canada, Malaysia, South Africa and the United States). Judgments on the basis of technical feasibility and the relative costs of achieving the objective are, however, more open to interpretation than clear statements of a single objective. In terms of consistency of interpretation, avoidance of doubt and political debate, and clarity for central bankers and the public, such single objective statements might be preferred.

3.2 *Financial stability objectives*

The great majority of central banks operate under the presumption that they have a policy responsibility for financial stability. The basis for this presumption is discussed in Section 4.2. Yet Figure 2 shows that noticeably fewer than half of central bank statutes contain objectives *relating to* financial stability. Of 146 central bank laws, less than one fifth have an explicit objective for financial stability per se – ie an objective that overarches or extends beyond objectives for functions that contribute to financial stability.

In some of the small number of cases in which the central bank has an explicit legal objective for financial stability, the objective is broad-ranging and the central bank’s responsibility apparently far-reaching. In China, the People’s Bank “shall ... prevent and mitigate financial risks, and maintain financial stability”. In Hong Kong SAR, the powers of the Exchange Fund can be discharged “to maintain the stability of the monetary and financial systems”. In Thailand, “the Bank of Thailand’s objectives are to carry out such tasks as pertain to central banking in order to maintain monetary stability, financial institution stability and payment systems stability”, which covers a substantial range of financial stability considerations, if not their entirety. In Zambia, the central bank “shall formulate and implement monetary and bank supervisory policies that will ensure the maintenance of price and financial systems stability”.

However, in several other cases in which an objective is set down for the wider financial stability function, the language implies a more conditional degree of responsibility for outcomes, with the central bank being charged with “promoting” a safe, stable or sound financial system, or words to that effect (eg Bermuda, Georgia, Hungary, Iceland, Mexico, Nigeria, Singapore, Slovenia, Turkey and Zimbabwe). In a

number of cases, the central bank's responsibility for overall financial stability is even more broadly defined as "contributing to" financial stability or to the actions of another authority pursuing a financial stability objective (eg Australia, the Czech Republic, the Eurosystem, Japan and Switzerland). Occasionally, responsibility for financial stability is explicitly attached to the discharging of a bank supervision function (eg New Zealand) or lender of last resort function (eg Portugal) rather than being generalised. And in other cases, the stability of the banking system, rather than the financial system as a whole, is the legal focus (eg Bulgaria, Oman and the Ukraine).

Specifying a financial stability objective involves confronting many of the issues discussed in relation to the monetary policy objective. "Financial stability" is also somewhat incomplete as a guiding light for policy actions and as a basis for accountability. Financial stability is not an absolute objective – most economists would agree that financial variables should be flexible, and should change, and sometimes sharply. The question is by how much and in what circumstances. Nor is there a generally agreed way of measuring financial stability, which makes it especially difficult to identify how much financial stability is intended and whether the appropriate amount has been achieved.

This immediately raises the question of whether a financial stability objective can be given a quantitative representation akin to the use of inflation targets with respect to the price stability objective. Quantification would provide a substantially clearer basis for policy guidance and accountability, and as such has been the focus of much recent research.⁹ To date, however, no standard way of measuring robustness or stability has been identified.

In addition, there are trade-offs to be considered. One such trade-off concerns the allocative and dynamic efficiency of financial intermediation. Banking systems in the mid-20th century were generally regarded as robust, in large part because entry was tightly controlled, as were the normal channels for competition between incumbents. In many countries a relatively cosy cartel ensued, featuring low risk-taking and little innovation but reasonable profits. Robustness came in part at the expense of efficiency and dynamism.

Another trade-off concerns potential incompatibility with other policy objectives. Apart from lender of last resort actions, there have been to date no policy instruments that are uniquely suited to the task of safeguarding financial stability. Instruments that might influence financial stability have other primary roles: interest rates for monetary stability; financial regulation for market efficiency and institutional or microstability; and prudential supervision for institutional or microsoundness. Diverting such instruments from their primary purpose inevitably involves trade-offs and a risk of unintended consequences. These issues are amply illustrated by recent events. During the period when serious fractures began to appear in global financial markets – through 2007, in particular – the willingness to cut interest rates was tempered by a concern about prospective inflation pressures. Subsequently, the balance of risks shifted to the extent that deep interest rate cuts were judged desirable, along with substantial quantitative easing. Even though there may be no conflict between financial and monetary stability in the midst of the crisis, the potential for such conflict may reappear when the time comes to exit from aggressively stimulative policy settings. Early removal of stimulus could delay the resumption of normal market functioning; late removal could risk the take-off of inflation.

⁹ See Aspachs et al (2006).

Ideally, a statement of objectives would specify the appropriate treatment of such trade-offs when they arise. In some cases central banks are explicitly directed to consider economic efficiency in their actions. For example, the Reserve Bank of Australia's Payments System Board is charged with using its powers in a way that "will best contribute to ... promoting competition in the market for payment services, consistent with the overall stability of the financial system"; the European System of Central Banks (ESCB) "shall act in accordance with the principle of an open economy with free competition, favouring an efficient allocation of resources"; the Bank of Korea is required to "emphasise the market mechanism" when implementing monetary and credit policies; and the Reserve Bank of New Zealand shall, in exercising its supervision and bank registration powers, promote "the maintenance of a sound *and efficient* financial system" (emphasis added). But being directed to consider efficiency does not entirely make clear the intended treatment when faced with a trade-off – how much efficiency versus how much stability remains an open question. When it comes to clashes between monetary and financial stability objectives, most central bank laws are silent on how to balance the risks arising from the potential trade-offs. In part, the silence may reflect a lack of knowledge of the underlying mechanisms involved; and, in part, it may result from these trade-offs having a complex dimension over time.

One of the mechanisms for treating trade-offs mentioned in the discussion of the monetary policy objective was to rank conflicting items by their technical feasibility (with available instruments) and the cost of their achievement. Is such an approach also feasible in the context of financial stability? Again, as with the question of the quantifiability of the objective, the current state of knowledge with respect to maintaining appropriate financial stability lags well behind the corresponding state of knowledge with respect to price stability.

Another of the mechanisms mentioned in the discussion of the monetary policy objective for bridging a gap between legal specification and a generally accepted understanding of objectives is an extra-statutory statement. A particularly important example is to be found in the United Kingdom, where a Memorandum of Understanding (MoU) between the Bank of England, the Financial Services Authority (FSA) and the Treasury establishes the joint understanding of the respective roles and responsibilities. For the Bank of England, that role is to contribute to the stability of the financial system as a whole through its oversight of, and responsibility for, the robustness of financial system infrastructure (especially the payment system), through its intelligence gathering and analysis of financial system functioning, and through its representation on the FSA Board. Interestingly, banking reforms recently decided by Parliament adjust those roles to increase the responsibility of the Bank of England for financial stability. The new legislation also provides a statement of the Bank's financial stability objective, requiring the Bank "to contribute to protecting and enhancing the stability of the financial systems of the United Kingdom". The Court of Directors – in consultation with the Treasury – will determine the strategy for the Bank's contribution. The new objective does not expressly guide the reconciliation of potential conflicts with the monetary policy objective. However, the role provided for the Court's specification of a strategy may allow for an extra-statutory statement of how potential conflicts will be reconciled; a revised MoU could likewise present such a reconciliation.

Other examples of extra-statutory statements that provide greater clarity on the financial stability objective can be found.¹⁰ All in all, with (1) sufficient official standing –

¹⁰ See the MoU between the Securities and Exchange Commission and the Board of Governors of the Federal Reserve System regarding coordination and information-sharing in areas of common regulatory and supervisory interest (7 July 2008) and the MoU for the performance of banking

helped by a multiparty approach ideally involving the government or its closest policy advisors, (2) the status accorded to them as being unchallenged over a number of years and (3) their public character assuring transparency, such extra-statutory statements appear to be able to make powerful contributions to effective governance in this area as well as in the monetary policy area.

3.3 Payment system objectives

An objective relating to the payment system oversight function is found frequently in central bank law, especially if that law has been rewritten in the last decade or so. However the statements of objective are usually very general, as in “supervise the smooth operation of the clearing and payment system and ... satisfy itself that they are efficient and sound” (Belgium, with similar words being used in the Statute of the ESCB and of the European Central Bank (ECB)); “contribute to ensuring sound and efficient payment systems” (Czech National Bank); and “foster [...] the proper functioning of payment systems” (Bank of Mexico).

In this policy area there are also trade-offs among objectives, the robustness versus efficiency trade-off being the most prominent. Thus much of the foregoing discussion relating to the specification of a financial stability objective applies here as well.

In this area, too, one finds increasing use of extra-statutory statements to give greater specificity to the objectives and their associated policy frameworks. The Federal Reserve Policy on Payment System Risk is a case in point. In addition, in the payment system area, international cooperation has played a particularly important role in defining the nature of the issues and widely accepted standards that include a balancing of robustness and efficiency considerations. Such cooperation has since 1990 been guided by the so-called Lamfalussy Principles and has involved, among other organisations, the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO). It has resulted in agreement (under the auspices of the CPSS) on Core Principles for Systemically Important Payment Systems, the CPSS-IOSCO Recommendations for Securities Settlement Systems, and the CPSS-IOSCO Recommendations on Central Counterparties.

4. The functions of a modern central bank

By the end of the 20th century the monetary policy function clearly dominated the public perception of central banking activities, notwithstanding the continuation of numerous other functions of great significance to the effectiveness of financial systems and monetary exchange. Especially in the advanced economies, direct regulatory instruments were mostly dropped in favour of market-based instruments as financial systems developed and matured. Banking system oversight and regulation had evolved substantially. Regulation of access to the intermediation market was scaled back, in advanced economies especially. However, the oversight component prompted the development of the formal supervision and inspection of banks. More recently, in some countries, the supervision function has been shifted from the central bank to other agencies in favour of a more generalised financial stability objective for the central bank.

supervision and state supervision of the financial market between the Czech National Bank, the Czech Securities Commission and the Czech Ministry of Finance (30 June 2003).

Table 2 sets out central banks' self-assessments on the functions that they discharge, taken from the BIS Survey 2008 (BIS (2008b)).¹¹ Cells are coloured in the form of a "heat" map, with colours indicating the degree of central bank involvement in the function.^{12,13} The colour scheme is continuous but can be illustrated by the following four steps:

- white: no involvement;¹⁴
- light orange: has only an advisory role for a function discharged by others or undertakes aspects of a function at the instruction of others;
- mid-level orange: partial involvement or shared responsibility requiring a substantial degree of consultation with others; and
- dark orange: full responsibility, ie undertakes the function essentially autonomously as the lead public sector agency.

In most cases, the functions reported in Table 2 are an amalgam of subfunctions. Where differences across subfunctions are relevant, they will be highlighted in the discussion below.

Examination of Table 2 immediately reveals a number of activities that are common to central banks today, whether older institutions in advanced economies or newer ones in either advanced or emerging economies. With respect to monetary stability, all central banks have a high level of **responsibility for monetary policy** – not surprisingly, given that the defining characteristic of the central bank is that it is an agency for monetary policy. Apart from monetary policy, the most common functions relate to the **provision of core financial infrastructure** – that necessary for an efficient monetary exchange system – and to the **financial operations involved in ensuring monetary and financial stability**. Broadly speaking, central banks from emerging market economies have a wider range of functions than central banks from industrialised economies (see Box 2 and Figure 3).

The organisation of the discussion of current central bank functions proceeds as follows. Initially, some further comment is made on individual functions, treating them in isolation from other functions. The discussion is selective, with most attention paid to functions in which the degree of central bank responsibility varies the most. This discussion is organised under the six headings set out in Table 2. However, many of the important governance issues relate to interactions between functions. Those issues are taken up in Section 5, "Good or Bad Bedfellows?"

¹¹ Responses are self-assessments on a qualitative scale and are therefore not necessarily comparable across central banks. The inherent limitations of any aggregation scheme are an additional reason to exercise caution when comparing the degree of involvement across countries (particularly when differences between countries are relatively small).

¹² The index values which form the basis of Table 2 are the simple averages of central banks' scores on a scale of their degree of involvement in each function. For each sub-component, weights are arbitrarily set to 1 for full responsibility; 0.5 for shared or partial responsibility; and 0.1 for limited involvement, as with an advisory role only.

¹³ With respect to Eurosystem central banks, certain functions are entirely undertaken at the level of the system, and so are shown as the same colour within a bounding box. Others feature varying mixes of centralised and decentralised decision-making and execution, with the mix not necessarily identical across Eurosystem central banks. Accordingly, for these, the individual institutions' self-assessments are represented.

¹⁴ In some cases, central banks did not select any of the options for involvement. We have interpreted those cases as indicating "no involvement", on the assumption that, otherwise, one of the options indicating at least partial involvement would have been chosen.

Table 2: Functions of central banks

												Eurosystem									
		AR	AU	BR	BG	CA	CL	HR	CZ	HK	ECB	BE	FI	FR	DE	IT	NL	PT	SK	ES	
1. Monetary stability functions	Monetary policy	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Exchange rate policy	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
2. Financial stability & regulatory functions	Prudential policy development	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Supervision/oversight	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
3. Policy operation functions	FX intervention	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	FX reserves	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Liquidity management	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Lender of last resort	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
4. Financial infrastructure provision functions	Currency provision	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Banking/account management services	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Payment system (inter-bank)	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Settlement system for central bank money	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Other settlement systems	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
5. Other public good functions	Registry provision	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Debt management	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Asset management	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Development functions	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Research (other than for functions above)	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Statistics	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
Consumer services	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared		
6. Other functions																					
Key to colours		No or very minor involvement					Shared or partial responsibility					Full responsibility									

Table 2 (continued)

		HU	IS	IN	IL	JP	MY	MX	NZ	NO	PL	RU	SG	ZA	SE	CH	TH	TR	UK	US	
1. Monetary stability functions	Monetary policy	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Exchange rate policy	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
2. Financial stability & regulatory functions	Prudential policy development	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Supervision/oversight	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
3. Policy operation functions	FX intervention	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	FX reserves	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Liquidity management	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Lender of last resort	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
4. Financial infrastructure provision functions	Currency provision	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Banking/account management services	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Payment system (inter-bank)	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Settlement system for central bank money	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Other settlement systems	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Registry provision	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
5. Other public good functions	Debt management	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Asset management	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Development functions	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Research (other than for functions above)	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
	Statistics	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	
	Consumer services	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
6. Other functions	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	
Key to colours		No or very minor involvement			Shared or partial responsibility						Full responsibility										

Source: BIS (2008b). See annex for country abbreviations.

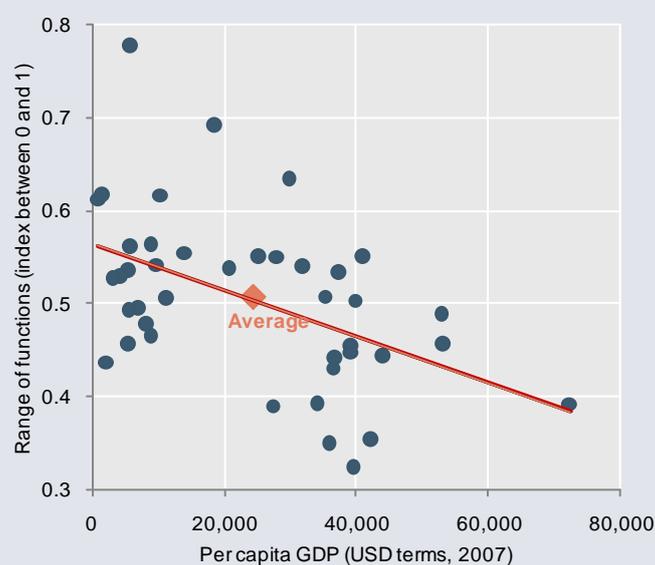
Box 2 The range of central bank functions relative to the stage of financial and economic development

For three main reasons, it is generally thought that central banks in emerging market economies tend to be allocated a wider range of functions than central banks in industrialised economies. First, in less well developed economies, the central bank is often a source of expertise that can be used in a wide range of applications. Second, central banks are often responsible for guiding the development of immature financial systems, a function that is less needed once critical financial structures are in place. Third, industrialised economy central banks tend to have narrowed their range of functions over time, perhaps reflecting an evolutionary path consistent with the first two observations. Figure 3 below tends to bear out this general idea (to the extent that per capita incomes provide a reasonable proxy for the stage of development). These points are discussed further in this chapter.

Figure 3

Range of central bank functions and per capita GDP

Information from 41 central banks



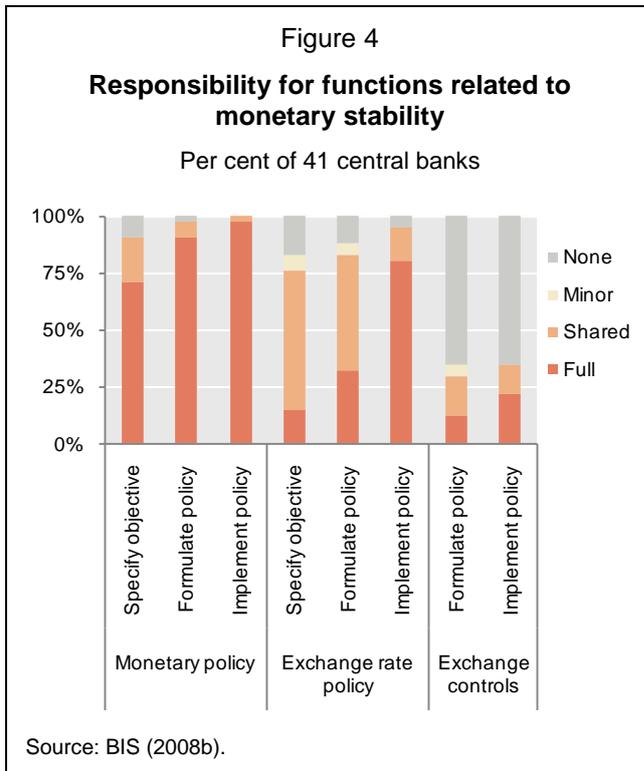
Source: BIS (2008b).

4.1 Monetary stability

Monetary policy decision-making and implementation are the defining characteristics of the central bank. Whichever institution undertakes these functions is, in essence, the central bank. However, there are differences between countries as to how extensive the central bank's independent responsibilities are for these aspects of monetary policymaking. These differences are discussed in this section.

Figure 4 takes a look behind the numbers – or colours – reported in Table 2, breaking down monetary and exchange rate policy into component parts. The average central bank reports a high degree of involvement in objective setting for monetary policy – though not complete autonomy. Complete autonomy, or very nearly, is reported for the decision-making and implementation stages of the monetary policy function. Central banks such as those of Australia, Brazil, New Zealand, Norway, Turkey and the United Kingdom report that responsibility for monetary policy objective setting is partly shared with others. In these cases, the government sets the specific target or participates in

that process. In those cases, the central bank has instrument autonomy with respect to monetary policy but not full goal autonomy.



Within the Eurosystem, the governors of the national central banks participate actively in an ex officio (but personal) capacity in the monetary policy decision-making process. The role of national central banks in monetary policy is accordingly represented in Table 2 as being equivalent to that of the ECB, notwithstanding that national central banks make no independent monetary policy decisions as institutions.

A similar pattern emerges with respect to responsibility for exchange rate policy, although here the average central bank has less autonomy over objective setting (which includes regime choice) and the formulation of policy (here including setting and adjusting the exchange rate target). But as with the monetary policy function, the typical

central bank has almost complete autonomy with respect to implementing exchange rate policy (ie intervening in markets and/or adjusting interest rates consistent with maintaining the target). The main exceptions are Japan and the United States, where exchange rate interventions are, on the rare occasions when they occur, directed by their respective ministries of finance.

Nowadays, involvement with exchange controls is very limited. Two main organisational, governance and management issues appear to follow from the use of such regulatory tools. The most important concerns the development of criteria to determine permissible uses of foreign exchange. Such criteria involve decision-making by the official sector on the activities to be favoured, decision-making that may require close political direction. The other issue relates to the potential for corruption or rent-seeking activities more generally. Because exchange controls were developed primarily as exchange rate management devices, the instrument has traditionally been assigned to the central bank. But the allocational aspect of it could just as easily be done by the tax authorities.

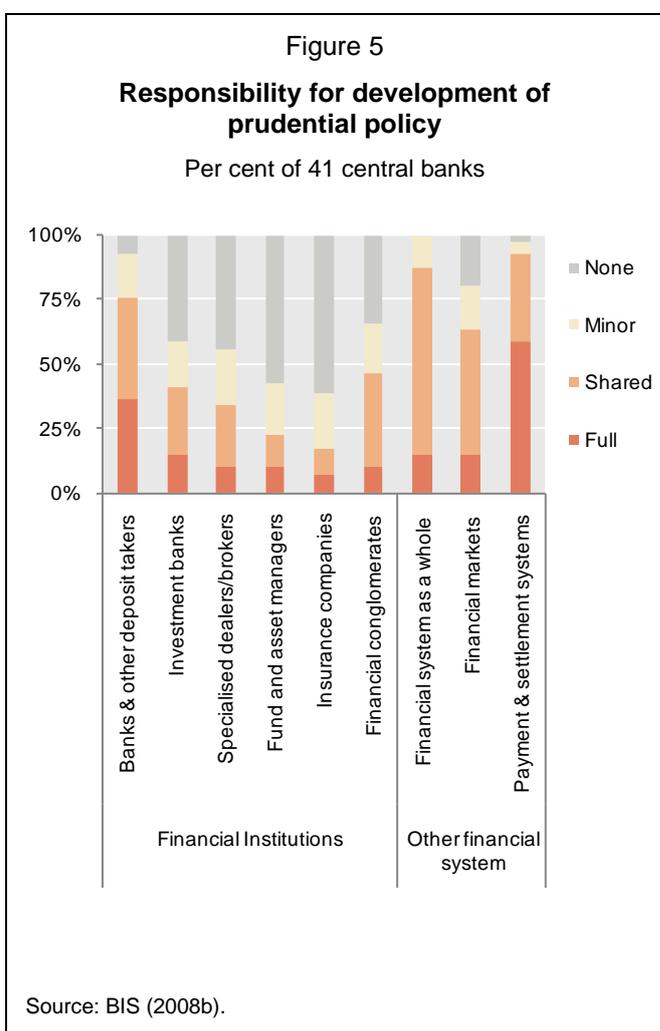
4.2 Financial stability and regulatory functions

Some form of responsibility for financial stability is now widely regarded as an essential characteristic of central banking. In the BIS survey 2008 (BIS (2008b)), 90% of central banks considered that they had full or shared responsibility for financial stability policy and oversight of the financial system.

As noted earlier, the legal basis for this responsibility is less clear. For a large number of central banks, the relevant legislation does not specifically mention financial stability

or synonyms; in those cases, a responsibility for financial stability is usually inferred from the existence of functions that relate to it.¹⁵ Such functions include bank regulation (and/or licensing) and bank supervision, deposit insurance, the provision of safety nets through emergency liquidity assistance, provision of honest broker services, and involvement in the payment system in general.

Table 2 shows a noticeably lower level of responsibility for financial stability than for monetary policy and other functions. And it shows less responsibility than implied by the 90% figure cited in the opening paragraph of this section. This also reflects the fact that financial stability policy has many dimensions – including policy development, rule making, supervision and oversight – with respect to markets, institutions and critical elements of infrastructure, and responsibility for many of these dimensions is shared with other agencies. Nonetheless, and despite the fact that the array of financial stability functions across central banks is not identical, all have a significant responsibility in some dimensions.

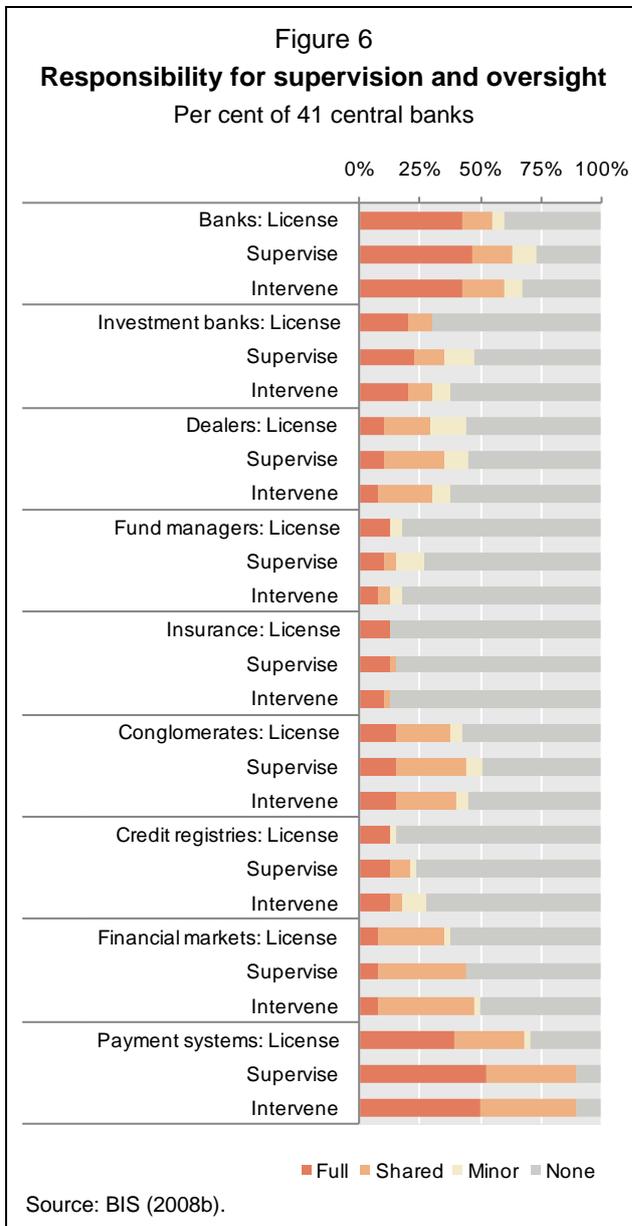


The breadth of the dimensions of financial stability functions is shown in Figure 5 and Figure 6, which go behind the aggregations represented in Table 2. The main focus of responsibilities has long been on banks (allowing that financial conglomerates are usually based around banks) and payment systems, both for policy development and for supervision and oversight. There is, however, a growing tendency for the central bank to have significant responsibility for the development of prudential policy with respect to the *financial system as a whole* – though that responsibility is usually shared with other government agencies – as well as for oversight of the whole system. Issues of efficiency and development also form part of this systemic mandate. Changes in governance structure have frequently followed the acquisition of this function. For example, in the United Kingdom, an array of governance changes were recently introduced, designed specifically to enhance the effectiveness of the financial stability function. These include a change in the composition of the Court and the creation of a Financial Stability Committee.

In industrialised countries, some central banks do not have a bank supervision function (and therefore no bank supervision department); in the majority of those cases, a

¹⁵ Brealey et al (2001) and Van den End (2006).

dedicated financial stability department or unit has been created.¹⁶ The head of that department or unit usually reports directly to the board, or to the governor or a deputy governor. This indicates the seriousness with which these central banks regard the responsibility.



Some of the relevant instruments of financial stability policy are direct, such as those involved in licensing and supervision and in intervention to require corrective action (Figure 6). In 83 out of 125 countries in a Financial Stability Institute survey in 2006 (FSI (2006)), a significant part of such direct responsibility is discharged via a primary role in bank supervision.¹⁷

With respect to indirect instruments, the central bank often plays a supportive or advisory role, either on a formal or informal basis, when primary responsibility for bank supervision rests with a separate agency or (less common) a government department (eg China and Switzerland). As for other indirect instruments, part of the responsibility for financial stability is discharged through ensuring that other policy responsibilities are attended to. In particular, monetary stability is a necessary (but not necessarily sufficient) condition of financial stability (and vice versa); as is the maintenance of liquidity in core money and financial markets. Maintaining price stability is, for example, the main way that the Eurosystem central banks fulfil their mandate to contribute to financial stability.¹⁸ The robustness and effective functioning of payment

¹⁶ This is less the case in central banks from emerging market economies because such central banks tend to have a supervision function.

¹⁷ FSI (2006). According to that survey, in just over four fifths of the cases where the central bank is the prime bank supervisor, financial stability is part of the legal mandate of the central bank. In contrast, at just over half of central banks, the proportion of central banks *having a legal objective for financial stability per se* (reported in Section 3.2) is less than one fifth, and those seeing themselves as *having a responsibility for financial stability* (reported at the beginning of this section) is 90%. The reconciliation may be that respondents to the FSI survey were interpreting legal mandates for financial stability in a manner somewhere between these two other definitions.

¹⁸ See Article 105, paragraphs 1 and 5 of the European Union (EU) Treaty.

systems is a further area of policy responsibility for central banks where success is important for financial stability.

And part is discharged through the research required to understand the ingredients of system robustness and causes of instability. The research function has accordingly grown in central banks in the last decade, as evidenced in output (and presumably staff numbers). In the latter regard, in addition to research papers, financial stability reports are now being published by nearly two fifths of central banks (and fully half of industrialised country central banks).¹⁹ Such research is not an end in itself, but rather an input into a better understanding of how financial stability is most efficiently achieved and maintained.

One of the key facets of policy responsibility for financial system stability in almost all central banks is **oversight of the payment system**. As Figure 6 shows, the average central bank has somewhere between a shared and a full level of responsibility for this function. Payment systems provide a crucial piece of infrastructure in modern economies. From various perspectives, the assignment of a policy responsibility for effective payment system functioning to the central bank makes sense:

- An important role of government is to provide, or ensure the provision of infrastructure that has the characteristics of a public good.²⁰
- By virtue of the use of its liabilities the central bank stands at the centre of this payment system infrastructure. That central place often involves electronic interchange between various payment systems and the central bank's settlement account system.
- Central banks have historically often been owners and operators of payment systems. In the United States, the Federal Reserve's automated clearing house (FedACH), which is an electronic alternative to retail payments through cheques, and its wholesale focused securities and fund transfer services operated by Fedwire are well known examples. In Europe, examples include the TARGET and TARGET2 systems, which provide for the real time payment and settlement of large value euro-denominated transactions.
- In the course of their own operations, central banks are usually users of (high-value) payment systems and are accordingly exposed – both financially and practically – to glitches in their functioning.

It is only in relatively recent times, however, that these four factors have come together in an explicit and formal central bank responsibility for the oversight of payment systems, a responsibility that is usually but not always coupled with responsibility for the design of public policy towards payment systems. The evolution from simple involvement in payment systems to a responsibility for oversight results from an increasing proportion of economic activity using payment systems, increasing concentration of such systems on relatively few platforms, a recognition of the role they can play in crisis conditions (eg the 11 September 2001 attacks), and an increasing focus of regulatory efforts towards the systemic rather than the individual institutional

¹⁹ BIS (2008b).

²⁰ On page 3 of Santomero et al (2001), the authors suggest that in fact “the main rationale behind the creation of a central bank is to secure an efficient payment system”.

domain.²¹ This evolution is frequently reflected in the new central bank laws that have been written in the last decade or so.

Having an oversight responsibility is one thing,²² discharging that responsibility is another. Central banks have approached this in different ways. In Australia, a separate governance structure was created, with the advent of the Payments System Board. Most central banks have also adapted their governance structures to better focus on payment systems issues, but none as extensively as the Reserve Bank of Australia.

Central banks have three instruments available to “oversee” the system. First, specific laws and regulations governing the operation of systemically important payment systems are used in a number of cases.²³ Second, the central bank can own and operate payment systems itself, ensuring particular outcomes in terms of balance between robustness, operational efficiency, cost and (coupled with fee structures) profitability. This approach is common, but it is occasionally controversial – especially with respect to state-owned enterprise competition with private sector operators.²⁴ Third, and most common, is the attempt to influence the design and operation of privately owned and operated payment systems. Such influence is exerted via persuasion based on sound analysis, moral suasion backed by threat of regulation, and imposed transparency.

4.3 Policy operations

Operations to support policy are prominent among the functions of central banks. The nature of these operations changed as central banks came to rely more heavily on transactions in open financial markets, dispensing with often-distorting regulatory and administrative interventions in the process. How the operational functions are organised within the central bank varies widely. In some cases, operations are fully delegated to lower levels of the organisation, with specialists implementing clearly defined instructions within an arrangement designed not to carry any policy signals. In other cases, subtleties around the engagement with market conditions are thought to be significant; senior policymakers remain close to the operational team and are engaged in decision-making on daily operations. The governance of operational arrangements may vary between types of policy operation and are often highly dependent on whether normal or unusual circumstances prevail. As the importance of liquidity management to the functioning of key markets became starkly evident during the current financial crisis, and as the nature of central bank operations changed

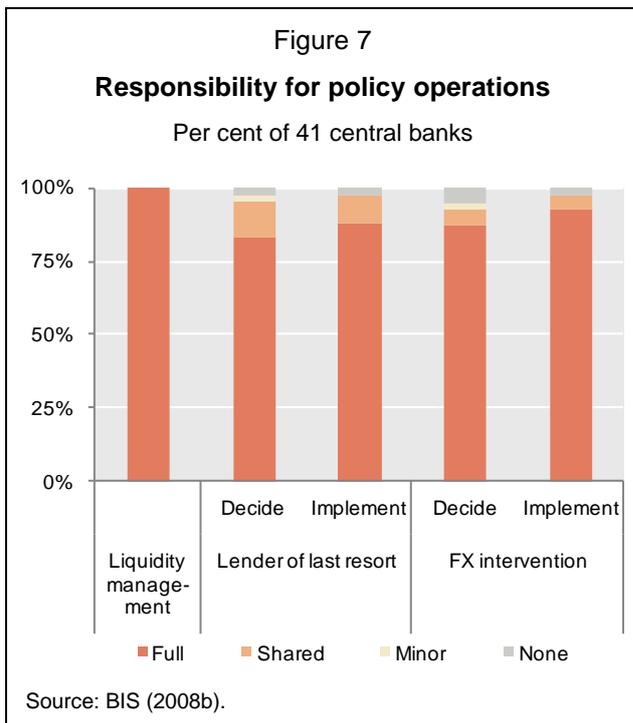
²¹ This shift towards a systemic focus has been associated, in some cases, with the transfer of operational responsibility for banking supervision from the central bank to another agency.

²² Many central banks clearly feel the weight of that responsibility. For example, the Bank of England recognises that in respect of systemically important payment systems “it falls to the Bank to advise the Chancellor *and to answer for its advice*, on any major problem arising in these systems” (emphasis added). See the Memorandum of Understanding between HM Treasury, the Bank of England and the Financial Services Authority Available at www.bankofengland.co.uk/financialstability/mou.pdf.

²³ For example, Canada’s Payments Association Act (1980), South Africa’s National Payment System Act (1998), the Czech Republic’s Payment Systems Act (2002) and Malaysia’s Payment Systems Act (2003).

²⁴ The recent proposal of the ECB to establish a settlement platform for euro-denominated securities (“Target 2 Securities” – T2S) is an example of this point (see also the relations between the Target and Euro 1 payment systems). The proposed T2S scheme has been criticised by a number of private sector central securities depositories as an encroachment into an area that they consider to be the preserve of the private sector.

significantly, some central banks substantially modified procedures for decision-making.



Different approaches to the governance of policy operations are evident in the area of liquidity management. In many central banks, **liquidity management** is no longer a vehicle for sending policy signals, even though open market operations and other instruments of liquidity management continue to be used to implement monetary policy decisions.²⁵ These operations have essentially become rule-driven, with no discretion of policy relevance, although perhaps with discretion to vary the transactional make-up of the operation to achieve a pricing that does inadvertently subsidise counterparties at the expense of the central bank. In some such central banks – the Reserve Bank of New Zealand is an example – senior management will become actively

involved in decision-making only in the relatively rare cases when changes of procedure are being considered or exceptional circumstances arise. In other central banks, senior managers (up to the executive board level) remain involved in decision-making on daily or weekly operations – the ECB is an example.

In exceptional circumstances, such as during the current financial crisis, liquidity management is brought to centre stage. Both of the key central bank roles – for financial stability and for price stability – may be relevant in such management. With respect to financial stability, the current financial crisis has demonstrated forcefully the increased role that markets are playing in the day-to-day funding of intermediation. Accordingly, the disruption of normal functioning in short term money markets and in wholesale financial markets more generally has had a bigger impact than in earlier crises. Central bank instruments that once were used primarily for the implementation of monetary policy are now considered highly relevant to limiting the propagation of financial crises and restoring market functioning. To a significant extent, during 2008 several major central banks used liquidity management tools to fill a role previously played by the network of market participants, becoming in the process the central intermediary for short-term financing. Substantial changes in procedure were developed and adopted in a remarkably short time frame.²⁶

²⁵ In a 2007 BIS survey (BIS (2007c)), 16 out of 30 respondents rated information about the implementation of monetary policy as being either “not important” or only “somewhat important” for assessing the stance of policy. In contrast, 11 rated such information as being either “important” or “very important”. (Two selected not applicable.) There was a sharp difference between industrialised economy central banks and emerging market central banks on this matter. For the industrialised economy central banks, the rating was 10:1 in favour of “not important”; for the emerging market central banks, it was 11:6 in favour of “important”.

²⁶ CGFS (2008) considers these new issues in detail.

With respect to the monetary policy role, the associated jump in bank reserves held at the central bank – at the Federal Reserve, from almost nothing in mid-2007 to \$300 billion towards the end of 2008; and at the Bank of England, a more than doubling of reserve targets over the same period – elevates the need to ensure that liquidity provision is consistent with monetary policy objectives. Additionally, cuts in policy interest rates towards zero raise the prospect of liquidity management becoming a more active monetary policy tool again. So-called quantitative management, as practised by the Bank of Japan during the period of zero policy interest rates, places liquidity management at the centre of policy operations.

Accordingly, internal governance arrangements may need to be adjusted to more closely reflect the centrality of the liquidity management function and the fact that it serves more than one purpose. Additional governance challenges have also arisen. As will be discussed more fully in Chapter 6, liquidity management in abnormal times may involve substantial changes in the income and risk profile of the central bank's own finances. Whether and how these financial implications are taken into consideration during policymaking is itself a governance issue of some significance. Also, as quantitative tools and targets are inherently more complex than an interest rate operating target, external communications may become more challenging, placing additional demands on senior management. Further complicating matters are practical considerations relating to personnel and systems support for sharply expanded and transformed liquidity management operations. Personnel in trading, settlements, accounting and legal areas may not be available with the requisite range of experience. Operational risks may therefore need to be accepted: identifying and evaluating the nature and scale of such risks is a core governance task.

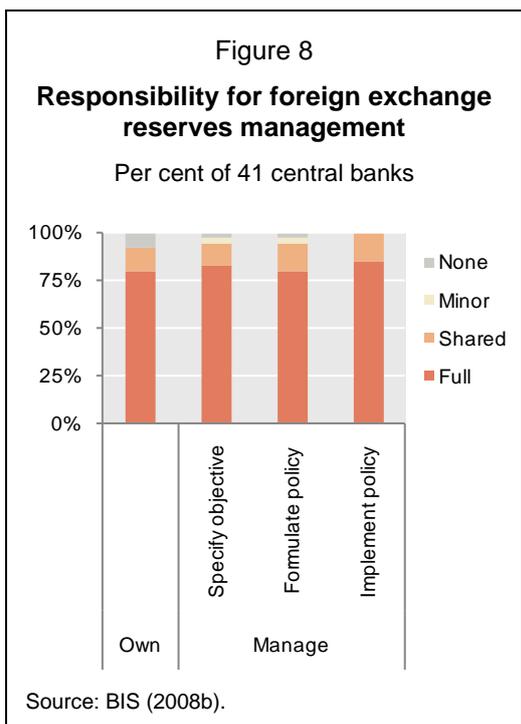
These exceptional circumstances have also drawn attention to ***lender of last resort*** operations, another dominant function of central banking. Lender of last resort operations in principle can be distinguished from liquidity management operations by their counterparty characteristics. Liquidity management operations are constructed so as to engage neutrally across a range of eligible counterparties; lender of last resort operations are designed to engage with a specific counterparty. In the former case it is overall market liquidity that is the objective; in the latter case, it is the individual institution's liquidity. In genuinely systemic cases, as has recently been experienced, the two may merge.

Figure 7 makes it clear that the responsibility for the lender of last resort function is overwhelmingly assigned to the central bank. Giving central banks a high degree of independent responsibility for the extension of last resort loans raises governance issues. Such loans may provide the liquidity needed to facilitate a withdrawal of uninsured funds, potentially leaving a government deposit insurance agency with a larger deficit to make up. Last resort loans are normally secured to protect the central bank and ultimately the taxpayer, but in extremis the quality of the collateral or the extent of cover may be allowed to fall in an effort to forestall wider ramifications. The central bank's rules on access to last resort facilities, and the terms on which emergency liquidity is provided (including with respect to collateral requirements), vary across institutional types. For example, closely regulated banks usually have preferred access relative to that of less regulated funds management companies. Choices made by the central bank on conditions for access may have implications for the structure of the financial sector and of financial regulation. And access to central bank emergency liquidity for different types of financial institutions – including those that are partially or fully owned by the government – may come under pressure in various ways.

The potential risk to the public purse in such circumstances is dealt with somewhat differently in different jurisdictions. In the United States, last resort loans of exceptional size or unusual nature typically involve extensive consultation with the fiscal authorities.

For example, the first-time extension of emergency loan facilities to institutions outside the supervisory umbrella could have implications for future risk taking by those institutions and call for a discussion with the government as to the implications for future regulation.²⁷ In the United Kingdom, institutional arrangements operating via the trilateral MoU between the Treasury, the Financial Services Authority and the Bank of England, presuppose that lender of last resort operations would involve consultation. In Japan, there is a formal structure for consultation with political and other authorities whenever unconventional lender of last resort operations (ie those involving credit risk to the Bank of Japan or involving non-standard counterparties) are contemplated. At the other end of the spectrum is the autonomy of national central banks of the ESCB in their provision – as a national task – of emergency liquidity assistance.²⁸

Similarly, with respect to *intervention in the foreign exchange market*, the place that operations occupy within governance arrangements depends very much on the degree to which conditions are normal and on the central bank’s view on whether operations should be rule-driven or instead adjusted to the subtleties of market conditions. On both scores, decision-making tends to be made at higher levels than is the case for liquidity management. For many central banks, foreign exchange market intervention is consistent with abnormal conditions by virtue of policy design. And especially for those that intervene in exceptional circumstances, it is the nature and timing of the intervention, rather than the weight of money, that is thought to matter for success or failure.²⁹



Most countries have an official reserve of foreign exchange to support their capacity to intervene in foreign exchange markets. In the great majority of cases the reserves are managed by the central bank and typically also owned by the central bank or at least held on the bank’s balance sheet (Figure 8). **Reserve management** objectives have usually been driven almost exclusively by exchange market policy considerations, with cost minimisation being a distinctly second order consideration. Nonetheless, those second order considerations, coupled with the potential for visible financial losses, has generally led to the implementation of specialised arrangements for reserves management operations. Some form of high-level decision committee (albeit often short of a fully fledged investment committee) and some form of specialised risk management structures (eg a middle office or similar) have become commonplace.

²⁷ Discussions about the regulation of investment banks following the extension of discount facilities to them in the aftermath of the Bear Stearns near-bankruptcy illustrate the point in a closely analogous situation.

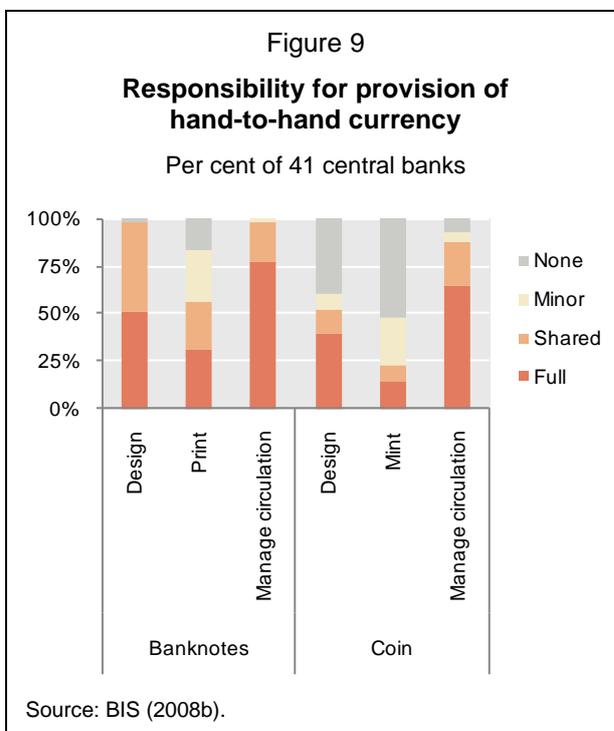
²⁸ In the ECB’s view (see ECB Opinions CON/2008/42 and 45), the statutes of individual national central banks should stipulate the same independence for the task of providing emergency liquidity assistance as is available for other ESCB-related tasks.

²⁹ See the discussion in Archer (2005).

More recently, however, with the growth of reserves in some countries to levels far in excess of what would be required for market liquidity or exchange rate stability policy, the issue of cost and rate of return has grown in relative importance.³⁰ This is true also for the commodity and wealth funds that have become part of the asset management functions at some central banks.

These are counterexamples of the general notion that central banking activities should not be guided by financial outcomes. It is not yet entirely clear how, and to what extent, governance and management structures and skill sets will need to be adjusted to allow for a higher priority being given to financial returns. Accordingly, the compatibility of these returns-driven activities with the policy driven part of reserves management or with other functions is not entirely clear. However, in some central banks (eg Norway), returns driven asset management has successfully coexisted with policy driven asset management for a number of years. At the same time, other countries have chosen to create special institutions for the management of such assets or have delegated it to external fund managers for all or part of the funds.

4.4 Provision of infrastructure for the financial system



As noted, the provision of infrastructure for the financial system is a dominating function of central banking. Some aspects of it are more prevalent than others among central banks, but the core activities of the function are common to all: the issuance of currency and the management of its circulation; the provision of banking services to commercial banks and the government; and the provision of a system for the exchange of central bank money in settlement of transactions. However, the way that these common functions are configured and undertaken can differ across central banks. The variations are discussed in this section, which also includes brief mention of infrastructure provision functions that are less prevalent.

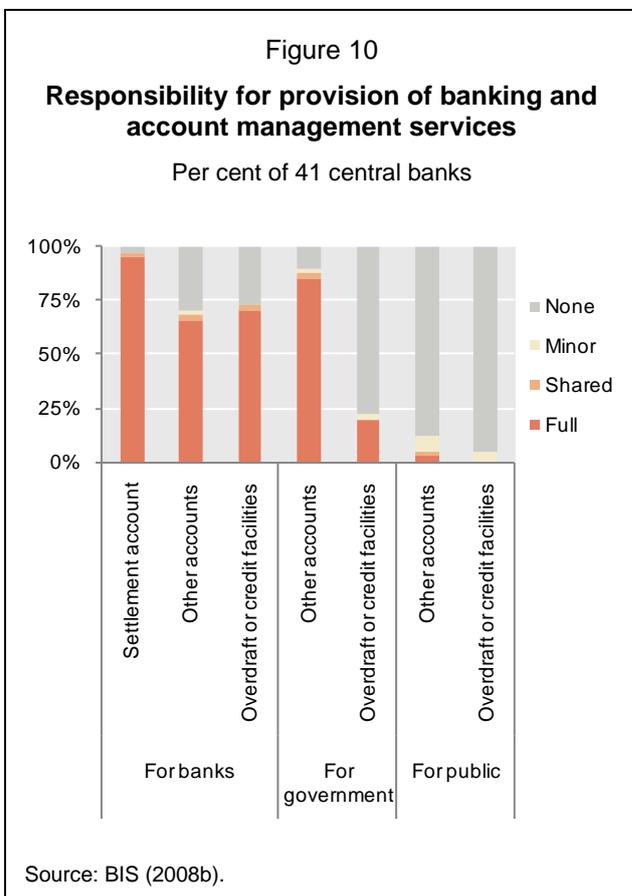
A commonly accepted means of hand-to-hand exchange has long

been a core element of the monetary infrastructure. In modern economies, the role of **banknotes and coin** – as a means of exchange and as a temporary store of purchasing power – is vastly reduced compared with former times. Especially nowadays, the central bank’s ability to influence interest rates and thus monetary conditions has essentially nothing to do with management of the currency. With the exception of a few currency board systems, banknotes are no longer convertible on demand into a fixed amount of an external standard; and in all monetary systems, they are essentially issued on demand.

³⁰ Issues surrounding the changing character of reserve management activities are discussed extensively in Borio et al (2008).

That shift does not necessarily mean, however, that responsibility for notes and coin could easily be transferred to another agency, or that the attribution of legal tender to the central bank's notes and coin could be dropped, or that the central bank's monopoly on the issuance of circulating currency can be eliminated. Those statements are points of debate in some quarters.³¹ But central bank circulating currency retains a unique and tangible connection to the standard of value used in fiat currency systems; and by virtue of being a liability of the central bank,³² it carries zero default risk. Severing the connection with the central bank would have no clear gain.

Nonetheless, many countries (eg Australia, Denmark, Finland, New Zealand and Norway) now outsource the retail management of currency circulation, retaining only wholesale functions associated with the distribution of new notes. Even more central banks now outsource the printing of notes – only about one third of central banks surveyed for Table 2 currently print notes in-house or have a note printing subsidiary (see Figure 9). Nonetheless, where banknotes are a liability of the central bank, it retains an important role as a generator of seigniorage income, as is discussed more fully in Chapter 6.



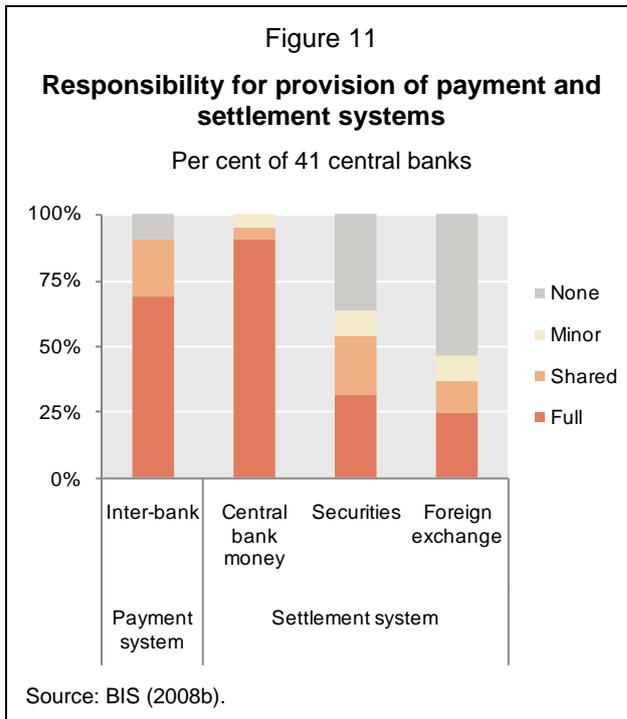
Another important element of the provision of the infrastructure underpinning economic exchange is the supply of banking services to banks and to the government (Figure 10). All central banks provide on-demand accounts for banks that can be used for settlement of their own and customer obligations via electronic settlement systems (Figure 11). It is the variation in the balances of these accounts that liquidity management seeks to control.

Payment and settlement systems provide a crucial part of the infrastructure of the modern economy, and most central banks have a high level of policy responsibility for the good functioning of this infrastructure. Figure 11 indicates that, in addition to supervising and overseeing privately owned payment systems, the average central bank is itself a provider of payment system services. That statistic is perhaps a little misleading, however. It reflects the fact that more than half of central

³¹ See White (2001) and the references therein.

³² Hong Kong SAR, where currency notes are issued by commercial banks under a currency board arrangement, has long been a special case. Scotland is another: Scottish banknotes, issued by the Bank of Scotland, are backed one for one with Bank of England banknotes. These cases use an alternative architecture to ensure that the infrastructure services provided by a commonly accepted currency are not undermined.

banks in the sample provide payment system services by themselves, but a significant minority do not.



In contrast, almost all own and operate settlement systems for the exchange of central bank money across central bank accounts. That critical function is simple in concept but usually involves tricky operational aspects in the context of real-time gross settlement systems that interface with one or more technologically distinct private sector payment systems. It also seems fairly common for central banks to provide, or be active in the provision of, settlement services for securities transactions – but not for foreign exchange transactions.

A further element of financial infrastructure is **registries** for recording the ownership of assets (primarily securities) and for recording debts. These registries need not be provided by the public

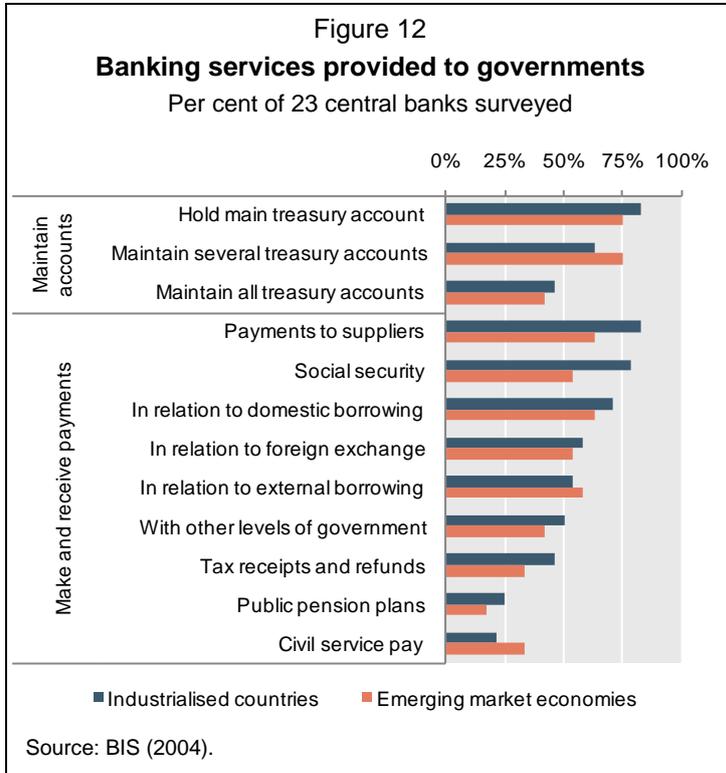
sector, although there may be public good aspects to their provision. In some settings the commercial incentives are strong enough to warrant their creation by the private sector. But just as developed economy central banks did before them, many emerging market central banks have invested in elements of financial sector infrastructure that could have been, but were not, provided by commercial suppliers. Examples include the creation of centralised credit registries accessible to lenders and sometimes to the wider public (Chile, the Czech Republic, Israel, Malaysia and Turkey); and the development of centralised trading platforms. Central banks in emerging market economies often expend resources on the research and development work that underpins new legislative initiatives relevant to the operation of capital and credit markets, work that would be done by other government agencies in countries with more mature public sectors.

4.5 Services to the government

Almost all central banks act as the government's banker. It is no longer the case that a central bank needs to conduct government banking business.³³ Most central banks do, but with widely ranging degrees of intensity. The specific deposit accounts and associated services provided to the government can vary widely without undermining the essential character of the monetary system. (The same is not necessarily true of

³³ It used to be thought that the key role that central bank liabilities play in the monetary system, and hence the monetary policy role, derives from some obligation or regulation that forces private individuals to use central bank liabilities. One such obligation would be to pay taxes in central bank liabilities, an obligation that would follow from the location of the government's tax account at the central bank and not from any special law or regulation. Nowadays it is believed that people use central bank liabilities for convenience, and that the amount they hold depends on the return on doing so rather than on an obligation.

overdraft and credit facilities provided to the government – this important issue is discussed in Chapter 3.) Some central banks provide extensive account management services to government and agencies of the state; others provide a bare minimum. Although it might be expected that more extensive account management services would be provided by central banks in countries where the commercial banking system is relatively immature, Figure 12 suggests that other factors dominate.



In some countries, the central bank provides a bare minimum of services – eg a single government account at the central bank is used as a final (daily) sweep account for a wide array of government agency accounts held with commercial banks. In such cases, transactional efficiency is often the main driver of the arrangement. The choice of service level rests substantially on the relative capacity of commercial and central banks to provide sophisticated and competitive account management services to government agencies, together with an assessment of the credit exposures incurred during the passage of government funds through private commercial bank accounts.

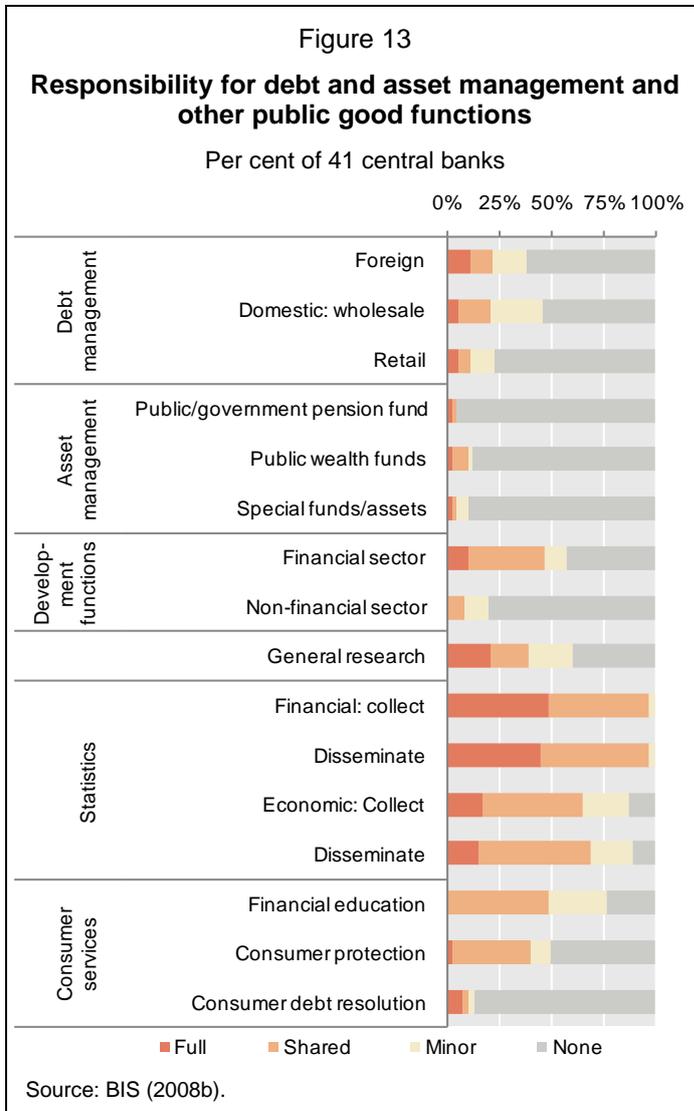
A related factor is the ability of central banks to price services or the obligation to do so competitively. The Reserve Bank of Australia is, for example, obliged to charge competitive prices for services that it provides, as were – to a greater or lesser extent – a quarter of the sample of central banks in an earlier survey (BIS (2004)). Another quarter of the central banks in the 2004 survey were prohibited from charging fees.³⁴

Variations in government accounts at the central bank give rise to variations in banking system reserves and hence monetary conditions. In most countries the transactions undertaken by central banks to offset such changes in reserves are conceived of as the open market operations used for implementing monetary policy, or more generically as liquidity management – the management of banking system liquidity. It could also be construed as **cash management services** for the government, since the central bank may be providing the government with short-term funding that the central bank itself borrows on the open market.

The choice of how to organise the cash management role depends on several factors, many of which are outside the scope of this report. If the ministry of finance is an active manager of government cash flows, can the central bank and government agree on priorities that would resolve conflicts that can emerge between them? A common point

³⁴ See Chapter 6, Section 3.3 for further details on the charging of fees for services.

of conflict arises when the central bank seeks to maintain short-term interest rates at a given level while the treasury would prefer cheaper financing of its short-term cash needs. Operational independence with respect to monetary policy implies that the central bank will act to keep interest rates at the desired level in any case. An “agency agreement” whereby the central bank and the government explicitly recognise this reality helps embed a common understanding of the point.



As the government’s bank, and being close to financial markets, central banks have often acted as the government’s **debt management** agent – a role that sometimes includes the provision of registry services. Indeed, through large parts of the 20th century, central banks had a strong policy interest in government debt management because monetary policy was conducted in part through variations in the government debt programme. Widespread adoption of the norm that the government borrows entirely on open markets, at market rates, and the consequent deepening of financial markets, has allowed separation of government funding and central bank liquidity management. Thus, more recently, many countries have set up specialised debt (and sometimes asset) management offices, either attached to the ministry of finance, or as independent agencies.³⁵ Relatively few central banks now act as the government’s debt (or asset) manager (Figure 13).

Just as with cash management, there is the potential for conflict in the execution of government debt management. Debt managers outside the central bank may exhibit a view about the future path of the exchange rate or long-term interest rates that differs from the central bank’s, and in so doing reveal an expectation of the outcome of monetary policy actions over time that also differs from the central bank’s. Even a neutral stance by the government on exchange rate and interest rate movements may not, in the central bank’s view, go far enough. For example, after a history of high

³⁵ Whether such offices are also assigned the government’s cash management function varies between countries.

inflation, the central bank might prefer that the government use its own financial positioning to overtly back a monetary policy strategy aiming at stabilisation. Such disputes can arise whether the central bank is debt manager or not, but they are perhaps more likely to be submerged when both the monetary policy and debt management functions are co-located. The choice of location of the debt management function thus depends on the government's view as to whether it is appropriate for the government to bet on monetary policy success when markets are sceptical; and on the likely success of the alternative governance arrangements in ensuring that conflicts are resolved consistent with that view.

4.6 *Other public good functions*

Most central banks have at some time been active within the financial sector promoting ***institutional and market development***, especially with respect to money and debt markets. Institutional arrangements such as the discount house system in the United Kingdom and the broker-dealer system in the United States had their origins at least in part in central bank initiatives for the improvement of the functioning of the respective markets.³⁶ To a considerable extent this role paralleled the activities of governments more generally in actively shaping institutional arrangements and resource allocation within the economy for developmental objectives.

Depth and breadth in money and debt markets is useful for the implementation of monetary policy, and central bank involvement in promoting the development of these markets can be justified along such lines (Goldstein and Turner (2004)). However, the motivation for the intervention of central banks to guide and promote specific developments often went beyond an investment in the arrangements that would help to increase the effectiveness of their core functions. Broader developmental and national interest ideas were involved as well. That was especially evident in the Bank of England's former role as the champion of the London financial markets. It is now evident in the roles currently played by the Hong Kong Monetary Authority (HKMA) and the Monetary Authority of Singapore.

Attitudes towards such functions have changed in some quarters but by no means everywhere. The Bank of England has withdrawn from the active support of markets to focus on its two core purposes of monetary and financial stability. Nonetheless, a large proportion of central banks are of the view that system design in the interests of market development is a legitimate and sensible function. In many cases that role can be inferred from legal mandates, as for example in the case of the Russian central bank, among whose basic objectives are "the development and strengthening of the banking system of the Russian Federation". Similarly, the Czech National Bank is legally charged with seeing to the "sound operation and purposeful development of the banking system". The Governing Council of the ECB is clear on the point that the Eurosystem's mission statement involves a commitment "to safeguard financial stability and promote European financial integration."³⁷

³⁶ There are numerous other examples. The Central Bank of Ireland established the Dublin Interbank Market Committee to bring together the main market participants to discuss market practices and facilitate its development. The Bank of Finland initiated negotiations among banks on market practices that led to agreement on a code of conduct and the establishment of a committee to develop market practices. For further details see BIS (1996).

³⁷ See the Eurosystem Mission Statement at www.ecb.int/ecb/html/mission.en.html. In addition, according to the EU Treaty, "The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system" (Article 105, paragraph 5).

The Monetary Authority of Singapore is particularly active in the design and advancement of the country's financial system and has established a division dedicated to that task. Indeed, the law establishing the Singapore central bank requires it "to foster a sound and progressive financial services sector", a sector encompassing much more than the banking, money and debt markets. The Singapore effort tends to be facilitative, seeking ways to remove impediments to market developments guided by market forces. Other examples in the Asian region are notable. The central banks of both Malaysia and the Philippines have recently drawn up plans for the development of their respective financial systems that involve considerable reengineering of current arrangements. In those countries, the development function tends to be both facilitative (eg ensuring that the law provides clarity on debt contracts) and more directive (eg using licensing and other arrangements to favour certain structures and institutional forms over others).

Different perspectives on the development function reflect a number of considerations. Views on the appropriate role of government play a part in determining whether the central bank is an active agent of financial system development. A frequently cited reason for central banks in emerging markets to play a development role is the availability of skilled personnel within a well-organised public agency – such personnel are a scarce resource in many such countries. In addition, questions may arise regarding the degree of development of national financial markets, including whether a critical mass of privately motivated intermediation has been achieved; and questions of public good provision. In the latter regard, many central banks in Asia have been active in generating government debt issuance, even in the absence of a need for deficit financing, to provide financial markets with a ready source of information on interest rates for securities free of credit risk (McCauley (2006)).

If financial system development is an active function of the central bank, certain issues of governance arise. These include the desirability of coordinating with other government agencies responsible for economic infrastructure, for capital and financial market regulations and for taxation. In all three of those areas, the public policy approach needs to be integrated across the various economic sectors to avoid regulatory and tax arbitrage and distortions of economic incentives. Such coordination activities may – but not necessarily – cut across other imperatives, such as institutional independence and the development of a supportive constituency for the central bank's monetary policy responsibilities. Another governance issue concerns the potential for "reputational contagion", whereby problems in one area weaken the central bank's ability to influence key agents' attitudes in other areas. These governance issues are by no means overwhelming – as their successful management in many instances attests – but they do demand attention.

Economic development functions beyond the financial sector comprise quasi-fiscal activities generally unrelated to the purpose of central banking, notwithstanding that central banking instruments (eg extension of central bank credit) are used. Included in this category are lending subsidies, preferential discounting, differentiated credit targets and ceilings, loan guarantees and extension of sub-prime loans, rescue operations not needed for system stability, equity stakes in private or public commercial operations unrelated to the central bank's purpose, multiple exchange rates, selective import deposit requirements, and exchange rate insurance or guarantees. These are all intended to boost favoured activities using instruments that substitute for taxes, transfers and subsidies.

Quasi-fiscal activities also include a diffuse set of policy interventions somewhat related to the central bank's policy goals but which involve exceptional risks, or costs, to the taxpayer. Such policy interventions, which may be promoted or endorsed by the government, include subsidised lending to particular sectors, exchange rate

interventions in pursuit of competitive advantage, bank rescues, unfunded deposit insurance payouts and large-scale purchases of very low yielding assets in the face of deflationary pressures.³⁸ Policy actions that have implications for the public purse may also be undertaken by the central bank at its own initiative. If that is done solely on the basis of a sense of public duty, it can lead to very difficult questions when decision-makers are held to account later on. Consider the rescue of a bank whose failure the central bank believes would pose an undesirable level of systemic risk. The motivation for the rescue may be sound, but if the action is outside the generally accepted scope of emergency liquidity support to a probably solvent bank, it may be considered unacceptable. In short, regardless of the validity of the economic analysis underlying such actions, the legal and contractual basis for them is an important governance issue. By virtue of being off-budget, operations with fiscal implications undertaken by the central bank also tend to hide the true fiscal position.³⁹

From time to time, such activities can become very important. The Central Bank of Chile's capital was wiped out in the 1990s by a combination of costs associated with exchange rate interventions and bank rescues. A negative capital position worth several percentage points of GDP has been carried since.⁴⁰

In each of these examples, and more generally, quasi-fiscal operations could have been put onto a more explicit fiscal footing, with the government directly carrying the costs of the activity. As discussed in Chapter 6, Section 3.3, which addresses safeguards for central banks' policy and financial independence, some central banks must charge market related prices and fees when providing services, while others are prohibited from undertaking certain types of activities in favour of the government. However, many of these quasi-fiscal activities would bypass such safeguards. The successful management of the issues may depend on a general preference for making transparent the nature of government activities.

About 50% of central banks (60% in emerging market economies) play some role in **consumer protection**.⁴¹ Given that most retail financial transactions are covered by some type of consumer protection laws, many central banks have chosen to eschew direct involvement in the design and application of such laws. For example, the Statute of the ESCB and of the ECB does not list consumer protection as one of the Eurosystem's responsibilities, and the majority of European national central banks have no consumer protection functions. Such protection is generally ensured by other bodies of law or entities. However, some central banks consider that consumer behaviour is sufficiently important for the functioning and stability of the financial system to warrant some involvement. The Central Bank of Malaysia, for one, has put in place a comprehensive consumer protection framework that covers financial education, fair treatment of consumers, avenues for redress, distress management as well as advisory services. In the United States, the Congress lodged with the central bank the

³⁸ See Hawkins (2003).

³⁹ See Mihaljek (2007).

⁴⁰ A number of other central banks, including the Central Bank of Brazil, the Czech National Bank, Magyar Nemzeti Bank, the Bank of Korea and the Bank of Thailand, also recorded substantial losses related to the carrying costs of foreign exchange reserves or changes in their domestic currency values (Dalton and Dziobek (2005) and Barabas et al (1998)). Several central banks have incurred losses (sometimes in addition to foreign exchange related losses) in rebuilding their financial sectors, such as the Reserve Bank of India, Bank Indonesia, the Bank of Korea, the Central Bank of Malaysia, the Bank of Mexico, the Bank of Thailand and the Central Bank of Turkey.

⁴¹ BIS (2008b).

responsibility for implementing most of the federal laws regarding consumer credit protection. The regulations written by the Federal Reserve Board to implement those laws cover not only banks but also certain other financial businesses, including finance companies, mortgage brokers, retailers, and automobile dealers. For example, in 1968, the Congress passed the Truth in Lending Act to ensure that consumers have adequate information about credit. The Federal Reserve Board implements that law through its Regulation Z, which requires banks and other creditors to provide detailed information to consumers about the terms and cost of consumer credit. The Federal Reserve Board also maintains a consumer information website with educational material related to consumer credit protection.

General economic advice. About one half of central banks in industrialised countries, and a somewhat higher proportion in emerging market countries, report a responsibility to advise the government on economic policy matters beyond those inherent in the central bank's own functions.⁴² In some cases (eg Israel), the obligation is formal in that the central bank governor has an ex officio role as a government economic adviser. The compatibility of this advisory role with other central banking functions depends in part on the time commitment involved and the nature of any inherent conflicts (see next section).

5. Good or bad bedfellows?

The foregoing discussion concentrated on particular functions and the corresponding objectives rather than on interactions between functions. The short history of central banking at the beginning of this chapter contains numerous examples of rearrangements that consolidate several functions in the central bank. Whether functions fit well together within a single institution will depend on three important considerations:

- whether the objectives being pursued are compatible (or at least whether any incompatibilities are predictable and controllable);
- whether a single governance structure is suitable for the efficient discharge of all functions; and
- whether the skill sets and technology required for each function are similar.

These factors are discussed in turn in the context of the most common issues confronting central banks.

5.1 How many is too many?

Aside from the question of compatibility of specific functions, there may be in practice some optimum number of functions that should be assigned to an organisation. On the one hand, the larger the number of functions, the more chance for conflict between objectives and for competition for senior management attention. On the other hand, the narrower the range of functions, the fewer the complementarities and the smaller the range of people and skills and consequent opportunities for cross fertilisation.

To illustrate the considerations favouring a narrow set of functions, some commentators on the first 10 years' operation of the Monetary Policy Committee (MPC) in the United Kingdom suggest that its success was in some measure attributable to the fact that it had a single function, and the singularity allowed considerable clarity on

⁴² BIS (2008b).

the objective. And in a 1995 BIS survey (BIS (1995)) of the driving forces behind change in central bank activities, a number of respondents noted that a growing consensus on the need to ensure price stability had been a significant element in spurring changes to organisational structures. The Reserve Bank of Australia, the Austrian National Bank, the Swiss National Bank and the Bank of England all specifically cited a sharper focus on core functions as a prime reason for institutional reforms. In a more recent BIS survey (BIS (2000)) the clarification of roles and greater accountability continued to be prominent driving forces for a reduction in the number of functions, along with progress in computer technology and the need for better internal communications.

Diversity is, nonetheless, often beneficial. Different perspectives and different experiences can add value to an endeavour that is significantly dependent on the application of good judgment.

5.2 Public policy and money making functions

Nowadays, it is rare for central banks to compete with private financial institutions. Government-owned commercial enterprises have competitive advantages relating to lower target rates of return and lower cost of capital, advantages that might distort pricing and investment in markets. In addition, where the central bank holds regulatory powers, it would normally be considered inappropriate to compete with those being regulated.

However, central bank motivation can matter. In an interesting exception to the no-competition norm, the National Bank of Poland in 1997 briefly entered the market for term deposits to compete head to head with banks, but the motivation was to achieve a change in term interest rates rather than to extract profits from intermediation.⁴³

More generally, it is widely accepted that there are conflicts between public policy objectives and the financial bottom line of the central bank. Maintaining price stability can reduce seigniorage income. Buying fixed income assets during deflationary episodes when interest rates are very low may mean capital losses when price stability is restored. In fundamental respects, therefore, the correlation between policy and commercial interests is negative, and the use of financial outcomes to guide policy would be wrong.

At the same time, an exchange rate defence might lose money as might an attempted bank rescue. Acquisition of overly large foreign exchange reserves may be costly when sovereign credit spreads are adverse and the local currency appreciates in trend terms (eg in the Czech Republic and other transition economies). For any given level of foreign exchange reserves, a more risk-averse portfolio structure than is needed to satisfy the objectives of reserves management would add to opportunity costs already being incurred. In these cases, the correlation between policy and commercial interest would be positive, and the use of financial outcomes to constrain policy actions could be valuable.

To some extent, the issue of conflicts between policy and financial outcomes could be avoided by the careful choice of the functions assigned to the central bank. Choices on this dimension might explain decisions to locate foreign exchange reserves directly on the central government's balance sheet (eg in Canada and the United Kingdom) and to place in different institutions the management of so-called wealth funds and the

⁴³ Pruski and Zochowski (2006).

management of foreign exchange reserves held for intervention purposes (as with the Government of Singapore Investment Corporation and the Abu Dhabi Investment Authority).

But not all such conflicts can be avoided by institutional separation, and in some cases the choice to accept and manage potential conflicts may make sense for wider reasons. Central bank intervention in foreign exchange markets, the management of foreign exchange reserves, and specific bank lender of last resort actions are standard functions of central banking. All involve financial risk, a risk that ultimately impacts the taxpayers and involves a fiduciary duty to them.

Management of such potential conflicts within the central bank takes several forms. Clarity of objectives, with a specification that clearly ranks policy and financial outcomes, is an important starting point. Most central banks' statutes contain the strong implication that financial outcomes are to be ranked lower than policy outcomes, though only in Russia does one find an express statement that profitability is not an objective of the central bank. Other options include the creation of clearly demarcated structures within the central bank for the separate management and reporting of potentially conflicting business (as with the Pension Fund managed by the Central Bank of Norway, and the new China Investment Corporation).⁴⁴ A third approach involves coordination with the government or the ministry of finance on a predetermined (for example, by way of an MoU) or ad hoc basis as the need arises. Thus, in several countries, foreign exchange market intervention is undertaken in consultation with the fiscal authorities (eg China, Iceland, Korea and Mexico); important changes in the risk profile of foreign exchange reserves owned and managed by the central bank are discussed in advance with the minister of finance; and lender of last resort actions are subject to ministerial consultation or determination (for example, in Sweden, Switzerland and the United Kingdom).

5.3 Monetary policy and banking supervision

As central banks took on a structured bank supervision role, especially during the second half of the 20th century – with increasing international coordination via the Basel Accords and less formal exchanges of ideas and approaches – a substantial debate on the appropriate level of involvement of the central bank also emerged. At one end of the spectrum of options is central bank responsibility for policy development and advice as well as supervisory operations. At the other end is an advisory role on policy, and potentially a contributory role with respect to operations and day-to-day activities. Amongst the main elements of the debate have been the potential for conflicts of interest between the functions; competition between functions for the attention of senior management; reputational contagion that might affect monetary policy credibility should a supervised bank fail;⁴⁵ concerns to provide an offset to moral hazard associated with anticipated institution-specific lender of last resort operations by allowing the lender (the central bank) to regulate against additional risk-taking; informational advantages for monetary policy decision-making;⁴⁶ the question of the

⁴⁴ The China Investment Corporation was created in 2007 with the objective of managing part of the People's Republic of China's foreign exchange reserves.

⁴⁵ Notwithstanding the point that bank supervision is never explicitly accompanied by a guarantee against failure.

⁴⁶ For elaboration, see the arguments and empirical analysis of Peek et al (1999).

neutrality of the regulatory environment for different forms of financial intermediation;⁴⁷ and finally an issue of concentration of power.⁴⁸

The debate has produced widespread agreement that appropriate placement is based on a weighing of the relevant trade-offs and is thus situation dependent. In a number of countries, bank supervision has been assigned to an integrated supervision agency other than the central bank. That was the case, for example, in the Nordic countries (between 1986 and 1991), Korea and the United Kingdom (1997), Australia and Japan (1998), Austria (2002), Belgium (2004) and Switzerland (2009). The move has not been all in one direction, however. In 2003 Ireland's central bank became responsible for the supervision of non-banks as well as banks; similar changes have taken place in the Netherlands (2005–07) and are now being implemented in New Zealand. Moreover, experience during the recent financial crisis has increased consciousness of the need for supervisory information to support central bank decision-making on the extension of emergency liquidity loans and the need for financial crisis managers to have access to liquidity creation capabilities. Those needs may be better served by locating supervision as well as emergency liquidity provision in the central bank. Such considerations, together with the value of consistent prudential regulation and supervision within the euro zone, have recently prompted suggestions that the ECB/Eurosystem be assigned the responsibility for macroprudential supervision and for banking supervision of large euro area cross-border banking groups.

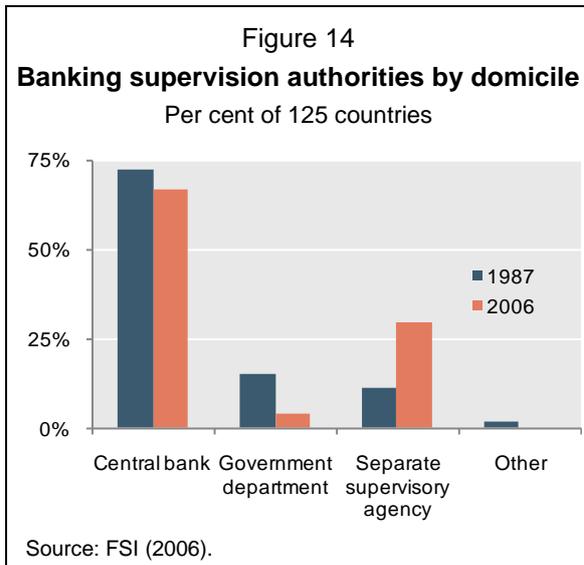
While supervisory responsibility has been shifted out of the central bank and into integrated supervisors more often than the other way around, the FSI survey mentioned earlier (FSI (2006)) shows that central banks are still the main supervisors in most countries (Figure 14). An earlier survey (Healey (2001)) suggested that amongst the industrialised countries, small countries tended to place the bank supervision function in the central bank more often than larger countries. A similar tendency emerged for the group of transition and emerging economies surveyed. Whether these size relationships – which suggest that an important factor might be a relative scarcity of skilled resources – carry over into the larger group surveyed by the FSI is unknown.

Given that central banks remain the dominant supervisor – and where they are not dominant they usually continue to play an important advisory role (with respect to both policy and operations) – the governance implications of the issues listed in the first paragraph of this section are clearly important for the central banking community. The essential challenge is to devise governance arrangements that maximise the informational advantages while minimising the potential for problems. Although they are no doubt important in protecting the confidentiality of information about individual institutions and their customers, “Chinese walls” are accordingly not the full answer. Strong Chinese walls would reduce any information advantage while being of doubtful

⁴⁷ The issue of neutrality bears more directly on the question of whether regulation and supervision of different forms of financial activity should be integrated than on the question of who has responsibility for the task. The two questions are not separable, however. The FSI survey mentioned above confirms earlier findings (eg Masciandaro (2004a, b)) that unified supervision is more likely to be found outside central banks than inside. This may relate to, inter alia, concerns not to extend to a wider set of institutions any implicit guarantee that is (rightly or wrongly) presumed to be enjoyed by supervised banks.

⁴⁸ Goodhart (2000), among others, argues that the delegation to one institution of both the monetary policy decisions and the independent supervision of banks would risk concentrating too much power in the hands of unelected and imperfectly accountable officials.

benefit in relation to problems such as potential reputational contagion (since Chinese walls are often presumed to be highly permeable, even if the opposite is the case).



Potential conflicts between monetary policy and supervisory objectives have generally been thought to be an issue more in theory than in practice. However, as the discussion in Section 4.3 indicated, the potential for conflict has been made apparent by the recent crisis – during its onset and potentially also in the prospective exit from the extraordinary central bank actions now in place.

In the lead-up to the current financial crisis, significant inflation risks were evident in a number of countries, alongside concerns about the fragility of the financial system. Public debate about the appropriate direction of interest rate

changes illustrated the existence of a policy trade-off. Likewise, as substantial volumes of base money have been injected in response to concerns about financial stability (as well as, increasingly, concerns about real economic activity), issues of future inflation risk during a recovery phase have become more topical. More generally, as the severity of the current financial crisis has become clearer, a renewed debate emerged concerning the potential for monetary policy to lean against the wind of asset price developments in the interest of financial stability but potentially at the expense of normal (near-term) inflation targets.

At the same time, in a number of countries the unfolding financial crisis revealed weaknesses in the understanding at the central bank and at other regulatory authorities regarding the state of both individual financial institutions and systemic interconnections. As “micro” and “macro” components of financial system risk usefully inform each other, heightened attention is now being given to ways of ensuring effective cross-fertilisation of different perspectives. This is discussed further in the next section, but it has clear implications for the assignment of supervisory functions among different public sector agencies and for coordination mechanisms.

An additional governance issue relates to the appropriate degree of independence in the bank supervision sphere. As noted earlier (see the discussion pertaining to Figure 6), responsibility for supervision is more often shared with other agencies than is the case for monetary policy. Yet it is not always clear why the appropriate degree of operational independence should differ markedly between the two functions. The prime motivation for operational independence with respect to monetary policy relates to the political sensitivity of interest rate adjustments. Similar political problems can occur in the supervision area – the decision to place a bank under statutory management, for example, could be highly sensitive politically. Basel Core Principles on Banking Supervision accordingly contain the presumption that operational independence is a key feature of effective supervision.⁴⁹

⁴⁹ The survey by Healey (2001) cited earlier contains results that suggest that increased supervisory responsibilities are empirically associated with less independence, at least on the measures of independence used. This result is, however, due to the tendency for emerging market and developing

Finally, central banks also need to be aware of, and to manage, the reputational risks that can arise when they have regulatory and supervisory responsibilities. The current financial crisis illustrates the nature of the risks that might be involved. Even when the central bank is not responsible for supervision, it is often perceived as being responsible for financial stability. As a result, its reputation may have become tarnished by events for which it was not responsible.

In short, the question of the appropriate allocation of responsibilities for monetary policy and supervisory functions, and the appropriate governance arrangements for each – and for both together when they are co-located – remains topical across several national contexts.

5.4 Stability – monetary, real and financial

The issues relating to a (temporary) trade-off between monetary policy actions directed towards price stability and those directed at economic growth have been widely discussed elsewhere and need not be explained in detail here. Important to note here, however, is that dealing with the trade-off is not a matter of choice – the trade-off is inherent in the monetary policy function, which is nowadays the sine qua non of central banking. What is a matter of choice is how central banks deal with the trade-off. To the extent that decisions on that score can be affected by the structure of the central banking institution, it is a matter of the design of governance arrangements. We return to this subject in the following two chapters (dealing with legal arrangements and the design of decision-making).

Less discussed and less understood are the interrelationships between monetary policy actions targeted at macroeconomic stability and the implications for financial stability of those actions. The BIS, among others, has recently postulated that monetary policy directed at ensuring price stability over conventional time horizons (ie one or two years) might not always be consistent with financial stability over a longer time horizon. Indeed, such policy action might on occasion create, or exacerbate, financial imbalances that ultimately lead to sharp and destabilising corrections. In an awkward twist to the story, price stability itself might lead to risk-taking behaviour that in turn leads to bubbles and bursts.⁵⁰

If there is indeed from time to time such a trade-off between price stability and financial stability, consideration needs to be given to the institutional arrangements for both monetary policy and financial stability policy. Should responsibility for both be co-located within the one institution? The earlier tabulation of current functions makes it clear that such co-location is the norm, even if sub-elements of the broader financial stability function (eg bank regulation, bank supervision, oversight and regulation of non-bank financial institutions, oversight and regulation of capital and debt markets) are located elsewhere. Given that co-location is the norm, and assuming that there is a trade-off to be managed, considerations of institutional design point to the specification of objectives – as was the case for management of the inescapable (if temporary) trade-off between monetary policy stability and the stability of the real economy. The discussion in Section 3.2 suggested that specifying the objectives relating to financial stability is no easy task.

country central banks to have relatively more regulatory functions and simultaneously relatively less independence than their industrial country counterparts. The direction of causality is unclear.

⁵⁰ For elaboration, see recent BIS Annual Reports, Borio and Lowe (2002), Borio and Shim (2007) and White (2006).

5.5 *Financial stability and financial guardianship*

It is not completely clear what toolkit the central bank should use to discharge an obligation to pursue financial stability. But one tool that clearly belongs in the kit is lender of last resort (LOLR). LOLR at a systemwide level involves ensuring the continued adequacy of liquidity even as the demand for liquidity changes markedly in response to shocks to risk preferences. If such shocks translated into an inability to clear financial markets, existing instability could be drastically compounded. At the level of the institution, too, it has long been argued that LOLR can play a critical role in preventing information asymmetries from turning erroneous fears of institutional failure into actual failure, with the potential for contagion to generate systemwide instability.⁵¹

Distinguishing between solvency and liquidity problems in the heat of a crisis is a challenging task – sufficiently challenging that in practical terms the distinction might be rendered meaningless. This information problem has major operational and governance implications. Given the information problem, the risk arises that the central bank's LOLR extension will not be repaid in full. LOLR losses are ultimately borne by the taxpayer. The risk changes in character but does not disappear when the central bank takes collateral. The subsequent failure due to an undetected solvency problem would leave the central bank protected – assuming the market value of the collateral was sufficient and assuming that the central bank was able to sell the collateral without compromising its policy objectives – but leave fewer assets available to pay out unsecured creditors. Rather than all taxpayers carrying the cost, the costs would be significantly more concentrated and potentially more politically sensitive. Either way, individual institution LOLR involves the potential for political fallout and therefore a strong government interest in being involved in decision-making.

Some central banks have an interest in the government, or other government agencies, participating in the decision on individual institution LOLR. This is in order to spread or transfer the risk associated with the action. In several countries (eg Canada, Switzerland and the United Kingdom), the central bank relies at least in part on solvency assessments undertaken by outside supervisors. In Norway, Sweden and the United Kingdom, government guarantees may be sought before LOLR loans are extended to individual institutions, especially where the risks are judged to be exceptionally high. Others are of the view that the risk of a politicisation of LOLR decision-making outweighs risks to the central bank; hence independence in respect of such decision-making is to be preferred. Cooperation in assessing the issues, prior to decision-making, may nonetheless be useful.

In the United Kingdom and the United States, substantial increases in emergency liquidity support have recently sharply changed the risk profile of the central banks' balance sheets. Both central banks have engaged with their treasury counterparts in the course of expanding their emergency liquidity support in unusual directions and to exceptional levels. Such engagement has sometimes been both structured and formal, but often it has been less so. As it happens, the central banks of the Eurosystem have not extended emergency liquidity support to the extent and in a manner that greatly changes their risk profiles.

⁵¹ The difficulties of accurate problem identification are clearly much greater in the individual institution case than in the systemwide case. So too are the moral hazard consequences of being too quick to provide liquidity support – withdrawal of excess liquidity in the systemwide case is easier than withdrawal of the signal that the central bank is willing to provide emergency liquidity to an individual institution. See Capie and Wood (2002) and Goodhart and Illing (2002).

Chapter 3: Political framework and legal status⁵²

The Main Issues

Choices regarding the political framework and legal status of central banks present the following main issues:

- What powers should the central bank be given to make policy and discharge other functions, and how independent of the government should the bank be when using those powers?
- What ownership structure and legal form best support the preferred delegation of powers and responsibilities to the central bank?
- When placing the objectives of the central bank in law to protect them from short-term political considerations, how detailed and specific should the objectives be, and how deeply should they be embedded (how difficult to change)?
- What other devices are available to protect central bank officials from pressures while still providing for appropriate accountability and the right of governments to govern?
- How can employment contracts of key officers be constructed so that dismissal and threats of non-renewal cannot be used to exert improper influence?

3

1. Introduction

Legal mechanisms establish the central bank and endow it with rights and responsibilities – its mandate. Although economic considerations are involved, the choice of a precise mandate for the central bank is fundamentally a political decision. Thus, international variations in the legal framework for central banks reflect differences in social preferences and different political environments.

More specifically, the central bank's legal framework expresses society's preferences for how independent of government the central bank should be in discharging its assigned responsibilities. The choice of framework will also affect the flexibility with which the central bank's mandate can be adapted as circumstances change. This chapter addresses these issues as well as the choices regarding the form and ownership of the central bank; the specification, limitation and protection of its powers; the legal procedures for appointing and dismissing officials; and protections and immunities for the bank and its officers.

The chapter will offer examples of particular central banks when appropriate and will note important instances in which actual practice differs from what is specified by law.

2. Creating a legal framework for autonomy

Despite the differences in legal foundations across countries, there are well known advantages to providing the central bank with some - perhaps considerable - autonomy or independence from the state. The legal assignment of authority from the government (executive or legislature or both) insulates monetary policy and reduces the possibility

⁵² This chapter was prepared mainly by Ellen Meade.

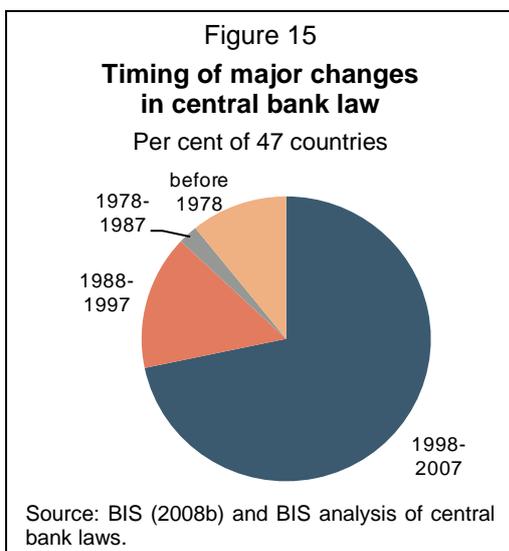
that the government could use it for political gain. Without legal and, ultimately, actual autonomy, it is possible that a change in the response of the current government due to short-term political pressures or a change in the political party in power could erode the capacity of the central bank to achieve its basic objectives. At the same time, the delegation of authority centralises professional and technical expertise for monetary and financial matters in the central bank, raising the likelihood of appropriate policy decisions.

3

The degree of a central bank's autonomy is generally determined by four elements of its legal underpinnings:

1. **Mandate:** a mandate that is precise, clear and not contradictory is a hallmark of central bank autonomy (Chapter 2 provided a detailed discussion of objective specification).
2. **Relationship to the state:** a central bank's autonomy is high when the activities it is required to perform for the government are clearly specified and exclude the obligatory financing of government activities.
3. **Power to make policy decisions:** autonomy is also high when the state has no say in, and cannot overturn, decisions made by the central bank.
4. **Appointment process and term limits for its officers:** it is desirable to involve the state in the appointments process, but once appointed, officials can be insulated from political influence through various means.

This chapter provides details on the range of law and practices across countries, particularly as it relates to the latter three elements of central bank autonomy.



Since the late 1990s, major changes to central bank laws have been implemented in a large number of industrialised and emerging market economies (Figure 15).⁵³ For example, the EU Treaty provided for the establishment of monetary union in 1999. The Treaty required changes in the national central bank laws of European Union countries to prepare for the required transfer of authority for monetary policy to the ESCB and the ECB.⁵⁴ In general, the changes in law over the past decade have resulted in greater clarity about the position of the central bank within government and with that has come a greater degree of *de jure* autonomy.

⁵³ Unless otherwise noted, the figures and tables in this chapter are based upon information for 47 central banks, including 11 national central banks of the Eurosystem.

⁵⁴ The Governing Council of the ECB formulates monetary policy and national central banks carry out the monetary operations. The relevant portions of the Treaty are Articles 108 and 109. The latter requires amendment of national laws in order to bring about compatibility with the EU pillar of the Treaty and the Statute of the ESCB and of the ECB.

3. Legal frameworks

Most central banks exist predominantly within their own country's legal framework. Legal frameworks differ in their form and type. This affects arrangements for central banks, although more so in form than in practice. Indeed, multijurisdictional central banks exist, in some cases crossing different types of legal framework – the ECB being the most prominent example.

National legal systems fall broadly into three types: those rooted in a civil law tradition, those rooted in a common law tradition and those with a mixed tradition. Civil law dates from ancient Rome;⁵⁵ it is the predominant legal tradition used in most of Africa, Asia, Europe and Latin America. Common law derives from English law that was “common” to the realm and is the legal tradition found in the United Kingdom, the United States and in countries that were formerly part of the British Empire.

3

Table 3
Constitutional provisions and legal tradition

Per cent of 46 countries

	Number of countries	Number with civil law tradition	Number with common law tradition	Number with mixed legal tradition
With constitutional provisions relating to the central bank law	35	30	0	4
<i>and covered by an international treaty</i>	17	17	0	0
No constitutional provisions	65	26	13	26
<i>but covered by an international treaty</i>	22	17	4	0
Total	100	57	13	30
<i>of which covered by an international treaty</i>	39	35	4	0

Note: The countries covered are those whose central banks are in the Central Bank Governance Network.

Source: BIS (2008b).

Civil law relies much more than common law on written codes and constitutions. This might suggest that countries with a civil law tradition are more likely to rely upon constitutional provisions for establishing the central bank. Table 3 provides a breakdown of countries that have provisions pertaining to the central bank in their constitutions and those that do not, based on a sample of 46 countries.⁵⁶ Of the

⁵⁵ For additional details, see La Porta et al (1998).

⁵⁶ The constitution of a country may contain various sorts of provisions relating to the central bank, including the following: granting the central bank its right to exist, setting its structure, noting its independence, establishing its purpose or providing the objective for monetary policy, prohibiting credit

26 countries in the sample that have a legal system rooted in civil law, about one half have provisions relating to the central bank in their constitutions. None of the countries with a common law tradition have constitutional provisions relating to the central bank.

Despite the importance of written codes in countries ruled by civil law, not all such countries have codified every attribute of the central bank into law. Brazil is a good example of this point: although the Central Bank of Brazil is given powers in the Brazilian constitution, it does not possess legal autonomy from the Government. However, the Presidential Decree that established inflation targeting in 1999 gave the central bank wide de facto autonomy.

In some cases, a constitution may limit the degree of legal autonomy that the central bank can possess, with respect to the discharge of certain functions. This possibility had to be considered when the Bank of Japan law was amended in 1997. The Constitution of Japan (Article 65) reserves sovereign executive power to the Cabinet, with the question being the extent to which decision-making on monetary policy was covered by that provision.⁵⁷

Several central banks have legal responsibility for policy in more than one country; national authority is ceded to them for this purpose. While the multistate ESCB/ECB system is the most recently created and perhaps best-known example, three other multistate central banks have been in existence for much longer. The Central Bank of West African States and the Bank of Central African States have existed since 1959 and are responsible for the two monetary unions in Africa that are known collectively as the CFA franc zone.⁵⁸ A monetary union among countries in the eastern Caribbean was founded in 1950 and is operated by the East Caribbean Central Bank.⁵⁹ Monetary unions are currently being considered by countries in southern Africa, western Africa and the Middle East.⁶⁰

A multistate central bank may possess some, but not necessarily all, of a central bank's powers. Some powers, such as the responsibility for banking supervision, may be retained domestically by the constituent national central banks – which is the case in the Eurosystem, where the authority for monetary policy is held by the Eurosystem as a whole, including the supranational ECB. (In contrast, the central bank of the East Caribbean Currency Union regulates banks on behalf of and in collaboration with the governments of member states.) Thus, the laws that govern the central bank may be

to the government, and laying out procedures for the appointment or dismissal of officials. See Table 4 and the associated discussion for further details.

⁵⁷ For further discussion, see Oritani (forthcoming).

⁵⁸ The CFA franc zone was established in 1945. The West African Economic and Monetary Union (WAEMU) currently unites eight countries in western Africa (Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo), while the Central African Economic and Monetary Community currently unites six countries in central Africa (Cameroon, Central African Republic, Chad, Republic of Congo, Gabon and Equatorial Guinea). Each union (and its respective central bank) operates separately but identically.

⁵⁹ The East Caribbean Currency Union currently consists of Antigua and Barbuda; Dominica; Grenada; St. Kitts and Nevis; St. Lucia; St. Vincent and The Grenadines; and two British territories (Anguilla and Montserrat).

⁶⁰ The Southern African Development Community (SADC) consists of Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. The Economic Community of West African States (ECOWAS) combines the WAEMU countries with Cape Verde, The Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone; the Gulf Cooperation Council (GCC) comprises Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

both international and domestic, where the former cedes domestic authority for monetary policy to the supranational central bank, and the latter specifies the tasks to be carried out by the national central bank.

Central banks in a single country may be established as a single institution or as multiple institutions that are joined together in a federated system. Here, the issue of multiple jurisdictions does not arise, although careful attention is often given to the balance between the powers of the federation and those of the constituent parts. The Federal Reserve System, for example, is composed of the Board of Governors in Washington, DC, and 12 Federal Reserve Banks that are located throughout the United States. The Federal Reserve Act gives a legal form and responsibilities to the Board of Governors that differ from those it gives to the twelve Reserve Banks. Other federal countries – Brazil, Canada, Germany and India, for example – also have regional offices of the central bank that are established in the law (although the regional offices in some of those countries cannot be compared to the US Federal Reserve Banks because they do not have a separate legal personality and responsibilities).

4. Embedding and the management of legislative change

The choice of which body of law or administrative procedure is used to delegate national authority to the central bank affects the permanence of that delegation. A government instruction or decree can be readily changed; a constitutional provision cannot. Central bank authority is more readily defended against improper influence if it is provided in a law whose amendment requires a super majority – for example, the constitution or some international treaties may require a two thirds majority or even unanimity. The relatively high hurdle for proposed changes to such bodies of law weakens threats of withdrawal of authority or modification of the objective. The same goes for threats to change the specification of objectives.

If flexibility is valuable, however, it may not be sensible to deeply embed details of delegated authorities by placing them in higher levels of law (such as the constitution). Because our understanding of economics changes over time, the specification of objectives, and especially of any numerical targets selected as the best practical representation of those objectives, may need to change. As an example, it might not be sensible to embed the inflation target for an inflation targeting regime even in ordinary statute law, let alone in the constitution. Likewise, embedding a specific exchange rate target in law may reduce exposure to speculative attack but reduce flexibility to adjust to a structural shift in competitiveness. In both cases, the choice depends on the gains from flexibility compared with gains from better anchored expectations.

To constrain the use of flexibility, the law can set out the factors to be taken into account and the process to be followed when targets are being selected. The central bank, the minister of finance, or both acting together can be required to make and publish a decision for a defined duration, for example. Another example is a requirement for an agreement between the central bank and minister of finance. Such extra-statutory statements that clarify the objectives of policy have become increasingly commonplace.⁶¹

Local circumstances and problems affect the choice of what to embed in the law and how deeply. Countries with written constitutions have additional options in this regard,

⁶¹ Table 1 in Chapter 2 provides information on the use of extra-statutory statements in relation to setting monetary policy objectives.

Table 4
Constitutional and international treaty provisions relating to the central bank

	Constitutional provisions; see also last column for provisions relevant to central banks of countries that have adopted the euro or plan to adopt it.																				EU Treaty/ESCB*			
	AR	BG	BR	CH	CL	CZ	DE*	FI*	HR	HU	ID	IN	MX	MY	PH	PL	PT*	RU	SG	SE		SK*	ZA	
There shall be a central bank	✓				✓	✓	✓		✓	✓			✓			✓	✓	✓		✓	✓	✓	✓	✓
CB structure															✓	✓				✓	✓			✓
Independence is noted				✓	✓				✓				✓					✓		✓	✓	✓	✓	✓
Other acts to have limited effect					✓											✓		✓						✓
A specific statute is required					✓	✓			✓	✓	✓					✓	✓			✓	✓	✓	✓	✓
CB's purpose is stated							✓						✓					✓		✓		✓	✓	✓
Monetary policy objective is stated				o		✓							✓			✓		✓					✓	✓
Credit to govt prohibited			✓		✓											✓								✓
CB has regulation power										✓			✓									✓		✓
The state has final jurisdiction				✓							✓									✓				
Supreme Court has jurisdiction			o																					
Who appoints	✓	✓				✓		✓	✓				✓			✓		✓		✓	✓			✓
Who fires	✓	✓							✓				o					✓		✓	✓			✓
Firing restricted													✓							✓				✓
To whom CB is responsible				✓				✓	✓	✓						✓								
CB must consult with				✓																			✓	✓
Other specific provisions				✓			✓							✓			✓							

Notes: Country abbreviations are translated in the Annex. (1) No constitution or no specific constitutional provisions are to be found in the following countries: AT, AU, BE, CA, CN, DK, ES, FR, GR, HK, IE, IL, IS, IT, JP, KR, NL, NO, NZ, RO, SA, TH, TW, TR, UK and US. (2) In the case of countries belonging to the euro area (including those marked with an asterisk in the table), relevant EU Treaty/ESCB provisions have a quasi-constitutional status. Such provisions are taken into account under the column heading for the EU Treaty/ESCB, and should be read as applying to AT, BE, CY, DE, ES, FI, FR, GR, IE, IT, LX, MT, NE, PT, SK and SL, in addition to the separate constitutional provisions listed in the table. EU Treaty/ESCB provisions relevant to central banks may also be implemented in countries planning to join the euro area. (3) "o" indicates that the constitutional provision is inferred rather than explicit. (4) Shading indicates constitutional provisions that provide a direct safeguard of the central bank's independence from unwarranted interference. (5) Country abbreviations can be found in the Annex.

and a wide range of constitutional provisions related to the central bank are used, as Table 4 shows. The countries of the European Union have chosen to place the statutes of the ESCB in a Treaty that requires unanimity and ratification in the Member States to change, which gives the Treaty quasi-constitutional status. For this reason, the Eurosystem column in Table 4 is the most complete. More generally, deeper embedding in law might be used where the political process has historically delivered unstable policy. Going in the other direction, it might be desirable to be less specific in the law and make greater use of extra-statutory devices in situations where the entire statute is open for review should any one part be amended. Similarly, situations in which the process of law-making is particularly cumbersome would also push the choice in the direction of reduced embedding.

When relevant legislation is being amended, an important aspect of the process is the role of the central bank – whether it is permitted to initiate or propose such a change, whether it is able to participate in the discussion and debate during the development of a proposal, and whether it is asked to comment on a legislative proposal before it is voted upon. The central bank's participation in any and all of these stages of the amendment process can help to ensure that inappropriate changes to the law do not occur. Amendments to higher order law, such as a country's constitution, will likely require greater legislative consensus, but the procedure for amendment may be similar to that of lower order laws. Article 105(4) of the Treaty on the EU provides a good example of a legal requirement that the central bank be consulted on relevant changes to legislation. It provides that the ECB shall be consulted on any proposed EU act that falls within its field of competence, and also on certain legislative proposals developed at a national level.

Recent amendments to central bank laws in several countries also provide instructive examples of legislative processes that allow for central bank consultation. In Australia, Iceland, Sweden and Switzerland, a working group or consultative committee was appointed to consider changes and develop a proposal; in all four countries, the central bank participated in the process either as a member of the committee or as a consultant to it. The committee was appointed by the prime minister, minister of finance, or parliament. In the United Kingdom, however, the reform of the Bank of England, which involved, inter alia, the transfer of responsibility for banking supervision to a new regulator for the financial services industry as a whole, was initiated by the Government (George (1998)). Ultimately, the Bank of England and the Treasury agreed to an MoU implementing the reform. There are fewer recent examples of fundamental amendments to the central bank law in countries with presidential systems.

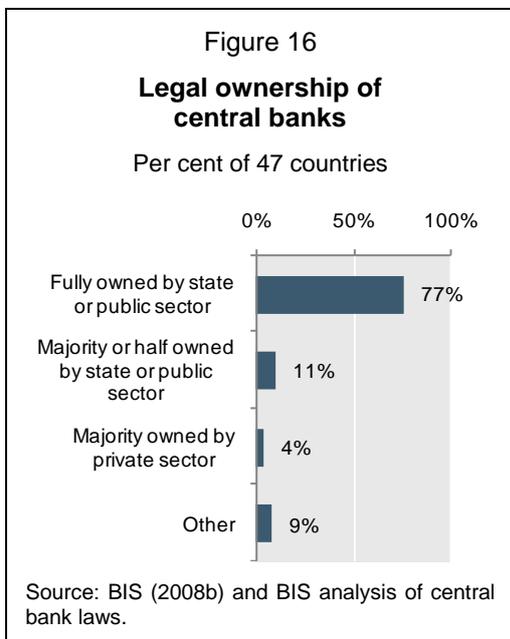
5. Legal status and ownership of the central bank

Different countries have different approaches to the legal status of the central bank. There appears to be no single best form – instead history seems to be an important determinant of both legal form and ownership. A number of recently created central banks are part of the state and owned by it; some older central banks were originally created as privately owned institutions and continue to have features related to that status (see Figure 16).

Almost all central banks are established under special legislation. The mandates and powers of the central bank, any restrictions (for instance, on the provision of credit to the government) and the procedures for governance are generally specified in that legislation. As Figure 17 shows, slightly more than two fifths of respondents can be grouped under the broad heading of state-owned corporations, and slightly less than two fifths describe themselves as independent, autonomous or self-administered

government institutions.⁶² Another 16% of central banks have been established as private entities under some version of company law. In this latter case, the monetary authority is not explicitly part of the state, and the law establishing it must specify its relationship with the government. Furthermore, central banks established as private companies must be empowered to implement policy and may need to be provided with certain immunities or special powers.

3



Central banks established under company law may be subject to the rights, privileges and governance mechanisms of the private sector. This may provide the central bank with well-developed techniques for the control of resources and give it a supervisory board, which can foster sound management and reduce the risk that the central bank's autonomy will be challenged by government intervention. However, central banks established under company law may be subject to challenges by "rogue" shareholders. (In Belgium, South Africa and Turkey, for example, part or all of the shares of the central bank's capital are publicly listed and available for purchase by private individuals.) Addressing such challenges can consume a significant amount of the central bank's time and resources. Another drawback may be an inconsistency between stock exchange

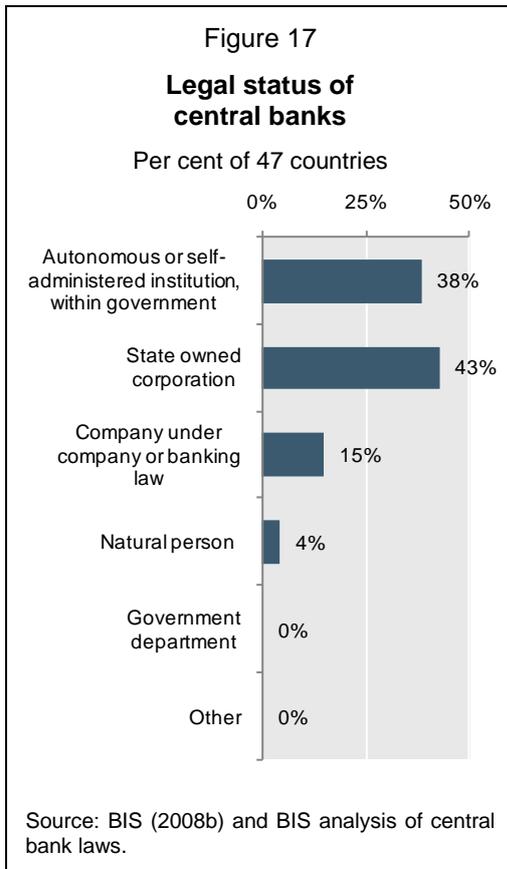
reporting requirements and restrictions on disclosure that are designed to buttress the effectiveness of policy. An example is emergency liquidity support that is of a scale or form sufficient to fall within stock exchange requirements to report material changes in exposures. Yet immediate disclosure may render emergency lending ineffective in seeing an institution through a temporary liquidity problem.

If established under company law, the central bank may be subject to both company law and particular laws written precisely for the central bank. For example, the Swiss National Bank, a company, is subject to the law governing joint stock companies, but its officials are subject to legislation that governs the behaviour of federal authorities.

Of the quarter of central banks that are not fully owned by the state, only in a small number does the private sector have majority ownership. One of these, the South African Reserve Bank, lists its shares on the Johannesburg Stock Exchange, and the shares are held by more than 600 shareholders composed of companies, institutions and private citizens. The remaining central banks are not majority publicly or privately owned for one reason or another. Korea's central bank, for instance, has no capital. The Federal Reserve System and the Swiss National Bank have a mixed public/private ownership structure that is specified by law. In the Federal Reserve System, the Board of Governors is a public institution owned by the state, while the regional Federal Reserve Banks are private institutions whose stock is held by commercial banks. The capital of the ECB itself is owned by the national central banks of European Union countries according to shares based upon population and GDP. (The ownership of these national central banks varies: while most are owned by the state, a number,

⁶² Although the latter grouping could also include some state-owned corporations.

including in Belgium, Greece, and Italy, are owned partly or wholly by private sector shareholders.)



All in all, these different ownership models do not appear to affect the performance of the main tasks of the central bank and are instead mostly arrangements designed to satisfy local constitutional or practical needs. As discussed next, additional powers may need to be provided so that the central bank can perform its public policy tasks; or powers may need to be constrained to ensure that the institution serves the public interest.

6. Specifying the type and breadth of powers

As discussed in Chapter 2, the range of functions assigned to and discharged by today's central banks covers a wide spectrum. The decision to extend a narrow, intermediate or broad range of powers to the central bank must balance a number of factors, including the compatibility of the associated functions and the government's desire for control or retention of decision-making. The decision will thus be closely related to the measures that require the central bank to account for its actions.⁶³

In addition to the question of what powers are provided to the central bank, there is the question of how they are assigned. Legal tradition determines whether powers, responsibilities, functions and duties must be expressly stated or, instead, can be inferred or adopted if not expressly prohibited. Functions and powers can be stated explicitly in the law or, as has become more common in recently written or revised central bank statutes, the functions can arise from the need to satisfy particular objectives that are stated in the law. Different sorts of legislation will be necessary to support different functions and to provide the central bank with the legal means to accomplish its duties.

Where central bank laws provide explicit authority to transact with a specified range of counterparties, the range is normally expressed in fairly open terms allowing the central bank to widen or narrow it as a matter of policy choice.⁶⁴ If a central bank is established under ordinary company law, or law specific to financial companies, it may not require express permission to carry out monetary policy operations because it is already bestowed with powers to borrow and lend. Finally, the law may give the central bank the right to formulate regulations or make quasi-legal judgments (including the

⁶³ Chapter 7 discusses central bank accountability.

⁶⁴ For example, the Monetary Authority of Singapore may lend to "such financial institutions or class of financial institutions as the Authority may from time to time determine" for the purposes of money market operations (Section 23) or safeguarding the stability of the financial system or confidence in it (Section 26).

issuance of fines or sanctions). These sorts of powers may be required to operate or oversee the payment and securities settlement systems or participate in banking supervision or for the enforcement of monetary reserves or statistical requirements.

Legislation may be constraining as well as empowering. Later in this chapter are examples of constraints that serve to buttress the desired autonomy of the central bank from the government. Other constraints may inhibit improper private influence by, for example, ensuring that private shareholders (where relevant) have no influence over the public policy tasks of the central bank or over the bank's finances, or restricting the ability of key officers to work for financial institutions or run for political office.

7. Provisions concerning the interaction between the central bank and the government

The relationship between the central bank and the government is one of the prime determinants of central bank autonomy, and the provisions in a given country's law for the several aspects of the relationship should be clear. Insufficient clarity about roles and responsibilities creates the potential for dispute between the central bank and the government. A few countries have explicit mechanisms for resolving such disputes so that the intended relationship is not disturbed by ad hoc agreements made in the heat of the moment.

Some laws explicitly require that the central bank discharge delegated responsibilities independently of the government. Regarding the activities that the central bank might conduct on the government's behalf, it is common for statutes to define those that are permitted (in Argentina, Brazil, Canada and Mexico, for example) and those that are prohibited (in Argentina and Finland, for example). Requirements that the central bank finance government spending or grant large, long-term loans to the state at non-market interest rates undermine the central bank's independence because they compromise its ability to control inflation and achieve price stability. However, the central bank is well placed to perform some other activities – fiscal agency or the management of government assets, for example – so the law needs to be very clear about permissible activities and prohibited ones.

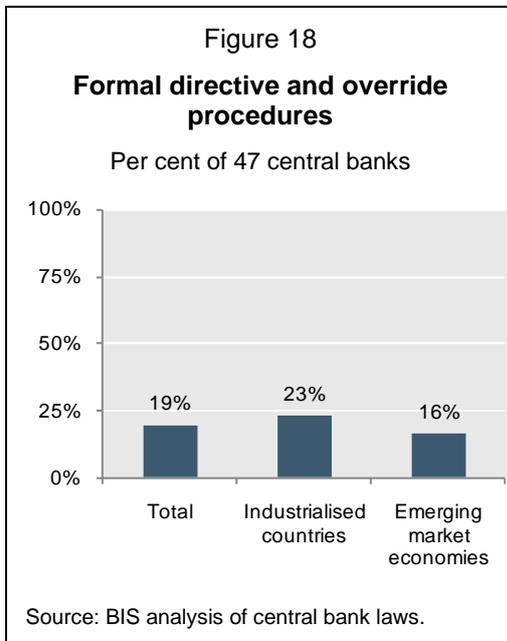
7.1 Restrictions on taking instructions

Many constitutions and central bank statutes state that the central bank is independent or autonomous in exercising its functions.⁶⁵ In addition, some laws also contain explicit prohibitions on central bank decision-makers from taking instructions from anyone, outside of the mechanisms and processes that are contained in law. Good examples are the Mexican constitution, which states that “No authority shall order the central bank to grant financing” (Article 28); and the legal texts underpinning the ESCB and the ECB, which state that “neither the ECB, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Community institutions or bodies, from any government of a member state or from any other body.”⁶⁶ As another example, the law governing the Romanian central bank includes the following: “When carrying out their tasks, the National Bank of Romania and the members of its decision-making bodies shall not seek or take instructions from public authorities or from any other institution or authority” (Article 3(1)). In yet another

⁶⁵ For example, the Constitution of Mexico states that “The State shall have a central bank, which shall be autonomous in exercising its functions and management” (Article 28).

⁶⁶ Article 108 of the EU Treaty and Article 7 of the Statute of the ESCB and of the ECB.

example, the charter ruling Argentina's central bank states that "As regards the preparation and implementation of monetary and financial policy, the Central Bank of Argentina shall not be subject to any order, recommendation or instruction given by the National Executive Power" (Article 3). In a number of cases, internal codes of conduct make it clear that central bank officials may not take instructions or expose themselves to partisan influence (see Chapter 1 for details), although such codes of conduct are clearly of less weight than statutory provisions.



In many cases, however, such prohibitions are implicit: they flow from the various elements of the law whose purpose is to put decision-making at arm's length from political pressures and from the existence of explicit mechanisms that allow the government to convey its view or give directions to the central bank. In several countries, the minister of finance or a representative of the minister may attend policy board meetings and speak (see Chapter 4 for details). In about one fifth of countries, the law provides for the government or parliament to give directives to the central bank and sets rules around the procedure to be followed (Figure 18). The override procedure often stipulates that the decision to override is to be made public, has a time limit and is subject to an appeal process (see Section 3.1.1 in Chapter 5).

7.2 Restrictions on lending to government

An important potential channel for an inflationary monetary expansion is central bank financing of budget deficits. Much of the inflationary risk is removed if central bank loans to the government are made at full market rates, particularly when those rates are influenced by the sterilisation operations used to offset the monetary impact.⁶⁷ There are thus two routes to prevent government financing from posing a risk to the achievement of the monetary stability objective:

1. Rules or mechanisms to ensure that all government financing activities affect market rates. Such rules include provisions that all debt raising must be on the open market, at market rates. An early example is the March 1951 Accord between the US Treasury and the Federal Reserve; more recent examples are to be found in New Zealand (contained in fiscal responsibility legislation and reflected in an Agency Agreement between the Treasury and the Reserve Bank) and a number of other countries. Other examples include legal provisions stating that the central bank determines the terms and conditions on which it provides finance (eg Korea); and provisions that allow the central bank to purchase government debt only on the secondary market (eg the Maastricht Treaty and the central bank laws of Brazil, Hungary and the United States).

⁶⁷ An important, though rare, exception is where the crowding-out of other financing by government debt issuance drives interest rates to the point that "unpleasant monetarist arithmetic" applies.

2. Prohibitions on central bank lending to government. This route may be preferred in the presence of weak mechanisms to ensure that government debt raising affects market rates (as just covered) together with weak authority on the part of the central bank to determine interest rate levels in pursuit of clear objectives. This route is also used as a "belts and braces" approach – that is, to reinforce the central bank's monetary policy independence.

Prohibitions on lending to government can take many forms:

- *Blanket prohibitions:* The requirement that the central bank purchase government debt only on secondary markets already implies a prohibition on primary market purchases. The most common other prohibitions are on direct lending to the government or government agencies (Articles 101 of the EU Treaty and Article 21 of the Statute of the ESCB and of the ECB provide an example); and on automatic or compulsory forms of central bank financing of government activity.⁶⁸ A rare example of a complete ban on central bank financing (voluntary or involuntary, direct or indirect) of government activity is provided by Chile. There, liquidity management operations involve trading in the central bank's own securities, as the central bank may not buy government securities.
- *Quantity limits:* These may be expressed in relation to government expenditure (eg Israel), government revenue (eg Argentina and Canada), the central bank's own liabilities (eg Argentina and South Africa), total government borrowing limits (eg Korea) or a nominal ceiling (eg India).
- *By purpose:* For example, in Brazil the central bank may buy and sell government bonds only for the purpose of regulating the money supply or interest rates.
- *By term or maturity of financing* of government activity, usually to restrict financing to coverage of seasonal cash deficiencies (eg Israel, and, with respect to direct financing, the United States). All advances provided by the Central Bank of Argentina must be repaid within the subsequent 12 months. The Central Bank of Malaysia may not purchase government debt instruments exceeding 30 years to maturity, presumably for risk management reasons.

7.3 **Explicit mechanisms for conflict resolution**

Explicit mechanisms for conflict resolution, especially those that mandate public disclosure of conflict and its resolution, may provide safeguards against the application of pressure in the course of disputes, such as by way of threats of non-renewal of appointment or of a change in the legal status of the central bank.

Examples of such a mechanism are to be found in Australia, Canada, New Zealand and Norway. In Australia, the legislation provides that the central bank may disclose differences of opinion between itself and the government on policy matters by tabling a statement in parliament. It has been in place for more than five decades but has never been invoked, possibly because of the political cost it would entail for the two parties.

⁶⁸ Arnone et al (2007) indicated that almost all countries have laws preventing automatic central bank financing of government activity.

Although the lack of use might suggest that the power is an extreme option and thus almost unusable, it remains a countervailing threat that the central bank has available in extremis.

In Canada, the Minister of Finance may issue a directive to the central bank in the event of a difference of opinion over the monetary policy to be followed, but only after consulting the Governor and obtaining the approval of the head of state. Any such directive must be made public “forthwith”.

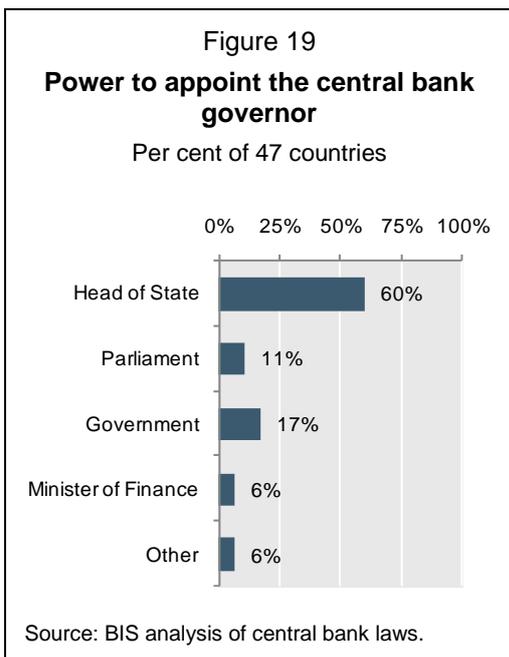
In New Zealand, the Governor might consider a directive from the Minister of Finance on foreign exchange market intervention to be inconsistent with the agreement with the Government regarding monetary policy targets. In that event, the Governor may force the negotiation of a new agreement, thereby making the conflict public. Alternatively, if the directive is considered inconsistent with price stability, the Governor may force the Minister publicly and formally to override the price stability objective itself.

In Norway, Section 2 of the Norges Bank Act (1985) sets out the relationship between the central bank and government authorities, and provides that “before the Bank makes any decision of special importance, the matter shall be submitted to the [Finance] Ministry.” This requirement allows the Government to intervene in exceptional circumstances and direct the central bank before it takes action. As in Australia and New Zealand, specific procedures are triggered in the event that the Government chooses to exercise its directive powers. In this case, directions must be decided by “The King in Council” (ie the King together with the whole Government), with the Bank being given the opportunity to give its opinion before the directing resolution is voted on, and with a requirement that Parliament be notified as soon as possible.

8. Appointments, terms of office, and dismissal

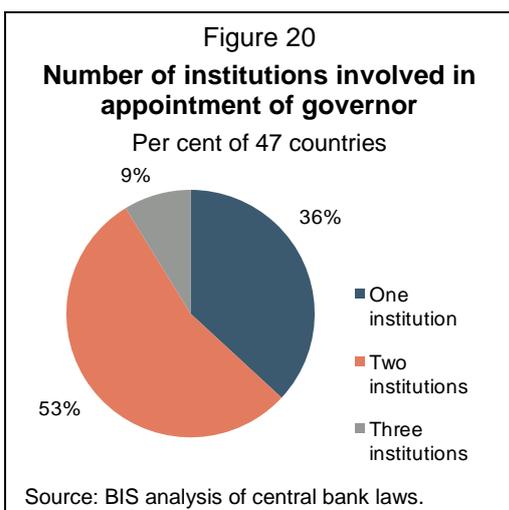
Another critical aspect of the central bank’s autonomy pertains to the appointments process for officials, their terms of office, and the procedures for their dismissal. The central bank’s autonomy is underscored when its officials have secure tenure and cannot be easily removed from their positions. However, as the central bank is ultimately accountable to its government, elected officials should have an important role in choosing high-level central bank personnel as well as a means by which they can remove officials who are found to have acted highly inappropriately or violated the terms of their appointment.

8.1 Appointment of the central bank governor and senior officers



Although the specific legal procedure differs across countries, the governor and other senior officials of the central bank are generally appointed through a governmental process. Appointment of the central bank governor by a high-ranking official or body can help to underscore the stature of the central bank. In 60% of the central banks surveyed by the BIS, the governor is appointed by the head of state or government (see Figure 19). In about one third of the cases, the governor is appointed by the government or the minister of finance. The appointment of the governor by some other body, such as the legislature or supervisory board of the central bank, is thus relatively rare. The President of the supranational ECB (along with the other members of the Executive Board) is appointed by common accord of the heads of state or government of the European Union countries.

Typically, the appointment process involves more than one individual or body (see Figure 20). In about one third of central banks, it is made by one institution based upon the advice, recommendation or proposal of another institution. In New Zealand, for example, the Reserve Bank’s Board formally proposes the Governor, who is then appointed by the Minister of Finance. Appointments to the senior executive positions at the ECB involve several institutions. The appointing heads of state or government of the European Union Member States that have adopted the euro are required to act on a recommendation of the Council, and to consult with both the European Parliament and the Governing Council of the ECB. In more than half of the central banks surveyed, the process is more broadly based, with one institution appointing the governor and another institution agreeing to the appointment or two other institutions being consulted.



A multifaceted appointment process that involves advice, recommendation or consent by another body may mute the influence of any single political party in the selection of the governor and other senior policymakers. This can generate broad support for the central bank, shield it (to an extent) from changes in the executive or legislature and help to anchor the central bank in the community. However, in practice, a multifaceted appointment process may not ensure full “checks and balances” if the confirmation of an appointment is no more than a formality. That situation tends to reduce the difference between multifaceted and singular appointment processes.

Moreover, the appointments process for the governor and other central bank officials may in fact be more complex than the procedures outlined in the law. For instance, the government may appoint a search committee to interview potential candidates prior to official nomination or appointment.

8.2 Terms of office

While the appointment process for the central bank's governor and other officials can secure public support for the institution if it imparts legitimacy to the incumbents, legal requirements for the length of the term in office can strengthen institutional autonomy. Lengthy terms for the senior policymakers relative to the political cycle, and the staggering of those terms, help to underpin the independence of the central bank as long as the terms are not cut short by, for example, a change of government.⁶⁹ Table 5 provides a frequency distribution of the statutory length of term in office for the governor. In about two thirds of the central banks, the governor's term lasts five or six years. While a few central banks have somewhat shorter or longer terms, only six do not have any term length specified in the law. Although both the ECB and the Federal Reserve have limitations on the reappointment of board members, most countries' central bank statutes place no limit on the number of times the president/governor can be reappointed.⁷⁰ Notably, only two central banks (the ECB and the Bank of Spain) have explicit prohibitions on the reappointment of the president/governor⁷¹. It might be argued that such a prohibition removes the incentive for a governor to seek favour from those who decide on his reappointment. Limitations on the number of terms reduce the probability that the political powers that reappoint the incumbent will use the threat of non-renewal to influence central bank policy. At the same time, if the reappointment procedures are based purely on effectiveness, they can be a means to monitor performance and be complementary to the other mechanisms used to scrutinise the operations of the central bank.

Table 5
Length of term and reappointment of central bank governors

Per cent of 47 central banks

	3–4 years	5–6 years	7–8 years	Not specified	Life tenure
Length of term	6	64	17	13	0
Reappointment not limited	0	45	11	0	0

Source: BIS analysis of central bank laws.

The length of term specified in the law may differ substantially from the actual average term of the central bank's officials. Thus, the turnover rate provides an alternative way of measuring the government's influence on the central bank, particularly for

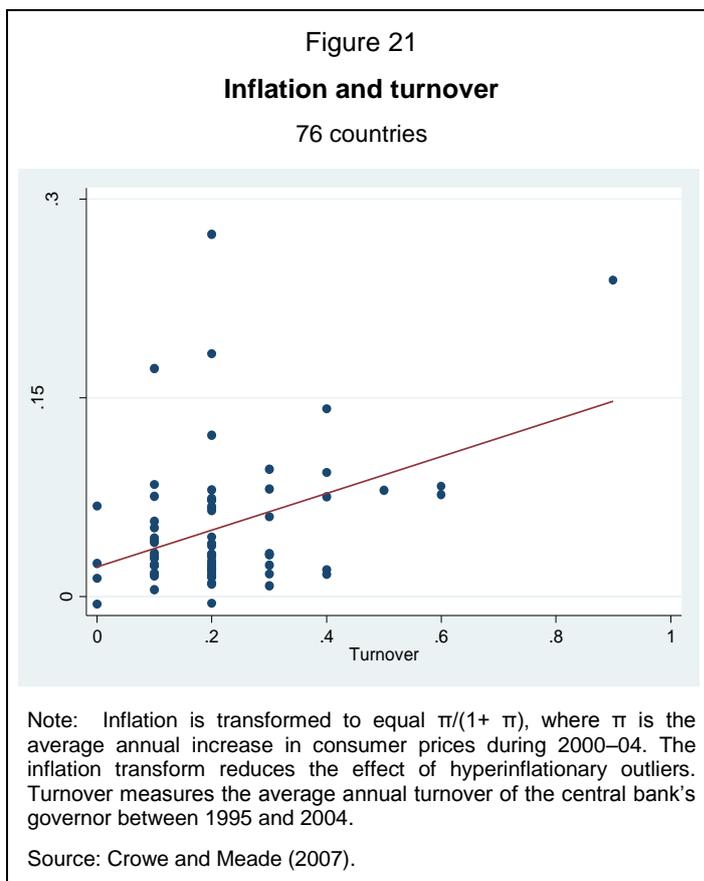
⁶⁹ See Cukierman (1992).

⁷⁰ Although in some cases age limits may prevent the reappointment of the governor.

⁷¹ Such restrictions on reappointment also apply to the other ECB Executive Board members.

developing countries.⁷² Between 1995 and 2004, the average term for central bank heads in advanced economies was 5.2 years, compared with an average term in emerging market and developing countries of 4.8 years.⁷³ As Figure 21 illustrates, there is a positive association between the turnover of the central bank's governor and the country's average inflation rate. The conventional explanation for this is that a longer tenure of the governor increases the independence of the central bank and allows it to pursue lower inflation. However, there might be other explanations. A lengthy tenure that heightens the governor's expertise and credibility may result in lower inflation. Moreover, if a central bank governor in a country with high inflation is replaced because the government desires to reduce inflation or resigns because of the inflation problem, then the direction of causality could run from high inflation to high turnover.

8.3 Staggering of terms



The staggering of terms of senior central bank decision-makers helps to foster continuity and renewal. Moreover, and importantly, it can be used to reduce short-term political influence on the central bank yet permit change if there is a prolonged and fundamental difference in views between the central bank and the government. The staggering of terms is widely practiced, including by the Central Bank of Chile, the ECB, the Bank of Japan, the Bank of Mexico, the Bangko Sentral ng Pilipinas, the Sveriges Riksbank, the Bank of England, the Federal Reserve Board and by countries with central bank legislation of recent vintage. There are several ways to provide for staggering of terms in the central bank's statute. First, the law may stipulate that when the central bank is initially estab-

lished, some officials will serve shortened terms (that is, shorter than the full statutory term) in order to achieve the desired staggering.⁷⁴ The first appointments to the Executive Boards of the ECB and the Sveriges Riksbank (following new legislation in 1998) were made in this fashion. If the law further requires that vacancies arising from

⁷² See Cukierman (1992) and Cukierman et al (1992).

⁷³ See Crowe and Meade (2007). The data source for turnover rates was Morgan Stanley's *Central Bank Directory*. The classification of economies as advanced or emerging market/developing is from the International Monetary Fund.

⁷⁴ In general, the term of the governor (and in many cases, that of the deputy governor) is not among the shortened ones.

an official not completing a term are to be filled only for the remainder of that term, then the staggering of terms can be preserved. Alternatively, the law may specify the staggered timing of appointments to the central bank's board. For instance, the law could require that a certain number of terms end each year or every other year. Finally, the law may specify the timing of appointments relative to the electoral cycle. For example, the term of the Governor of the Bank of Mexico starts in January of the fourth year in office of Mexico's president. The terms of the Deputy Governors are similarly staggered so that one starts every other year, commencing in January of the president's first year in office.

In reality, the tenure of senior decision-makers may differ from what is specified in the law. For example, members of the Federal Reserve Board generally do not serve out a full 14-year statutory term. The *de facto* term is substantially shorter, between five and six years. Because the starting dates of the statutory terms are set by law and officials may be appointed to unfilled terms, there is wide variation in central bank appointments across the political cycle. In other cases, the actual and statutory terms may differ because the central bank's governor is subjected to political pressure and forced to resign before the term is completed.

8.4 Qualification criteria

Where individuals are chosen primarily on the basis of their personal qualities, the law often attempts to provide guidance on the qualities to be valued (Table 6). Perhaps more importantly, such statutory prescriptions can act (imperfectly) to filter out those who might otherwise be selected on the basis of political connections or simply as notable persons but lacking any particular qualifications for the function.

Table 6
**Qualification criteria for policy
board members (including boards with mixed functions)**
Per cent of policy boards

	Internal members	External members
Educational	9	3
Individual character or integrity	34	3
Professional	51	20
Geographic or sectoral	11	6

Note: Based on the central banks in the Central Bank Governance Network. An entry is recorded for each of the 35 policy boards (including those with mixed functions) in that group. Some central banks do not have policy boards (for example, where the Governor decides, or where decision making is centralised in a multijurisdictional body such as the ECB), while others have more than one. External members are defined as limited-term non-executive members selected from outside the central bank.

Source: BIS analysis of central bank laws and websites.

8.5 *Legal provisions for dismissal*

Improper behaviour by the central bank's governor, other officials and senior staff can potentially damage the credibility of the institution in the financial markets and harm its reputation among the public. For this reason, most central bank statutes permit the dismissal of the governor and specify the circumstances or conditions for dismissal.

The legal conditions for the dismissal of the governor range from specific, policy related factors (such as poor inflation performance and actions that go against government directives) to more general factors, some of which relate to personal behaviour (such as conviction, dereliction of duties or personal misconduct). New Zealand's central bank law permits dismissal on the basis of policy failures – in the event that the inflation target is not achieved – but such policy related grounds for dismissal are highly unusual. In fact, the great majority of central banks have eschewed the ability to dismiss the governor for policy reasons because of concerns that this could open the door to unwarranted pressure from the government. Many central bank laws carefully specify the grounds for dismissal in order to provide strong protection against such pressure. In the case of the central banks belonging to the ESCB, for example, governors may be dismissed from office only if they no longer fulfil the conditions required for the performance of their duties or if they have been guilty of serious misconduct (with the added safeguard of recourse to judicial review).⁷⁵ The central bank law in many countries specifies more than one condition for dismissal. By contrast, a few countries' laws permit dismissal but do not detail the required findings.

In about two thirds of central banks, the governor can be dismissed on the decision of one individual or body: the minister of finance, head of state or government, parliament or legislature, "government" or high court.⁷⁶ This feature stands in stark contrast to the most common appointment procedure, which involves two or more bodies. In the remainder of countries, two or more government branches are involved in the dismissal (one has the dismissal authority while the other advises on, recommends or approves the decision). The difference between appointment and dismissal procedures could be related to the more precise specification of dismissal procedures for non-policy related reasons than is the case for policy related reasons. It should be noted, however, that dismissals are rare occurrences.

8.6 *Remuneration*

Remuneration arrangements usually contain incentive effects. It is relatively rare in central banking for remuneration to be tied directly to performance. For one thing, performance is difficult to measure because of difficulties in specifying clear objectives, lags between action and outcome and the influence of other factors on target variables. For another, meeting policy targets may require actions that have harsh consequences for some people as unemployment rises and income growth falls, even if negative real consequences are temporary for the population as a whole. It would be politically unwise for central bankers to be getting performance related bonuses in the middle of a recession.

⁷⁵ This is stated in Article 14.2 of the Statute of the ESCB and of the ECB. Article 14.2 also states that the laws of the national central banks of the ESCB may not contain grounds for dismissal that would be incompatible with its provisions (ECB (2008)). In the case of the Bank of England, the central bank law contains different wording concerning dismissal, but the substance is similar. There are grounds for dismissal, but they are not policy related.

⁷⁶ BIS analysis of central bank laws.

Given the inability to use remuneration as a policy related incentive mechanism, other mechanisms need to be used. Such mechanisms need to be sufficiently independent to protect the governor and board members from potential political pressure. A minister of finance who is prevented by the governance arrangements from influencing decision-making directly may be tempted to exert clandestine pressure through financial arrangements. That is why the salaries of the governor and board members are usually set by an outside body or reference point. The safeguards associated with the resourcing of the central bank and remuneration setting for key officials are taken up in Chapter 6.

9. Provisions relating to legal action against the central bank and its officers

The central bank's statute should provide for protection from arbitrary legal challenges to its policy actions from interest groups. At the same time, however, the law needs to provide for a legal means to check any inappropriate behaviour of the central bank.

In most countries, private parties are permitted to bring legal action against the central bank. The area where the greatest number of cases are brought to court is bank supervision, though there are a few, comparatively rare cases involving monetary policy decisions or the ownership of gold and external reserves (claimed by private shareholders). The manner in which the central bank is established in the law will have a direct bearing on the type of legal action that is permissible. For instance, the Reserve Bank of Australia is established as a body corporate able to sue and be sued, which is the norm for this legal form. The central banks of India and Singapore, also bodies corporate, have explicit provisions that prevent the possibility of a suit against the central bank.

The potential legal liability of a central bank is closely related to the nature and extent of its responsibilities. Central banks with several functions may have immunity with respect to monetary policy but not with respect to other activities such as the operation of the payment system, the issuance of regulations, or the power to issue licences (or the other way round). For monetary policy, repurchase agreements used in open market operations will typically require a contract between the central bank and its counterparty that is governed by the terms and conditions of contract law. But for payment system oversight or regulatory authority, contract law does not apply. In Australia, for example, the legality of central bank regulation of fees on credit cards in the retail payment system has been challenged.

Nearly all countries have laws to protect citizens against negligence, a claim for which can be filed against the central bank unless there is a statutory provision that exempts it from liability due to negligence. A number of central banks (for example, the Bank of Canada, the South African Reserve Bank, the Bank of Thailand, and the US Federal Reserve Board) have immunity provisions that narrow the circumstances of a legal claim against the central bank or its officials to those cases in which bad faith or dishonest conduct can be demonstrated. In some cases in which statutory immunities are not provided, the central bank grants adequate defence to its staff (where needed) and pays the costs associated with defending legal actions where they acted in the execution of their official duties, such as at the Bank of Mexico. The Bangko Sentral ng Pilipinas has purchased personal liability insurance on behalf of staff to cover such risks.

Judicial review is an important means of ensuring the proper behaviour of the central bank, particularly in areas, like supervision, where other accountability mechanisms (such as a clearly specified objective and a reasonable measure of results) cannot be meaningfully applied. At the same time, it is important to limit judicial review to the

process by which decisions are made and not permit it to extend to the content of the decisions. Otherwise there is a risk that judicial review could hinder the ability of the central bank to enact policy, perform its functions or fulfil its obligations.

Chapter 4: Decision-making structures⁷⁷

The Main Issues

At the heart of any governance arrangement is the design of decision-making structures. Human factors will always remain important to outcomes, but human behaviour is subject to influence by structural and procedural aspects of the environment. Here are the main issues for central banks:

- Should decision authority be given to individuals or to groups? And if the latter, what degree of specialisation of the groups is appropriate – ie how many boards should be formally constituted, and how should their roles relate to each other?
- Should board members have individual or collective responsibility for decisions? And what determines whether decision-making is by voting or by consensus?
- When is it valuable to bring in outsiders to sit on boards?
- Is there an optimal size for a board? What are the relevant considerations?

4

1. Decision-making by an individual or a group?

If central banks simply implemented the government's policy instructions, the preferred arrangement might be to have a single chief executive responsible for running the institution – the model for government departments. Attractive though the clarity of such an arrangement might be, central banks have become increasingly characterised by group decision-making, especially in relation to monetary policy (Table 7). As more decision-making authority has been delegated to the central bank, group decision-making has become more common.

Group decision-making is thought to lead to better, more accurate decisions – an idea that has both theoretical and empirical support. Different individuals may have different mental “frames” through which they interpret information and options. Combining those interpretations through discussion, followed by consensus forming or voting, effectively allows a group to base its decisions on a set of concerns, information and judgments that is much larger than would be available to an individual.⁷⁸

More generally, society is reluctant to delegate state power to a single individual. One reason is probably a perception that groups will be better at understanding and representing society's interests. Policy objectives are sometimes difficult to specify precisely, and their pursuit might involve trade-offs or conflicts between different interest groups. And as circumstances evolve, they might have to be reinterpreted in ways that were not foreseen when they were initially formed. Group decision-making might therefore have greater legitimacy in the eyes of the public.

Nonetheless, groups might also have some disadvantages as decision-makers. If individual members' sense of accountability is weakened, it might weaken incentives.

⁷⁷ This chapter was prepared mainly by David Archer.

⁷⁸ Vandebussche (2006) provides a summary of the relevant literature. Sibert (2006) also reviews the literature and focuses on two important features of committees: the effect of size on performance and whether group decision-making is more moderate than the individuals forming the group. Blinder and Morgan (2005) report experimental work on individual versus group decision-making.

Groups might end up making compromise decisions that lack logical cohesion. Group decision-making can be inefficient (especially where consensus building is necessary but difficult to achieve).⁷⁹

Numerous examples of group decision failures, especially in stressful circumstances, have been explored by social psychologists. And groups can be prone to ignoring information that does not fit with the group's view.

Table 7
**Who has the authority to make monetary policy
and general management decisions?**

Per cent of 47 central banks

Type of monetary policy authority:	Location of authority for monetary policy decisions			Location of authority for management decisions		
	Governor	Board	Euro-area NCB	Governor	Board	Other
Goal or target autonomy	6	45	23	34	36	2
Instrument autonomy	6	17	0	15	6	2
Limited autonomy	2	0	0	2	0	0
Total	15	62	23	51	43	4

Note: The classification by type of authority is based on Lybek and Morris (2004), updated and amended by the BIS. Lybek and Morris define *goal autonomy* as the independent authority to determine primary objectives from among several included in the central bank law, and *target autonomy* as the independent authority to determine the policy target against the background of a single legal primary objective. They define *instrument autonomy* as central bank authority to select and set policy instruments against the background on government or legislature involvement in setting the policy target.

Source: BIS (2008b), BIS analysis of central bank laws.

These considerations suggest that group decision-making would be more prevalent where central banks have more authority (eg goal or target autonomy in addition to instrument autonomy). Table 7 shows that while the great majority of central banks nowadays use boards to make decisions on monetary policy implementation, most central bank laws still provide for the governor to have sole responsibility for management. In both areas, where policy autonomy is weaker, the ratio of governor focused to board focused central banks is higher.

2. Legal framework for decision-making

In many countries, the legal statute of the central bank specifies the decision-making body or bodies of the institution, how these bodies are constituted, and what they are responsible for. The types of decisions that the central bank makes fall broadly into

⁷⁹ Blinder and Morgan's (2005) experimental work failed to confirm the findings from other disciplines that group decision-making has more inertia than individual decision-making.

three categories. These categories, and the names of the boards in charge of them as used in this chapter, are as follows:

<i>Responsibility</i>	<i>Name of board in this report</i>
1. Policy formulation and implementation	Policy board
2. Management and administration	Management board
3. Oversight of the institution's performance	Supervisory board or committee ⁸⁰

To the extent that the central bank has more than one major policy responsibility – for example, it operates the domestic payment system and it participates in bank supervision – the policy board may be responsible for more than one type of policy, or there may be more than one policy board (Table 8). Finally, there may be yet other boards or committees that are separately responsible for employee compensation, auditing, risk management, investment of assets or staff disciplinary issues if these activities are not assigned to the management or supervisory boards.

In several central banks, important boards or committees have been established without grounding in the law. In some cases the legally designated authority has effectively (though not legally) delegated its decision-making rights to a group by undertaking to be bound by the collective decision. The Bank of Canada's Governing Council – which is not a creation of statute – makes monetary policy decisions in this way, under a resolution of the Bank's Board of Directors. In this case, the Governor remains formally responsible, but for all intents and purposes the decision is that of the Council. Likewise, in Malaysia and South Africa, monetary policy committees play important decision-making roles, notwithstanding the fact that they are not specifically required by law.

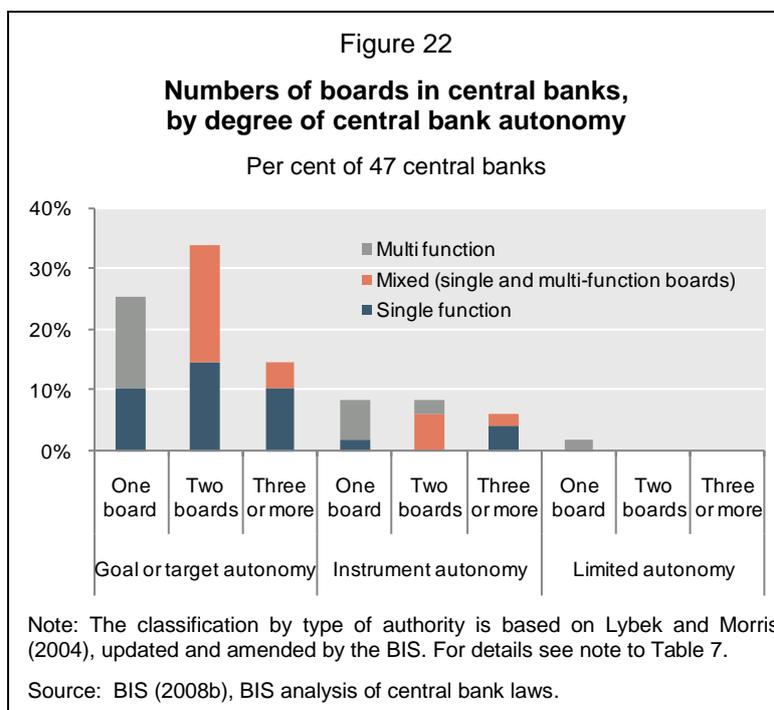
Virtually without exception, the governor, by law, chairs the policy board and the management board (Table 8).⁸¹ Because the governor's role usually includes that of "chief policymaker" and thus bears the greatest responsibility for the policy outcome, it makes sense for the governor to chair the policy board. In the case of the management board, having the governor as chair is consistent with his or her role in the day-to-day management of the central bank. When the policymaking and administrative functions are combined into a single board, it is likewise typical for the governor to chair that committee. In contrast, the law with regard to chairing the supervisory board varies across central banks. Where the central bank has such a board, the governor chairs it in a little over one third of the cases (an issue which is taken up later). Again, practice may differ from what is called for in the law. If relevant aspects of the legal code have not been revised for some time, the law might not reflect current thinking about governance matters, and more appropriate workarounds have been established.

⁸⁰ Despite the potential for confusion with policy boards for banking supervision, we continue to use the label "supervisory board" for the internal oversight board, given that that is the common usage.

⁸¹ For the national central banks of the Eurosystem, the policy board has no responsibility for the formulation of monetary policy.

3. Many roles ... how many boards?

Many central banks have a singular (“main” or “principal”) board discharging several functions; others have several boards, each with a separate function. The issues involved in designing the particular arrangement include the impact on efficiency of decision-making, the management of potential conflicts amongst objectives, the effectiveness of accountability and the availability of suitable personnel. This section discusses the ways in which these issues are typically addressed by central banks.



The standard governance structure in the English-speaking corporate world involves a single board, setting strategy and overseeing the actions of the chief executive. In parts of continental Europe, the standard structure features two boards, with a supervisory board overseeing an executive board. In the central banking context, around one third of institutions have a single board (Figure 22), with a significant proportion of boards having multiple functions. As shown by Table 8, boards with policy and management

functions are more likely to have multiple functions than are supervisory or advisory boards.⁸²

As single boards represent a less complicated organisational structure, what circumstances justify a multiboard structure? Frisell et al (2008) suggest that key central bank functions may differ from each other, or in some cases conflict, to such a degree that specialised governance arrangements are needed. The specialisation of boards in such arrangements allows an alignment of expertise and focus with the task. Thus, a dedicated policy board may call for different skill sets, and hence a different composition, than an executive or management board. For example, economists who may be valuable for a monetary policy board may have little management expertise, while good managers might not have any experience in economic policymaking.

The specialisation of governance arrangements also allows relationships with other public sector entities to differ by function. An important example is the common preference for an arm's length relationship between the central bank and the government with respect to monetary policy decisions, and the similarly common preference for joint or consultative decision-making on lender of last resort operations.

⁸² The numbers in this table differ substantially from those in Lybek and Morris (2004). They are based mainly on central banks' own classification; Lybek and Morris' numbers are based on their interpretation of legal codes. And the samples differ, which can sometimes introduce substantial differences.

Another example relevant for central banks that are charged with banking supervision responsibilities might be a preference for an independent monetary policy board and another board for banking regulation and supervision that includes ex officio representatives of other public sector agencies; the new arrangements at the Bank of England follow this model.

Table 8
Selected types of central bank boards, and their frequency

Board function specified in the law	Per cent of central banks		Median number of board members	Per cent of boards	
	One board of this type	More than one board of this type		Multiple functions	Governor as chair
Supervisory	66	2	10	21	39
Monetary policy	64	0	8	83	97
Other policy	43	9	7	82	89
Management	66	4	7	60	97
Advisory	17	2	11	20	30

Note: Data are drawn from a survey of the central banks in the Central Bank Governance Network. The 12 national central banks of the Eurosystem which are in the Network are not counted as having monetary policy boards, given the centralised nature of decision-making in the euro area; nor are those 12 central banks counted as having a formal advisory role on monetary policy.

Source: BIS (2008b), and BIS analysis of central bank laws and websites.

A multiboard governance structure can also provide a system of checks and balances involving internal accountability. The potential role of supervisory boards in holding central bank management to account is discussed further below.

These considerations – specialisation benefits, internal accountability structures, operational efficiency and availability of suitable board members – would be expected to be weighed differently in different situations. Some examples help to illustrate the range of central bank arrangements.

In Mexico, a committee that is not chaired by the Governor and is stipulated in the central bank law provides guidance on salaries for members of the board of the Bank of Mexico. In contrast, in Canada, the Governor chairs the principal board and thus has relatively broad powers. However, the range of functions performed by the Bank of Canada, whose statute dates from the 1930s, is smaller than in many countries; and in some of its major operations, the Bank of Canada acts as an agent for the Government, which oversees its operation. According to the Bank of England Act of 1998, the Governor chaired the Court of Directors, a board responsible for both management and supervision of the central bank – excluding decisions of the Monetary Policy Committee. Oversight of the central bank was performed by a subcommittee (NedCo) composed entirely of non-executive directors and chaired by one of them. The Banking Act (2009) changes this arrangement to one in which a smaller Court is chaired by a non-executive director.

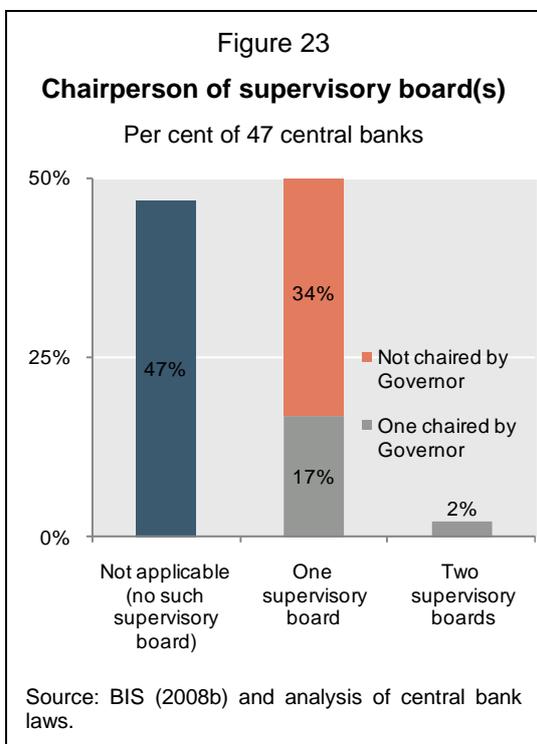
Different sorts of procedures govern the mix of public and quasi-private institutions that constitute the Federal Reserve System. The Board of Governors of the Federal Reserve System is subject to an external audit but does not have an internal

supervisory body of its own. Each of the 12 Federal Reserve Banks, however, has a board of directors that is chaired by a non-executive.

The supranational ECB provides yet another approach. The voting rule of the Governing Council gives each member an equal vote; but when the Governing Council decides on financial matters of the institution, it uses a special procedure set out in the statute in which the vote of each national central bank is weighted according to its share in the subscribed capital of the ECB. Although members of the Executive Board may participate in the discussions regarding these decisions, their votes count as zero.

4. Supervisory boards

A little under two thirds of BIS member central banks have boards that the central banks themselves identify as having significant supervisory responsibilities (Table 8).⁸³ About half of BIS member central banks have at least one board whose prime purpose is to supervise the central bank in whole or part (Figure 23).



One of the main functions of supervisory boards is to hold management to account on behalf of the principals. In the corporate world, a supervisory board acts for shareholders whose ownership rights may be widely spread, reducing the ability and incentive of each principal to contract with and monitor management. In the central banking world, the motivation for a supervisory board may be different. Because the legislature or the government are themselves agents for the principals (the wider public, including future generations), monitoring need not be delegated in order to overcome dispersion and associated free rider problems. Monitoring can thus be concentrated where there is also power to act, making for a strong base for accountability. But, as discussed in Chapter 7, politicians might not be the best agents for the public in the monetary (and other) spheres at the core of central banking. Inserting some distance between

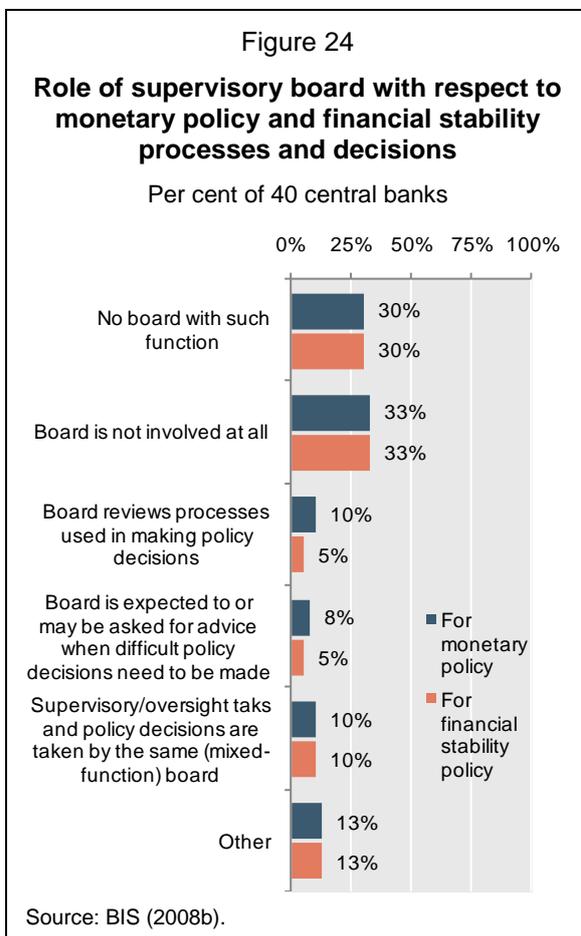
politicians and the central bank may be desirable, leading to the need for another monitoring mechanism. A supervisory board can provide such a mechanism.

Different countries see this issue differently. As noted, around half of the central banks in our sample do not have a dedicated supervisory board. In Finland, for example, the central bank operates under the supervision of Parliament (which elects the members of the Parliamentary Supervisory Council); in the United States, supervision is

⁸³ In contrast, Lybek and Morris (2004) count nearly all central banks in their sample of central bank laws as having a board with supervisory responsibilities in some form. Besides the differences that can be produced by samples of differing sizes (47 central banks in the table, 101 in Lybek and Morris), it is likely that the definition of "supervisory responsibilities" used by Lybek and Morris to evaluate legal codes differs from that used by central banks themselves in assessing whether boards have a significant supervisory role.

conducted by congressional committees. Aspects of oversight are also delegated to public auditors in some cases, including at the ECB and the Federal Reserve, where external control functions are performed by, respectively, the European Court of Auditors and the Government Accountability Office (an arm of the US Congress).

One of the issues surrounding central bank supervisory boards is that they might be no better (or worse) than politicians at representing the public's interest. Whereas the political process can reach deeply into society for the selection of representatives and can achieve legitimacy through broadly based electoral procedures, a central bank board is small and appointed rather than elected.⁸⁴ A risk arises that, by creating a supervisory board, one problem in the construction of the monetary policy decision-making framework (how to move away from direct political oversight) is simply replaced by another one. That is, concerns about the consequences of allowing the government of the day to alter the monetary policy target at will – concerns relating to the issue of whose interests the relevant politicians are serving – would potentially be magnified if a much less representative group, such as the central bank supervisory board, were charged with that task.



For this reason central banks that have supervisory boards have statutes and bylaws that often pay particularly careful attention to defining the role of the supervisory board vis-à-vis the central bank's policy responsibilities. Essentially, three approaches are available.

The first is to attempt to ensure that the supervisory board is both capable of understanding the issues and representative of society. Much depends on the appointment process (discussed in Section 8 of Chapter 3).

A second approach is to exclude oversight of monetary policy decision-making from the responsibilities of the supervisory board, relying instead on other mechanisms to hold the central bank's policymakers to account. Figure 24 suggests that the majority of supervisory boards are excluded from active involvement in policy or the review of policy decisions – with respect to both monetary policy and financial stability policy. At the Bank of England, the supervisory board (the Court of Directors) has oversight of the process used by the MPC to make monetary

⁸⁴ The selection process will be discussed later. In general, however, supervisory boards are made up of individuals selected from a broad range of backgrounds, sectors and locales. Selection for expertise in monetary economics is the exception.

policy decisions but no right of review of those decisions themselves. At several central banks, policy boards include significant numbers of outside appointees, and their presence may provide a form of external supervision.

A third and largely complementary approach is for the respective roles of the policy and supervisory boards to be conditioned by a predetermination of policy goals and even of specific targets. Predetermination of targets reduces room for discretion on the part of central bank decision-makers. Predetermination also makes it more difficult for supervisory bodies to impose its own interpretation of appropriate trade-offs in the course of holding the decision-makers to account. An example of such an arrangement is New Zealand, where the supervisory board is constructed as a monitoring agent of the Minister of Finance – who participates in setting the specific policy target. Use of such a monitoring agent follows from the understanding that the intent behind policy actions is not always directly observable, in part due to long lags between action and effect. A monitoring agent within the central bank, such as a supervisory board, may be better placed to infer intent than would be outside observers.

4

Principles of corporate governance tend to favour the separation of the roles of chairman of the board and chief executive officer to ensure appropriate checks and balances. Figure 23 showed that the governor is the chairperson in about one third of the boards with predominantly supervisory functions.⁸⁵ Supervisory boards in central banks may review the central bank's operation and management, oversee audits, determine risk management strategies and set the governor's salary. These are all areas in which the governor has a personal responsibility or stake. Risk of conflicts of interest in these cases will be minimised if the supervisory board is chaired by someone other than the governor.

Where conflicts of interest arise, the relevant functions are often performed by a subcommittee of the board that is chaired by a non-executive director – such arrangements are often adopted by central banks even though not required by the law. Of course, if the main function of the supervisory board is to give the central bank strategic direction and oversee its administration in a general sense, it is less contentious for the governor to act as chair. Also, following standard practices of corporate governance, central bank supervisory boards have a majority of external members (see Table 9). It is sometimes the case that these external members represent certain parts of the community, sectors of the economy, the government, or legislature (Table 6 in Chapter 3).

It is worth noting that several central banks with recently amended central bank laws have split the post of the governor from that of the chairman of the supervisory board (Iceland, New Zealand, Switzerland and the United Kingdom).

A choice also needs to be made between a board of experts or a board comprising members with wide experience in different fields. The first option – experts – can place considerable stress on the available talent pool. Central banking is a highly specialised subject. Having experts supervise experts carries a risk of battles of egos unless roles

⁸⁵ Lybek and Morris (2004) reported that a substantially higher proportion (74%) of boards with supervisory responsibilities are chaired by the governor. The differences are partly attributable to the fact that the Lybek and Morris survey count boards with supervisory attributes rather than supervisory boards. Thus “main” or “principal” boards – which are normally chaired by the governor, may be included, even though the supervisory responsibilities of main boards are typically more limited than those of specialist supervisory boards. In addition, with 101 countries in the Lybek and Morris sample, more boards from developing economies are included. Typical practice may be different in developing versus advanced and emerging economies. (See also Footnote 82).

are very clearly defined, which is difficult. The second option – generalists – inherently runs afoul of gaps in understanding between the expert with delegated authority and the generalists with the responsibility to monitor but without the necessary training. A further risk with groups of generalists is that the members may feel that they have an obligation to represent particular interest groups (be it businesses, unions or others), leading to efforts to reinterpret imperfectly defined objectives in terms that give preferential treatment to some sectors or groups over society at large. As already noted, the mandate of supervisory boards in a number of countries does not extend to include oversight of decision-making on policy objectives, in part for this reason.

5. Policy boards

Boards or committees for decision-making on interest rates are now very prevalent and have become the focus of a mushrooming field of research.⁸⁶ In only a handful of countries is the governor still legally and practically responsible for interest rate decisions (Aruba, Israel, Madagascar, Malta, New Zealand and Papua New Guinea). In some other cases, the governor remains legally responsible, but decisions are made within the context of committee meetings that entail a vote or consensus forming (Canada, India, Malaysia, South Africa).

In almost all cases, the board that makes interest rate decisions is also responsible for other functions, including decisions in relation to other policy functions and on the management of the bank. There is only a small (but growing) number of dedicated monetary policy boards. The best known examples of dedicated policy boards are the Bank of England's Monetary Policy Committee and more recent equivalents in Hungary, Poland, Thailand and Turkey. The Federal Open Market Committee of the Federal Reserve System is also a dedicated committee, responsible for open market operations, although the Board of Governors has sole responsibility for some other aspects of monetary policy. In a few central banks, a multifunction board formally reconstitutes itself as a specific monetary policy board for the monetary policy task. The Bank of Japan's Policy Board has formal monetary policy meetings, as does the Central Bank of Brazil's COPOM (although the latter is not a creation of the law). For the majority of cases in which the policy board is a multifunction board, the meetings at which the board considers monetary policy decisions have no other item on the agenda, although the formal differentiation between monetary policy business and other business of the boards is a little less distinct than in the cases of Brazil and Japan.

There are a few cases in which the board is advisory rather than decision-making when it comes to monetary policy. For example, the Board of the People's Bank of China advises the Governor of the People's Bank; the Governor in turn advises the State Council, which is the decision-maker. Boards of the national central banks of the Eurosystem may informally play some role in advising their governor on monetary policy matters, although these governors participate in monetary policy decision-making at meetings of the ECB's Governing Council in a fully independent personal capacity – not as representatives of their national institution or country. At the Bank of Israel, the law established two levels of advisory committee – both of which comprise a majority of members drawn from outside the central bank – to advise the Governor, who is the sole decision-maker. At the Reserve Bank of New Zealand, an internal advisory committee has been established to advise the Governor, who is also the sole

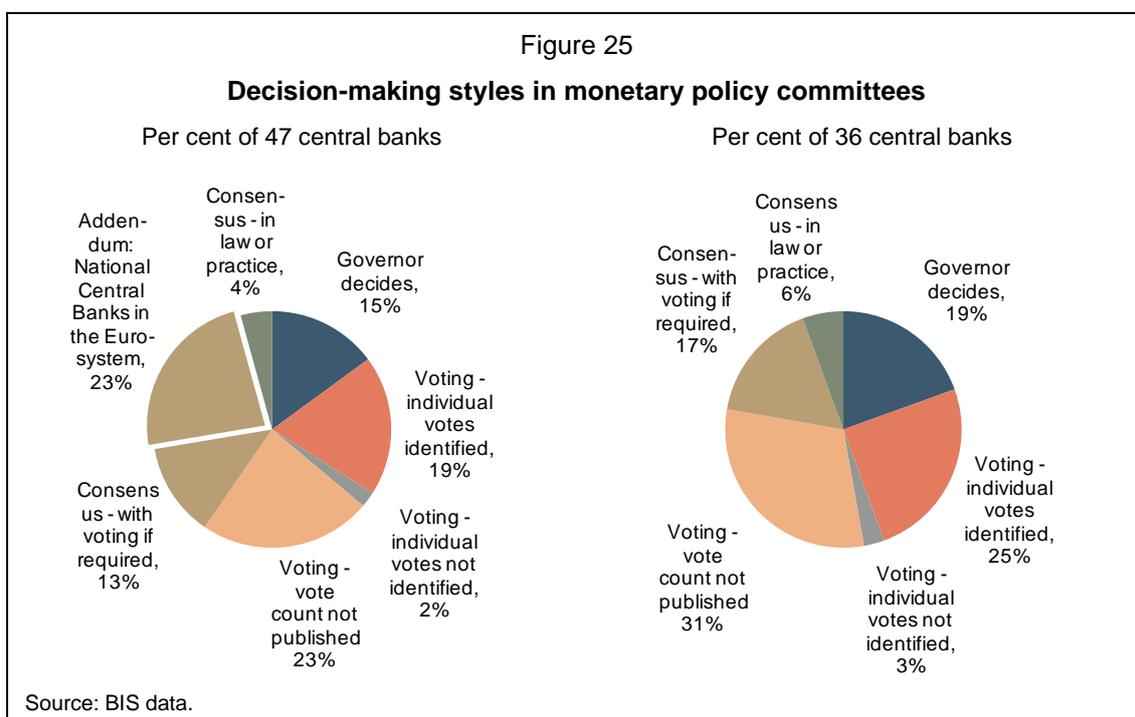
⁸⁶ Prominent examples of the research are Blinder (2007); Maier (2007); and Sibert (2006). See Blinder et al (2008) for a survey of the theory and evidence.

decision-maker. In the New Zealand case, there are also members drawn from outside the central bank, but they are in the minority.

The sections that follow focus mostly on the issues to be addressed in the design of policy boards, though they also apply to other instances of group decision-making in central banks.

6. Individual or collective responsibility; voting or consensus

With group decision-making, a choice needs to be made between individualistic or collective decision-making protocols. Few central banks release vote counts or the voting record. If minutes are released within a short time of the decision having been made, attribution of views is rare.⁸⁷ Collective decisions – whether determined by private voting or consensus – are strongly favoured (Figure 25).



Such arrangements are in keeping with those used for some other appointed agencies, such as those dealing with public health and safety issues. They are also in keeping with arrangements for executive government in many countries. Cabinets usually debate issues behind closed doors, record individual contributions and votes in secret minutes, then present a united front behind the final decisions. Common to executive government and central bank decision-making is the presence of pervasive uncertainty. In such circumstances, the exploration and testing of alternative ideas has particular value, and such exploration may be more wide-ranging when out of the public eye. Differences in views can dominate the attention of observers and thus obscure the sometimes more important common ground.

The balance of these considerations is difficult to assess outside of the context of the whole structure. For example, decision-making in private might motivate more

⁸⁷ Chapter 7 discusses the public release of information on central bank decisions and decision-making.

abundant disclosure of collective reasoning. (A discussion of the disclosure of collective reasoning via the release of minutes is contained in Chapter 7.) Decision-making in private might also suggest the need for monitoring by supervisory boards, of process if not of content. And it might also warrant the use of external appointees to the decision-making board – as discussed next.

7. External board members: when to include, what roles to assign

Decision-making groups made up of experts commonly face two problems: a tendency to “group think”, especially when the world is uncertain; and an attraction to technocratic solutions for human problems.

Bringing outsiders into the group may counterbalance those tendencies. The essential contribution of outsiders is diversity of life experience and of day-to-day contacts. With that greater diversity of background, they may ameliorate the expert group’s problem tendencies. Also, the democratic legitimacy of the decision-making group, which is particularly important in some jurisdictions, can be enhanced by members from a larger cross-section of society. In a similar vein, as previously noted, the presence of outsiders may have the effect of making insiders behave as if they were under supervisory scrutiny. The presence of external members on policy boards is in fact quite commonplace; within the central banking community, one finds a wide range of arrangements for external members, from their being in the majority to being in the minority, and from having full-time duties to being only part time (Table 9).

4

Table 9
Composition of central bank boards
Per cent of boards in the sample

	With majority of internals	With majority of externals	With external ex officio members		With part-time external members
			who vote	who observe	
Policy boards	63	31	23	37	43
Supervisory boards	9	91	39	27	79

Notes: 1. Based on a sample of 47 central banks covering members of the Central Bank Governance Network. The sample contains 35 policy boards (including policy boards with mixed functions) and 33 oversight boards. 2. External members are defined as limited-term non-executive members selected from outside the central bank. 3. Ex officio members serve on the board by virtue of their occupation of a specific office.

Source: BIS analysis of central bank laws and websites.

Yet the mechanism is not without its complications. If policy objectives are not clearly articulated in the bank’s or policy group’s mandate, diversity can be a disruptive force, especially if external members are affiliated with particular sectors of the economy or society; and the disruption can be even more pronounced if such an affiliation plays a (formal or informal) role in their appointment. Although the majority of central bank laws do not provide explicitly for geographic or sectoral characteristics as a basis for

appointment (Table 6 in Chapter 3), the weight placed on representation may be higher in practice. The essential problem concerns disagreement over objectives – geographic and sectoral interests can be at odds with the interests of society at large.⁸⁸ Clearly stated objectives reduce the potential for such disagreements to disrupt decision-making, but they may be reflected in arguments over policy implementation. 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. Even quite large countries have found the availability of appropriate outsiders to be an issue after a period of years, given that limited terms are necessary to preserve diversity – over time, outsiders tend to become insiders, and more rapidly so if the appointment is a full-time one.

The numerous practical choices to be made in appointing outsiders also present complications. What role should full-time members have? Full-time policy work may be too narrow an assignment to be attractive for external policy board members, but to attempt enriching the assignment with an executive role can disrupt the career paths, and hence the motivation, of long-term central bank employees. Assigning executive roles to external policy board members may also be less efficient because it does not take advantage of best-fit appointment procedures.

Will part-time members face a conflict of interest? After all, few private businesses are not influenced in a material way by central bank decisions. And will part-time members have sufficient preparation time and resources to permit them to effectively counterbalance full-time internal members?

Finally, for or both full- and part-time outsiders, getting access to information and expert advice can be difficult: for confidentiality reasons the information and advice may need to come from bank staff, yet bank staffs' use of time is properly a matter for bank management to determine.

8. Board size

Table 8 indicates that the median board size in central banks is in the range of seven to nine members; a little smaller for boards with management functions and a little larger for boards with advisory functions. Much has been written on the subject of the optimal size of groups that make decisions. The literature tends to see an optimal size for monetary policy committees in the range of five to nine members, but central banks and other institutions proffer numerous examples of both smaller and larger boards working successfully. The Swiss National Bank, for example, has a three-member board, while the Federal Reserve System's Federal Open Market Committee numbers 19 (although only 12 have a vote at any one time) and the ECB's Governing Council numbers 22 (at present).

The Federal Reserve and ECB examples point to the influence of regional makeup and country size on board size – boards are large in these federal and multistate examples to ensure representation. In general, regions with larger populations tend to have larger boards. Some researchers ascribe that pattern to the notion that larger economies are

⁸⁸ The potential importance of this issue has been recognised in the design of the monetary union in Europe. The multistate structure of the ESCB is reflected in the geographical basis for appointments to the decision-making bodies of the ECB. However, over-arching principles of personal independence and of policymaking apply to the euro area as a whole. These principles make membership on such bodies incompatible with the exercise of other functions that may influence members' activities, such as holding an office in the executive or legislative branches of the state or involvement in a business organisation. See ECB (2008), p 20, which deals with safeguards against conflict of interests.

more complex and thus require a larger team of decision-makers to pool the relevant information.⁸⁹ The reasoning is suspect on two grounds. First, because of their limited diversification, smaller economies are usually less stable, and thus more difficult to read, than larger economies. Second, the task of board members is not usually to contribute raw information about the current performance of sectors and regions. That task is usually performed by national statistical offices – with substantially more completeness and accuracy than a small group of individuals could hope to achieve – coupled with the central bank’s own professional staff, who further analyse such information. The task of board members relates instead to interpretation. More likely, the empirical relationship between the size of economic regions and the size of boards has to do with the influence of federal and multistate systems (as noted), the “tax” (seigniorage) base available to pay for the board’s functioning, and the number of suitable candidates.

The most suitable board size is likely to be a function of several considerations, including group dynamics, a subject that is picked up in the next section. Some considerations also interact with each other. For example, the preferred decision-making procedure may influence choice of board size; smaller groups might work better if consensus decision-making is preferred; however, the experience of the ECB, which has a large board that reaches consensus decisions in meetings that are shorter than those of many other central banks, suggests that this is not always the case. Public disclosure of individual arguments and votes may create incentives for individuals to be seen to be making an active contribution, and their doing so takes up meeting time. In such a context, large boards could be less practical.

9. Committee dynamics

A large literature in social psychology considers the effect on group dynamics of factors such as decision procedure, the presence and backgrounds of external members and the extent of public disclosure of proceedings. The literature suggests, for example, that the beneficial averaging of views that occurs when people come together may be offset by a tendency for individual views to become more extreme if they are shared by the majority or by others with big reputations.⁹⁰ The less diverse the group’s views are, the greater the risk of polarisation. A second example from the literature concerns the effect of group size on group dynamics. When the group is large, speaking time tends to become more unevenly distributed, again raising the risk of undermining the gains from apparent diversity. Larger numbers bring diversity – assuming that the selection procedures seek diversity – but also a risk that individual members feel that they need to contribute only a piece of the puzzle rather than evaluate all the information available.⁹¹ Larger boards may also be more prone to coalition-forming within the group, also reducing effective diversity; and to the influence of information and decision “cascading”.⁹²

⁸⁹ See, for example, Berger et al (2006); and Erhart and Vasquez-Paz (2007).

⁹⁰ For a discussion of when the views of the group are better than those of individuals, see Surowiecki (2004). Blinder and Morgan (2005) provide experimental evidence for the superiority of groups in the context of decision-making on monetary policy. For a discussion of group polarisation, see Brown (1989).

⁹¹ Such behaviour is called “social loafing” or “shirking” in the literature.

⁹² See Caillaud and Tirole (2007) for a discussion of the use of speaking and voting order to create a “cascade” effect on opinion formation (especially when some individuals carry strong reputations).

Very little research has been conducted on these issues of group dynamics in the specific context of central banking. A small number of case studies of a somewhat anecdotal nature are available in the published histories of particular central banks and in the memoirs of retired decision-makers. As an example, more than one ex-insider's retrospective view of Chairman Greenspan's management of the Federal Open Market Committee points to the importance of pre-meeting lobbying and of speaking and voting order. Similarly, informal reports indicate that in most central banks conventions have evolved to guide the expected behaviour of committee members. Although the anecdotal information supports the relevance of social psychology research in the case of central banking, it remains to be demonstrated by structured studies.

Chapter 5: Relations with government⁹³

The Main Issues

Most of the choices to be made in shaping the central bank's relations with the government and legislature are practical ones with important consequences. Good relations allow effective coordination of policies and operations. And for fundamental policy issues on which the central bank may be only an adviser – regime choice and framework design – the central bank is likely to lose access to the political decision-making process if it does not maintain good relations. Yet, relationships that do not respect the autonomy intentionally provided by the central bank's statute may undermine the effectiveness of policymaking, to the detriment of the public. In that context, here are the main issues:

- What arrangements can ensure effective dialogue and consultation between the central bank and the executive and legislative branches while avoiding inappropriate influence of those branches?
- What are the limits on central bank advice to the government, in private and in public, on issues outside of its mandate?
- Can governments and legislatures publicly comment on the conduct of monetary policy without undermining the central bank's autonomy?

1. Introduction

As public institutions, central banks need to interact with government. Chapter 3 discussed the interaction in terms of the legislation governing the central bank. Chapter 7 will consider interaction in the context of accountability. This chapter considers the interaction in practical terms. The discussion focuses mainly on the central bank's means of maintaining a relationship with the executive branch without undermining central bank autonomy. Depending on the system of government, some aspects will be relevant for the central bank's relationship with the legislature as well.

If the amount or intensity of contact between the central bank and government exceeds that envisaged in the central bank's statute, it can provide a conduit for active political influence that threatens central bank autonomy. In some important areas, policy coordination can be achieved without close contact if relations are governed by clear roles and responsibilities. Ideally (from the perspective of macroeconomic policy efficiency), the government knows the central bank's policy "reaction function". It can then anticipate the monetary policy response to a planned fiscal action and adjust accordingly. Coordination between monetary and fiscal policy can thus be achieved without close interaction.

However, both the central bank and the government are likely to make better decisions within their independent spheres of responsibility if they can exchange information with one another during the period of deliberation on those decisions. For example, much work may be needed to understand the policy implications of a major change in the tax system, and advance consultations with the central bank may contribute to better outcomes. On a technical level, information flows between the central bank and the government are typically also necessary for the day-to-day implementation of monetary policy. In some countries, particularly in emerging markets, the perception of close

⁹³ This chapter was prepared mainly by Paul Moser-Boehm.

coordination between the central bank and the ministry of finance is of crucial importance to investors, particularly in periods of financial stress. In addition, the regulatory functions or advisory responsibilities of the central bank may call for close coordination with the government. Liaison will be needed if the central bank performs banking or debt management services for the government. Participation in international forums also calls for coordination.

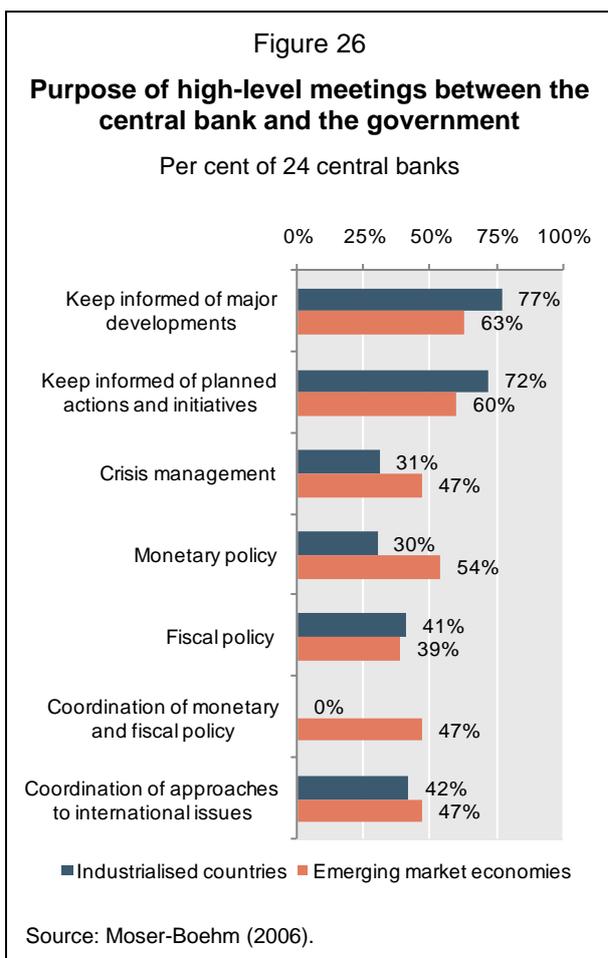
2. Nature of contacts

2.1 Meetings of senior central bank and government officials

This section draws on a 2005 BIS survey (BIS (2005d)) and related discussions by central bank governors.⁹⁴

2.1.1 Formal meetings

All central banks in the survey exchange information and cooperate with government, but the process for doing so differs considerably between industrialised countries and emerging market economies (Table 10). In industrialised countries, it is common for the governor and the minister of finance to meet one-on-one or in a small group, less so in emerging market economies.



In contrast, it is far more common in emerging market economies than in industrialised countries for a government representative to participate in meetings of the central bank's board or for the governor to participate in cabinet meetings. The average number of meetings of senior central bank officials with counterparts in government is twice as high in emerging market economies (47 per year, or about one per week) as in industrialised countries (23, or about two per month). However, the number of types of such meetings is higher in industrialised than in emerging market countries.

Strikingly, for about half of the central banks from emerging market economies, the coordination of monetary and fiscal policy is a key purpose of their high-level meetings with the government, while none of the central banks of industrialised countries say that this is why they meet with government (Figure 26). Similarly, discussing monetary policy is a purpose of the meetings considerably more often in emerging

⁹⁴ See Moser-Boehm (2006) for a more detailed analysis of this issue.

market than in industrialised economies. It is not clear why this is so. One possibility is that limitations to monetary policy autonomy are more of a factor in some emerging market economies than in industrialised countries, and as a result there is a greater need to meet and agree. In addition, having generally more meetings (to discuss a larger range of subjects) may make it more natural in emerging market economies to discuss monetary policy as well, especially in countries in which some members of government are not well versed in monetary policy matters.

Table 10
Frequency of meetings between the central bank and government
 24 central banks

Type of meeting	Per cent of central banks having this type of meeting		Average number of meetings per year	
	IC	EME	IC	EME
Governor and minister of finance	73	31	8	9
Governor and other high-level government officials	91	62	5	21
Deputy governors and high-level government officials	27	15	9	32
Senior officials and department heads	36	15	7	12
Government representative on central bank's board	18	62	17	17
Governor at (economic) cabinet meeting	9	54	10	29
Financial stability or supervisory committee	18	38	9	14
Other	36	23	4	3
Number of meeting types	Percentage of respondents using		Total average number of meetings per year	
One	–	–		
Two	9	31	23	47
Three	36	31		
Four	55	38		

IC Industrialised countries. EME Emerging market economies.

Source: Moser-Boehm (2006).

The degree of involvement of the governor also varies considerably across countries. Some governors have less than a handful of meetings with senior members of government each year, while others meet with the head of government or the minister of finance on a weekly basis. For example, the Governor of the Reserve Bank of Australia generally meets with the Minister of Finance *after* the meeting of the Reserve Bank Board, while the Governor of the Central Bank of Norway and the Minister of Finance meet on the day *before* interest rate meetings of the Bank's Executive Board. In the Czech Republic, the Minister of Finance has the right to participate in the weekly

meeting of the Board of the central bank, and the Governor (or Deputy Governor) has the right to participate in a weekly meeting of the Government. In Mexico, the Minister of Finance and the Deputy Minister of Finance may attend the meetings of the Board of Governors, with a voice but without voting rights. Although it rarely happens, the Governor may also be invited to attend cabinet meetings. In the United Kingdom, the Governor meets the Chancellor of the Exchequer about once a month; although they discuss a broad range of matters, including appointments, they only rarely discuss monetary policy. In the United States, a Federal Reserve/Treasury luncheon is hosted at the Federal Reserve Board by one of the Governors on a rotating basis once every three weeks or so. In part, that meeting reflects a commitment made by both sides in their 1951 Accord to maintain an ongoing exchange of information.

The purposes of meetings involving the governor tend to be more wide-ranging in emerging market economies than in industrialised countries, a difference probably reflecting the broader mandates of emerging market central banks. In emerging market economies these meetings also tend to be relatively more institutionalised than personal, in the sense that other senior officials may occasionally substitute for the governor. In industrialised countries, meetings would be less likely to occur in the absence of the governor.

2.1.2 *Informal contacts by governors*

The governor and other senior central bank officials also maintain contact with their counterparts in government over the phone and by email (Table 11). In most countries the governor and the minister of finance keep in touch by phone, with both sides initiating contact with similar frequency. Calls are typically made once or twice per month. The governor and the head of government also keep in contact over the telephone in the majority of countries, but less frequently than with the minister of finance. Informal contacts between the governor and the head of state are still less frequent, and generally not made in about half of the countries surveyed.

As discussed above, consultation between the central bank and the government tends to be a more continuous, frequent activity in emerging market economies than in industrialised countries. In line with that pattern, informal contacts between the governor and senior government officials are on the whole more frequent in the emerging market economies. Indeed, in about a third of the emerging market central banks in the survey, a general coordination group has been established at the staff level to deal with all central bank/government issues, and almost half of emerging market central banks have set up such a coordination group for monetary and fiscal policy coordination. By contrast, such groups are rarely used in the industrialised countries.⁹⁵

In emerging market economies, the level of the government counterpart who is contacted by the governor tends to be higher than in industrialised countries. This is consistent with the governor having a higher average rank in official protocol in the former (where the most frequent case is the governor having the same level as the minister of finance) than in the latter, where the governor most often is at the level of the highest ranking civil servant at the ministry of finance.

⁹⁵ The only exceptions are coordination groups for financial sector/financial stability issues and for crisis management, which are used in a number of industrialised countries and emerging market economies alike.

Table 11
**Informal contacts between the governor
and selected senior government officials**

Per cent of responses from 23 central banks

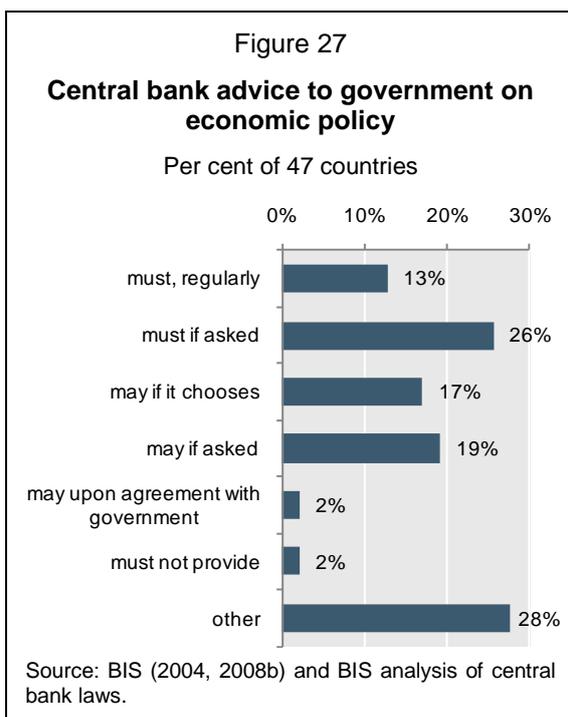
Characteristic of meeting	Head of state		Head of government		Minister of finance		Deputy minister of finance	
	IC	EME	IC	EME	IC	EME	IC ¹	EME
Generally not done	40	54	30	23	10	8	30	15
Frequency per year:								
Up to five	100	80	67	33	13	–		13
Six to ten	–	–	17	33	63	38		38
Eleven to 25	–	20	–	–	25	31		13
More than 25	–	–	–	22	–	23		13
Direction:								
Usually governor contacts government official	33	20	17	44	25	–		–
Usually government official contacts governor	–	40	50	22	–	15		13
Each side initiates contact with similar frequency	–	20	33	22	75	77		63

¹ Insufficient information was provided for this column.

Source: Moser-Boehm (2006).

5

2.2 The role of the central bank in the economic policymaking process



The central bank is almost always a centre of economic expertise, and in some countries there is no counterpart with similar expertise in government. As a result, 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 if the government asks or, in a few cases, as a matter of course. Other central banks have the right to provide such advice if they deem it appropriate, or they may provide it on request.

For the majority of central banks, contributing to the debate on government economic policies is thus not voluntary – they must do so if asked, and other survey evidence suggests that many are in fact asked to provide advice (Figure 27). However, central banks can

choose whether to provide the advice publicly or privately. Judging from what is in the public domain, most prefer giving their advice privately.

In at least two cases, it may be difficult or even undesirable to keep policy advice to government out of the public eye. One is if the central bank is the sole source of official macroeconomic analysis in the country. In that case, it can be in the interest of both the government and the public if the analysis is published, as it may serve as a baseline for the government's budget or as a voice of reason that helps to convince the public of the need for reform. However, publication may come at the cost of drawing the central bank into debates outside its own mandate, thus making it difficult for the central bank to retain its political neutrality.

The second and more difficult case is that in which the central bank judges that government policies pose a massive risk to the long-term health of the national economy, a threat of imminent fiscal dominance or a lack of progress away from it. Whether central bankers have a whistle-blowing responsibility when it perceives that government economic policies will be ruinous is a matter for each country's tradition to determine. It is not clear whether the independence to conduct monetary policy makes central bankers more like independent professionals (who may have a "civic duty" to speak out) or like civil servants (whose obligations may be more complex). This second case also concerns extreme circumstances in which the foundations of good government are at risk and the central bank must make a choice as to what role to play in an institutional, not primarily economic, crisis. As the following section will point out, such circumstances are rare but probably not rare enough to be ignored.

5

3. Managing the relationship

Table 12 shows that serious conflicts in industrialised countries between the central bank and the government, while not frequent, do occur from time to time. In contrast, in emerging market economies the odds are considerable that a governor will find himself or herself in serious conflict with government at least once.

One reason for disparity in the frequency of conflict may be that, on average, the emerging market economies have the shorter histories. Even with a well conceived central bank law, institutions need the time to establish their territory and flesh out the extra-statutory protocols governing interactions between them over cycles encompassing both stress and calm. Well known disputes (and their resolution) in Canada (1961) and the United States (1965) show that the law does not cover every aspect of the relationship; a recent dispute in Iceland illustrates that sharp conflicts can arise even when the law is very clear.

Differences may also result from some governors' active guarding of the boundary lines. For example, in 1988, Federal Reserve Chairman Greenspan publicly rebuked an undersecretary of the Treasury who had written to him requesting an easing in monetary policy.⁹⁶ Similarly, in 2006, the EU Commissioner for Economic and Monetary Affairs and the chairman of the EuroGroup wrote to ECB President Trichet to request more meetings with him; Trichet replied bluntly that there was no need because the President of the ECB is the spokesperson for the euro, not a politician.⁹⁷ In some countries, the boundary lines are less well established and thus more difficult to guard.

⁹⁶ Havrilesky (1995).

⁹⁷ As reported by Reuters, 8 June 2006.

In Colombia, for example, the President has on occasion publicly demanded a cut in central bank interest rates.

Table 12
Incidents of tension between central bank and legislature, 1990–2007

Per cent of responses from 40 central banks

	Total	Industrial-ised countries	Emerging market economies
Legislature passed formal resolution or formal comment on the central bank and its policies, outside or in addition to the legislative review foreseen in the law	9	0	16
Central bank and its policies were subject of extraordinarily heated debate in the legislature that went substantially beyond the critical review of the central bank that is part of the ongoing process of accountability	15	9	20
At least one of above	19	9	28

Source: BIS (2002, 2008b).

Managing the relationship with government will be different for central banks that are themselves an integral part of the (narrowly defined) state apparatus. Such is the case for the People's Bank of China, which reports directly to the government and formulates and conducts its policies under the leadership of the State Council.

3.1 Formal approaches

Some approaches to relationship and dispute management can be institutionalised. Two types of the institutionalised procedures in use by central banks are discussed below, along with a number of aspects raised in Chapter 3.

3.1.1 Directives

A particularly clear type of convention is a statute giving government the power to override the central bank's autonomy on monetary policy decisions. Although this power is relatively rare, it exists in at least four countries belonging to the Central Bank Governance Network (see Box 3).

Observers sometimes argue that the government's power to issue a formal directive to the central bank (even if subject to conditions and in a transparent manner) constitutes a major reduction in what is deemed an essential level of central bank autonomy. However, some central banks operating under such a government power tend to believe that it can be a useful escape valve when its relationship with the government is extraordinarily tense. In such cases, the government can take control of policy, but it must do so in public and choose an explicit alternative path. If the governor deems the path unacceptable, he or she could resign, but that outcome could be a major blow to the government, especially if the governor's reputation is high. If the government fears that outcome, its policy choices become narrowed to those that still have a measure of support in financial markets. The provision for a government directive can thus make it feasible to achieve a resolution without resort to a change in the central bank law, which, if done at a time of conflict, may lead to a long-lasting and economically damaging degradation of the central bank's autonomy.

Box 3 Government directives to the central bank

The approaches taken by governments to issue directives to central banks vary substantially, as illustrated by the procedures instituted in Canada, Korea, Malaysia and New Zealand.

In Canada, the law requires regular consultations between the Minister of Finance and the Governor. If an issue cannot be resolved in these consultations, the Minister can issue a directive on monetary policy but only after further consultation with the Governor and the approval of the Prime Minister. The directive must spell out specific instructions and applies for only a specified period of time; Parliament must publish it within 15 days.

In Korea, the Minister of Finance may request the Monetary Policy Council of the Bank of Korea to reconsider a decision that the Minister believes is in conflict with the economic policy of the government. The request must be announced publicly. If, in response, the Monetary Policy Council reaffirms the decision with at least five members concurring, the President of Korea must make the final decision.

In Malaysia, current law (under review) provides that the Minister of Finance may issue a directive to the central bank at any time, and the central bank must comply. If the central bank objects, the Minister must present both the directive and the objection in the legislature.

In New Zealand, a more detailed approach is taken. The Prime Minister may issue the directive to the central bank on the advice of the Minister of Finance. The directive applies for a maximum of 12 months, after which it can be renewed. It must be published and presented in Parliament, and the Governor and the Minister of Finance must negotiate a new Policy Targets Agreement (PTA) that is consistent with the directive within 30 days.

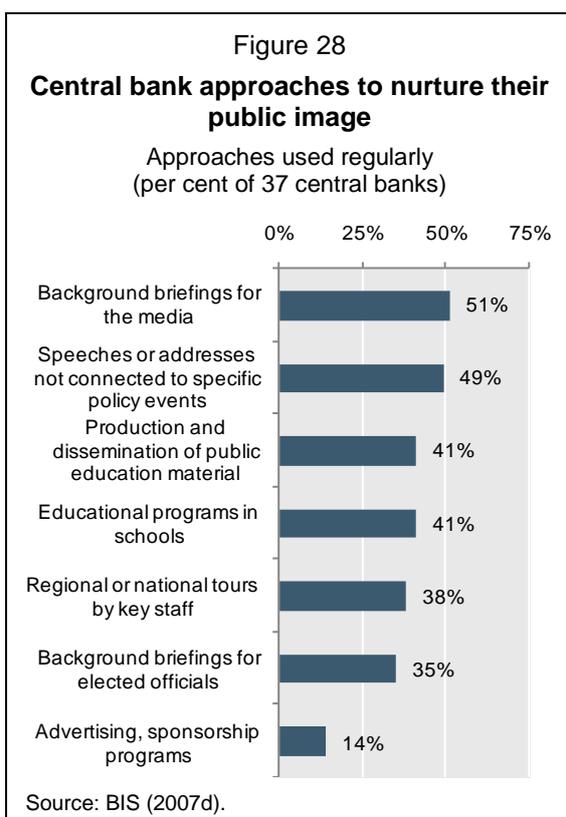
A somewhat different mechanism is used in Japan, where the Minister of Finance and the Minister for Economic and Fiscal Policy (or designated delegate) may submit proposals to the Board regarding monetary control matters; or they may request that the Board postpone a vote on monetary control matters until the next Board meeting.

3.1.2 Memoranda of understanding

Several central banks have drawn up an MoU with their government to facilitate their interaction with each other.⁹⁸ For example, early on in his tenure, the current Governor of the South African Reserve Bank had a number of contentious meetings with the Minister of Finance and his staff. The situation was ameliorated by a suggestion from the Governor for a new approach to their meetings; the approach was formalised in an MoU and substantially improved the relationship. In Hong Kong SAR, a 2003 Exchange of Letters between the Financial Secretary and the Chief Executive of the HKMA set their respective roles.

⁹⁸ These MoUs may overlap but are generally different from those covering the roles of various agencies in financial sector supervision or in dealing with institutions in financial distress.

3.2 Informal approaches



Informal arrangements for interacting with government vary widely, but some major approaches are evident. A number of these approaches would seem to be most relevant for maintaining a productive relationship with government if they are seen by the central bank as part of their “active management” of the relationship. Active management means trying to understand the perspective of the government and preparing facts and arguments proactively so that problems can be addressed while they are still manageable. It also means, when possible, avoiding having the government be publicly surprised by the central bank; such surprises can work to the detriment of the central bank’s public reputation. Background briefings for elected officials are one way to avoid such surprises, but, as Figure 28 shows, central banks seem to use such briefings notably less than background briefings for the media as a means of nurturing their public image.

5

Table 13
Topics addressed regularly in background briefings for politicians
 Per cent of 37 central banks

Briefing topic	Total	ICs	EMEs
Monetary policy mandate and objectives	54	62	44
Central bank’s role in financial stability	51	57	44
Raison d’être, identity of central bank	46	57	31
Limits to what the central bank can achieve	46	48	44
Dedicated effort to directly enhance the reputation of the central bank	35	29	44
General financial literacy	22	24	19

Source: BIS (2007d).

Regarding the topics featured in the background briefings that central banks provide for politicians, the most frequent are the monetary policy mandate and objectives and the central bank’s role in financial stability (Table 13). Central banks in industrialised

countries more so than in emerging market economies tend to hold such briefings regularly⁹⁹

3.3 *Communication*

In some countries the central bank has an obligation to comment publicly on selected aspects of government policy (including at times on matters that are unrelated to central bank issues), and in a few cases the government has an obligation to comment on general aspects of monetary policy. However, in the majority of cases each side can choose how frequently it comments on the policies of the other side (Table 14). Central banks in industrialised countries have a higher propensity to comment on the fiscal and structural policies of the government than do their counterparts in emerging markets, and central banks as a whole comment more frequently on government policy than governments do on monetary policy – indeed, central banks rarely consider it a taboo for them to comment on government economic policies. Many of the central banks in emerging market economies say their comments on government policies are part of their duty, whereas, in industrialised countries, tradition and (to a lesser extent) the personal preferences of the governor play the most important role. The Deutsche Bundesbank, with its long tradition of commenting critically on fiscal policy, is a case in point. The Federal Reserve is another, whose Governors frequently make public comments and speeches on a wide range of economic and social issues.

More generally, wider public support for central bank autonomy may allow central banks to comment on fiscal policy more freely than in the past. However, national traditions differ, and a movement by the central bank to speak out more openly on fiscal and structural policies needs to be considered carefully. Two examples illustrate the range of outcomes that can result from such public disputes over policy.

First, during the 2004 federal election campaign in Australia, the Prime Minister claimed that interest rates would rise if the opposition were to come into power. This claim was accompanied in some political campaign material by the suggestion that the Reserve Bank of Australia had endorsed the current government's economic policies. In response, the Reserve Bank of Australia lodged an official complaint with the Electoral Commission. That response was understood to have reduced the chance of a reoccurrence of such an event.

Second, having objected unsuccessfully to the monetary policy conducted by Magyar Nemzeti Bank, the Government of Hungary in late 2004 passed an amendment to the central bank law to increase the number of members of the Monetary Council from nine to 13.¹⁰⁰ The move was interpreted by many as an attempt by the Government to stack the Council in its favour. However, with the central bank law stipulating price stability as the central bank's primary objective and with an inflation targeting framework in place, the increase in membership did not change the stance of monetary policy in the way the Government may have expected.

Overall, snares await the governor who either indulges in disputes with the government or, more broadly, chooses to speak publicly about matters unrelated to central banking. Comments from the central bank about government policies have their appeal to the

⁹⁹ The smaller propensity of emerging market central banks to provide such background briefings for politicians ties in well with their larger propensity to have regular meetings with government officials where monetary policy is discussed. These regular meetings may thus take the place of the background briefings that are used more often in the industrialised countries.

¹⁰⁰ The number of members on the Monetary Council, currently at nine, is predicted to decline to seven.

media because they come from a source that has an aura of professionalism and political neutrality. But, as stories of conflict help attract an audience, the media can tend to magnify them.

Table 14
**Public comments by central banks
 and governments on each other's policies**

Per cent of 22 central banks

Topic	Must comment		Chooses to comment							
			Often or always		At times		Rarely		Never	
	IC	EME	IC	EME	IC	EME	IC	EME	IC	EME
Comments by the central bank										
Government's budget	10	8	30	33	50	42	10	8	10	0
General aspects of fiscal policy	–	–	50	17	30	50	20	8	–	17
Financial sector policy	–	33	33	17	60	25	10	–	–	8
Structural policy	–	–	40	17	40	42	20	25	–	8
Comments by the government										
Monetary policy decisions	–	–	–	17	70	42	30	17	–	8
General aspects of monetary policy	–	17	–	17	50	33	20	17	20	–

Source: Moser-Boehm (2006).

Likewise, problems can emerge if the governor speaks out on a wide range of topics that are not related to his or her professional responsibilities. In such cases, the governor can be perceived as attempting to advance a personal or political agenda and thereby lose her or his reputation as an impartial expert. Even if a governor does not initiate speaking on such topics, the governor is often asked about them by the media precisely because of the weight and prestige of the governor's office. If the governor chooses to respond, a disclaimer such as "this is only my personal opinion" is of limited use. One way for the central bank to address the issue is to minimise such comments – for example, by the governor refusing to take open questions from the news media. However, in some countries such an approach is unthinkable for a senior public official and could be interpreted as a sign of disdain for democratic practices or of weakness in exercising the bank's policy autonomy.

An alternative approach is for the central bank to engage with the media on the economic policies of the government or broader issues only if the topic is critical for the central bank. And if it is, the comments can be usefully preceded with a statement that they are not political but based on impartial economic analysis. That stipulation is most effective if it is rarely needed. Just as it is important for political leaders to be in the news, it is important for the governor to keep his or her powder dry until needed.

Chapter 6: Financial resources and their management¹⁰¹

The Main Issues

Central banks need financial resources – funding and a balance sheet with which to engage the private financial sector. Access to such resources can be an important source of independence, or of influence, depending on who has control. At the same time, central bank policy decisions and operations can have large financial consequences. Finding the right balance between independence and accountability is an important issue. The main issues are as follows:

- What funding models are available for central banks? What are the implications of self-financing – paying operating costs from revenue – especially as it applies to controlling central banks' budgeted and realised expenditure?
- Who bears the financial risks associated with policy action? What role do rules for the distribution of capital and income play in managing the relationship between financial independence and policy independence?

1. Introduction

Central banks have a dual identity: they are banks as well as policy agencies. They can be large, in a financial sense, and they can have a substantial impact on the financial conditions that determine their income, while their pursuit of policy objectives has a direct bearing on their balance sheets. As public policy institutions, they are part of the state sector and thus are owned (directly or beneficially) by the government on behalf of the public. Yet they usually have a degree of independence that extends to their finances. This combination of role and position gives rise to the complex trade-offs that generally lead to the subordination of profitability considerations, as discussed in this chapter.

2. The central bank balance sheet

Central bank balance sheets¹⁰² have common elements (see Figure 29, a stylised balance sheet that would apply to most members of the Central Bank Governance Network), but their structures vary considerably (as shown in Figure 30, which uses the same colours as Figure 29 to show actual data for 90 central banks).

The balance sheet of any organisation is a sum of interdependent parts and must be analysed as such. In the case of the central bank's balance sheet, a useful starting point is to take the monetary liabilities issued by the central bank, and the assets funded from the proceeds, as the core of it. The configuration of this core is the result both of structural factors – including explicit decisions on the composition of assets and liabilities – and economic policy choices, with the latter usually dominating. This section considers the balance sheet effects of these structural and policy influences.

¹⁰¹ This chapter was prepared mainly by Bruce White.

¹⁰² Strictly speaking, the term "balance sheet" refers to the accounting representation of assets and liabilities of an organisation. The term is also commonly used to refer to the assets and liabilities themselves. This chapter mostly uses the term to mean assets and liabilities; it is clear from the context when the term is intended to be interpreted as referring to an accounting report.

Figure 29
A stylised central bank balance sheet

Total assets	Total liabilities and capital
	Currency (notes and coin)
Advances to/claims on banks	Deposits from banks
Other lending	Other domestic currency borrowings/deposits
Government bonds/advances	Bonds and securities
Foreign exchange reserves	Deposits from government
	Foreign currency borrowings
	Capital – paid up capital – retained earnings and reserves
Other assets (premises, etc)	Other liabilities

Note: The colour scheme of cells in the left and the right column does not imply a functional relationship between them, and the row heights do not imply a size relationship.

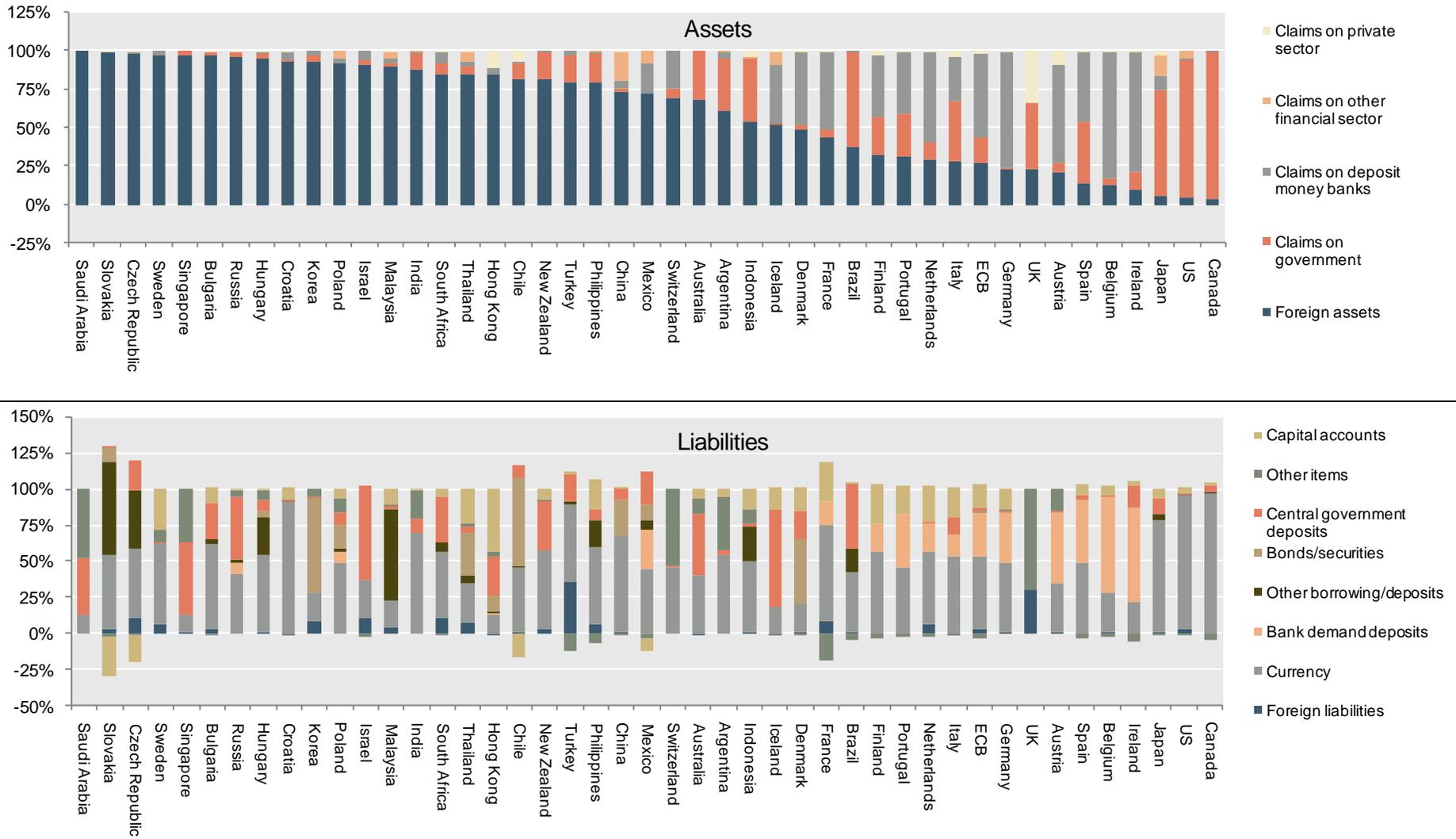
2.1 Structural factors

2.1.1 Monetary exchange

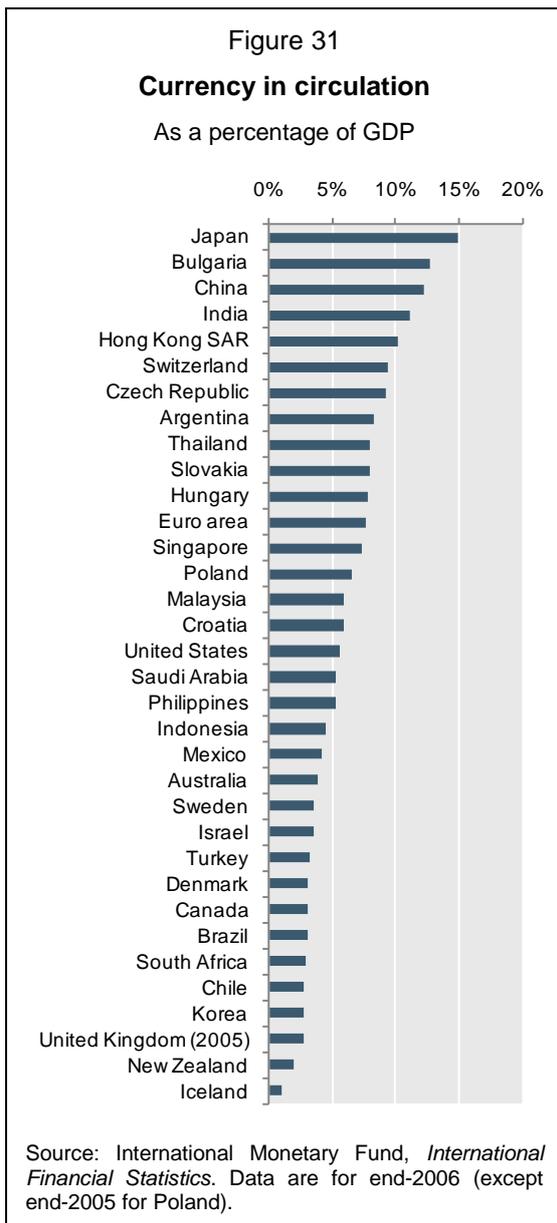
The central bank's liabilities – so-called central bank money – are at the heart of the monetary system. The liabilities consist of (1) banknotes and coins and (2) commercial bank deposits in the central bank – at least those deposits freely useable for purchasing currency and making interbank payments. The integrity of the monetary system depends on the ability to convert funds on deposit in private sector banks (so-called commercial bank money) into central bank money at par. A number of factors determine the amount of central bank money in the economy. Three important ones are as follows:

- The demand for notes and coins. Such demand varies widely across countries depending on preferences and habits that determine how willingly people use commercial bank instruments as a means of payment and store of value (Figure 31). It also depends to some extent on the degree of development of the infrastructure for retail payments and the sophistication of the financial system.
- Interbank payment arrangements, such as liquidity management policy (discussed below in the section on the influence of policy factors).
- The architecture of the interbank settlement system used by the central bank. A real-time gross settlement system requires a larger amount of intraday liquidity than does a system using end-of-day netting. The liquidity can be provided by intra-day central bank credit (as done by the Federal Reserve in its Fedwire system and by the Reserve Bank of Australia) or by banks holding sufficient liquid deposit balances at the central bank (as in New Zealand since 2006).

Figure 30
Asset and liability structures of 45 central banks



Source: International Monetary Fund, *International Financial Statistics*. Data are for end-2006 (except end-2005 for Poland).



The *share* of monetary liabilities in the balance sheet varies significantly (Figure 30) and depends on additional structural factors. These other factors include differences in the scope of functions discharged by the central bank, attitudes towards lending to the government and domestic private sector parties, and exchange rate risk. These are discussed next.

2.1.2 *Financial relations with government and the private sector*

A core issue faced by all central banks is where to invest their assets, that is, the proceeds from issuing their monetary liabilities. At least two choices are relevant: (1) foreign or domestic and (2) government or private.

As to the first choice, most central bank assets are invested predominantly in instruments denominated in foreign currencies (Figure 30). This arrangement is partly a consequence of current or historical policy choices – to be discussed shortly – but is also a reflection of the financial relationship that the central bank desires to have with the government, on the one hand, and the private sector, on the other. This follows from the fact that it is typical that foreign currency investments are investments abroad (ie with foreign governments or foreign private issuers).

Chapter 3 noted that many central banks are prohibited from lending directly to the government, or are at least the form in

which they hold government assets is restricted. The essential reason for those limits is avoidance of exposure to political pressure to adopt terms on such investments that will effectively monetise the fiscal deficit (“fiscal dominance”). Independent of other reasons for holding foreign assets (eg as ammunition for intervention or as a precaution against interruption of access to capital markets), the choice to invest abroad limits the risk of fiscal dominance.

An argument against the central bank investing abroad proceeds along the following lines: The willingness of people to hold and use central bank liabilities, even at no interest, derives from the credit standing of the central bank as an institution fully backed by the government and from legal privileges accorded to the central bank – especially monopoly rights to issue legal tender. The proceeds of issuance thus belong in some sense to the government and should be lent to the government. Under this argument, limiting the risk of fiscal dominance should be achieved through means other than prohibiting the central bank from lending to the government.

Regarding the choice of public or private sector, being prohibited from lending to the government does not necessarily mean that the central bank must invest abroad. The

central bank could invest in domestic private sector assets. However, doing so may not always be possible in countries where the range of private sector assets is narrow – in those circumstances, domestic lending would raise concerns about credit risk and liquidity risk. It would also potentially bias funding costs in favour of some market participants and against others. In the exceptional circumstances represented by the current international financial crisis, the central bank's acquisition of private assets can become large enough to raise such issues even in the largest advanced economies, such as the United States. Where capital markets are not deep, or are not functioning well, the central bank could become a significant financier of individual enterprises, biases in funding costs of individual private enterprises could be important, alongside notable governance issues and (in some places) corruption risks. In any case, central bank investment in marketable government securities can help maintain its neutrality towards private borrowers and in smaller economies can potentially assist the development of the government securities market.

2.1.3 *Exchange rate risk preferences*

The choice to invest the proceeds of monetary liabilities in foreign assets usually creates an exchange rate risk. A very small number of countries have the option of investing in foreign assets denominated in their own currency. But for the large majority, holding foreign assets means holding foreign currency assets.

Foreign currency assets are on central bank balance sheets often as a result of historical or current policy reasons rather than as a result of a decision on balance sheet structure. One historical reason is that fixed exchange rate regimes required stocks of foreign currency. Among the current reasons to maintain a reserve of foreign currency instruments are the ability they convey to intervene in foreign exchange markets to influence the exchange rate and the ability to deal with an interruption in access to global capital markets. As both those motivations tend to be more relevant to emerging than advanced economies, emerging markets tend to maintain higher proportional levels of foreign currency reserves. An active exchange rate policy creates variations in foreign currency positions that in turn generate changes in exchange rate exposures. However, the structural position associated with maintaining an intervention capability need not necessarily create an exchange rate exposure for the central bank.

There are two main ways for the central bank to avoid a structural exchange rate exposure while maintaining an intervention capability, and both have balance sheet consequences. The first way is for the government, rather than the central bank, to own the foreign exchange reserves used for intervention. Under such arrangements – for example, in Canada, Japan and the United Kingdom – the central bank intervenes as an agent without carrying any of the balance sheet risk. Some central banks do not have this option, as the relevant law requires that the central bank holds and manages the reserves. This is the case, for example, for the Eurosystem central banks.¹⁰³

The second way to avoid a structural exchange rate exposure is for the foreign exchange reserves to be funded from foreign currency borrowings rather than domestic monetary liabilities. Such an arrangement is generally available to borrowers with a high credit standing – the Bank of England is a notable example – and leads to an increase in the size of the central bank's balance sheet, since foreign currency

¹⁰³ Article 105, paragraph 2, 3rd indent of the EU Treaty makes it a task of Eurosystem central banks to hold and manage the official foreign reserves of Member States.

liabilities cannot be a general substitute for domestic monetary liabilities.¹⁰⁴ Until recently the Reserve Bank of New Zealand ran a fully hedged foreign exchange position. However in 2007 the Reserve Bank restructured its balance sheet to one that incorporates a sizeable “long” foreign exchange position. This followed a fundamental review of the structure of the balance sheet, taking account of its various policy roles and responsibilities. The revised structure was also considered to provide the Reserve Bank with greater scope to intervene in the foreign exchange market for monetary policy purposes (ie if possible to avoid unnecessary instability in the exchange rate while achieving its inflation target over the medium term). High-level trade-offs between different policy and financial objectives clearly were involved in arriving at the preferred asset and liability structure (see Reserve Bank of New Zealand (2007a,b)).

2.1.4 *Balance sheet variance*

The recent restructuring of the Reserve Bank of New Zealand’s balance sheet illustrates some considerations relating to the impact of different financial structures on the co-variance of the central bank’s net asset and liability position with economic circumstances facing the country as a whole. The review that led to the restructuring in New Zealand appears to have been viewed from “mini-max” welfare and insurance perspectives. Setting aside the financial consequences of any foreign exchange market intervention – or assuming no intervention – a long foreign exchange position would generate profits during a financial crisis or a period of weak economic performance that leads to depreciation of the local currency; that is, foreign currency assets would be increasing in value in local currency terms. Conversely, a long foreign currency position would lead to losses during good times as the local currency appreciated. Thus, from an overall public sector or national net worth point of view, some offsetting of gains and losses would be involved, consistent with a portfolio diversification strategy.¹⁰⁵ If such diversification gains are thought to be important, it may even be judged appropriate to pay a higher running cost of financing reserves by borrowing in the domestic currency, which is akin to paying an insurance premium.

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Even if motivated by wider public sector or national net worth considerations, the impact on the central bank’s own position cannot be ignored. By design, policy and financial independence separate the governance of the central bank from the governance of the public sector as a whole. From the mini-max perspective, a long foreign exchange position would mean that the central bank is booking revaluation gains when the policy situation is worst – when the currency is tumbling, such as may be the case during an economic crisis. Although intervention in the foreign exchange market in such circumstances might risk losses, the central bank’s own starting position would be one of relative strength. But on the other side of the coin, in better times the central bank’s capital position would be eroded by exchange rate revaluation losses. Should such losses accumulate to the point at which recapitalisation of the central bank is warranted, financial independence may be threatened. While a capital injection by the government may be more forthcoming because tax revenues are relatively

¹⁰⁴ A third possibility would be to achieve the same exchange rate hedge through derivatives. For the purposes of this discussion, this option can be regarded as equivalent to financing FX reserves with foreign currency borrowing.

¹⁰⁵ Another way of viewing such a central bank position is as a “hedge” against the exchange rate risk faced by the economy as a whole; or sometimes, more specifically, as a hedge against an opposite exchange rate exposure embedded in the government’s balance sheet. Some countries have also accumulated foreign exchange assets in their sovereign wealth funds, which moves the foreign currency exposure from the central bank’s balance sheet and may also facilitate investing in a wider range of investments, including equities, than is typical for a central bank.

buoyant, new funds may not be automatically granted. Potentially difficult negotiations may be required; the central bank may find it difficult to persuade the sceptical elected officials that the loss of capital was justified, especially if, at the same time, the central bank is raising interest rates to cool the buoyant economy. For this type of reason, diversification tends to be only an ancillary consideration.

A further ancillary consideration is the dynamics of risk-taking during foreign exchange interventions. A central bank that maintains a structural net long foreign currency exposure would reduce its initial currency mismatch when intervening to support a falling currency. Conversely, faced with the same policy problem, a central bank with a fully hedged structural starting point (FX assets fully funded by FX liabilities) would, by intervening, generate a currency mismatch at a time when the situation was most risky. Such dynamic issues are rarely discussed in connection with choices on balance sheet structure, suggesting that they are of second or third order.

2.2 Policy regime influences on the balance sheet

2.2.1 Exchange rate regime

First, maintaining foreign exchange reserves provides a capability to intervene, including in financial crises to ensure continued convertibility of the currency, and in circumstances in which access to capital markets dries up. This appears to have been one of the driving forces behind the accumulation of substantial foreign exchange reserve portfolios by a number of East Asian central banks in the aftermath of the Asian financial crisis of the late 1990s. Even among those countries whose central bank holds only very small amounts of foreign currency reserves – for example, Canada, the United Kingdom and the United States – the government continues to hold foreign exchange reserves (generally with the central bank continuing to manage some or all of the portfolio under an agency arrangement). Because countries with a floating exchange rate tend to intervene in the foreign exchange market infrequently, their holdings of foreign exchange reserves tend to be reasonably stable.¹⁰⁶

Intervention in the foreign exchange market to maintain a fixed or managed exchange rate or to influence a floating rate produces fluctuations in holdings of reserves. When reserves are held on the central bank balance sheet, both sides of the balance sheet are affected. On the liability side, the local currency leg of the intervention transaction initially affects commercial banks' deposit accounts at the central bank.¹⁰⁷ Usually, that initial effect is immediately sterilised to prevent changes in liquidity that would be inconsistent with policy interests. Generally, sterilisation operations involve the central bank in offsetting its purchase (sale) of foreign exchange by selling (buying) government securities from its own portfolio. With large-scale purchases of foreign exchange, central banks may find that they hold insufficient securities in portfolio, and instead have to issue their own securities (for example, the People's Bank of China). Central banks can also issue their own securities to widen the range of monetary control options.

¹⁰⁶ Which is not to say that the *composition* of the foreign exchange reserves portfolio is not actively managed; many central banks quite actively manage the portfolio with a view to achieving investment performance targets, within prescribed risk parameters.

¹⁰⁷ Either directly to the account of the local banks with which the central bank has entered into the foreign exchange transactions, or indirectly when transactions with local banks' customers (including their overseas correspondents, and customers of those correspondents) are cleared and settled across the accounts of the central bank.

Thus foreign exchange market interventions can produce large-scale changes in the size and composition of the central bank balance sheet. Where sterilisation is entirely in securities held in portfolio, the changes are compositional, with foreign exchange assets rising or falling and domestic assets moving in the opposite direction. When the central bank issues its own securities as a part of the sterilisation operation, the balance sheet also swells (or shrinks, where upward pressure is being exerted on the exchange rate).

2.2.2 *Fiscal influences*

In virtually all countries, the government holds its main bank account with the central bank. However the range of banking services varies widely. Some central banks (for example, the Bank of Canada) provide little more than a single cash deposit account; in such cases, transactional banking services, such as the processing of government payments, are provided by commercial banks, whereas other central banks (for example, the Reserve Bank of Australia) provide both account and transactional services. In both cases, however, the Government's bank account at the central bank generally is the main repository for its cash flows arising from revenues, expenditures and financing transactions. Thus, the Government's cash payments and receipts generally result in a transfer of funds (in the interbank clearing and settlement system) between the Government's account and the commercial banks' accounts at the central bank. In this way, fiscal policy as it eventuates in government financing operations can have a significant bearing on the structure of the central bank's balance sheet.

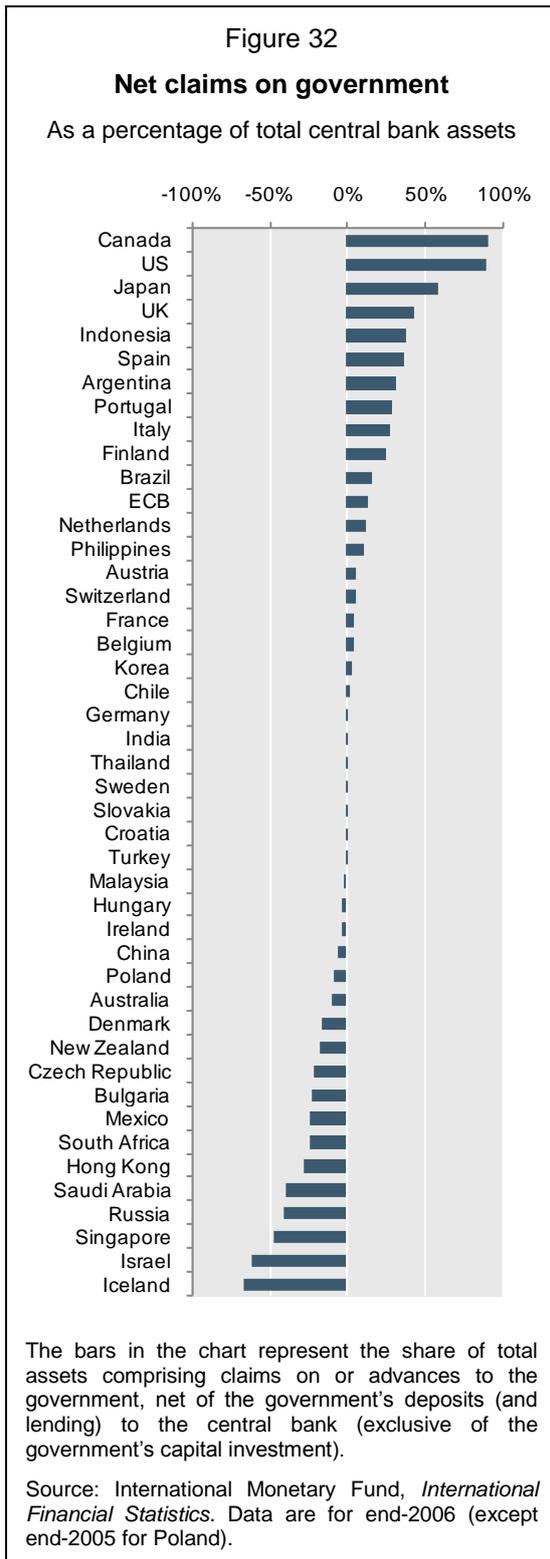
As evident from the preceding discussion, central banks' choices for structuring their balance sheets – for example, regarding sterilisation of interventions in the foreign exchange market – can also have a bearing on the financial position of the central bank vis-à-vis the government. The overall government position with the central bank reflects both influences and also varies substantially across central banks in the Central Bank Governance Network (Figure 32).¹⁰⁸ Some central bank balance sheets, including those of the Bank of Canada and the Federal Reserve System, show large net claims on their respective Governments, whereas in other cases, for example, Iceland and Israel, central banks are large recipients of deposits from their Governments.

2.2.3 *Monetary operations*

The central bank's liquidity management operations can have a significant bearing on the structure of its balance sheet. While central banks generally implement monetary policy by calibrating the price (interest rate) at which they transact with the commercial banks and the amounts in which they transact, the details vary from central bank to central bank.

Such operations may take a variety of forms. For example, excess liquidity in the banking system might be absorbed by the central bank through a sale of securities; issuing its own interest bearing securities; entering into repurchase agreements (under which the central bank sells government bonds with an obligation to repurchase at an agreed price at a future date, and which, under accounting conventions, is treated as secured borrowing); and entering into foreign exchange swap agreements (similar in substance to repurchase agreements, but using foreign exchange rather than government bonds to exchange payments or rates over a specified period).

¹⁰⁸ This overall position comprises central banks' claims on the government (by way of advances and holdings of government bonds) less their liabilities to the government (deposits held by the government with the central bank and any other borrowing by the central bank from the government, but not the government's equity in the central bank).



Alternatively, excess commercial bank deposits at the central bank might be “absorbed” by an increase in reserve requirements, possibly with little change being evident in the balance sheet. However, although there are exceptions (China being an important one), the trend has been away from the use of reserve requirements as a policy instrument, and in many countries there are none.

While these different operating techniques affect the balance sheet in quite different ways, they have the same broad monetary effect. In other words, there is no one-to-one relationship between the size and structure of a central bank's balance sheet and its effectiveness as a monetary policy institution. Any such evaluation needs to take account of the nature of the central bank's monetary operations and how they are reflected in its balance sheet.

2.2.4 Financial stability interventions

The balance sheets of some central banks include claims on the private sector and on non-bank financial institutions, such as development banks. Claims on the private sector generally arise from the central bank's provision of emergency support to the financial system; while not common, such interventions and their impact on the balance sheet are related to core parts of central bank functions. Claims on non-bank financial institutions typically arise from the provision of finance for longer-term development purposes; such financing is neither common nor generally regarded as a core part of central bank functions.

Private assets normally appear on the balance sheets of only a small number of central banks (Figure 30). This is in part because large-scale liquidity support operations are rare and temporary. Such support more usually involves either the government, directly, or a special purpose asset resolution entity. And it is usually

considered preferable to prevent the extension of the central bank's banking (credit) functions to the non-bank private sector (the financing of which is the function of the commercial banking system).

However, the current financial crisis, centred in major industrial economies, illustrates that financial stability interventions can in certain circumstances dramatically alter the size and structure of central bank balance sheets. For example, Figure 30 shows that

the balance sheet of the Federal Reserve System was almost entirely invested in US government securities at the end of 2006, yet by the end of 2008 it was predominantly invested in private sector debt. And during the intervening period, the size of the Federal Reserve's balance sheet had more than doubled. During the same period, the balance sheet of the Bank of England, and to a lesser extent that of the ECB, were similarly transformed (Figure 33).

These changes in balance sheet composition and size have directly and indirectly affected the financial relationship between these central banks and their governments – in terms of the risk characteristics of the government's equity stake in the central bank and the central bank's exposure to recapitalisation risk. In turn, these changes can, but need not, influence the financial independence of these central banks.

In sum, the composition of central banks' asset portfolios covers a full spectrum, from those that are almost entirely local currency backed – for example, the Bank of Canada – through a range of intermediate positions, to some that are overwhelmingly foreign currency backed – as is the case for those, such as the HKMA, that operate a currency board type of arrangement.¹⁰⁹ Most of the advanced economy “gold standard legacy” central banks still have sizeable foreign currency holdings. Meanwhile, central banks in a number of emerging market economies – for example, China, Hong Kong SAR and Malaysia – have accumulated very substantial foreign exchange reserves, particularly during the last seven to eight years following the East Asian financial crisis; they have done so both for precautionary reasons and to manage their exchange rates in the face of large balance of payments surpluses. And central banks in a few large developed economies have recently seen dramatic changes in the structural composition of their balance sheets, the longer-term effects of which are yet to be seen.

3. Central bank income

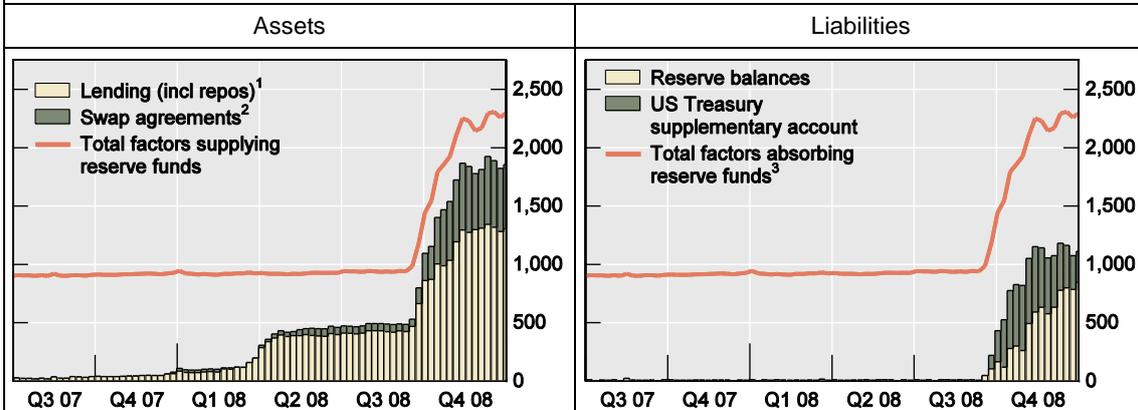
A central bank's income statement resembles that of any other financial institution. Its primary source of income is interest receipts from investments, net of interest costs from liabilities, although revaluation gains and losses can also matter substantially. As discussed above, the liability and asset structure reflects the variety of policy approaches and circumstances in each country. In turn, these choices and circumstances will affect income generation. Although it sometimes seems that central banks are inherently in a position to generate more income than they could possibly spend – on valuable projects, that is – structurally unprofitable outcomes are also possible.

¹⁰⁹ Use of foreign exchange derivatives can cause the foreign exchange position of a central bank to be quite different from what is shown on its balance sheet. For example, some central banks use foreign exchange swaps to manage liquidity: one side of these transactions is on-balance sheet and the other is off-balance sheet.

Figure 33

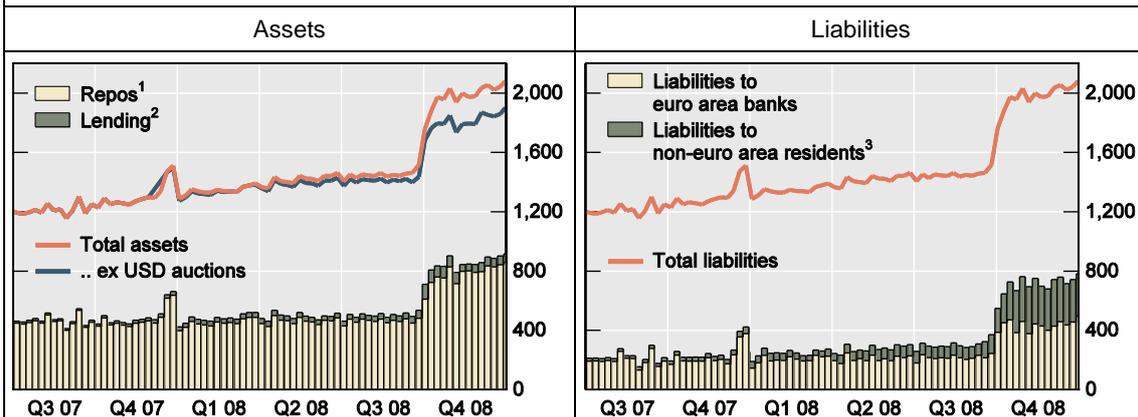
The recent evolution of selected central bank balance sheets

Federal Reserve (in billions of US dollars)



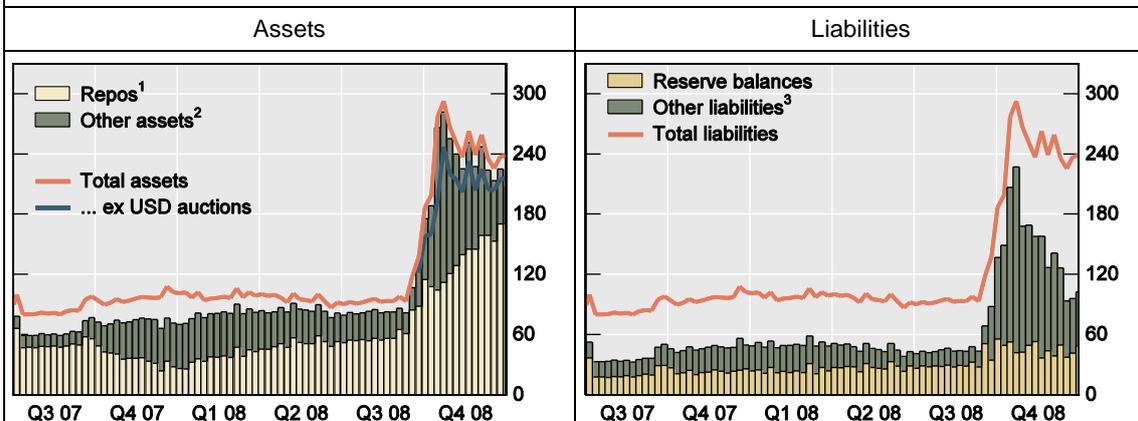
¹ Primary credit, reverse repos, Term Auction Facility and all other special lending facilities introduced since December 2007. ² US dollar currency swap agreements with foreign central banks. ³ Total factors absorbing reserve funds and reserve balances with Federal Reserve Banks.

Eurosystem (in billions of euros)



¹ Main refinancing, long-term refinancing and fine-tuning operations in euros. ² Marginal lending and other claims in euros on euro area credit institutions. ³ Including liabilities vis-à-vis the Federal Reserve (US dollar currency swap agreements).

Bank of England (in billions of pounds sterling)



¹ Reverse sterling repos. ² Includes, among others, lending for UK deposit protection and US dollar repo lending to UK-based credit institutions. ³ Including fine-tuning sterling repos.

Source: Central banks.

3.1 *Net interest income*

3.1.1 *Balance sheet composition effects*

Where the share of non-interest bearing liabilities is overwhelming, the portfolio of assets of the central bank will usually generate ample seigniorage income. In those cases, the central bank can face little in the way of a budget constraint to promote efficient, and effective, use of resources – an issue that is returned to in Section 6.1 below. Also, it can give rise to struggles over whether the central bank should retain the surplus to build up reserves or transfer it to the government (considered further in Section 5.3 below). A further concern is that because surplus income tends to rise with inflation via nominal interest rates, either the government or the central bank, or both, have an incentive to inflate.

But the central bank's funding position may be precarious – especially where foreign exchange reserves are large and growing, or the central bank accepts unusually low interest margins as a result of operations to absorb liquidity or restore financial stability. For most central banks, the investment returns on foreign (reserve) currency assets are lower than those available on the domestic currency assets for which they are a substitute. Equivalently, the cost of additional domestic funding required (such as where a central bank issues securities to the market to sterilise the expansionary monetary effect of purchasing foreign exchange) is often higher than investment returns on the foreign exchange assets purchased. Lower interest rates on reserve currencies tend to go with the greater liquidity and lower risk premia typically associated with those currencies.¹¹⁰

For example, in recent years, Bank Indonesia has earned between 2.5% and 3% on its foreign exchange reserve holdings but has paid between 7% and 8% on rupiah securities it has issued to finance them. In China, where for some years the sterilisation costs were negative – local interest rates were below the rates obtainable on foreign currency investments – a normalisation of international interest rate differentials has recently created a negative “carrying cost” on the foreign currency reserves.

The financial risks arising from policy decisions are a motivation for some central banks to hold exceptionally large buffers of capital. Moreover, capital invested in the central bank does not necessarily carry a market related servicing cost.

3.1.2 *The level of interest rates*¹¹¹

A core influence on central bank income is the level of domestic interest rates. With a substantial proportion of funding (currency liabilities on issue) at a zero rate of interest, variations in the interest earned on a central bank's investment assets (both domestic and foreign) translate directly into variation in its net investment income.

For most central banks, the amount of currency issued, the counterpart of which is invested at prevailing rates of interest, generates net interest income sufficient to comfortably cover their operating expenses. In a restricted BIS study on central bank

¹¹⁰ Even where the central bank funds the building of foreign exchange reserve assets in foreign currency, there can still be a net interest cost. Unless the central bank enjoys a foreign currency credit rating that matches or exceeds that for the foreign currency assets in which it invests, the cost of borrowing generally will be greater than the investment return.

¹¹¹ The concentration in this section is on the effect on income of sustained interest rate configurations, rather than on policy measures undertaken to influence the business cycle and thus the current level of interest rates.

capital (BIS (2005a)), the break-even interest rate – that is the level of interest rate required for net investment income to be just sufficient to cover operating costs – was estimated for a cross section of central banks to fall mostly in a range from about 0.5% to a little over 1%, or around double those levels if the amount of currency issued was to shrink by half (Table 15).¹¹² These estimates suggest that interest rates at “normal” levels, combined with current patterns of currency use, provide most central banks with a comfortable level of net investment income relative to their operating expenses.

Table 15
Break-even interest rates for central banks
In per cent

	Actual date (2003)	If banknotes issued fell by 50%
Canada	0.50	1.01
Chile	4.94	-6.74
Czech Republic	1.00	2.92
France	2.45	4.82
Japan	0.17	0.33
Netherlands	0.85	1.50
Philippines	1.17	1.89
Sweden	0.53	0.79

Source: BIS (2005a).

That said, the same study also highlights how the break-even interest rate can be sensitive to the structure of the balance sheet. In cases where only a small proportion of the central bank’s total funding is interest free, say because of past losses that have eliminated capital, a reduction in currency issued could actually tip the central bank into a loss-making position. The Central Bank of Chile is a case in point: owing to losses that were incurred through the 1990s, it has since had negative capital, and its income earning assets exceed its interest bearing liabilities by only a small margin. In that case, a (hypothetical) 50% reduction in the amount of currency issued would shift the balance sheet of the central bank from having net remunerated assets to net interest bearing liabilities and thus create structural losses.¹¹³

Also, interest rates may fall to such low levels that central bank net investment income falls to correspondingly low levels. In the early part of this decade, interest rates in the United States and in the euro area were at very low levels, which, if sustained, could have significantly narrowed the comfort margins of the central banks of those

¹¹² The break-even interest rate is calculated as a weighted average of domestic and foreign interest rates but does not take account of potential currency gains or losses on net foreign exchange positions. The calculations are sensitive to a number of assumptions and hence should be regarded as illustrative rather than definitive.

¹¹³ A negative break-even interest rate should be understood in terms of the central bank needing to receive an interest subsidy sufficient to cover what would be a net interest expense.

economies (although they would not have faced any immediate danger of losses). Interest rates have again fallen to very low levels.

3.2 *Income from balance sheet operations*¹¹⁴

Many central banks nowadays implement monetary policy by undertaking operations in the financial markets and place less reliance on administrative measures, such as adjustments to reserve requirements and regulations on commercial lending. These operations generally are calibrated to achieve a targeted short-term interest rate (the central bank's "policy" rate) in the financial markets. Given fluctuating market conditions, central banks typically have a regular presence in the market, either buying (to inject liquidity) or selling (to withdraw liquidity).¹¹⁵ If these operations are conducted at a positive "spread" between the price at which the central bank provides central bank liquidity and the price at which it withdraws it – around a reasonably stable policy interest rate – income is generated for the central bank. Conducting market operations at a spread can also encourage market participants to manage liquidity by transacting within the spread among themselves and thus support the operation of domestic cash and bond markets; however, excessive spreads can amount to a "tax" on the financial system and inhibit its development. For these reasons, the design of the central bank's market operations is policy driven rather than profit driven.

3.3 *Fees for services*

Most central banks perform a range of activities beyond those that involve the use of its balance sheet to implement monetary and exchange rate policy. Almost all act as banker to, and some are supervisor of, the country's commercial banks. Many also provide banking and debt management services to the government. In many countries, central banks also have been providers or regulators of the systems by which payments are cleared and settled among commercial banks.

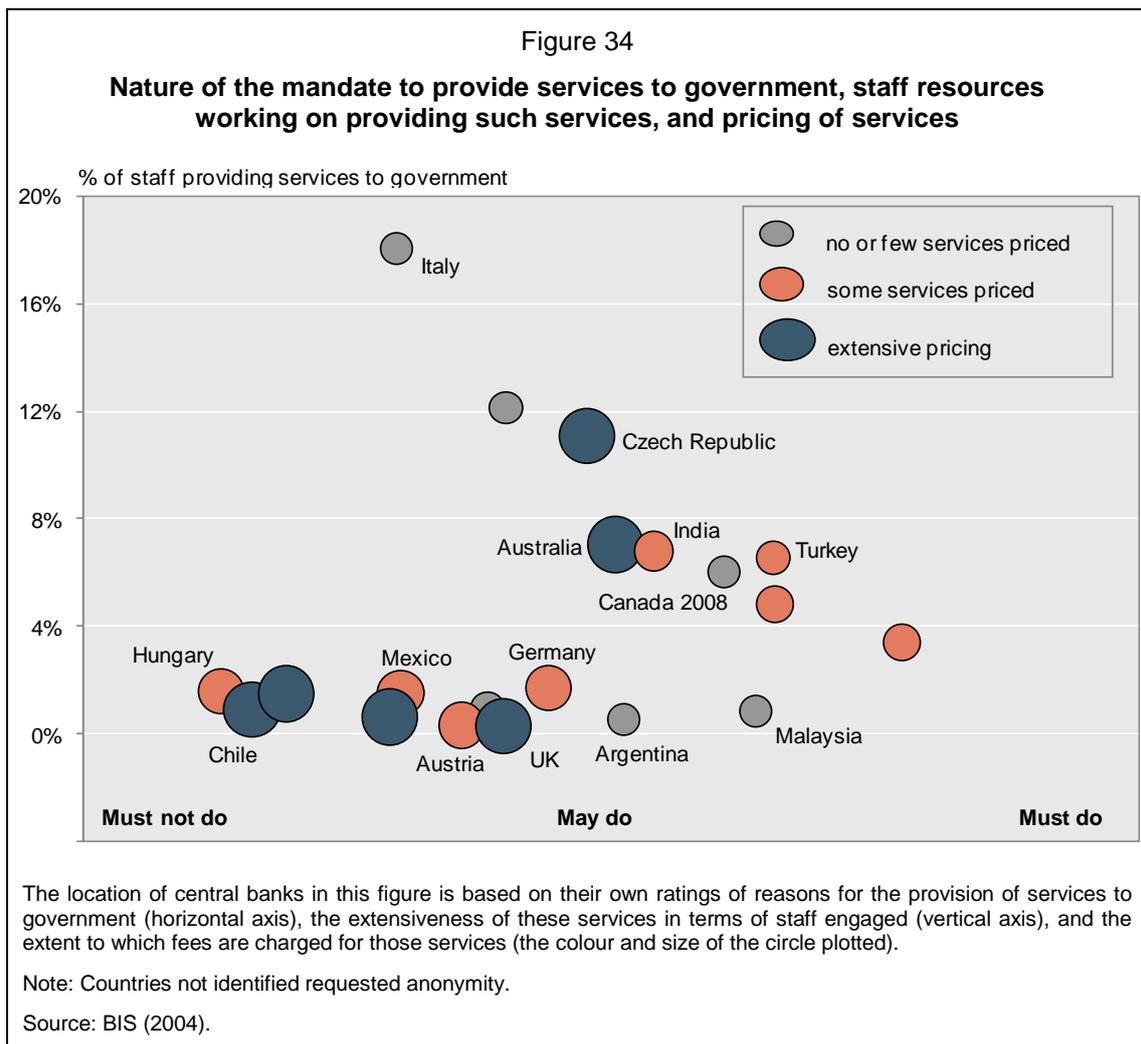
In some countries, it is also common for central banks, as agent for the government, to perform a range of administrative functions related to the financial sector that are not necessarily core central banking functions (Figure 34). In the United States, for example, the Federal Reserve Banks process food coupons and postal money orders (and are reimbursed for the costs of providing these and similar services). The Bank of France administers the Household Debt Commission, which provides personal budgeting assistance, and employs throughout France approximately 1,200 of the Bank's 15,000 staff.

Some central banks have quite rigorous and comprehensive processes for charging fees for services provided, for example, Australia and the United States (Figure 35). In

¹¹⁴ As a matter of practice, it is not always easy to account separately for the income from holding securities and the income from trading them because both involve the same portfolio (unlike commercial banks, which often separate their balance sheet into a trading book and a banking book). A similar issue arises from the liability side of the balance sheet. Hence, net investment income as reported in central banks' financial statements generally comprises a single amount, which means that the cost of funding the portfolio can mask the income from operations.

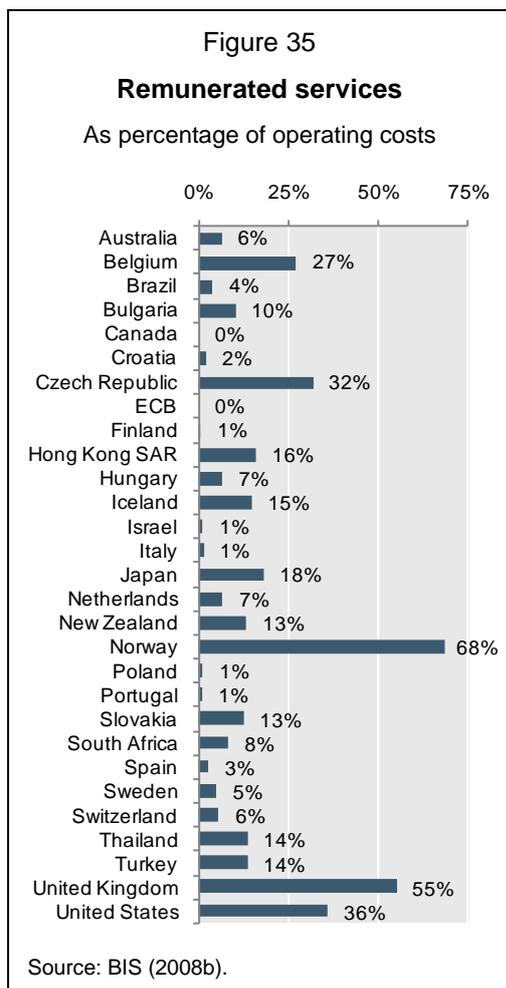
¹¹⁵ Most central banks undertake open market operations in one form or another, although the techniques used differ in their detail from one central bank to another. They may involve buying and selling securities outright, the use of repurchase agreements (in economic terms, secured loans), making loans and taking deposits, foreign exchange swap transactions, or some combination of these. See Bank of England (2006 and 2008) for a review of market operation practices in the United Kingdom and BIS (2008a) for an updated summary of market operations practices in large economy central banks.

Australia, since 1996 contracts by government agencies have been required to go to public tender and entities like the Reserve Bank of Australia price their services to the Government at full cost, including a return on capital. The Federal Reserve is required to practise full cost recovery for a range of payment services it provides to depository institutions (including a margin for imputed profits and taxes); which means, in effect, to charge on a basis that is competitively neutral with respect to private sector providers. As a result, the Federal Reserve System recovers almost one third of its operating costs by pricing services. Central banks that have implemented charging regimes for the provision of services generally have found it to have sharpened their focus on efficiency and on whether alternative arrangements might be preferable, from the standpoint of both the central bank and the service recipient.



By contrast, there are some central banks that do not charge for services. Some of these central banks find it difficult to set fees to cover overhead as well as the direct costs of providing the services concerned. Another constraint on charging fees for services provided can be the law. For example, by law the Deutsche Bundesbank cannot charge for services provided to the Government. That said, it is not unusual for central banks to provide services to the government without charge; this is the case for fully one half of emerging market central banks and one third of industrialised economy central banks. One possible rationale for this practice is that charging would introduce unnecessary administrative costs since the amounts involved merely gross up both

government expenditure and receipts, and that these would be netted out if the government and central bank accounts were consolidated.



Overall, fee income has not been a major contributor to central bank income, and in the cases of some central banks, ancillary functions tend to be funded to a significant extent out of the income generated from the balance sheet. For instance, the incidence of bank supervision fees is significantly less in countries where the bank supervisor is the central bank rather than a separate supervisory agency, although the non-interest bearing reserve deposit requirements that apply to commercial banks in some countries can be regarded as a proxy for fees. Also, there are some central banks that apply reasonably full cost recovery for banking supervision, eg the Bank of Slovenia, or partial cost recovery as the Central Bank & Financial Services Authority of Ireland, the Netherlands Bank and the Bangko Sentral ng Pilipinas (Masciandaro et al (2007)).

4. Balance sheet exposures: asset and liability revaluations

The preceding sections of this chapter have described the central bank's financial resources and the sources of income. This section considers how the balance sheet can be exposed to revaluations which, when they crystallise, can have a substantial impact on

the income and capital of a central bank, and thus on the availability of the resources needed for it to perform its functions.

The central bank's exposure to operational risks (fraud, computer failure during a crisis, policy errors) is considered separately in Chapter 8.

Central banks have dual responsibilities in relation to their balance sheet – as a policy institution and as a custodian of public resources. These responsibilities are mostly complementary, but in some circumstances they can conflict.

For a central bank to achieve its policy objective of maintaining price stability – that is, stability in the purchasing power of the central bank's monetary liabilities – it needs to maintain sound asset backing for those liabilities: sound money generally requires a sound balance sheet. But a central bank may also need to use its balance sheet to help maintain stability in the face of financial shocks. For example, it may need to provide emergency liquidity assistance in the event of a financial shock that causes a "flight to cash". The example of dramatic changes in the structure of the Federal Reserve System's balance sheet in response to the worldwide financial crisis has already been noted.

And, as discussed above, most central banks hold net foreign exchange reserves, and hence an exposure to exchange rate risk, to support policy objectives.

Thus, for central banks, minimising financial exposure cannot take precedence over the key policy goals of maintaining price and financial stability. At the same time, however, effective stewardship of the balance sheet is important: poor financial performance by a central bank can impinge, potentially seriously, on the adequacy of its resources and on its ability to deliver medium-term price stability; and ultimately its financial results are for the account of the public purse. Stewardship of the central bank's finances entails effective management of the structural exposures as well as of day-to-day activities (asset and liability management and revaluations), as discussed below.

4.1 Balance sheet exposures

Central banks' financial risk exposures can be grouped into three broad categories: exchange rate, interest rate and credit.

4.1.1 Exchange rate exposure

The majority of central banks maintain a structural "long" foreign exchange exposure (Figure 30). The long foreign exchange position can be viewed as (1) allowing the central bank to back its own liabilities with other currencies and (2) enabling the central bank to support – that is, buy – its own currency in the foreign exchange market if that is needed.

Losses or gains from foreign exchange exposure depend on changes in the exchange rate, net of interest rate differentials on assets and liabilities. Provided the exchange rate remains fixed (Hong Kong SAR) or fluctuates around a reasonably stable long run average value (eg Australia over recent decades), these exposures either do not result in significant gains or losses, or they produce gains and losses that may be offsetting over the longer run.

But long-lasting currency adjustments have correspondingly more permanent implications. For example, a central bank may accumulate foreign exchange reserves to counter upward pressure on the exchange rate; such pressure can arise from, say, trend improvements in an economy's productivity and performance, as arguably has been the case for China, Korea and some other emerging market economies in recent years. The accumulation may grow to the point at which the inflationary and/or interest carry costs tip the balance in favour of allowing the exchange rate to appreciate.¹¹⁶ That, of course, would crystallise the exchange rate exposure and result in a one-time, but possibly substantial, revaluation loss for the central bank. A number of emerging market economies have incurred significant losses as a result of interest carry and exchange rate adjustments during the past decade or so, including the Central Bank of Brazil, the Czech National Bank, the Central Bank of Chile and Magyar Nemzeti Bank.¹¹⁷ A central bank can also incur losses when it sells foreign exchange, thus accumulating a short foreign exchange position, in an unsuccessful attempt to defend its exchange rate from depreciation. Examples include the United Kingdom in September 1992, when it was forced to abandon its participation in the European Exchange Rate Mechanism; and the Bank of Thailand in 1997, when it endeavoured to support the baht during the East Asian financial crisis

¹¹⁶ Monetary theory suggests that in these circumstances, even if the nominal exchange rate does not rise, the *real* exchange rate will do so because the foreign exchange purchases entail a monetary expansion that generates inflation.

¹¹⁷ See Dalton and Dziobek (2005) for a brief description and discussion of the experience of those countries.

Exchange market intervention can, of course, be profitable. If the central bank's view on the appropriate value for the currency turns out to prevail, then taking and holding an exposure consistent with that view results in a gain to the central bank. Over the years, many central banks, including those in the major economies, have intervened in the exchange market in a manner sometimes referred to as "leaning against the wind". The Reserve Bank of Australia has intervened in the exchange market over a number of years with a view to smoothing fluctuations in the value of the Australian dollar; it reports that this intervention policy has been profitable on average (Reserve Bank of Australia (2003)). Opportunistic intervention can also be profitable if the central bank's view of the evolution of the exchange rate proves to be right.

4.1.2 *Interest rate exposure*

Central banks' asset portfolios comprise mostly fixed income investments, whether in local currency or foreign currency. Investing for longer terms, given the normally upward sloping yield curve, usually provides a higher and more stable return than investing in short-term assets. But it also creates an interest rate exposure (ie gains or losses should long-term interest rates change). Unless funded by liabilities with an equivalent interest rate structure – which central banks' currency liabilities do not have because they bear no interest – these gains or losses affect the economic value of the central bank's balance sheet. The overall gain or loss in any accounting period from investing in long-term fixed interest assets, therefore, may be more volatile than if the central bank had invested in investments on which the interest rate re-sets more frequently (ie the greater stability in net interest revenue flow is more than offset by revaluations of the investment assets).

4.1.3 *Credit exposure*

Holding financial assets always involves a credit risk. Typically those risks for central banks are low, with counterparties generally confined to those of high credit standing. Moreover, exposures arising from domestic market operations are generally covered by high quality collateral – typically government bonds or other highly rated securities in (reverse) repurchase agreement transactions.¹¹⁸ And in relation to foreign exchange reserves management, credit quality considerations are given a far higher weighting than is consistent with the financial impact of a credit event – reputational costs matter a lot.¹¹⁹

However, being lender of last resort for the country's financial system is also a core central banking function, as discussed in Chapter 2. This function entails standing ready to provide (undoubted) central bank money in exchange for (in principle, collateralised) claims against solvent financial institutions that are nonetheless unable to liquefy their assets or borrow anew to meet demands for repayment. The role embeds a potentially substantial contingent exposure in central banks' balance sheets (Stella (1997)). Lending only against good collateral should not, in principle, expose the central bank to elevated credit risk; but in several instances, it has in fact done so – Chile, Nicaragua and Venezuela in the 1980s; Indonesia in the latter part of the 1990s; and Turkey in the early 2000s. Invariably it is difficult to assess whether a financial institution that has lost the confidence of the market is solvent and hence whether the collateral available is sufficient to mitigate the risk. Moreover, the value of collateral as insurance against the default of an issuer lies in the ability of the lender to sell the

¹¹⁸ See BIS (2008a) for details of the securities accepted as collateral under the "standing" credit facilities provided by the central banks of the G10 and selected other large economies.

¹¹⁹ See Borio et al (2008).

collateral immediately. In the context of systemic events, central banks might not be able to do that while also reaching their policy objectives.

The risks inherent in the lender of last resort role may depend in part on whether or not the central bank is also a bank supervisor and on any arrangements for risk-sharing with the government. Some central banks that are not also bank supervisors have established understandings with the government supervisory agency under which the latter would take the lead role in determining solvency (as in Australia) and carry at least some type of “moral” responsibility should credit losses be incurred. In some countries, the central bank sees its lender of last resort role as that of a provider of liquidity against good collateral, with solvency support, if required, being a government function. In the United Kingdom, the Bank of England, the Financial Services Authority and the Treasury have agreed in their MoU that the Chancellor of the Exchequer has ultimate responsibility for authorising exceptional support operations. In the recent case of the facilities granted by the Bank of England to Northern Rock (October 2007), the Bank of England was indemnified by the UK Government.

During the past decade or so, various central banks have sought to bring clearer definition to their lender of last resort role, particularly its limits. For example, the HKMA and the Sveriges Riksbank have published their lender of last resort policy. In the case of the HKMA, a rule-based policy narrows that role.¹²⁰ In the United States, clear procedures were put in place in the 1990s to establish the conditions under which government resources would be available to support a large financial institution.¹²¹ Further consideration of the role of the official sector is reviewed in a recent report by the US Department of the Treasury (2008). Events have, however, already forced numerous and significant changes regarding the manner of the Federal Reserve’s liquidity support and the range of counterparties to which it is daily providing such support.

4.2 Financial asset and liability management

Day-to-day management of a central bank’s balance sheet mostly involves management of the risk inherent in undertaking market operations and foreign exchange reserve portfolio management. In these operations, most central banks follow relatively conservative policies. Because market operations are generally confined to collateralised transactions with highly rated counterparties, the credit and settlement risks, typically managed within continuously monitored limits, tend to be very low. Nonetheless, financial risk is secondary to policy objectives. Central banks cannot, for example, stop dealing with a licensed banking counterparty because of concerns about financial risk without formally initiating supervisory actions (regardless of the agency responsible for supervision).

Within their strategic balance sheet structures, central banks’ investment policies tend also to be conservative. For example, most central banks included in a 2003 BIS

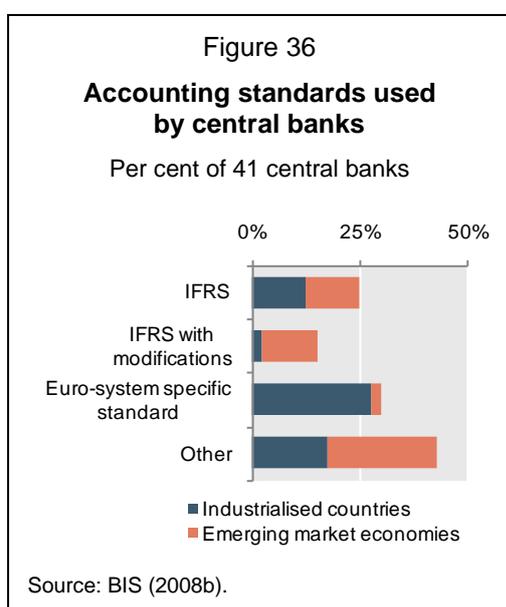
¹²⁰ These policy statements are available, respectively, at http://sc.info.gov.hk/gb/www.info.gov.hk/hkma/eng/guide/circu_date/19990630b2_index.htm and www.riksbank.com/upload/Dokument_riksbank/Kat_publicerat/Artiklar_FS/FinancialStability032_artikel1.pdf.

¹²¹ The Federal Deposit Insurance Corporation Improvement Act of 1991 mandated a least cost resolution approach but also allowed for other action or assistance should a systemic threat emerge. Such action would have to be agreed jointly by the Federal Reserve and the Secretary of the Treasury (in consultation with the President). See also Bradley and Craig (2007) for an overview of more recent legislative changes and propositions.

survey of foreign exchange reserve management reported that liquidity, diversification and risk containment ranked ahead of yield objectives (BIS (2003a)). Within those constraints, however, central banks look for adequate investment returns: Some central banks have developed sophisticated investment management capabilities and actively monitor their investment performance against performance-based benchmarks. In addition, as a “live” benchmarking exercise, the HKMA, the South African Reserve Bank, the Bank of Mexico and the Bank of England have also outsourced a portion of their foreign exchange reserves to institutional fund managers.

The elements of financial risk management are, in broad terms, common across most central banks and, indeed, are similar to those for commercial banks – albeit adjusted for different complexities and specific risks and, crucially, the priority of policy objectives over financial objectives.

4.3 Accounting for balance sheet revaluations



In 2001, the International Accounting Standards, revised to incorporate the best of existing standards (and thus attempting to achieve international uniformity), were renamed International Financial Reporting Standards (IFRS). By March 2008, some 75 countries required their corporate sectors to use IFRS, and many central banks also chose, or were required, to do so. However, some central banks – including a number of major ones – did not do so, at least not in all respects (Figure 36).

A notable feature of IFRS is the requirement for “fair value” accounting, in which assets and liabilities that may be traded before maturity are to be measured at fair (market, if available) value, with revaluation amounts included in income. In contrast, central banks have

traditionally adopted a range of valuation practices, particularly regarding assets:

- at cost (and in cases of some assets, at an arbitrarily low cost);
- on a yield to maturity basis (so that valuation gains or losses are taken to the income statement over the remaining life of the asset);
- at market, with revaluation gains or losses taken to the income statement if realised, but otherwise to a reserve account (subject to unrealised revaluation losses also being taken to the income statement if the balance in the revaluation reserve account is insufficient to cover those losses). A variant of this practice is applied within the Eurosystem and at the Bank of Mexico.

These valuation and accounting practices tend to produce smoother year-to-year income results than does fair value accounting. As discussed above, most central banks have interest and exchange rate positions embedded in their balance sheets. Including changes in the market value of some of those positions can introduce considerable volatility to central bank income, which in turn raises issues for the determination of the amount that will be transferred to the government at year-end. Issues are also raised in terms of the amount of capital needed by the central bank in the discharge of its policy obligations. For example, monetary policy operations when interest rates are already close to zero might involve so-called quantitative easing,

whereby the central bank purchases large volumes of tradeable assets at cyclically high prices. Were such assets revalued at market prices, rather than at yield to maturity (for example), large losses might be booked against capital as interest rates normalised.

5. Capitalising the central bank

At the centre of many discussions on the finances of central banks is the question: what is the appropriate level of capital? The question can arise in a number of contexts: at the establishment of a new central bank; in the event that it incurs large losses which seriously deplete its capital and give rise to a need for a possible replenishment; and if the government seeks a “special dividend” from the central bank to cover a shortfall in its own budget. But the most frequently encountered context is an annual one, when decisions are made on allocating the previous year’s net income.

5.1 *How much capital do central banks need – and have?*

The actual capitalisation of central banks covers a wide range (Figure 37). The variation can be explained, in part, on the basis of wide differences in the nature and extent of the risks – both past and future – faced by different central banks. It can also be explained by a number of other elements, including inherited custom and tradition relating to the financial arrangements between the central bank and the government, and the type of currency regime adopted by the country.

There are important differences – but also similarities – between central banks and commercial banks with respect to the adequate level of capital. Commercial banks need to maintain a clearly positive level of capital so that their owners have an incentive to manage it prudently and depositors remain confident that the bank will always have sufficient assets to pay its obligations, that is, remain solvent. Failure to maintain solvency generally results in the bank being required to cease operating, either because depositors run, or the authorities close the bank.

Central banks, however, are not subject to the solvency constraint because they can pay their obligations by issuing their own liabilities. Thus they are not subject to the same zero bound to capital as that which applies to commercial banks. At the same time, because central banks have a monopoly on the right to issue currency liabilities, their long-term profitability is normally assured.

But that profitability is not always guaranteed. While seigniorage income usually covers a multiple of the central bank’s actual operating expenses, exposures on the balance sheet can result in losses (as discussed in Section 4.1) of a magnitude that results in negative net capital. Does that matter for a central bank? The answer is that it depends. If the losses are of such a magnitude, or persistence, that they cannot reliably be expected to be offset by future seigniorage income, or positive revaluations, then negative debt dynamics can occur. Stella (1997) notes that, in the absence of a real transfer of resources from the government, large central bank losses could either lead to an injection of reserve money – if in cash – or portend future cash injections if the losses are unrealised, and thus could undermine the central bank’s ability to maintain an effective monetary policy. In this connection, Stella (2008) suggests that central banks are exposed to bankruptcy risk, if only in the sense of “policy bankruptcy” – that is, debasement of, rather than default on, its liabilities.

Figure 37

Central bank capital

Per cent of balance sheet assets, end-2007

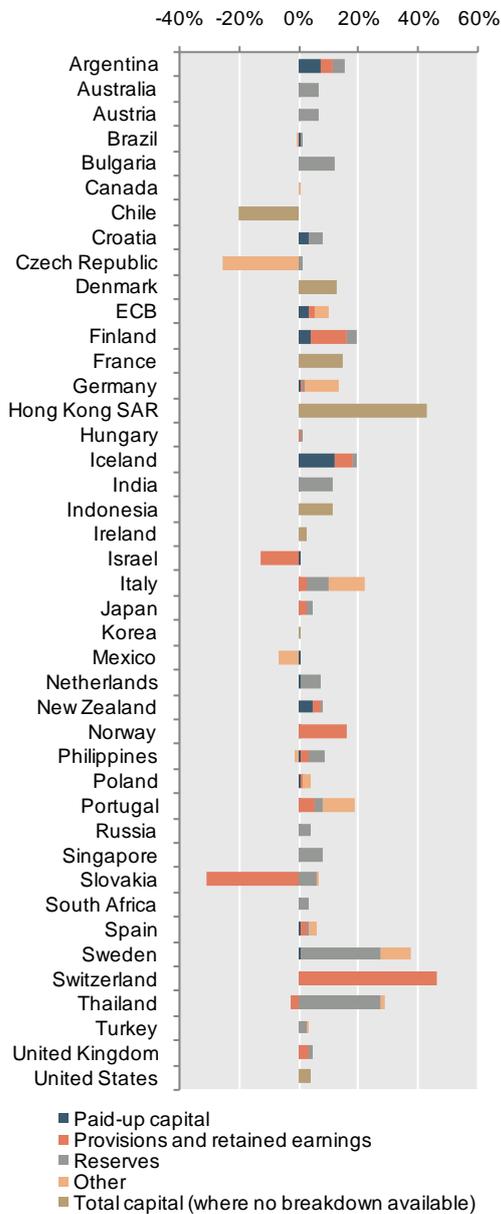


Figure 38 is based on survey responses by central banks and refers to end-2007; by contrast Figure 32 uses IFS data for end-2006.

Source: BIS (2008b).

Thus, negative capital may compromise a central bank's credibility and its financial (and hence policy) independence. It might also result in insufficient balance sheet strength to conduct market operations and hence produce a tendency towards use of (regulatory) instruments that can be inimical to financial development. Moreover, because negative capital can result in negative debt dynamics, a vicious cycle of increasing financial losses and loss of monetary control can ensue. The relevant yardstick is thus functional rather than numerical: central banks need sufficient capital for policy and operational autonomy because having to go cap in hand to government could threaten their credibility and policy independence.

In some cases large risks have resulted in historic losses that have depleted central bank capital. And in other cases – for example, Chile, the Czech Republic and Israel – central banks have for years operated successfully with negative capital. But in those cases, other conditions played an important role in preventing their loss of credibility and autonomy. In Chile, large fiscal surpluses counteracted the central bank's deficit, which arose from the financing of bank rescues in the early 1980s and losses on foreign exchange assets as the exchange rate appreciated (Marshall (2003)). In the Czech Republic, the central bank's seigniorage income remained sufficient to provide confidence that capital would be rebuilt over time. Moreover, in all three cases, the erosion of capital had stemmed mainly from the strengthening in the market value of their own currency liabilities (which imposed losses on foreign exchange reserves) rather than from the issuance of their liabilities against insufficient value (as, for example, tends to be the case when central banks bail out insolvent financial institutions).

But history is not replete with such positive outcomes. It is more common for countries with negatively capitalised central banks to have ineffective monetary and financial policies. Such episodes occurred in Venezuela and Jamaica in the 1980s and 1990s,

and empirical cross-country evidence indicates a negative relationship between central bank financial strength and inflation performance.¹²²

On the other hand, a central bank can have an excessive amount of capital. A central bank with a capital buffer that seems to be unnecessarily large would be less able to resist pressures to make (inappropriate) loans of last resort. And if the central bank is seen as enjoying an abundance of resources while other arms of government are subject to tight fiscal discipline, it may attract government interference that weakens its independence. If a central bank's monetary, exchange rate and financial arrangements expose it to very little risk, it arguably needs very little capital. Such central banks include those with floating exchange rates, those that manage foreign exchange reserves only as an agent for the government, and those that would be indemnified for losses resulting from loans of last resort.

At the other end of the spectrum, central banks that operate currency board type regimes that back parity with the euro or US dollar are exposed to risks that could result in very large future losses and, in recognition of this, are strongly capitalised. The balance sheet of those central banks includes very substantial holdings of foreign currency assets because the risk of loss is high should parity not be maintained for any reason. The substantial amount of capital on the balance sheet both supports confidence in the sustainability of the fixed exchange rate and provides a buffer against potential losses.

5.2 Frameworks for determining capital adequacy for a central bank

Some central banks use the Basel framework in reporting their capital. Nonetheless, the considerations relevant to determining an adequate level of capital for a commercial bank are fundamentally different from those for a central bank. Moreover, although the framework for determining capital for commercial banks is well established, no counterpart for central banks is similarly established.

Some central banks have sought to develop frameworks for establishing the appropriate amount of capital. These generally seek to establish the capital required to ensure that the balance sheet generates sufficient income to (1) cover its operating costs and (2) absorb financial losses that could arise from the exposures embedded in its balance sheet and/or its monetary, exchange rate, and financial policy functions. Simulation, value-at-risk and scenario analysis techniques have been used by, among others, the central banks of the Netherlands and Sweden to assist in making these assessments.¹²³

These more formalised techniques for assessing the appropriate level of capital can be, of course, importantly dependent on assumptions about key variables such as future trends in currency issuance and volatilities in financial market prices. They can also depend on judgments about the extent to which additional allowances might need to be made for "long tail" events. A number of major central banks have recently sharply altered their risk exposures as a result of extreme events – eg the temporary seizure of core interbank money markets – with the result that new calculations on the appropriate level of capital may be motivated. Of course, the capital required to buttress a central bank's reputation and credibility also are, at least to some degree, a

¹²² Stella (2008).

¹²³ BIS (2005a, unpublished) contains a summary of the asset and liability simulation modelling used by the Netherlands Bank. See Ernhagen, Vesterlund and Viotti (2002) for an analysis undertaken at the Sveriges Riksbank.

matter for judgment and will be influenced by each central bank's history and track record.

The nature of the financial rights and responsibilities of a central bank's stakeholders can also be relevant for determining the appropriate amount of capital. For example, if the central bank law includes provisions that require the government to forgo receipt of a distribution from, or to recapitalise, the central bank should it incur a loss, there may be less need for a buffer to cover such contingencies. These aspects are considered next.

5.3 Income distribution procedures and practices

For most central banks, distributions of income to the government occur annually and are determined in light of the preceding year's financial result.¹²⁴ The income distribution decision comprises three major elements: (1) determination of the distributable amount; (2) the rules or practices that govern the decision on how much of that amount should be transferred to the central bank's reserves to build its capital; (3) how much should be transferred to stakeholders (generally the government).¹²⁵

Counting revaluation gains and losses in the income statement increases the volatility of the amount seen as available for distribution. This is an issue for governments that expect a steady dividend from the central bank. A particular concern for central banks is that the inclusion of balance sheet revaluation gains and losses in the calculus of distributable income may result in an asymmetry, with distributions being made in years when gains are recorded but not being reversed when revaluation losses are incurred. Even if no distribution is made in years when losses are incurred, this asymmetric approach could, over a number of years, deplete the central bank's capital.

Some central bank laws, such as those of Australia and the ECB, take explicit account of the potential for revaluation adjustments to reduce the central bank's capital. In Australia, both unrealised valuation gains and unrealised valuation losses are excluded from distributable income, although with the proviso that distributable income is reduced by the amount by which unrealised losses exceed the balance of accumulated unrealised amounts previously transferred to the revaluation reserve. This approach bases distributable income on a measure closer to what the Reserve Bank of Australia describes as "underlying" income (net interest income less operating expenses plus net realised gains); however, the deduction of net accumulated unrealised losses from distributable income provides a tilt toward conservatism. In the case of the ECB, unrealised valuation gains are excluded from distributable income – which counteracts the tendency towards asymmetric distributions.

An alternative approach to smoothing distribution in the face of volatile central bank income, adopted by some of the Nordic countries, is to determine distributable income as an average of accounting income taken over a number of years, so that revaluation gains and losses may largely cancel out.

Central banks differ significantly in their rules and practices for allocating income between reserves and distribution, but in this regard, most central banks fall into one of

¹²⁴ Although the distributions are made weekly in the United States.

¹²⁵ In the case of the ECB, the national central banks of the Eurosystem. Also, in the case of the Federal Reserve System, the commercial bank shareholders of the regional Federal Reserve Banks are paid a 6% per year dividend on their shareholdings, with the balance (after reserving) paid to the US Treasury. The Swiss National Bank is another central bank (of only a handful) with private shareholders, and as such also pays dividends to institutions besides the government.

two categories. In the first category, comprising a relatively large number of countries, a “graduated sharing approach” bases the amount to be transferred to reserves on the existing level of capital; or on capital in relation to an indicator such as banknotes in circulation, which allows for the required level of capital to expand as the economy grows. For example, the Governing Council of the ECB can determine that an amount of up to 20% of net income can be transferred to the general reserve fund (subject to a limit equal to 100% of paid-up capital) and thereafter pay all net income to its shareholders in proportion to their paid-up shares. Similarly, in Malaysia, if reserves are less than one half of paid-up capital – and in the United States, if reserves are less than paid-up capital – net income is transferred to the reserve and the remainder to the Government. In Indonesia, net income is retained until capital reaches a targeted level, as is the case in Switzerland, where the targeted level of capital is set with reference to the amount of banknotes in circulation.

A fully rules based sharing approach is used by a small number of countries within this first category, most notably emerging market economies with central bank laws of recent vintage: in some of these countries, the law prescribes that net income is to be allocated in fixed proportions – for example, in Korea and the Philippines, 10% and 25%, respectively, of net income is to be transferred to reserves.

For some in this category (including Australia and New Zealand), the central bank law does not provide any quantitative rules but instead defines a process by which either the board of the central bank or the government, either independently or in consultation with the other, determines the allocation of net income between reserves and dividends.

The second category of central banks comprises relatively few countries. They transfer, either formally or informally, virtually all of their net income to the government. In the case of the Bank of England, the income of the Issue Department, which issues the currency, is automatically transferred to the Government, as are the earnings generated by the Bank’s other operations, unless the Chancellor of the Exchequer agrees to a share of income being retained as reserves. In Canada, the established practice before 2007 was for the full amount of net income to be transferred to the Government. Although that remains the case, the Bank of Canada Act was amended in 2007 to establish a special reserve fund (with a ceiling of CAD \$400 million) for potential unrealised valuation losses due to changes in the fair value of the Bank’s “available for sale” investment portfolio. With this new reserve, the Bank of Canada still maintains a very low level of capital in relation to its total balance sheet. In contrast, a large proportion of the net income of the Hong Kong Exchange Fund (which is managed by the HKMA) typically is retained as reserves (including fiscal reserves), which has resulted in the accumulation of a very large capital buffer.¹²⁶

As these examples suggest, central banks whose balance sheets comprise mainly domestic currency assets – and hence are not subject to substantial variations in earnings as the result of changes in exchange rate valuations – are more likely to transfer most or all of their net income to the government. They are correspondingly less likely to incur future losses that could call at some stage for the government to recapitalise the central bank.

¹²⁶ In the case of the People’s Bank of China, the transfer of income to the Government is even more direct and immediate: all revenues are passed to the Government, which in turn meets the People’s Bank’s expenses.

A general key point here is that the rules for calculating income and the rules for determining any distribution of it interact with each other in ways that can have a major bearing on the evolution of a central bank's capital. And the move by many countries to adopt IFRS currently is casting new light on the matter. Some central banks to date have elected not to adopt IFRS, or not fully adopt it. The reason appears to be that the consequent volatility in reported income from year to year – owing to required revaluation of the substantial exchange and interest rate positions embedded in most central banks' balance sheets – could give a misleading picture of the central banks' results, which, given their policy roles and responsibilities, need to be viewed in a more medium-term context. Also clearly apparent from the foregoing discussion are the important interactions between balance sheet structure, accounting policies, income distribution rules and the central bank's capital, and the need for these to be formulated as an integrated package rather than be revised in a piecemeal manner.¹²⁷

6. The operating budget

As a part of the public sector that is usually outside of the government budget process, and as an institution that normally lacks a natural budget constraint, central banks are wary of being perceived as fiscally undisciplined. In some places, the apparent contrast between them and other government agencies is heightened by the higher salaries paid by the central bank to attract a staff whose alternative employment opportunities include the high paying financial private sector. As pressures rise on other government agencies to trim costs and increase efficiency, central banks in many countries have thus sharpened their focus on the efficiency of their operations.

To ensure that their use of operating resources is disciplined and effective, many central banks during the past decade or so have strengthened their budgeting, planning and financial reporting processes. Overall operating expenses – generally not large compared with balance sheet net income and revaluations – are funded by most central banks from their own gross revenue. In most such cases, the budget approval process does not entail ex ante authorisation by the government, but in many it does entail ex post approval. In some countries, new arrangements for determining the central bank's operating budget have been introduced as part of wider changes to the relationship between the central bank and the government.

Central to the non-financial component of operating costs is the fact that central banks are knowledge based organisations. Correspondingly, personnel expenses probably constitute the largest component of non-financial operating expenses for most central banks. Other significant operating costs include those related to banknote printing, premises, general administration and information and communication technology. The last includes the tools needed by knowledge workers (analysts, managers and clerical staff) and by the financial and payment systems in which central banks typically invest heavily.

¹²⁷ For example, in 2007 the Reserve Bank of New Zealand changed the foreign exchange structure of its balance sheet from being fully hedged against exchange risk to a net long position in foreign exchange. That change made the government realise that an amendment to the central bank law would be required to avoid inappropriate volatility in reported income and in the distribution of income to the Government.

6.1 **Determining the operating budget**

The institutional arrangements by which the central bank operating budget is determined can be grouped into three broad categories:

- a corporate planning and budgeting model;
- a government planning and budget model;
- an intermediate model, under which high-level and longer-term parameters are set by or agreed with the government, and the central bank follows a corporate planning and budgeting process within those parameters.

The most common approach is for the central bank to formulate its budget within essentially a corporate planning and budgeting framework. In the majority of those cases, including, for example, the Austrian National Bank and the Monetary Authority of Singapore, executive management is responsible for the formulation of a proposed budget – generally supported by strategic and operational plans – for approval by the central bank’s supervisory board (Figure 38).

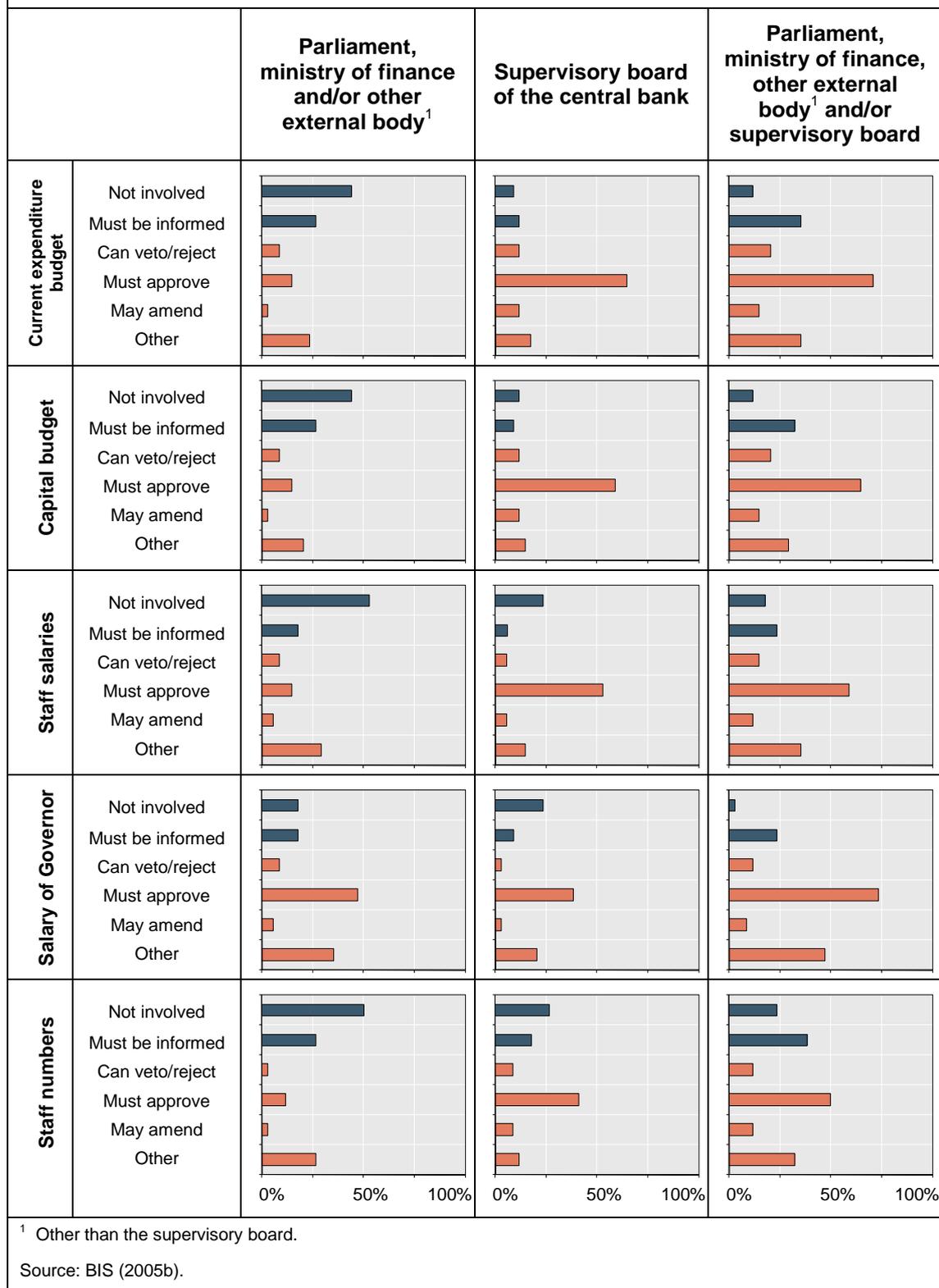
The defining characteristic of the budgeting process in these central banks is that the government or the legislature does not approve the budget *ex ante*, though those branches of government will often receive the budget for information. Some of the central banks that plan and budget this way (about nine central banks canvassed in a 2005 BIS survey (BIS (2005b)) disclose their budget to the ministry of finance, for information, before it is approved by the central bank board. Most of the remainder disclose their plan and budget after formal adoption, including in some cases in the central bank’s annual report or by some other reporting process.

At the other end of the spectrum, some central banks’ operating budgets, although funded from their own revenue streams, are subject to government authorisation to control expenditure. As Figure 38 indicates, the current and capital expenditure budgets of around one fourth of central banks are subject to approval, veto or amendment by an external body such as parliament or the ministry of finance. These central banks do not have the authority to incur outlays that have not been approved by the government. The arrangement tends to be more common in emerging market economies – a notable example is China – than in advanced economies.

The third, intermediate, approach is for the government to establish a framework that limits the overall size of the central bank’s operating budget for a multi-year period. The central bank itself determines its annual plan and budget within those bounds. Having a multi-year framework – five years in the case of the Reserve Bank of New Zealand and the Bank of England – reduces the risk that policy decisions will be subject to political influence via the budget process. This approach is one element of new arrangements the respective Governments established in the 1990s to provide the central banks with greater autonomy within the “Westminster” (UK-style parliamentary) system of government.

Figure 38
Respective roles of the supervisory board and outside bodies
in relation to expenditure budgets

Per cent of 34 central banks



¹ Other than the supervisory board.

Source: BIS (2005b).

To some extent, the intermediate approach separates the funding of the central bank's operations from the income derived from the balance sheet, and in comparison with the other two approaches, it establishes a more direct link between the resources available to the central bank and those needed to perform its operational functions.¹²⁸ In contrast, income derived from the balance sheet is influenced by a range of other factors (as discussed in Section 2 above). As a result, income tends to bear little relationship to operating costs, and depending in part on the accounting conventions applied (which are discussed in Section 4.3), income can fluctuate widely from year to year whereas resource requirements for annual operations tend to be relatively stable.

6.2 Promoting effectiveness and efficiency of resource use¹²⁹

Budgeting requires planning and monitoring, regardless of whether the operating budget is subject to government approval or is the responsibility of the central bank's supervisory board. If anything, the need for such planning and monitoring may be greater in the latter case – greater autonomy generally is associated with the need for more rigorous accounting.

Because central banks are not profit-seeking institutions, their proposed expenditures cannot be evaluated against hard yardsticks such as revenue per dollar spent. Instead, their expenditures need to be evaluated in terms of whether they contribute to better policy outcomes, a connection that is usually imprecise and difficult to determine. Central banks therefore use more varied techniques than do firms in the private sector to ensure that the resources allocated through the budget are used effectively and efficiently.

6.2.1 The planning process

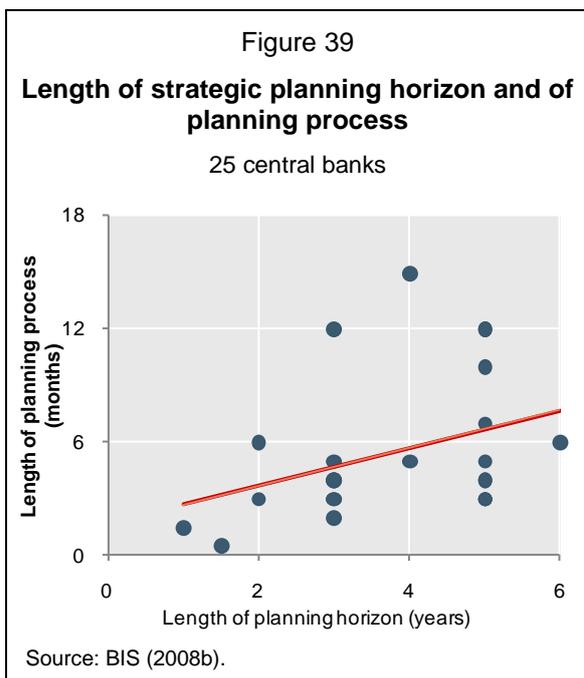
Most central banks undertake a planning process before developing the operating budget. The purpose is to identify organisational goals and priorities so that resources are allocated accordingly. Rigorous planning helps management scrutinise and assess the likely value of proposed policy and research work and, as at the Reserve Bank of Australia, to weed out proposals unlikely to warrant the resources required.

A common practice – pursued, for example, at the Bank of Canada and the Sveriges Riksbank – is to commence the planning process with an “environmental scan” for potential major emerging issues or changes in the wider economic or political setting that could affect the central bank. Some central banks have developed the practice of involving outsiders in the process, including “wise people”, members of the central bank's supervisory board or international experts, to bring an independent perspective. The People's Bank of China and the Monetary Authority of Singapore both have panels of international experts who contribute in this way. The aim is to be forward-looking and lateral, with a view to preparing the central bank for potential new demands on it as well as, where appropriate, helping to shape emerging issues. Typically, the process results in a medium-term strategic plan, covering a rolling three- to five-year horizon,

¹²⁸ Indeed, in the United Kingdom, all the Bank of England's seigniorage income is passed directly to the Government, and the five-year budget allocation is funded by returns on the investment of the compulsory (but non-remunerated) reserve deposits made by commercial lenders.

¹²⁹ Effectiveness concerns achievement of desired objectives (outputs), and efficiency concerns doing that with the least possible use of resources (inputs). Central banks are concerned with both, though in the final analysis most central banks would not seek gains in efficiency at the expense of policy effectiveness.

which sets the context for the development of a more focused plan (and budget) for the year ahead.



The length of the planning process tends to vary with the length of the planning horizon (Figure 39). Some central banks have established a separate unit – sometimes attached to the office of the governor – to coordinate the planning process. For example, at the Austrian National Bank, the Organisational Analysis Project Group plays a central role, and similar units exist at the Central Bank of Malaysia and the Monetary Authority of Singapore. At other central banks, the planning process is more decentralised, often supervised by a committee of senior officers or executive board members assembled for the task; the Bank of Canada and the Bank of England manage planning processes along these lines.

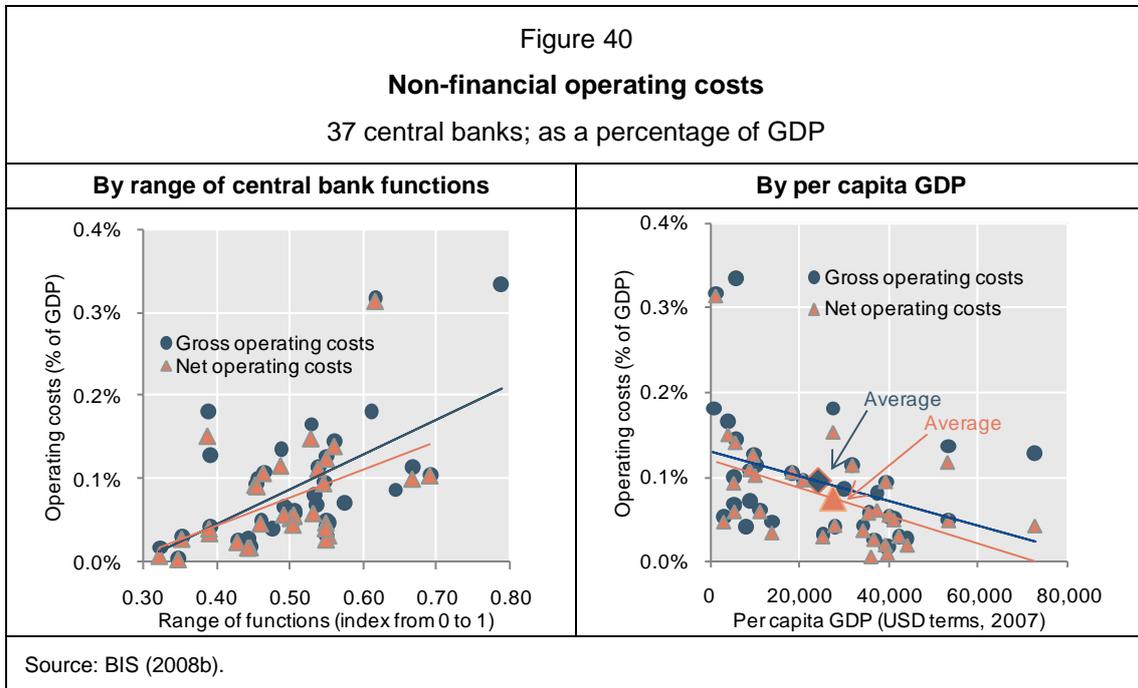
Another dimension concerns whether to adopt a “top down” or “bottom up” approach. The former typically commences with high-level objectives being developed at executive board level. Divisional units then develop more detailed and operational plans. A bottom up process, by contrast, begins with divisional units identifying priorities and projects, which are then assessed and melded into the overall plan. The latter tends to be a more participative, though more time-consuming, process. It has been used by some central banks as a change management tool when major reform was underway and staff buy-in was an important goal. A bottom up approach also appears to be used by central banks in which formal planning and budgeting have been long established and the processes are well embedded at the divisional level (such as at the Board of Governors of the Federal Reserve System).

Besides supporting the budget process, formal plans provide a reference point for monitoring performance, both as part of the internal management process, as in any organisation, and externally as an element of the mechanisms by which independent central banks are held to account. A formal plan provides a sound basis on which a supervisory board, the government and the wider public can assess the central bank’s performance. For example, the supervisory board at the Reserve Bank of New Zealand seeks regular “balanced scorecard” reports on progress against plan. Also, a number of central banks now centre their annual reports on reviews of performance against planned outcomes and objectives and provide an outline of the work plan for the next period; some of these elements are illustrated in the recent annual reports of the Bank of Canada, the ECB, the Sveriges Riksbank and the Bank of England.

6.2.2 Benchmarking and peer review

Due to their unique combination of functions and their place “in between” the public and private sectors, central banks find it difficult to identify suitable domestic benchmarks against which the efficiency of their operating expenditures can be assessed. Comparing central bank expenditures internationally is also complicated by differences in function and situation. A larger spread of functions tends to increase operating costs, indicating negative economies of scope, while central banking tends to be more

expensive in poorer countries (Figure 40) – two tendencies that may be related to each other by virtue of a tendency for poorer country central banks to be allocated a bigger range of functions (see Figure 3 in Box 2).



Many central banks now conduct benchmarking exercises to measure their performance against that of organisations with similar functions. Depending on the function being benchmarked, those other organisations can be private firms as well as central banks. Among the benchmarking exercises at the Bank of Canada, for example, have been those targeting note printing and distribution, human resources, and information technology (IT) services. The Bank of Mexico requested a mission from the International Monetary Fund to carry out a benchmarking of their payment system. In a slightly different vein, the Federal Reserve System not only uses benchmarks but also tracks internal productivity measures across a range of activities over time, such as cost per payment made and person hours per bank inspection.

Policy, analytical and research functions are less amenable to benchmarking because the outputs are difficult to quantify. Nonetheless, a number of central banks have subjected their policy processes and practices to comparative evaluations with the help of external experts, often from another central bank. Examples include reviews of monetary policy at the Reserve Bank of New Zealand, the South African Reserve Bank, the Sveriges Riksbank and the Bank of England, undertaken in each case by a leading academic or a central banker from another country; and a review of the Sveriges Riksbank's *Financial Stability Report* by a team comprising an IMF executive, an academic and a commercial banker. The Bank of Canada also recently commissioned a committee of five outside experts from academia and the Federal Reserve System to conduct a review of its economic research activities.

6.2.3 Outsourcing and contestability

Benchmarking has been used both to promote productivity improvements within the central bank as well as to assess whether existing activities could be performed more effectively or efficiently if they were outsourced. At some central banks, the latter

question has been driven by a strategic view that activities ancillary to what they identify as their core functions should be outsourced or divested unless they have strong reasons to retain them. This view has been reflected, for example, in the outsourcing of some elements of physical security and the distribution of banknotes, of cleaning and catering services, and of some IT services, including at the Austrian National Bank, the Sveriges Riksbank and the Bank of England. An activity often partly outsourced by central banks that manage foreign exchange reserves is the portfolio management function either as an operating procedure or as a live benchmarking exercise. Benchmarking, however, has not always resulted in outsourcing; at the Reserve Bank of Australia, the IT function and aspects of the banking services provided to the Government were benchmarked and put up for tender but ultimately retained, and workers compensation (occupational risk) insurance was brought in-house on efficiency grounds.

Related to benchmarking is the practice at some central banks of “charging” operating divisions for their use of internally provided services such as human resources management, accounting, IT and the services of the governor’s office, usually according to a relatively simple formula. Such procedures are applied by the Bank of Canada, the Sveriges Riksbank, the Bank of England and the Federal Reserve System, among others. The relationship of this practice to benchmarking is clearest when the internal services are seen, at least in principle, as being externally contestable, that is, as potential candidates for outsourcing. Even where contestability does not apply, however, some central banks see value in applying internal charging for both the users and providers of the charged services: for the functional divisions, it provides a fuller sense of the cost of their outputs; and for internal service providers, it can better attune them to the needs of their, albeit “captive”, clients.

Chapter 7: Accountability, transparency and oversight¹³⁰

The Main Issues

Important state powers have been delegated to the central bank, powers that may affect the distribution of income in society and across generations. Safeguards are needed to shield the proper exercise of those powers from political threat, but insulating the central bank entirely from oversight of elected representatives would have the effect of making central bankers unaccountable. The key issue is to strike the right balance between protecting the independence of the central bank and preserving its accountability. To strike that balance, several issues need to be confronted in the design of accountability arrangements:

- How can objectives be made sufficiently measurable and precise so that policy success and failure can be attributed to the relevant decision-makers?
- How can central bankers be held accountable to elected representatives for actions taken independently of those representatives?
- Where group decision-making is used to reduce idiosyncratic risk, how can the individuals involved be held to account?
- How much can openness and transparency fill any gaps in accountability to elected representatives by providing accountability to the wider public? Should obligations to be transparent be formalised and detailed?

1. Introduction

Central banks have a number of responsibilities (see Chapter 2), a considerable degree of autonomy (see Chapter 3) and a significant amount of resources (see Chapter 6). Thus, the delegation of tasks to the central bank should be accompanied by accountability to ensure appropriate democratic control and good governance. Accountability pertains to the functions and objectives of the central bank as well as to its use of resources.

In general, accountability has three characteristics:

1. scrutiny by others;
2. regular accounting for one's actions; and
3. the risk of negative repercussions, if performance is considered unsatisfactory.

All in all, accountability centres on an evaluation of performance. Suitably designed, mechanisms can play a critical role in aligning objectives and incentives so that objectives are met and the central bank's operations are conducted effectively and efficiently.

However, in the central banking context, laying down effective accountability mechanisms encounters special challenges with respect to describing the performance yardsticks that central bankers are measured against. First, it may be hard to clearly define the objectives, or there may be multiple objectives that are potentially conflicting.

¹³⁰ This chapter was prepared mainly by Petra Geraats.

Without a precise specification and prioritisation of the central bank's goals, it can be difficult to evaluate its achievements. Second, it may be hard to identify appropriate and verifiable performance criteria with respect to the objectives that are defined. For many central bank functions, and especially the most critical ones, the central bank's actions are only one out of many influences on the outcomes. It may require a specialist's expertise and a lot of judgment to relate specific actions to intended outcomes and to assess their contribution to the achievement of objectives. Third, the formal and informal delegation mechanisms may leave somewhat vague how much responsibility for decisions rests with the central bank, or the central bank may not be given the powers needed to achieve its objectives.

These issues make it far from straightforward to hold central banks accountable. Nevertheless, developments during the past two decades have greatly facilitated accountability. The main gains have perhaps been in relation to monetary policy, where operational independence with a primary objective of price stability and numeric targets has become increasingly prevalent.

The key questions in the design of accountability arrangements are to whom is the central bank accountable, for what is it held accountable, and how is accountability accomplished? Because central banks supply public goods, they are ultimately accountable to the public. Formally, central banks are accountable to the state, from which they derive their statutory authority. In practice, they are typically made accountable to legislative committees, ministers of finance, or supervisory boards. The choice of accountability mechanisms generally depends on the nature of the central bank's responsibilities. The mechanisms used for easily observable and quantifiable objectives, such as price stability, are different from those for objectives that are hard to measure, such as financial stability, or not easy to observe, such as the stewardship of resources.

After analysing the main challenges to creating effective central bank accountability, this chapter takes stock of current accountability practices, both formal and informal, and the critical role of transparency with regard to informal accountability. It also addresses potential tensions between central bank accountability and independence.

2. Central bank accountability

Accountability with respect to functions and objectives gives rise to a host of issues that are specific to central banking. Accountability for monetary policy is usually further developed than accountability with respect to the central bank's financial functions and objectives. Accountability with respect to the central bank's use of resources is in many ways similar to that of private and other public institutions, although several challenges arise because of inherent conflicts between the central bank's functions and objectives on the one hand and its financial stewardship on the other.

2.1 *Accountability with respect to monetary policy*

Typically, one of the main objectives of monetary policy is price stability. Although different views exist about what price stability means in practice, it is amenable to quantification, and its achievement is to a certain extent publicly observable. A large number of central banks nowadays publish a numerical inflation target, which provides a concrete criterion against which to judge the central bank's success in achieving price stability. Other central banks have an explicit target or monitoring range for the exchange rate or for monetary aggregates as intermediate targets in the pursuit of price stability.

Explicit quantitative targets or monitoring ranges for one or more of three variables – inflation, the exchange rate and a monetary aggregate – have played an increasingly

prevalent role in monetary policy over the last two decades (see Table 16). In particular, there has been a notable shift since the early 1990s away from exchange rate and monetary targeting towards inflation targeting. In 2006, 64% of central banks in a sample of 36 monetary authorities were operating with quantified price stability objectives. In contrast, in 1990, only 3% of central banks had numerically explicit inflation objectives. An important contributor to this overall evolution was the creation of the Eurosystem, which led member central banks to move from various exchange rate targeting schemes to a common framework based on a single quantified price stability objective. Such transparency about main objectives provides an important means for holding central banks accountable.

Table 16
Explicit targets and monitoring ranges for monetary policy

Per cent of central banks (Eurosystem central banks counted as a single institution in 2006)

	1990	1998	2006
Single target			
Inflation	3	20	56
Other quantified price stability objective	0	0	8
Exchange rate	39	35	11
Monetary aggregates	21	13	3
Multiple targets	11	26	6
No explicit target or monitoring range	26	7	17

Source: Fry et al (2000), updated by BIS. Sample of 38, 46 and 36 central banks in 1990, 1998 and 2006 respectively.

During the 1990s it also became common for central banks to have explicit targets for more than one of the three variables. For instance, monetary targets have often been used to monitor progress towards an inflation target. But multiple targets could give rise to conflicting signals and complicate accountability. Their use has become less popular during the past decade with the advance of fully fledged inflation targeting schemes, which centre on one explicit target for inflation.

In about 70% of countries, the government has a role in setting explicit targets for monetary policy, which provides a yardstick that facilitates accountability. The government plays such a role in about 70% of countries with an inflation target, 80% with an exchange rate target, and 30% with a monetary target (which is often not primary). Typically, targets are set jointly by the government and the central bank, although in about 30% of countries with inflation targets and 30% with exchange rate targets, the goals are set solely by the government.

The evaluation of an exchange rate target is quite straightforward because the exchange rate can in principle be directly and immediately controlled. However, as discussed in Chapter 2, evaluating performance against monetary and inflation targets is complicated by the fact that the central bank typically has only imperfect control over broader monetary aggregates and inflation.

Another important challenge for accountability is that monetary policy actions tend to take a long time to affect macroeconomic outcomes (typically around two years for inflation). Therefore, targets are usually specified for a suitably long horizon, which is often indefinite for inflation targets. These same lags in monetary policy transmission imply that ex post accountability based on a comparison of realised outcomes with targets actually evaluates the central bank's actions in the (distant) past. It also uses the benefit of hindsight, which may not be fair. These anachronisms can be avoided by taking into account the effect of unanticipated transmission disturbances and relying on the real-time information available to the central bank. The latter also allows for real-time accountability based on an assessment of the anticipated effects of the current actions of the central bank. But monetary policy actions are generally clouded by economic uncertainties that make it hard to divine the central bank's intentions. This murkiness can be lifted by the central bank through the disclosure of relevant information. Thus, transparency facilitates accountability.

2.2 Accountability with respect to financial functions and objectives

As discussed in Chapter 2, it is generally hard to identify appropriate quantitative performance targets for the central bank's financial functions (such as financial supervision and regulation) and objectives (such as an "efficient" payment system, a "sound" financial system and "financial stability"). Furthermore, the effects of regulatory actions may be hard to distinguish, even with the benefit of hindsight, while counterfactual outcomes (based on what otherwise might have happened) are generally subject to so much uncertainty as to be unreasonable bases for accountability. To complicate matters, measures to thwart a systemic crisis (eg bailouts) may contribute to growing financial imbalances, as it could encourage financial institutions and investors to pursue highly risky strategies.

For reasons like these, the central bank's financial functions and objectives usually have no formal targets. Instead, the adherence to appropriate procedures is generally used as a performance criterion for accountability.

Such procedures naturally include the legal requirements and external regulations that the central bank is subject to, and formal accountability in this respect takes place through the court system. However, whether procedures are appropriate as performance criteria and adhered to is often hard to evaluate without an intimate knowledge of the central bank's operations. Hence, solely relying on external monitoring may not suffice. In practice, this problem is often addressed by assigning responsibility to a supervisory board to monitor procedures for internal control and the achievement of the central bank's functions and objectives.

For central banks involved in financial supervision and regulation, there is an additional reason for accountability besides the usual argument in the case of public policy. A supervisor or regulator is often able to require certain actions to be taken and to alter property rights by (controlling access to markets through licensing and by imposing financial penalties. Those powers may make it desirable to allow claims for redress from affected individuals and companies. A system with checks and balances that is perceived to be fair is also likely to engender greater support from the institutions under the central bank's supervision or regulation, thus enhancing its effectiveness.

2.3 Accountability with respect to resources

As discussed in Chapter 6, the central bank manages a considerable amount of physical, human and financial resources, including any official reserves it may hold. Although use of resources is easier to measure than achievement of financial functions and objectives, it is nevertheless challenging to choose appropriate performance

criteria. This holds in particular for financial asset management because of potential conflicts with the achievement of the central bank's policy objectives. These can be delicate issues, especially in developing countries. In the event of definitive conflict, modern central banks generally agree that public policy interests take precedence over commercial interests, but in other cases it is not always easy to strike the right balance.

In contrast to profitability, efficiency in the central bank's operations and cost effectiveness in its use of resources are increasingly considered to be important by governments. Accountability with respect to financial resources involves the adherence to rigorous accounting and auditing standards and the publication of regular financial reports. The most prominent publication in this respect is the central bank's annual report, which seem to be paying increasing attention to the central bank's management of resources. Although this may be partly due to the rising popularity of separate reports for monetary policy and financial stability, it also appears to reflect the growing weight that central banks attach to their accountability for their use of resources.

A cornerstone of public accountability with respect to resources is the integrity of external financial reporting. External auditors establish whether the financial statements published by the central bank provide a "true and fair view" of the central bank's financial situation. In some cases, the external auditor is the public sector auditor, working directly for the legislature. The internal audit, which checks whether internal management and accounting procedures are being followed, is also important for good stewardship. The auditing process could be reviewed by the central bank's supervisory board, but many central banks (especially those with a single board) nowadays have a separate audit committee.

3. Accountability arrangements and mechanisms

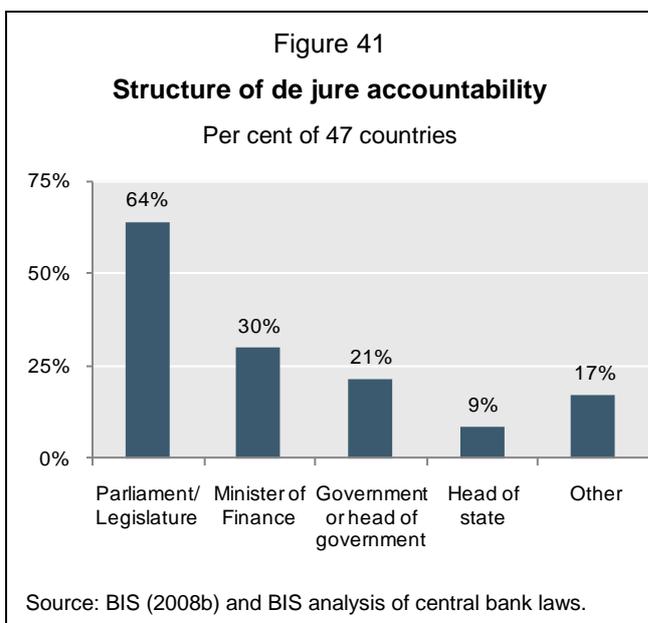
Central banks are subject to a number of formal accountability arrangements. However, de facto central bank accountability is typically much more extensive and relies on more informal, yet arguably more effective, mechanisms.

3.1 Formal accountability arrangements

The legal foundations for central bank accountability tend to be specified in the constitution and the central bank statutes. In addition, several countries use separate regulations, formal letters, or agreements to clarify the central bank's objectives and responsibilities, especially for monetary policy. Examples include the Regulation on Monetary Policy in Norway, remit letters from the Chancellor of the Exchequer for the Monetary Policy Committee of the Bank of England, and the Policy Targets Agreement between the Governor of the Reserve Bank of New Zealand and the Minister of Finance.

Generally, central banks are formally accountable to the legislative or executive branch of government, depending on the constitutional delegation of responsibilities. In federal and unitary states, the central bank is in general accountable to federal or central bodies. For instance, in the United States, the Federal Reserve is accountable to the Congress (the federal legislature). However, in some cases the central bank is also accountable to lower levels of government (eg cantons in Switzerland) or, to a lesser extent, to private shareholders (eg Belgium, Italy, South Africa and Turkey). In a monetary union, the supranational central bank can be accountable to national authorities (as is the case with the Central Bank of West African States) or to the union-wide authorities (as is the case for the ESCB, in which the ECB is exclusively accountable to the European Parliament and the national central banks are accountable to bodies specified in their national laws).

For monetary policy, central banks have traditionally been formally accountable to the executive branch, in particular to the ministry of finance. Although this is still the case for a number of countries, central bank laws increasingly make the central bank accountable to the legislature (see Figure 41). However, the parallel use of different legal texts and extra-statutory statements can give rise to multiple accountability structures. For instance, the Bank of England is accountable to Parliament, but with respect to the Bank's inflation target set in the remit letter, also to the Chancellor of the Exchequer.



Central bank accountability for financial functions is often similar to monetary policy, although the government sometimes plays a stronger role in accountability with respect to resources, especially when it is the formal owner of the central bank.

In some countries (eg Canada, Israel and New Zealand), the central bank governor is legally the sole decision-maker, which makes it especially clear whom to hold responsible. But for most central banks, decisions are made by a board, committee or council, which gives rise to the issue of collective versus individual responsibility. For instance, the members of the

Governing Council of the ECB bear collective responsibility, whereas each member of the MPC of the Bank of England is held individually accountable. As discussed in Chapter 4, this is likely to affect the decision-making and communication practices of the central bank.

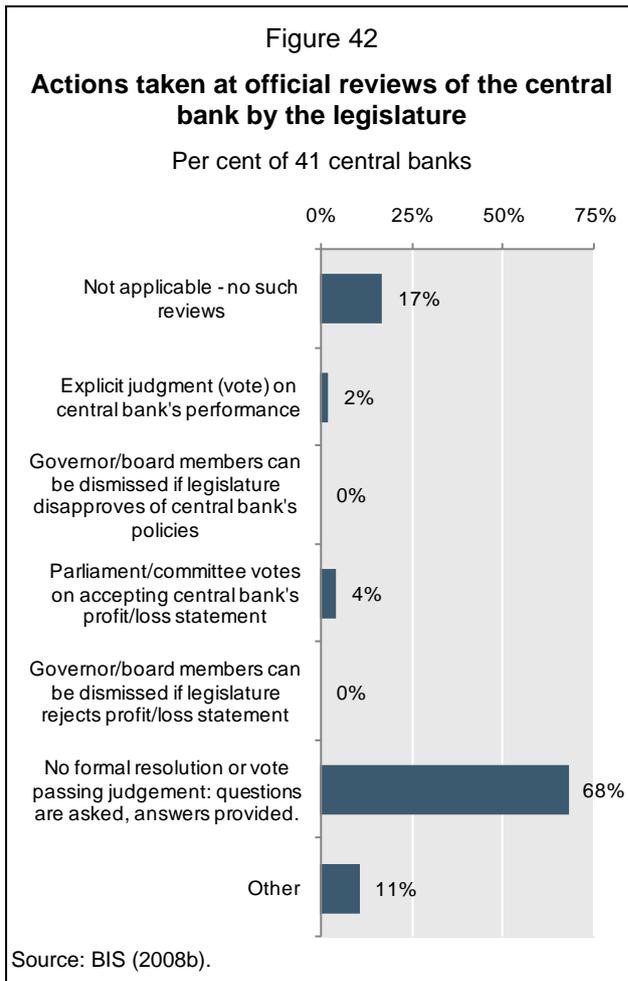
There are several formal mechanisms through which central banks are held accountable for their activities:

Table 17
Frequency of official reviews of the central bank by the legislature

In per cent

	Regularly scheduled reviews			Reviews on special request	No reviews
	Total (includes "other")	More than annually	Annually		
All (47 central banks)	43	28	13	51	15
Industrialised economies (22)	36	32	5	64	9
Emerging market economies (25)	48	24	20	40	20

Source: BIS (2008b).



(1) *Monitoring by the government or legislature.* Many countries have legal provisions for the exchange of information between the central bank and the government, often in the form of regular meetings or consultations, in particular with the minister of finance. For a considerable number of central banks, a government representative is allowed to participate in board meetings, but without the right to vote. Moreover, many central banks are subject to official reviews by the legislature. Typically, there is no mandatory schedule and the reviews take place on special request, although a significant fraction of central banks are subject to regularly scheduled reviews at more than annual frequency (see Table 17). The reviews, which could involve testimony by central bank officials, are usually in open committee sessions rather than in closed or plenary sessions of the legislature. But a vote based on the official review is uncommon, and generally no formal sanctions are imposed (Figure 42). Some central banks, for example, the Bank of

Mexico, are also subject to the auditing and supervision of a congressional auditing body.

(2) *The publication of regular central bank reports.* The vast majority of central banks are required to submit a written report to the legislature, usually each year (see Table 18). The report generally covers central bank operations and externally audited financial accounts. Sometimes the central bank is required to issue a monthly or even weekly financial statement, such as a summary balance sheet. In addition, many central banks nowadays have to publish a monetary policy report, often quarterly.

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Table 18
Frequency of statutorily required written central bank report to legislature

In per cent

	More than annually	Annually	None
All (47 central banks)	30	57	11
Industrialised economies (22)	18	64	9
Emerging market economies (25)	40	52	12

Note: Some rows sum to more than 100 because a central bank may be required to report both annually and more than annually.

Source: BIS (2001, 2008b).

(3) *Repercussions when central bank actions or outcomes are considered unsatisfactory*, especially when performance criteria are not met. In particular:

About 20% of central banks are subject to formal procedures when targets are missed. Typically this involves additional reporting requirements to explain the reasons for missing the target as well as the measures and time frame needed to meet the target. An example is the open letter that the Governor of the Bank of England is required to write to the Chancellor of the Exchequer if the inflation target is missed by more than 100 basis points.

Although central bank officials are usually legally liable in case of misconduct, financial penalties or bonuses based on performance are rare. Remuneration contingent on the central bank's profits is actually prohibited in some countries (eg Botswana, Canada and Switzerland), as it is seen to be at odds with the central bank's policy objectives. But salaries may be fixed in nominal terms or increase in line with the central bank's inflation target (eg for the Bank of England), so that officials are disadvantaged if inflation is higher than the target. Another potential sanction is no reappointment (in case of renewable terms) or even dismissal. But often, central bank officials can be dismissed only in cases of serious misconduct or incapacity and rarely because of poor performance. An exception is the Governor of the Reserve Bank of New Zealand, who could be dismissed if the inflation target specified in the Policy Targets Agreement is missed.

(4) *Tacit endorsement*. As noted in Chapter 5, Section 3.1.1, the government or parliament in about one fifth of countries has explicit power to provide formal directives to the central bank, to override decisions or otherwise change the course of policy. And in all countries, governments have the ability to publicly criticise the central bank's choices. A government that does not use those powers could be regarded as tacitly endorsing the central bank's actions. It might also be argued, however, that the use of those powers carries such a high cost – they might be described as “nuclear bomb” options, given the likely effect on policy credibility – that the endorsement value is negligible.

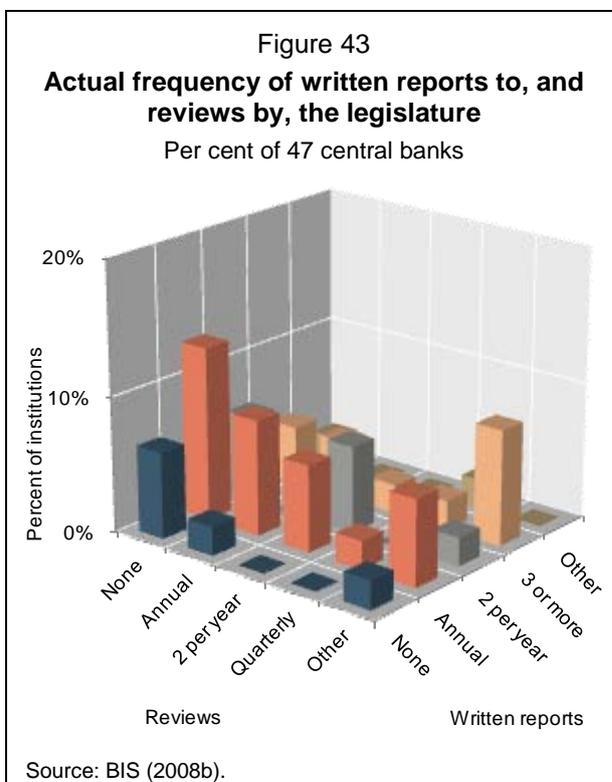
The actual frequency of written reports to, and reviews by, the legislature is illustrated in Figure 43; a broader range of accountability arrangements is presented in Table 19. The vast majority of central banks have published targets (in particular, for monetary policy), but only a limited number – mostly in industrialised countries – are subject to formal procedures when targets are missed. Most central banks, and nearly all in emerging market economies, are regularly monitored by the legislature.

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The operation of de jure accountability depends, of course, on an interpretation of the legal framework and enforcement mechanisms. But there are also other reasons why the effectiveness of formal accountability arrangements may be hampered. Central bank reports to the executive may be interpreted from political rather than policy perspectives. Scrutiny of reports to the legislature may be distracted by political point-scoring by various political parties. Furthermore, effective monitoring requires specialised expertise.

In some countries, the relevant legislative bodies have addressed the problem of expertise by formally consulting external experts on monetary policy matters. In Norway, the Ministry of Finance funds an annual independent review of policymaking, *Norges Bank Watch*, that is conducted by experts who often include international academics. The Reserve Bank of New Zealand and the Bank of England have occasionally invited overseas central bankers or leading academics to review the policymaking process and report their findings to the supervisory board. In addition, the reports of external agencies are often available to those charged with monitoring central bank performance. An example of such an external agency is the International

Monetary Fund (IMF), which usually comments on monetary policy in its regular Article IV consultations. The IMF also publishes *Reports on the Observance of Standards and Codes (ROSCs)* that summarise the extent to which certain internationally recognised standards and codes are observed in areas such as monetary and financial policy transparency, banking supervision and payment systems.¹³¹



The repercussions under de jure accountability are also somewhat constrained. As noted in Chapter 3, Section 8, most central bank legislation prevents the dismissal of governors and other key officers for policy failures (real or imagined).

The limitations of de jure accountability to external parties may be partly overcome by strong internal mechanisms for monitoring and control. As discussed in Chapter 4, many central banks have a supervisory board responsible for overseeing the achievement of the central bank's mandate and its use of resources or a separate audit committee that reviews the auditing process. The appointment of non-executive, external members with relevant expertise to such bodies could help to enhance central bank accountability.

Table 19
Central bank accountability arrangements
In per cent

	Total (47 central banks)	Industrialised countries (22)	Emerging markets (25)
Publication of specific targets	55	36	72
Regular monitoring by legislature	62	64	60
Formal procedures to overrule decisions	19	23	16
Formal procedures when targets missed	15	9	20

Source: Fry et al (2000).

¹³¹ Furthermore, the Financial Action Task Force (FATF), an international intergovernmental body, issues a list of countries and territories that are considered to be non-cooperative in international efforts against money laundering and terrorist financing. Although such FATF opinions are not legally binding, they carry some political weight.

3.2 Informal accountability mechanisms

Informal mechanisms are important complements to de jure accountability. Some operate through the executive and legislative branches and the attention of external experts. But perhaps the most powerful informal mechanisms are reports to financial markets and the general public.

Formal arrangements associated with executive or legislative review can be a fulcrum for additional disclosure. Central banks often take initiatives involving additional reporting or testimony before the legislature to generate goodwill, to increase credibility, and sometimes pre-empt the imposition of less well-suited mandatory measures. For example, the ECB decided early on to go beyond the already stringent reporting requirements stipulated in the EU Treaty (Issing (1999)). The Riksbank publishes the material on which it bases monetary policy assessments – including relevant in-house analyses – in response to requests from the Riksdag's Committee on Finance, but it goes beyond the required minimum.

Another device that helps to hold central banks accountable is external monitoring by financial market experts. Most central banks are nowadays closely scrutinised by the financial press and central bank watchers. For example, lack of confidence of financial markets in the sustainability of a currency peg often incites powerful speculative attacks that force the central bank to abandon the peg. In this way, financial markets can have a tremendous disciplining effect on central banks. The reaction of financial market participants to monetary policy actions and strategy is probably one of the most effective (real-time) accountability mechanisms that central banks face.

Accountability extends beyond financial markets, in particular through the actions of firms and employees in the real economy. A central bank that lacks credibility for achieving price stability can generate price increases and higher wage demands, which make it harder for the central bank to reach its objectives. In the extreme, there may be a flight from money whose value is very uncertain.

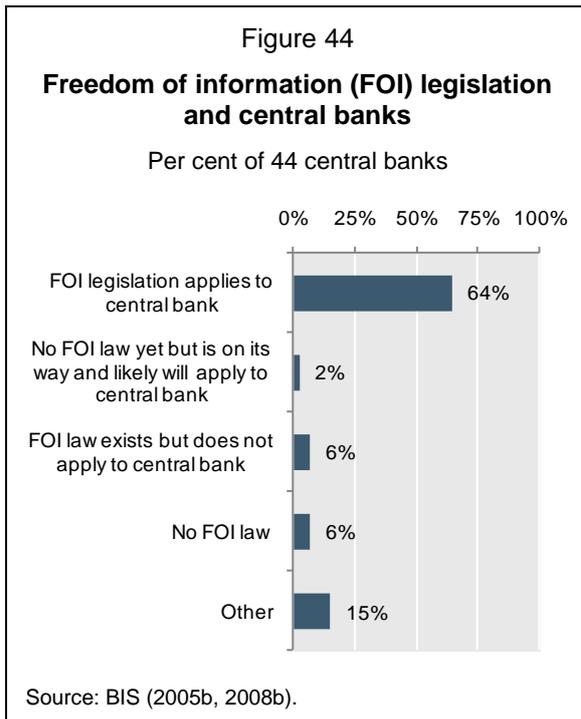
Informal mechanisms of central bank accountability are greatly facilitated by the public availability of information with which to evaluate the central bank's performance. Thus, greater central bank transparency enhances de facto accountability.

4. Transparency

For the purpose of de jure accountability, central banks are generally subject to some disclosure requirements. But the transparency of many central banks nowadays goes far beyond these mandatory information disclosures. The current practices and trends in central bank transparency greatly contribute to de facto accountability. As a result, central bank accountability and transparency are intrinsically related.

4.1 Disclosure requirements

Central banks are generally required to publish regular reports as part of formal accountability arrangements. Typical disclosure requirements involve the publication of an annual report, including financial accounts and regular (often quarterly) monetary policy reports. About a dozen central banks (including the Bank of Japan, the Sveriges Riksbank, the Bank of England, and the Federal Reserve) are also required to publish substantive minutes of their monetary policy board meetings.



Usually, the formal reporting requirements indicate the frequency of disclosure without being specific about the information that must be released. However, a number of central banks (in particular those that have adopted inflation targeting) are explicitly required to provide an explanation of target misses. In addition, many central banks are subject to freedom of information legislation that requires them to disclose specific information records requested by the public (Figure 44), although there may be exemptions, for instance, for supervisory and regulatory information.

It is important that transparency requirements do not interfere with the achievement of the central bank's functions and objectives. Whenever confidentiality is desirable, selective disclosure, such as testimony in a closed session of a legislative committee (as is the practice

in Israel and Switzerland), could be used to achieve accountability. However, hearings hidden from public view may make the central bank more vulnerable to political pressures.

In general, however, as discussed below, central bank transparency exceeds that mandated by formal disclosure requirements.

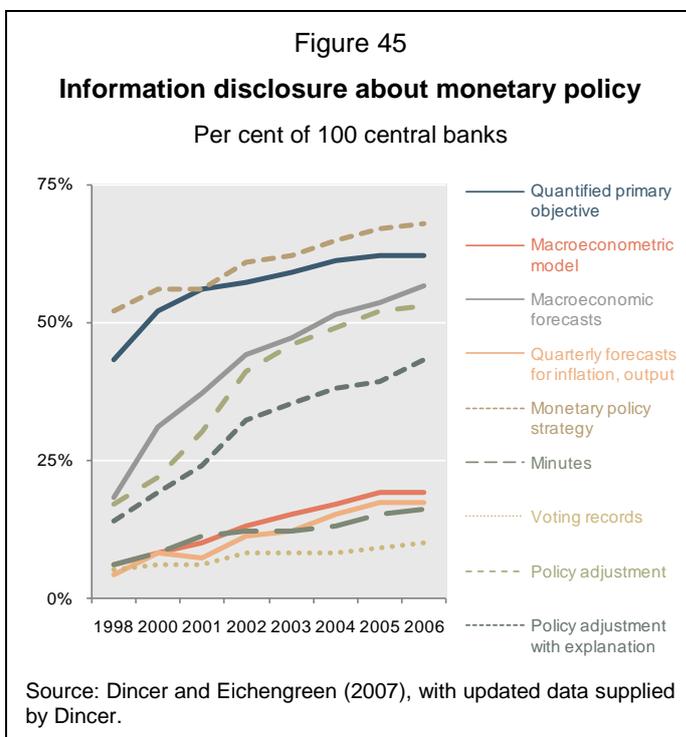
4.2 Transparency practices and trends

Central bank transparency has increased remarkably during the past decade, especially for monetary policy. This is partly in response to the growing popularity of central bank independence, which gives rise to political and public pressures for greater openness. In addition, information disclosure has become more important for central bank accountability as part of the movement from exchange rate targeting to targets aimed directly at inflation control (including "inflation targeting" per se, but also other policies aimed at price stability such as those practised by the ECB and the Bank of Japan). The reason is simple – to be accountable, the specific objective needs to be known. Furthermore, the vital role of financial markets has made central bank communications a critical component of policy that allows the central bank to influence expectations of inflation and interest rates, thereby enhancing policy effectiveness. In fact, many central banks have a communication strategy to help them achieve greater transparency –without a strategy, simply putting more information in the public domain generally does not suffice given limits on the type and quantity of information that the public can process effectively.

Transparency of monetary policy is widely thought to be beneficial.¹³² The reduction of asymmetric information between the central bank and the public reduces

¹³² Empirical studies suggest that greater monetary policy transparency has helped increase the predictability of policy decisions, reduce average inflation, lower the output cost of disinflation, and stabilise inflation expectations. See Dincer and Eichengreen (2007).

macroeconomic uncertainty. This allows the private sector as well as other public sector institutions to make better informed decisions. Moreover, greater transparency shapes the behaviour of the central bank, as it can be held accountable more effectively by the wider community.



Monetary policy transparency has increased in many ways (see Figure 45 and Table 20). As discussed earlier, a large majority of central banks have quantified primary objectives. There has been an even more impressive advance in the publication of numerical macroeconomic forecasts made by central banks, from less than 20% to more than 50%. These are often staff projections, but in some economies they are specifically endorsed by policy-makers. This helps the public understand the reasons for policy decisions, which reduces macroeconomic uncertainty, increases real-time accountability, and has the potential to improve credibility. In some countries (eg New Zealand,

Norway and Sweden), macroeconomic projections are provided under alternative scenarios. But the most popular way to convey uncertainty is to present the central bank's forecasts (especially for inflation and output) graphically with statistical confidence bands (following the Bank of England). The central bank's forecasts are usually discussed in a monetary policy report that explains monetary decisions and analyses medium-term macroeconomic developments. However, the number of central banks that publish medium-term numerical forecasts for inflation and output remains small.

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A large majority of central banks use structural macroeconomic models for policy analysis and forecasting, and an increasing number publish their policy model. Some of them, such as the Bank of England, go so far as to publish the equations of its main macroeconomic model. This allows the public to evaluate the construction of the central bank's forecasts, including the role of judgment.

Most central banks publish an explicit monetary policy strategy that describes their policymaking framework. Usually it explains in general terms how economic information is used to set the policy instrument and reach the central bank's objectives. For instance, the typical monetary policy strategy of inflation targeters involves adjusting the policy rate when the two-year-ahead forecast for inflation differs from the inflation target. The publication of a monetary policy strategy helps to reduce private sector uncertainty about the policymaking process, thereby making monetary policy reactions more predictable. At least five central banks (the Czech National Bank, the Central

Bank of Iceland¹³³, the Reserve Bank of New Zealand, the Central Bank of Norway and the Sveriges Riksbank) publish an interest rate path that is consistent with their macroeconomic forecasts and their monetary policy strategies. This provides an additional piece of information about their policy strategy (albeit in a form that – in the opinion of many central banks – suggests too much certainty about the future of policy rates).

Table 20
Information disclosure about monetary policy
 Per cent of 36 central banks

	1998	2006
Quantified primary objectives	50	78
Macroeconomic model	17	50
Macroeconomic forecasts	28	81
Quarterly, for inflation and output	11	39
Monetary policy strategy	64	81
Minutes	14	28
Voting records	11	22
Policy adjustment	42	78
With explanation	36	75

Note: In this sample, the Eurosystem is represented by the ECB.

Source: Dincer and Eichengreen (2007); updated to assign zero score for “minutes” and “records” at central banks with a single decision-maker.

Although they remain distinctly in the minority, an increasing number of central banks release the minutes of the monetary policy meetings, published with lags that have typically been decreasing in length. A few central banks, such as the Central Bank of Brazil, place the minutes at the centre of their policy communications strategy. Minutes usually provide a summary of the discussion, including the arguments that were raised, but are generally unattributed. An exception is the Bank of Japan, which identifies the comments of government representatives at the meeting, and the Sveriges Riksbank, which has recently started publishing attributed minutes. The publication of essentially verbatim transcripts of monetary policy meetings is rarer. The Bank of Japan and the Federal Reserve release them with a ten- and five-year lag, respectively. Two reasons are prominent among those usually mentioned for not publishing minutes or transcripts. First, such reports are generally thought to run the risk of inhibiting an open, interactive policy discussion. Second, by providing several lines of argumentation for and against policy decisions, the published record can make the central issues harder to detect – hiding them in what one writer has described as a “cacophony” of voices. It is more useful, in this view, to provide structured analyses of the issues and options by way of reports that represent the agreed view of decision-makers.

¹³³ The Central Bank of Iceland stopped publishing a projection of its policy interest rate after the July 2008 issue of its *Monetary Bulletin*.

A few central banks also disclose attributed voting records. These may be published together with the minutes or with the policy statement released immediately after the policy meeting (eg in the United States). The attribution of votes (Japan, Sweden, the United Kingdom, the United States) may facilitate individual accountability, although potentially at the risk of reduced collegiality.¹³⁴

The dates of monetary policy meetings are typically publicly announced well in advance, which helps to reduce volatility in financial markets. A majority of central banks promptly communicate policy adjustments, although this is a relatively recent phenomenon. The policy decision is announced in a press release, typically together with a brief explanation. Some central banks also hold regular press conferences, often by the governor or other committee members. This allows the central bank to clarify any confusion that may arise from prepared policy statements, while press scrutiny also contributes to accountability.

Although the increase in monetary policy transparency has been widespread, there remain considerable differences in the degree of transparency across countries and policy frameworks. In particular, central banks in industrialised countries tend to be more transparent than those in emerging market or developing economies. In addition, central banks with inflation targeting usually disclose significantly more information than others. For instance, 60% of inflation targeters publish minutes and 20% release voting records.¹³⁵ Inflation targeters also tend to publish more frequent and detailed forecasts, and they are more likely to provide explanations of policy decisions. In contrast, exchange rate targeters tend to disclose less information than others, which could reflect the less stringent information requirements to achieve accountability under such a policy framework.

Relative to the monetary policy area, financial functions and objectives are generally an area in which central banks are less forthcoming, and less able to be forthcoming. Many central banks publish a sizeable financial stability report, typically at semiannual frequency (see Table 21). The publication of such a report is very common in industrialised economies but less widespread in emerging market economies, although most central banks in the latter have a major involvement in financial supervision. Central banks without a separate report may discuss financial stability issues in their annual report. But such reports do not usually present detailed information on specific central bank actions in the financial stability area, especially with respect to individual financial institutions.

Indeed, any public discussion of financial supervision and regulation is affected by confidentiality of information about individual financial institutions, in particular when the information is commercially sensitive or could lead to instability. For instance, the disclosure of liquidity problems could trigger a bank run, as occurred recently in the United Kingdom: certain banks there were stigmatised when their use of standing liquidity facilities at the central bank became common knowledge. In addition, for the central bank's function as lender of last resort, constructive ambiguity has been considered important to prevent institutions from becoming reliant on the central bank – although more are now adopting transparency guidelines, and in recent instances of blanket guarantees of sufficient liquidity, ambiguity has disappeared altogether.

¹³⁴ Chapter 4 discussed issues around individualistic versus collegial decision-making.

¹³⁵ This is based on Geraats (2006), using the Fry et al (2000) survey data. A 2007 BIS survey (BIS (2007a)) also confirms this point.

Table 21
Frequency of publication of financial stability report
 In per cent

	Semiannual	Annual	Other	None
All (47 central banks)	45	34	2	19
Industrialised economies (22)	50	41	0	9
Emerging market economies (25)	40	28	4	28

Source: BIS (2008b).

Although the disclosure of certain information could trigger financial instability, financial institutions are also likely to become more prudent when they know that particular data about them are going to be publicly available, thereby exposing those that act irresponsibly. In addition, greater transparency helps individual investors make better-informed decisions, which could also contribute to preventing financial imbalances. And greater transparency may in some circumstances be crucial to maintaining public backing for government funded rescues of systemically important financial institutions. This is one of the prime motivations behind the development of www.FinancialStability.gov, a website of the US federal government that provides specific, bank-by-bank details of rescue packages, including related actions taken by the Federal Reserve.

In general, central bank transparency creates the prospect of public scrutiny. This could also contribute to high-quality decision-making by the central bank. For instance, the publication of forecasts is likely to make a central bank care more about the reliability of those forecasts. Furthermore, because central bank transparency affords greater accountability, it helps to strengthen public support for central bank independence and credibility.

5. Central bank accountability and independence

Accountability is generally considered more important when central banks enjoy a greater degree of autonomy. However, some accountability measures could potentially impinge on the independence of the central bank. Regular meetings between the central bank governor and the minister of finance may serve accountability but could also be used to exert political pressures, depending in part on the nature of legal protections against taking instructions. For instance, the Sveriges Riksbank must inform the Government in advance of monetary policy decisions but may not take or seek instructions from the Government. Similarly, an override procedure allows the Government to take control of policy, but its careless use could be largely avoided by, for example, (1) the imposition of stringent requirements (eg extraordinary economic circumstances) for invoking the procedure, as is the case for the Bank of England; and (2) requirements that any override be public.

The threat of reappointing only compliant central bank governors could be eliminated by giving them long non-renewable terms of office (see Chapter 3). The tenure of central bank governors could be further protected by permitting their dismissal only in exceptional cases or under well-specified circumstances.

Although public oversight of the use of resources may make the central bank vulnerable to political manipulation of its budget, the central bank in most countries is not subject to appropriation procedures.

Accountability requirements in the form of the publication of reports and open testimony in principle create no conflict with central bank independence. By virtue of their open public nature, both formal and informal accountability mechanisms based on central bank transparency pose no problem for the independence of the central bank.

In sum, there need not be any conflict between central bank accountability and independence. Indeed, for modern central banks, independence and accountability go hand in hand. Accountability legitimises the independence of the central bank, thereby buttressing public support for its autonomy and strengthening its public credibility.

Chapter 8: Management of non-financial risks¹³⁶

The Main Issues

The risk appetite of central banks is quite low, in part because they see risk as a threat to what is arguably their most important asset – their reputation. The risk management practices at central banks are more advanced with respect to financial risks than to non-financial risks. The principal issues to be confronted in pursuing a more proactive approach to the management of non-financial risks, the main focus of this chapter, are as follows:

- Are there net benefits to integrating the management of financial risk with that of non-financial risk? How much does the dominance of policy objectives over financial objectives influence this choice?
- How centralised should central bank risk management be? What roles should be played by top management and the oversight board? Should the risk of getting policy wrong be handled by the relevant policy committee or by a separate risk management committee?
- Most broadly, can central banks go beyond mechanical aspects of risk reporting to develop a genuine risk management culture?

As reputation is vitally important to central banks, their risk appetites have traditionally been relatively low. Without a good understanding of the risks faced, risk aversion may lead to an excessive bias towards conservatism. But central banks are now benefiting from risk mitigation that arises from a more conscious assessment of the risks embedded in their operations and policies. Prompted by the need to be accountable to their stakeholders, and drawing on advances in risk management techniques, they have become more systematic in their risk management by adopting more structured approaches and enhancing the oversight of their risk management activities. For some central banks, particularly those that supervise commercial banks, adoption of a more formal framework has also been driven by a desire to match the progress that commercial banks are making in implementing risk frameworks for compliance with Basel II.

The “bottom line” of central banks relates to policy rather than commercial outcomes. Nonetheless, as with commercial banks, risk management at central banks is more advanced with respect to financial than to non-financial risks. Accordingly, this chapter focuses on the opportunities available to central banks to enhance, and thus gain more benefits from, their management of non-financial risks.

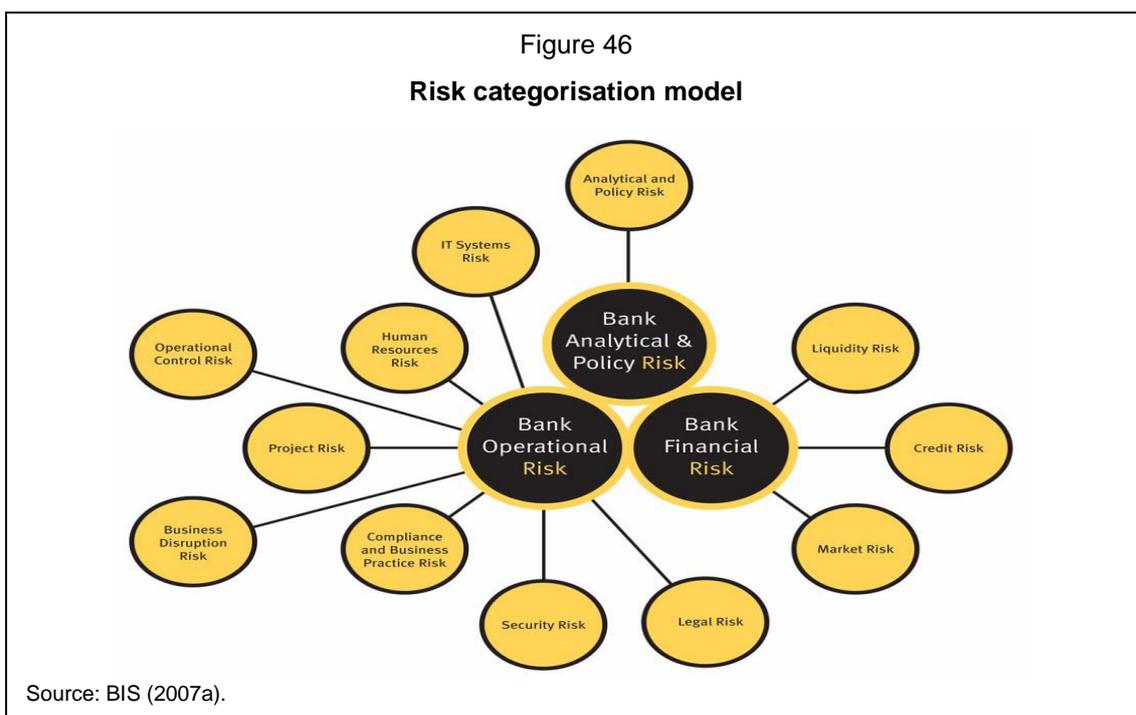
¹³⁶ This chapter was prepared mainly by Bruce White. It draws heavily on the unpublished report of a study group that reviewed the organisation of risk management and methods for managing non-financial risk at central banks.

1. A risk management framework

Like many financial organisations, central banks often distinguish between financial and non-financial risk (Figure 46) and apply dedicated risk management structures. But even with separate management structures for the two risk types, risk management itself exhibits two key characteristics at central banks that have formalised it:

- Risk management has been identified as a strategic priority and thus elevated and broadened to apply across the institution.
- The management of operational and reputational risk and, to some extent, policy risk is wrapped within a standardised framework encompassing both financial and non-financial risk.

Key elements in any risk management framework include the identification of types of events that could compromise the achievement of the central bank's objectives, assessing the appetite for risk, putting in place measures to mitigate the risks that are deemed unacceptable, monitoring and managing risks over time, establishing contingency plans for risk events that may occur and regularly reassessing the adequacy of the risk management framework. As will be seen below, such arrangements at central banks are more developed with regard to financial risks.



Governance arrangements for risk management typically consist of three components: overall responsibility, day-to-day management and systems to achieve a consistent approach across the institution. The overall responsibility for risk management lies with the institution's most senior level of management. Day-to-day risk management resides with departments, units and individuals. Consistency of approach across departments and units is promoted by adopting a common methodology; often (but not always), it is also promoted by a coordinating risk management unit which, among other things, condenses detailed risk management information into actionable monitoring reports.

The following summary of risk management frameworks begins with those for financial risks, partly for completeness but also to provide a background for the consideration of ways to strengthen non-financial risk management.

1.1 **Financial risk**

Financial risk management arrangements for central banks are fairly similar to those in place in commercial banks. The main elements are:

- a risk management committee, comprising senior executives and typically chaired by a deputy governor, with overall responsibility for risk management frameworks and policies (as is the case at, for example, the Reserve Bank of Australia, the Central Bank of Chile, the Bank of France and the Bank of England);
- a framework of delegated authorities and risk limits (credit, duration and position limits);
- a separation of duties between front and back offices to facilitate effective control arrangements;
- a risk management unit (or “middle” office) that monitors risk against limits and is responsible for risk analysis and support. This unit may be co-located with the portfolio managers or be separate and independent of them. Internal control principles suggest the latter approach, although many central banks find that co-location is beneficial in terms of achieving appropriate integration of risk management into business operations (and vice versa). However, central banks that adopt this approach acknowledge a need to ensure effective audit oversight; and
- an internal audit function, which has an independent compliance role, with direct reporting lines to the governor, or the supervisory board, or both.

The middle offices, using dedicated tools and techniques and staff trained in financial modelling, are common in central banks that take active financial risks. Likewise, specialised operational risk officers are commonly located in divisions that give rise to operational and business continuity risks. Areas in which the potential for fraudulent activity is elevated employ reconciliation and checking procedures that are stronger than those used elsewhere in the bank. And systems for reporting process failures tend to be more highly developed in areas in which weaknesses in business controls would cause the greatest problems.

1.2 **Operational risk**

As illustrated in Figure 46, operational risk encompasses a number of elements, including risks in relation to staff, IT systems, legal, regulatory and political risk, as well as human failure.

Transactional processes (eg operations for monetary policy, foreign exchange reserves, and banknote printing and delivery) involve risk of error or fraud; support activities (eg IT, human resource management, and physical security) may also cause financial, operational or image damages. Hence both transactional and support activities need to be subject to internal control procedures.

Management activities, such as decision-making and project management, are also prone to operational risk. But management activities are more difficult and even awkward to treat within an operational risk framework, given that decision-making under uncertainty, with incomplete information, is what management is about. But the risks can be mitigated through the adoption of robust project management and decision-making processes.

Economic analysis and research *processes* are also more difficult to integrate into an operational risk management process. Economic analysis inherently works in the

context of uncertainty; the definition of an operational failure is difficult, and the assessment of the consequences is not easy, even at the qualitative level. That does not mean, however, that the management of the risks cannot be improved. Obviously, risks linked to the availability and accuracy of data, the competencies of people, the efficiency of IT systems and the quality of internal procedures to meet qualitative and quantitative targets can be identified and managed.

1.3 Policy Risk

Many central banks regard the evaluation of economic risks and uncertainty as part of the interest rate decision-making process (or its equivalent in other areas of policy) and thus as a matter for the monetary policy committee rather than the risk management committee. Nonetheless, some central banks integrate policy risk management and overall risk management. For example, at the Bank of Canada, managers seek to identify and assess the key risks that could impede the fulfilment of the Bank's responsibilities and the achievement of its objectives. The results of the self-assessment process are summarised in a report to the Bank's management and discussed with the Board.

In another example, the HKMA had to consider risks to its reputation arising from consumer complaints about banking services, even though the matters in question went beyond the scope of the HKMA's supervisory function. The HKMA's Risk Committee examined the matter with a view to identifying options and avenues for addressing the risks, including the possibility of the need for change or refinement of policies.

In contrast, the risk management framework used by the Reserve Bank of Australia does not apply to the risks inherent in the Bank's core policy functions, which remain the responsibility of the respective policy boards. However, a failure to comply with, for example, procedures for implementing financial market transactions (for policy implementation purposes or management of foreign reserves) would be reflected in an *operational* risk event.

1.4 Reputational risk

Overarching the categories of financial, operational and policy risk is reputational risk. Reputational risk can be viewed as secondary, in that reputational damage usually is caused by a loss or failure in the areas of policy, operations or finance. But given the importance of credibility to central banks, reputational damage can be their greatest concern. In a 2003 BIS survey (BIS (2003b)), the vast majority of respondents reflected the view that continued reliance on the central bank as an independent authority with the necessary financial resources ultimately depends on trust in the institution.

Reputational risks can occur when there is a mismatch between public perceptions and the actual objectives and resources of the central bank. Serious misconduct, human or system failures or major difficulties in meeting objectives are not frequent among central banks, but they can seriously damage credibility when they do occur. Questions concerning ethical conduct and core principles such as honesty and integrity can pose a more severe test than purely legal issues, such as litigation against the organisation.

2. Organisation of risk management: the centralisation/decentralisation choice

Until relatively recently, central banks rarely integrated all risk management efforts in a single senior level body. Instead, a risk management committee at the senior management level would often focus on financial risks associated with active risk-taking in financial operations; the relevant policy committees would consider policy

related risks; and the senior executive board or committee would consider operational and general reputational risks. The degree to which senior management considered all risks in an integrated way would depend on the degree of common membership of these committees; and a comprehensive discussion of all risk issues would not be a regular agenda item for the bank's entire senior management.

Today, central banks are increasingly placing their various risk monitoring groups within an overall risk management framework that seeks to ensure consistency across the bank.

Many central banks have a risk management committee of several senior level officers that is chaired by the governor or deputy governor:

- The Reserve Bank of Australia and the HKMA both have risk management committees chaired by top management (the Deputy Governor at the Reserve Bank of Australia, the Chief Executive at the HKMA). Each committee reports to its institution's executive committee, and each is supported by specialised risk units.
- At the Bank of France, the risk committee dealing with financial risks is chaired by a deputy governor, and once a year the Executive Committee (chaired by the Governor) dedicates a meeting to operational risks.
- At the Bank of Spain, the Deputy Governor chairs the Operational Risk Management Committee, which reports to the Executive Commission.
- At the Swiss National Bank, financial and operational risk management share the same high-level governance structure. The Governing Board decides upon all strategic aspects of risk management, whereas the Risk Committee of the Board of Directors supervises the adequacy of the risk management processes and principles as well as adherence to them.
- At the Bank of England, governance oversight of the risk agenda is the responsibility of the Court, with some aspects delegated to its Audit Sub-Committee. An Executive level Business Risk Committee reports to the Court and recommends the overall parameters for risk appetite and policy – they are supported by a specialised Risk Oversight Unit. The Business Risk Committee's main objectives are to devise a risk management policy for the central bank, to determine the spectrum of risks that will be brought within the risk management framework and to ensure that they are assessed and managed by staff in accordance with these policies, particularly those risks that span more than one part of the central bank.

The accountability of senior management is enhanced by clear and regular reporting lines to the relevant oversight body on risk management – eg the board of directors or a parliamentary committee. The connection enables the oversight body to, when appropriate, endorse the risk management policy, to be apprised of the most significant risks facing the central bank, and to seek reasonable assurance that staff are trying to achieve the organisational objectives with an acceptable degree of residual risk. The appropriateness of the oversight body's involvement depends in large part on the ability to design procedures that avoid clashes with the central bank's autonomy on policy matters.

While risk management is generally viewed as a responsibility of senior management, practitioners also stress the crucial need for risk "ownership" to remain with the (generally lower) organisational units where individual risks actually arise. For example, at the Swiss National Bank, financial risk management is centralised but operational risk management is decentralised and parallels business line responsibilities. The Bank

of Mexico established a centralised department for financial risk management and created a coordinating risk management unit that reports to decision-making bodies primarily on operational risk issues. However, the responsibility for operational risk management resides within each department. That pattern shows that a consistent framework for the evaluation and reporting of risk issues can still allow for a high degree of specialisation at the operational level.

The optimal location of the middle office (risk analysis) function of the central bank's financial activities is an issue that is part of the broader centralisation/decentralisation topic. Most researchers and regulators agree that the front, back and middle offices of the financial markets area should be clearly separated; and these observers hold that the easiest way to achieve the separation is to make the middle office part of an independent risk management group with no organisational links to the financial markets area. However, several factors make many central banks reluctant to shift their middle offices from the markets area. They argue that, first, potential conflicts of interests are less significant in central banks simply because they do not pay profit-related bonuses. Second, they point out that middle office staff will maintain a much stronger familiarity with financial markets, instruments, trading processes and financial modelling by remaining part of the financial markets area. Last, central banks that have decided to maintain a middle office in the markets area point out that they have generally looked to strengthen governance and surveillance arrangements by, for example, upgrading audit oversight.

The Reserve Bank of Australia has recently taken the contrary approach, moving the middle office function from the Financial Markets Group to the Risk Management Unit. The purpose of the relocation was to have the front and middle office reporting lines come together in the Risk Management Committee.

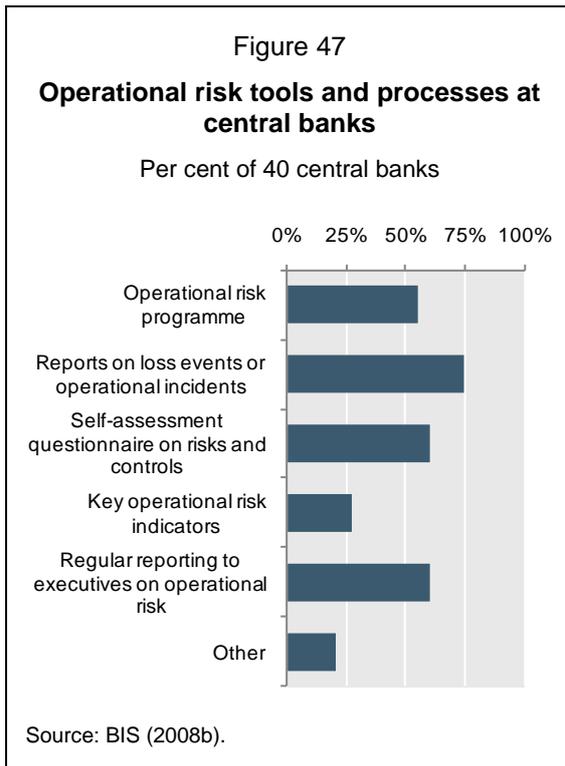
3. Approaches and techniques for managing non-financial risks

The main elements of most risk management methods are:

- a risk taxonomy;
- a risk matrix; and
- a set of methodological steps.

Together these provide a common language and methodology that employs both top down and bottom up approaches. Relevant tools include self assessment techniques, key indicators that show trends in risk “temperature”, corporate risk scorecards, and databases of loss events. Several central banks have set up a business continuity committee to assure that business continuity plans are robust, coordinated, appropriately tested and updated to reflect changing threats.

A substantial number of central banks, particularly those with major supervisory responsibilities, tend to apply the Basel II framework for operational risk or the Enterprise Risk Management Framework devised by the Committee of Sponsoring Organizations (a private sector group aimed at reducing fraudulent financial reporting).



Survey evidence suggests that a slight majority of central banks have a programme for managing operational risk.¹³⁷ The components of such programmes vary, but in most cases they include self-assessments and reporting (Figure 47).

3.1 Qualitative approaches: self-assessment

Most central banks with formalised approaches to risk management conduct some sort of regular (usually annual) self-assessment using qualitative risk rankings. For example, an operational component with a “high” risk rating would still be acceptable if the appetite for that particular risk was also rated “high” or above. Notably, the risk appetite of central banks tends to be higher for risks with limited scope for mitigation, and those risks are usually associated with the central banks’ policy-driven actions.

Asking managers and staff to identify and assess risks helps increase awareness and responsibility and thereby improves the organisation’s risk culture. The following techniques have been used by central banks in undertaking qualitative self-assessments:

- interviews;
- checklists and questionnaires;
- balanced scorecards - these are more elaborate checklists combining (with varying degrees of sophistication) the internal control assessment with the risk level of the domain; and
- workshops for business areas.

3.2 Quantitative approaches

A quantitative approach to risk management is to use data from event logs to model operational risk. The model in turn can yield measures – so-called key risk indicators – that point to emerging problems or losses.

3.2.1 Event logs

Reporting of loss events is an important component of the risk management programmes of a number of central banks. For a logging system to be effective, the staff must understand that the notation of loss events and incidents is a valuable action and not a trigger for blame. The challenge is to make it clear that a zero incident situation, like a zero risk situation, is either not possible or is achieved only at the cost of excessive control.

¹³⁷ Updated survey evidence and BIS (2007a).

At present, only a few central banks, for example, the Bank of Spain, capture explicit loss event data. These banks use a variety of approaches to gather the data, including using existing databases such as the general ledger or delegating collection responsibilities to a low level within the business unit, in most cases the operational risk liaison.

3.2.2 *Key risk indicators*

Key risk indicators are designed to measure the risk of major negative events. Only a handful of central banking institutions, for example, the Bank of England and the Federal Reserve's New York Reserve Bank, have thus far sought to develop key risk indicators as part of a formal risk management programme; and as with the commercial banks (which have been developing such indicators in the context of Basel II implementation), their work is at an early stage of development. That said, many central banks have informal processes to record and monitor certain key indicators, such as staff movements, staff training, operational health and safety incidents, and computer virus and other IT statistics.

3.3 *Reputational risk management*

The main method for dealing with the risk of damage to reputations is to manage the primary risks that would give rise to such an outcome. In addition, in relation to ethical standards and compliance issues, specific risk management tools are available. Post-event management can also affect the extent of reputational damage.

3.3.1 *Public expectations*

The central bank's high prestige can generate public expectations that go well beyond the legal responsibilities of the institution. And its position of power can generate doubts about integrity that are difficult to assuage. Thus, for example, in the case of exaggerated expectations, the central bank's reputation can suffer when individuals lose money in disputes with financial institutions, regardless of what the central bank's actual role in the matter may be. To the extent that the reputational damage spills over onto the central bank's effectiveness in relation to matters for which it does have both capability and responsibility, real harm can arise.

Regarding entrenched doubt, if the legal mandates of the central bank give rise to a potential conflict of interest, its reputation may also be at risk. An example is the central bank's compilation of macroeconomic statistics, which exposes it to the accusation that it is manipulating the data in its own interest. If the public cannot be satisfied that it can rely on the central bank's internal controls, resolution of the problem can involve a difficult choice: the responsibilities can be kept at the central bank to benefit from its autonomy and professional expertise (which, however, have come under attack in the charge of statistical self-dealing) or at a national statistical agency, where the integrity of governance arrangements and the level of expertise may not be beyond doubt. The problem has arisen in Mexico, where, in a third option, the task of computing price indices is in the process of being transferred to an autonomous statistical institute.

3.3.2 *Factors beyond the central bank's control*

The policy decision to hold net foreign exchange reserves, and thus a long foreign exchange exposure, can pose a risk to the central bank's reputation. When changes in the local currency value of these reserves create losses, the media and the public may blame them on weak management at the central bank. One way to address such risks has been adopted by the HKMA, ie maintain regular communication with the media and discussions in public, including legislators. Central banks can also seek arrangements under which the valuation gains and losses are shared with, or passed to, the government treasury.

3.3.3 *Personal misconduct*

As noted above, questions concerning ethical conduct can pose a more severe test to a central bank's reputation than purely legal issues, such as litigation against the organisation. To illustrate this, in 2003 a secretary to the Governor of the Central Bank of Chile was discovered to be leaking confidential information to a local financial firm from the Governor's office. The episode served to uncover a larger fraud operation in which other public entities were affected as well, and the information leaked by the secretary proved to be of little value. But the Bank's reputation was nonetheless at stake. It took the Governor's resignation to resolve the crisis, along with establishing very clearly that neither the Governor nor other central bank officials had been involved in the fraud. Even so, the Bank's reputation was damaged, and the episode revealed several flaws in its handling of the media.

Central banks manage the risks that can arise from personal misconduct generally through codes of conduct covering issues such as conflicts of interest, personal investments, acceptance of gifts received in the course of duty and political activity. In addition, some of these issues as they apply to the governor or board members are commonly incorporated into the central bank law.

3.3.4 *Challenges in managing reputational risk*

In managing reputational risk, central banks seek both to limit the causes that could initiate a reputational incident and to effectively manage an unfolding incident. Some of the steps central banks have taken in this regard include:

- Elevating staff awareness. The Bank of Canada requires business managers to assess the reputational implications of each business activity in the regular risk assessment.
- Evaluating initiatives before launch. The HKMA requires departments introducing major new services or policies to undertake a viability assessment to be monitored by internal audit. The Central Bank of Brazil is similarly strengthening strategic planning and project management to reduce reputational risk.
- Pre-emptively communicating. Public outreach in anticipation of problems can be an effective tool to manage public expectations, for example, in relation to the performance of a central bank's portfolio of foreign exchange reserves.
- Using data on complaints or dissatisfaction. Maintaining and regularly analysing a log of complaints and other events with reputational implications can provide the early warning signs of serious problems, and the data can help guide efforts to mitigate the risks and improve performance. In addition, some central banks engage external consultants to conduct discreet public opinion surveys on a regular basis to track the public's awareness of their work, as well as the public's satisfaction with and support for their policies and services.
- Implementing codes of conduct. A code of conduct reflects the core values of an organisation and the expectations of stakeholders and the community at large. But simply having the code does not suffice – regular staff training and occasional updating of the code are also needed.

4. Links to other central bank management issues

4.1 *Internal audit and compliance*

Both the private and public sectors have moved towards clearly separating risk management from auditing. For commercial banks, the Basel Committee on Banking Supervision (BCBS) has been a strong advocate of separating the functions and has recommended that the “internal audit function should not be directly responsible for operational risk management” (BCBS (2003)). The main motivation for the separation is to avoid the potential conflict of interest that can arise. In essence, if risk management is a management task and therefore subject to audit scrutiny, the audit area should not have an explicit role in the risk management process. That said, most risk management practitioners still advocate a close working relationship between the separated functions, in part to maintain consistency between the risk management and audit frameworks.

Differences in approach are evident across central banks. At the Bank of Mexico and the Bank of Spain, the Internal Audit Department is set apart from the central risk management function. At the Bank of France, the Risk Management Central Unit and the Audit Department are placed in the same General Directorate (General Control), but the relations between them are structured in a formal way consistent with their respective roles. Moreover, the Risk Management Central Unit is clearly auditable.

A number of (mainly smaller) central banks also carry out the two activities together in a single area, primarily owing to resource constraints. Various methods are available to help mitigate the potential conflict of interest identified above. For example, at the Reserve Bank of New Zealand, the risk management function is evaluated on a regular basis by external, rather than internal, auditors.

4.2 *Change and the management of change*

Central banks often have a system in place to ensure adequate levels of control over project design, approval and delivery. The system is likely to include some kind of assessment process for the risks related to project delivery. Although some of a project’s benefits may be linked to the reduction of risk exposure within the business, it is important to keep the two views of risk separate – the former (the assessment process) is about risks to the project, the latter (benefits) about the risk profile in the business-as-usual state.

4.3 *Business continuity and crisis management*

Business continuity risks refer to the disruption of the bank’s normal business operations as a result of a natural or man-made emergency such as fire, flood or terrorism. The risks can take many forms, but typically they are categorised into five generic events:

- loss of critical services;
- loss or severe degradation of communication or telephone networks, including mobile networks;
- acute failure of information systems or loss of data;
- absence of significant numbers of staff in one or more critical functions (eg flu pandemic, civil emergency); and
- loss of access to bank premises.

Business continuity planning (BCP) has become a critical component of operational risk management in the financial sector. In recent years, financial institutions, central banks and regulators have devoted significant resources to strengthening BCP to enhance the resilience of their national financial systems and to minimise the impact of a sudden failure of critical infrastructure as a result of terrorism or natural disasters. Some central banks, including the Reserve Bank of Australia, have established self-contained business resumption facilities to provide back-up capacity and business continuity in the event that access to head office facilities or IT systems is lost.

In some central banks, business continuity planning is conducted in the same area as the operational risk management function because such planning can mitigate the risk in some types of operational risk. A number of central banks have a central business continuity function that is part of the central risk team and forms a key part of the risk framework. This business continuity function sets the organisation's policy and standards for the format and content of local business continuity plans. An annual threat assessment reviews the priorities for business continuity plans and their updating. It is usual to have a business continuity committee that meets regularly to assure that the plans are robust, coordinated and appropriately tested and that they reflect changing threats.

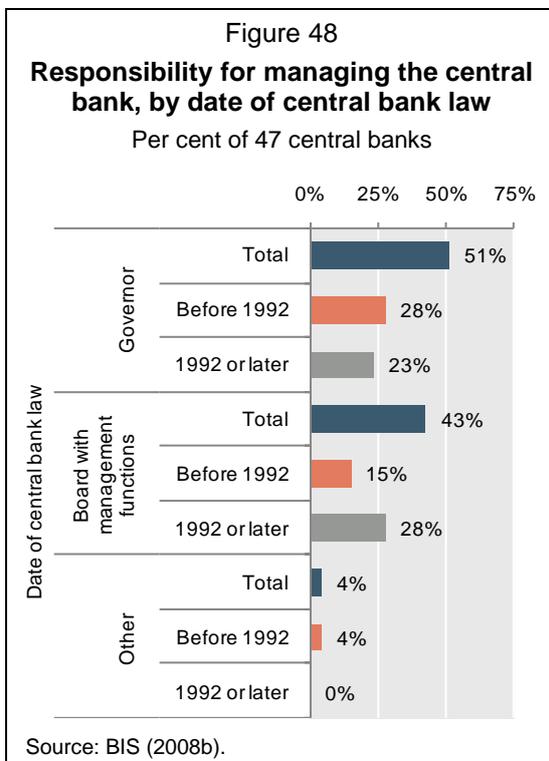
Chapter 9: Selected aspects of management and organisational structures¹³⁸

The Main Issues

In arriving at management and organisational practices that match public expectations about efficiency and effectiveness, central banks face a number of challenging issues:

- What are the staff skills and head count necessary to handle both normal and crisis situations?
- Can management structures simultaneously match specialised functions, take advantage of appropriate information and knowledge synergies and protect against information spillover where conflicts of interest exist?
- How can the remuneration system reflect the central bank’s public sector status while helping it compete with the private financial sector for staff?
- Can key performance indicators be developed that allow for quantitative management practices in an environment in which contributions to policy “bottom lines” are frequently not measurable, even with the passage of time?
- Can broad-based social representation and legitimacy be preserved while scaling back expenses related to branches or regional offices?

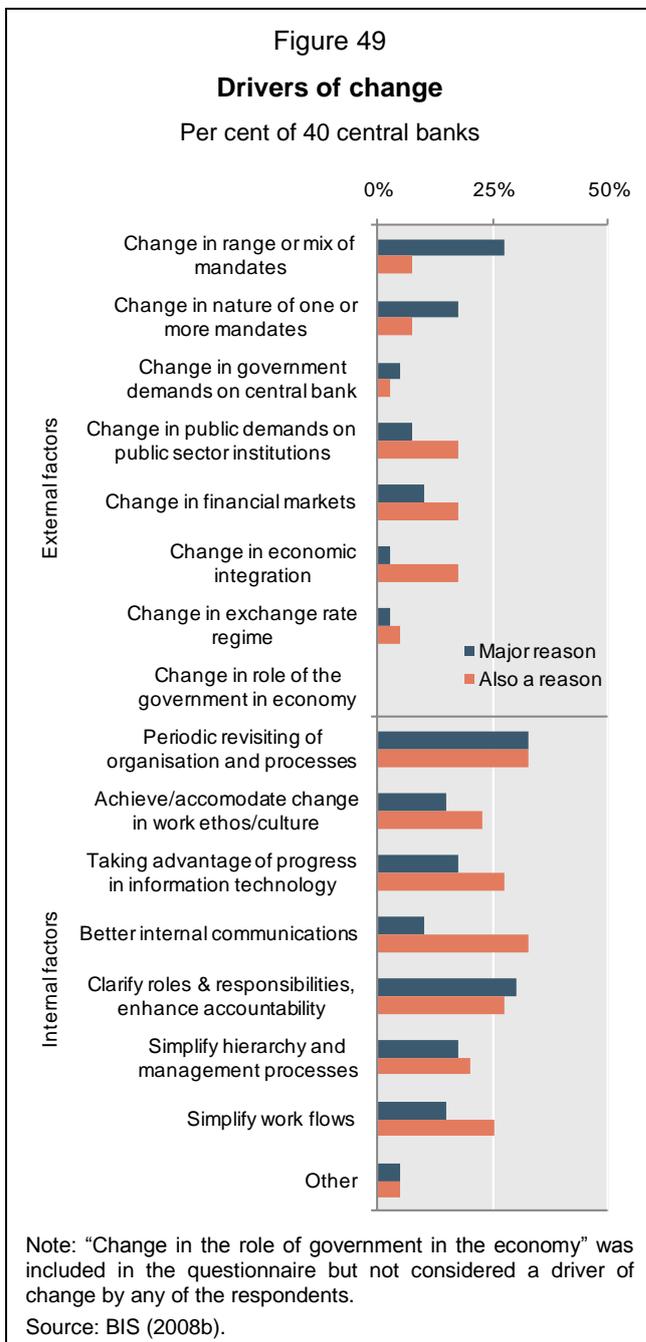
1. Management and organisational structures



Generally the central bank is most prominent as a policy making institution, and good public policy is popularly seen as more an outcome of the wise judgment of independent individuals than of effective organisational management. Yet, like any organisation, a central bank’s effectiveness depends critically on how well it is managed. The management task at a central bank is complicated by the relative absence of objective indicators of performance such as profit and return to shareholders. Yet even with their special character, central banks have gained from advances in the theory and practice of organisational management over the years. Those improvements in how central banks are organised and managed gains have usually come as part of the major reforms in central bank policy and governance undertaken over the past couple of decades.

¹³⁸ This chapter was prepared mainly by Bruce White.

Some of the organisational and management change at central banks has been driven by external factors, such as demands for greater accountability to go with greater independence. As discussed in Chapter 4, greater independence has tended to involve a move towards group-based decision-making with respect to monetary policy. As Figure 48 shows, there has also been a small shift towards group-based management. This would be consistent, given that alongside increased autonomy for making policy decisions, central banks have been given greater autonomy to manage their resources.



Another external factor has been the influence of broad-based programmes to reform public sector management against the backdrop of fiscal consolidation efforts. But much of the change in management and organisation seen in central banks during the past decade or two has been generated from within (Figure 49). Some of the change can be attributed to overall developments in management theory and practice (building effective teams, promoting better internal communication and motivating staff), while other aspects have been more tied to the particular nature of central banks as knowledge intensive policy organisations that also have significant operational functions (provision of banking services and the distribution of currency).

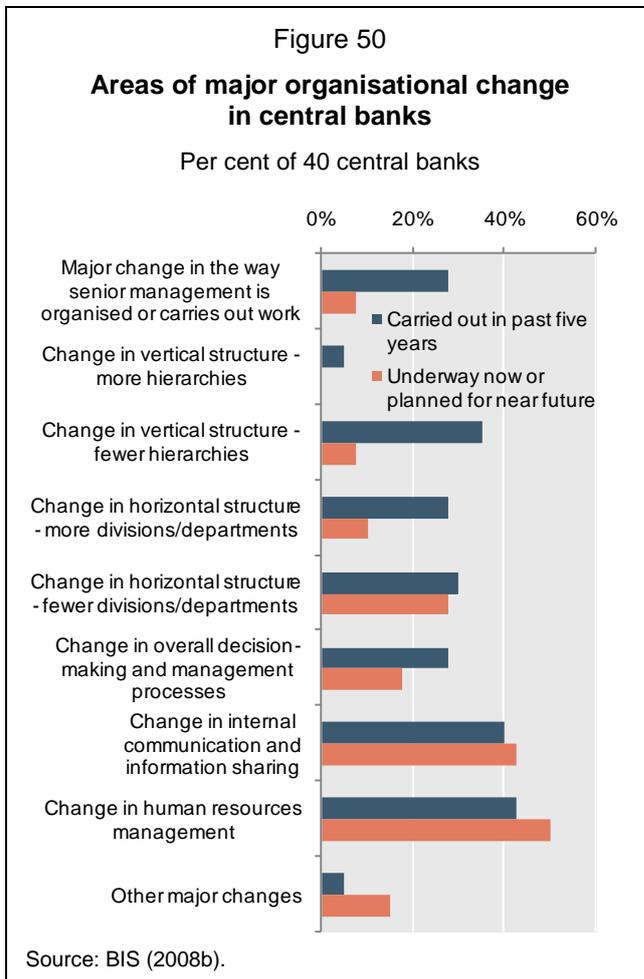
1.1 Some high-level patterns

The considerable diversity among central banks in their functions, number of staff and cultural and management traditions, creates a corresponding diversity in the way they organise themselves. They exhibit some broadly common trends in the focus of their efforts at organisational change (Figure 50).

A notable development has been a trend toward "flatter" management structures, which has involved the removal of one or more layers of middle management. Central banks traditionally have tended to be

highly hierarchical organisations, perhaps stemming from the need to maintain particularly high levels of quality assurance (through layered review and checking procedures). A number of influences have been at work, including the introduction of technology that has permitted the automation of manual processes (hence lessening the potential for error and the need for review and checking) and the growing emphasis

on the achievement of efficiency that comes with increased accountability. The shift to flatter management structures may have helped in empowering staff and boosting their motivation by allowing them to interact more directly with senior members of policymaking committees.



Another dimension of organisational change has been towards a more horizontal management of activities. Most central banks are today organised along functional lines, typically with separate divisions for monetary and financial system policies. Such a structure tends also to reflect the different professional groupings, with the former comprising mainly macro-economists, and the latter drawing relatively more on accounting, finance, legal and microeconomic skills.¹³⁹

But the emphasis on horizontal differentiation varies among central banks. The Bank of England, for example, organises its policy activities into two “wings”, each with its own mix of staff skills and each relating to a separate policymaking committee. The monetary policy wing encompasses monetary policy and markets functions and prepares analysis and advice for the MPC. The financial stability wing encompasses the Bank’s responsibilities for financial stability and banking services and prepares

analysis and advice for the Financial Stability Board (to be replaced by a Financial Stability Committee under new legislation). A rationale for the functional organisation of multidisciplinary teams is that staff are better motivated when they can identify their work with a clear, relatively undistracted, functional purpose.

The Federal Reserve System provides some elements of contrast to the arrangement at the Bank of England. Although the Board of Governors also has separate divisions overseen by staff directors, there are, at least at the highest level, functional crossovers. The Federal Reserve System as a whole has perhaps more of an “activity” structure than a “functional” structure; it does not have, for instance, a separate financial stability function, division, or committee but rather weaves financial stability considerations into the work of system-wide committees (including the Federal Open Market Committee and the Payments System Policy Advisory Committee) and the

¹³⁹ Most central banks’ organisational charts additionally show the various internal support functions (eg IT, human resources management, finance, premises) in another “cluster”.

standing committees of Governors that manage the activities of the Federal Reserve Board.

1.2 Organisation of two non-line functions: the research and international relations functions

As noted above, many central banks are organised around monetary policy and financial stability, their two main areas of policy responsibility. However, two sub-areas of substantive activity, research and international relations, do not fit neatly within this organisational form because they span both functions. Central banks therefore face a choice of establishing separate research and international departments to serve the central bank as a whole or of duplicating the services within each area of policy responsibility.

1.2.1 Central bank research

Many central banks have a research tradition. The nature and scope of their research varies considerably, with smaller central banks and those in emerging market economies generally confined to more applied work that is needed to support policy development in the near term. To some extent the research at the smaller banks may leverage research and policy development undertaken at larger and more established central banks or at international financial organisations. At the other end of the spectrum, central banks in some of the large, advanced, economies, make a substantial contribution to macroeconomic research. The Federal Reserve System stands out in this regard, with the Board of Governors and some of the regional Reserve Banks (for example, in San Francisco, St Louis and Chicago) having especially strong research centres.

The greater attention given to efficiency and effectiveness in central banking has spread to the research function: what research is needed? And how should it be carried out – in-house, collaboratively with other organisations, commissioned from other organisations, or in agencies sponsored by the central bank? These questions are being asked against a backdrop of a wide range of research being undertaken by central banks.

Some central banks may face pressures to, in effect, play the role of a national economic research institute in countries that do not already have one (as may have been the case in Israel and South Africa). Playing that role may permit the central bank to attract the best economic talent in the country, which may enhance its reputation. However, if the central bank carries out such functions, it may lose some of its autonomy to the fiscal authorities, which have a legitimate interest in seeing how well the wider research role is performed. For those or other reasons, the research role of most central banks is not so broad, although it is not unusual for a central bank to provide analysis and commentary on wider issues affecting the performance of the economy.

For central banks that undertake significant research, a number of questions bear on the decision of where to locate the function within the organisational structure. In particular, should the research capability be kept separate from policy work, or co-located with it, including through economists being permitted, or expected, to perform a combination of policy and research work.

Each approach has advantages and disadvantages and different central banks adopt different approaches. For example, the Reserve Bank of Australia, the National Bank of Belgium, the Bank of Israel and the Netherlands Bank have within their economics division a research unit that is separate from the unit responsible for economic monitoring and policy analysis, whereas a more integrated approach is evident at the

Monetary Authority of Singapore and in the Federal Reserve System. The Bank of Mexico uses a slightly different approach in that, in addition to maintaining a Research Department, it promotes research in other departments to analyse issues such as financial stability and market functioning.

Maintaining a separate research capability helps insulate the research staff from policy work and from any broader requirement that research must have near-term policy relevance. Thus, the research unit should be separate if it is intended to conduct “blue sky” and “pure” research. Conversely, if research is intended have a reasonable prospect of near-term policy payoff, then co-location in the policy areas might be preferable. The latter option also better supports the promotion of research findings among the central bank’s policymakers and better avoids silo tendencies; it may also be the best option in small central banks, where maintaining separate policy and research units may result in neither having a critical mass of appropriately specialised staff.

Another way to facilitate the interplay between theory and practice is to bring academics into policy roles at central banks. In recent years a number of prominent academics specialising in macroeconomics have served on the MPC of the Bank of England, on the Board of Governors of the Federal Reserve System, and as Governors or Executive Board members of the central banks of Cyprus, Germany, Israel and Sweden. Indeed, academics seem to appear in senior roles in central banking perhaps more than in other areas of public policy. A possible reason is that independent central banks are shielded from the day-to-day conflicts and power struggles that characterise other areas of policy, thus making it easier to delegate the decision-making power to “technocratic experts in macroeconomic and monetary matters” (Weber (2007)).

1.2.2 *International relations*

With the advance of globalisation, central banks have become increasingly connected through international relationships. A 2005 BIS survey (BIS (2005c)) indicated that central banks have on average 14 international relationships, with primary responsibility within the public sector for about half of those. Many of these relationships are bilateral, but others operate through multilateral institutions, such as the BIS, and regional groupings.¹⁴⁰

Organising the management of a central bank’s international relations raises some issues similar to those for the research function. Most facets of a central bank’s business involve elements of international relations, and those can be managed either centrally, by an international department, or devolved to the various business and policy units. Most central banks, including those of some comparatively closed but large economies (China, Japan, the United States), have a single international department. The need for appropriate language skills for conducting international relations may be a factor in some countries (China), while other central banks, particularly in emerging market countries, have close involvement, along with the government, in raising international capital from official, multilateral and capital market sources. Only about 20% of central banks have completely devolved their international relationships, and these predominantly are in advanced economies (for example, the Netherlands, New Zealand and the United Kingdom).

The complete devolution of international relations to individual policy and business units can create problems of coordination, such as unwanted duplication of interactions

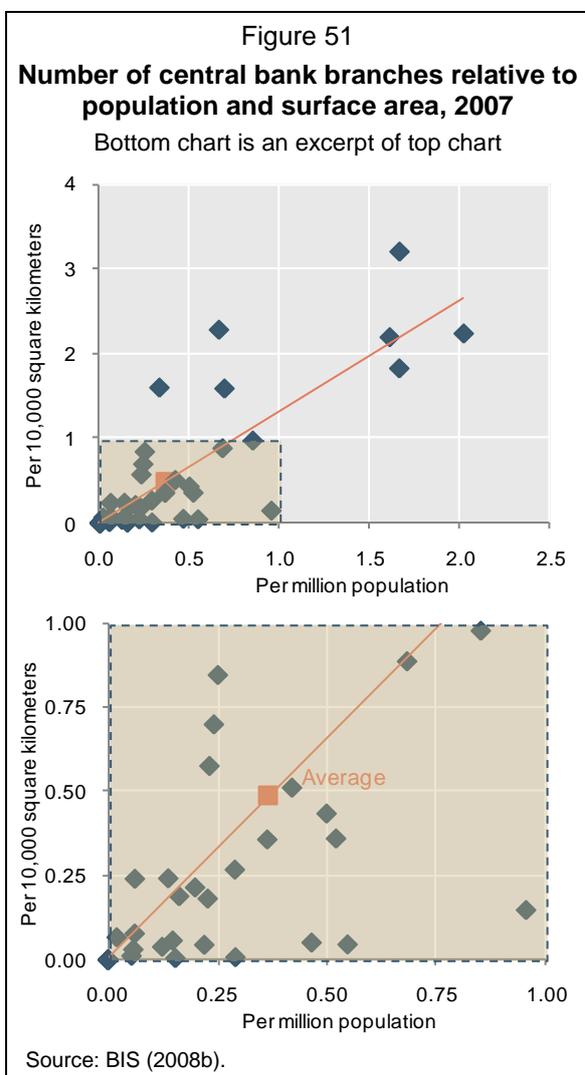
¹⁴⁰ For example, CEMLA (Centro de Estudios Monetarios Latinoamericanos) and EMEAP (Executives' Meeting of East Asia-Pacific Central Banks).

with international counterparts. In central banks with such devolution, the governor's office or secretary's department typically supplies the needed coordination. The solution is a natural one, given that international relationships usually are a significant element of governors' roles.

1.3 Regional services and representation

Traditionally, central banks have maintained regional offices to perform a range of administrative and operational functions and to help secure broad-based representation and legitimacy in the wider community. However, during the past decade or two, central banks with such branch networks have tended to scale back their operational aspects while still seeking to maintain or strengthen a regional presence. This section looks at the branch network trends, efforts to increase regional engagement, and the particular cases of areas with strong federal traditions, notably the euro area and the United States.

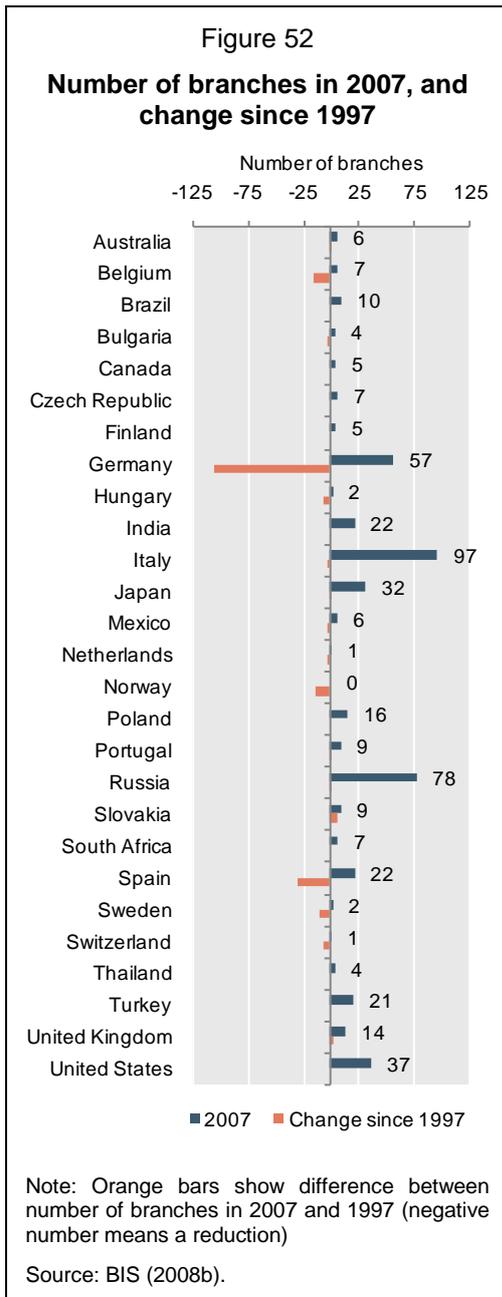
1.3.1 Branch networks



Historically, central banks have maintained regional offices as well as headquarters located in either the political or financial capital. Typically the roles of the regional offices have been to provide a local point for the issuance of currency as well as for services provided by the central bank to the government, to financial and business sectors and to the wider public. Such services may include the administration of certain regulations, eg exchange controls, provision of banking services, and administration of retail government debt issuance programmes (including for regional authorities in some countries). A number of central banks use branches to obtain localised information on economic conditions.

Branches also strengthen popular awareness of the central bank in regions distant from its headquarters office. Not surprisingly, the regional footprint of the central bank has tended to be larger in economies with large geographical areas or large populations (Figure 51).

During the last decade or so, a number of central banks have scaled back their branch networks, particularly in some of the industrialised countries (Figure 52).



A number of factors have been at work in the reduction of branch networks. Reductions in the costs of communication and travel have made meeting regional needs from centralised offices more economic at a time of increased focus on efficiency. The largest gains in efficiency in central banking have tended to be in industrial-type and administrative operations (eg processing banknotes and maintaining debt registries) rather than in policy analysis and research. With regional office functions weighted towards the former kind of activity, it follows that there has been more downsizing of regional offices than at headquarters (Figure 53).

Another factor in some countries has been a change in the system for distributing currency and taking back unfit bills, wherein commercial banks or the security firms serving them have taken a larger role. Changes of these kinds have been implemented in Canada, Mexico and Sweden, among other countries. Similarly, the Reserve Bank of Australia has replaced separate note processing units that had been located at each state branch with a central facility at its note printing facility.

1.3.2 *Stepped up alternative means of regional engagement*

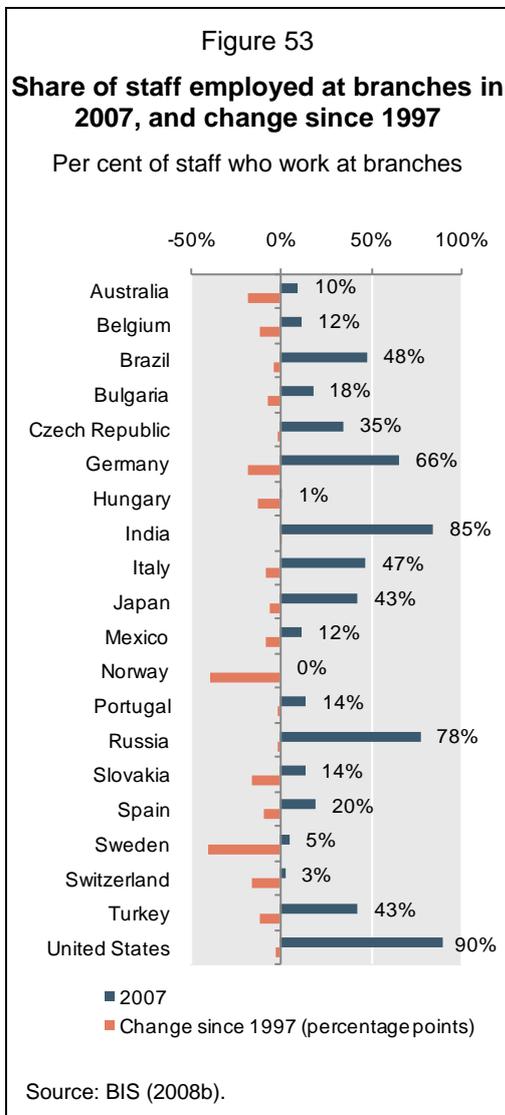
The scaling back of regional branch facilities has not generally led to a diminution of community engagement. Many central banks have taken steps to strengthen their local presence.

As part of their programmes to become more transparent, a number of central banks have substantially expanded their public communications programmes, with governors providing presentations and addresses, and taking

questions, across a wider range of topics and audiences. This trend has been noticeable at the Bank of Canada, the Reserve Bank of New Zealand, the Sveriges Riksbank and the Bank of England.

Also, the economic intelligence gathering role that traditionally has been undertaken by regional offices has not diminished; this is evident in expanded and formalised processes for obtaining localised anecdotal information in a number of countries. For example, staff from the Reserve Bank of New Zealand visit a sample of about 40 to 60 businesses across the country during the course of the preparation of each quarterly Monetary Policy Statement (and lists the firms visited in each Statement). Similarly, the Reserve Bank of Australia had dedicated staff at the head office as well as in four small offices in state capitals to visit firms to obtain on-the-ground economic intelligence. However, with today's ease of travel and communication, it is becoming more efficient to conduct these activities from headquarters, with the possible added benefit that

doing so may facilitate the integration of on-the-ground economic intelligence into the policymaking process at headquarters. The role of the Bank of England's regional agents in recent years has, if anything, been elevated, with agents providing regular reports to the MPC, as a regular and formal component of the suite of information considered at each MPC meeting.



A third means of regional engagement for some central banks is set regional venues for some meetings of its board or some of its appearances before parliamentary committees. Additionally, as a matter of practice or law, some countries employ some degree of regional balance in the appointment of the members of their policy or governing boards (as in Germany and the United States). Although the motivation is not the representation of regional interests – board members should act in the interests of the central bank and the nation as a whole – the balancing can help ensure that relevant information from the regions is fed into the policymaking process as well as foster a perception of the broad based legitimacy of the central bank within the wider community.

1.3.3 Federal systems

In federal systems – countries where sub-national units play a strong role in the overall system of government – it is natural for the central bank to have a large regional footprint.

The United States and its central bank provide a good example of a federal system of government and a regionalised monetary authority. Each Reserve Bank is a separate institution, with its own balance sheet and board of directors, but operates under the ultimate governance authority of the Board of Governors, which, in conjunction with the Reserve Banks, formulates the policies of the System.¹⁴¹

In response to the opportunities provided by lower communication and travel costs, the Federal Reserve System has strengthened coordination across the individual Reserve Banks more than it has shifted activities to the centre. Although some “back bone” services, such as the computer and communications network, and the accounting function, have tended to become more centralised at the Board of Governors, the Reserve Banks have become specialised centres for the system as a whole. For example, automation has become an expertise of the Federal Reserve Bank of

¹⁴¹ The Board of Governors appoints three members of the board of directors of each Reserve Bank, including the chair. The remaining six directors are appointed by the Reserve Bank's commercial bank shareholders.

Richmond, and policymaking on cheque clearing has been located at the Federal Reserve Bank of Atlanta. Open market operations have always been conducted by the Federal Reserve Bank of New York. Supervision is vested in the Board of Governors, and committees comprising representatives from a number of Reserve Banks oversee the activities.

In this structure, the individual regional Reserve Banks have been likened to nodes on a network, and the enhancement of backup facilities and redundancy after the terrorist attacks of 11 September 2001 further strengthened the network characteristics of the Reserve Bank system. The development of variously specialised nodes that serve the overall system reflects both the pursuit of efficiency and a commitment to the federal nature of central banking in the United States.

In a number of respects the Eurosystem can also be regarded as operating in a federal system of government, albeit with a number of important differences from the United States. One of the most important differences is that the regional structure of the Federal Reserve System does not map into political constituencies (the Districts cover multiple states), whereas that of the Eurosystem does since it consists of the supranational ECB and the central banks of sovereign nations. For this reason, some elements of the European system are more decentralised than in the case of the United States.

In the euro area, monetary policy is devised at the centre, by the Governing Council of the ECB, but is implemented by all central banks in their respective national financial systems; and banking supervision remains a national responsibility (with the ECB's role limited to an advisory and coordination role in the area of prudential supervision policy). The production and distribution of euro banknotes is also implemented by national central banks. This decentralisation, which is consistent with the subsidiarity principle embedded in the EU Treaty, means that certain tasks are carried out in parallel by all national central banks. That said, there is some movement in the direction of consolidation, notably in the production of banknotes, with certain denominations now being produced only at certain national printing facilities. Whether such a pooling of functions will be extended to other areas or evolve towards a trend to greater centralisation will only become apparent with time.

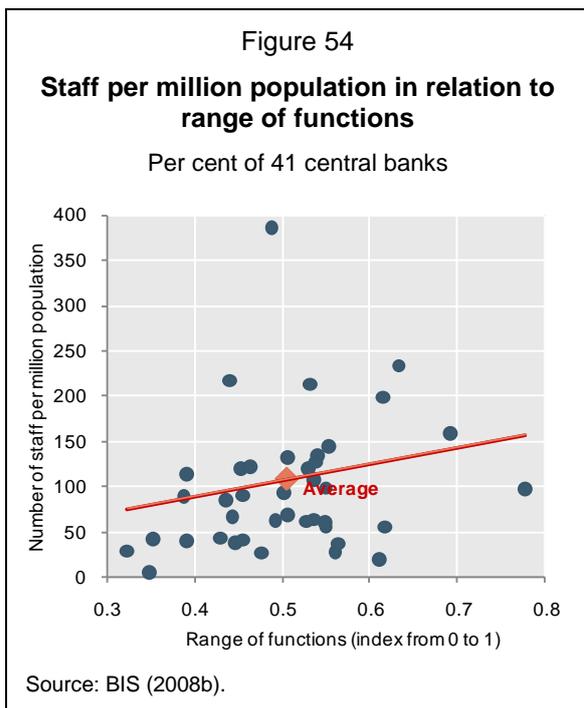
However, the pattern regarding federal systems is not entirely uniform. Australia and Canada, both geographically large, have federal government systems but their central banking arrangements are closer to those in countries with a unitary system of government, eg the United Kingdom.

2. Maintaining a corps of professional central bankers

The staffs of central banks traditionally have included a cadre of highly trained policy professionals. Especially during the last decade or two, the environment within which central banks operate has changed significantly, with major impacts on their staffing needs. The change of environment has had at least three elements. First, the focus has tightened on the performance of public institutions, including central banks. Second, a greater emphasis is now placed on market-based relative to administrative instruments, particularly in monetary policy, but also for the supervision of commercial banks. Third, the revolution in information and communication technologies has had a major effect on organisation and staffing.

This section reviews how these developments have impacted the staffing needs of central banks and on how central banks have responded in their human resource management practices.

2.1 Staffing trends



The numbers of staff employed ranges considerably, generally from the tens of thousands to a few hundred.¹⁴² Thus, the size and complexity of the human resources management task varies considerably. (Figure 54 and 55, and Table 22 provide an overview of patterns of staffing of central banks across a range of countries.)

The trend in staffing levels has been downward at many, but not all, central banks. The reductions have mostly been in staff performing industrial (eg check processing) and clerical tasks. These are areas where new technologies, along with reforms to business practices, have enabled significant reductions in staff requirements.

As a result of technology related downsizing, a larger proportion of the

staff of many central banks is now categorised as being professionally trained – about 60% in a 2003 BIS survey of “mid-sized” central banks (BIS (2003c)). If anything, the proportion of staff counted as professionally trained is likely to have increased in the years since.

2.2 Staff remuneration policies and practices

Achieving the right level and structure of remuneration has a major bearing on any organisation’s ability to recruit, retain and motivate its staff.

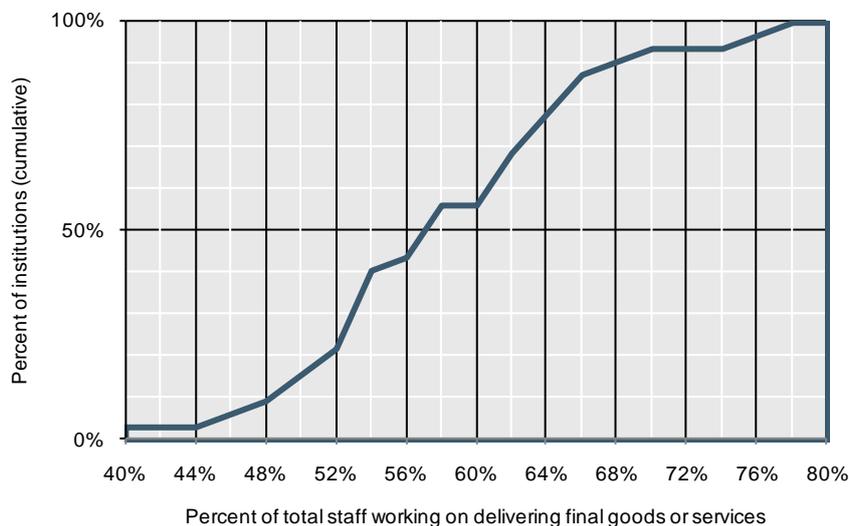
Central banks generally have a large measure of autonomy in determining staff remuneration but within certain implicit or explicit constraints (Table 23). That autonomy derives from both their financial autonomy and, in most cases, from being outside of the administrative arrangements that apply to government ministries. In most central banks, staff remuneration is determined by the central bank’s management (governor, executive board, or management committee) under the oversight of a supervisory board, if such a board exists. For certain categories of staff, wages and salaries are set in the context of negotiation with a staff union or association.

Constraints on remuneration take a number of forms. In some cases they are legal, but in many cases they are more subtle. Of the central banks that participated in the 2007 BIS survey (BIS (2007b)) (Table 24), those facing significant practical restrictions to determine staff remuneration most often report the following factors:

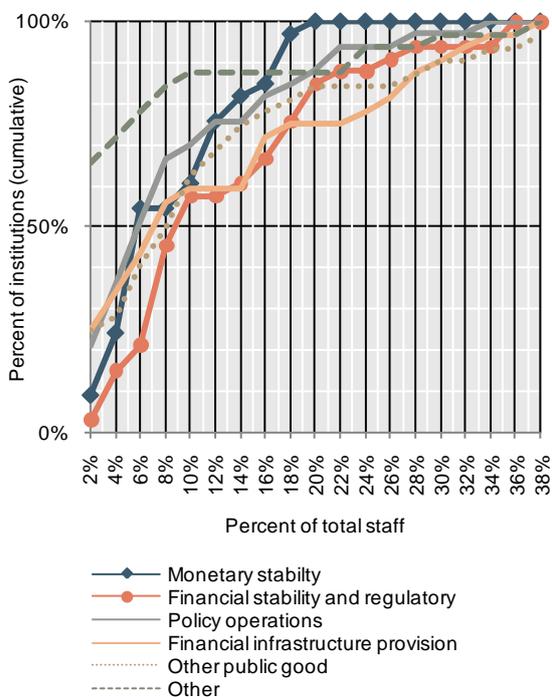
¹⁴² The range is wider still if one includes the outliers: the People’s Bank of China, with about 110,000 employees, and the central banks of small Pacific Island states, some with well under 100 employees.

Figure 55
Breakdown of central bank staff by type of goods and services provided
 Data from 33 central banks

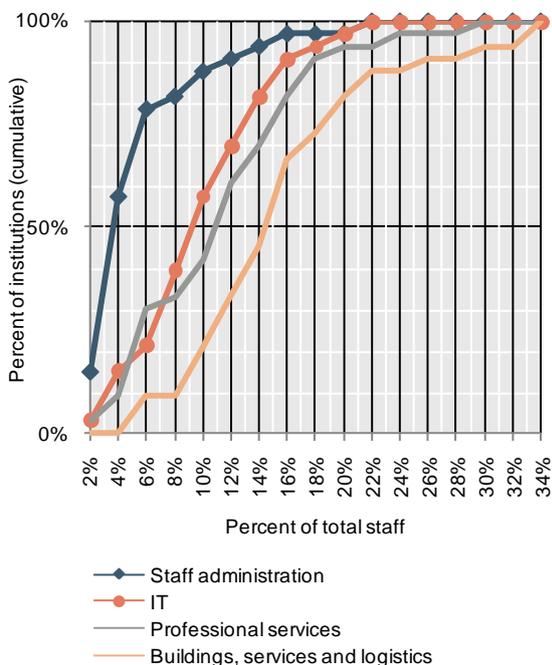
Share of staff providing final goods and services



Breakdown by type of final goods and services



Breakdown by type of internal services



To illustrate how these charts should be read, consider the point $x = 57\%$, $y = 50\%$ (ie where the blue line crosses the horizontal 50%-line) in the top chart. This means that in half of the central banks in the sample, the share of staff providing final goods and services is 57% (of total staff) or less, and in the other half it is more than 57%. The blue line reaches its maximum (100%) at a value of 78% of staff, indicating that no central bank devotes more than 78% of its total staff to the delivery of final goods and services.

Source: BIS (2008b).

Table 22
Central bank staff numbers

Country or currency area	Staff numbers (headcount except where F (full-time equivalents) is indicated)				Staff per million population			
	2007	2005	2000	1995	2007	2005	2000	1995
Argentina	2,474	2,358	2,144	1,700	62.9	61.1	58.3	48.9
Australia	896	860	807	1,532	42.9	42.2	42.1	84.6
Belgium	2,262	2,344	2,672	2,918	212.6	223.0	260.4	287.7
Brazil	5,072	4,604	4,640	6,160	26.8	25.0	27.1	38.8
Bulgaria	910	932	1,291	796	119.2	120.3	161.3	95.9
Canada	1,238	1,166	1,715	2,000	37.6	36.1	56.0	68.3
Chile	603	562	590	677	36.4	34.7	38.8	47.6
Croatia	593	561	586	479	133.5	126.3	133.8	107.6
Czech Republic	1,474	1,433	1,465	1,660	143.5	140.1	143.3	160.7
Denmark	507F	516F	550	592	97.1	99.5	103.2	113.5
Euro area	47,308	50,164	51,400	53,094	149.4	161.1	175.6	–
of which ECB	1,348F	1,370F	830F	–	4.4	4.6	3.0	–
Finland	490	544	725	796	93.2	103.7	140.1	155.8
France	12,828F	13,972F	15,265	15,220	217.0	238.9	258.5	263.1
Germany	10,391F	11,502F	14,407	16,373	131.9	145.5	175.1	200.1
Hong Kong SAR	622	604	607	469	89.3	88.3	90.4	74.8
Hungary	690	809	1,316	2,318	68.6	80.1	128.7	224.2
Iceland	115F	116	105F	133F	387.0	386.7	387.0	517.7
India	21,669	22,366	31,295	33,213	19.2	20.4	30.8	36.5
Indonesia	6,108		5,955	7,685	27.2		29.0	39.4
Ireland	991	964	694	574	230.4	233.2	183.1	159.4
Israel	745	794	900	907	106.6	118.6	147.9	168.8
Italy	7,405	7,961	8,651	9,427	126.7	137.1	151.7	165.8
Japan	4,912F	5,052	5,620	6,045	40.1	39.5	44.3	48.2
Korea	2,174	2,204	2,083	3,600	44.9	45.8	44.3	79.8
Mexico	2,801	2,774	3,155	3,364	26.6	26.9	32.2	36.9
Netherlands	1,565F	1,685F	1,785F	1,485F	98.2	107.8	116.9	100.4
New Zealand	221F	218F	237F	293F	55.0	55.4	64.0	83.1
Norway	528	547	1,200	1,226	113.2	118.8	267.0	281.0
Poland	4,424F	4,627F	6,319F		121.2	126.5	171.4	
Portugal	1,687	1,702	1,832	1,771	158.8	161.1	179.4	177.6
Russian Federation	71,918	78,834			505.7	549.4		
Saudi Arabia	2,588	2,606	2,661		106.6	112.7	130.0	
Singapore	1,049		821		233.4		204.3	
Slovakia	1,075	1,169	1,304	1,187	198.7	216.2	242.0	222.0
Spain	2,720	2,705	3,092	3,281	60.5	62.3	76.3	83.6
Sweden	372F	429F	448F	755F	42.3	49.5	52.6	89.1
Switzerland	656	671	575	606	89.9	92.2	80.0	85.8
Thailand	3,881F	4,289F	4,617F	3,846F	60.9	68.7	77.2	67.5
Turkey	4,536	4,642F	5,550	6,999	61.6	64.8	83.9	115.4
United Kingdom	1,744	1,767	1,907	3,991	28.7	29.3	32.4	68.8
United States	19,930	22,056	23,056	25,465	65.9	74.3	81.7	95.6
of which Board of Governors	1,900	1,797	1,635	1,689	6.3	6.1	5.8	6.3

Source: Central bank websites and annual reports; Dexia (2009); BIS (2008b).

- *The governor's remuneration often sets a ceiling.* Given that the governor's remuneration tends to be determined externally (see below), the internal remuneration structure can – indirectly – also be determined externally. In only a few institutions are some staff members paid more than the governor (eg at the Central Bank of Brazil, the Bank of Israel and the Board of Governors of the Federal Reserve System), but this is the exception rather than the rule.
- *Public scrutiny of bank remuneration levels or changes, or concern about public reactions, are important.* In a little more than half of these cases, this factor was deemed more important in periods when monetary policy was tight.
- Tradition dictates that central bank remuneration will remain within a certain distance from remuneration at other public sector agencies.

Table 23
Determination of salaries
 Per cent of 37 central banks

Salaries are ...	Professional staff	Other staff
... decided by		
the executive board of the central bank	51	46
the governor	23	23
the supervisory board of the central bank	14	9
... affected by legal provisions concerning ...		
the level of salaries	9	9
a ceiling for salaries	14	11
a floor for salaries	26	29
... set in labour union contract(s)		
that apply to but are not negotiated specifically with the central bank	6	6
that are negotiated between the central bank and one or more labour union(s)	37	43

Source: BIS (2007b).

Although the survey indicates that central bank autonomy extends to setting pay scales, many central banks also still report that they face major challenges in competing with the private sector for key talent. This may indicate that central banks are quite good at walking the tightrope by offering just enough to retain professionals (after the non-pecuniary benefits of working at an influential institution are taken into account – see below) while not offering too much ground for public resentment. Alternatively, there may be an element of self-restraint that prevents central banks from pushing beyond the unseen boundaries of public and political acceptability. In the end, the talent pool achieved may be sufficient for the task, even if short of the ideal. That characterisation would be consistent with the ongoing expression of concerns about competitiveness and yet limited use of the reported autonomy to pay more.

Table 24
**Extent to which formal independence to set remuneration
 is constrained in practice**

Per cent of 35 central banking entities

		Formal independence to set remuneration		
		Low	Medium	High
Usability of formal independence	Low	BR, DE, HK, EM (4, 11%)	CA, IT, US(NY), EM (4, 12%) BE, CH (2, 6%)	CL, IS, NO, PT, UK, MX, US(BG), EM, IC, IC (10, 29%) AT, AU, BG, CZ, EU, FI, HU, NZ, PH, RU, SK, TR, ZA, EM, EM (15, 43%)
	Medium			
	High			

Note: Exceptionally, this table shows two separate entries for the United States – one for the Board of Governors (US(BG)) and one for the Federal Reserve Bank of New York (US(NY)).

Source: BIS (2007b).

2.3 Compensation for the governor and board members

The methods used to set compensation for the governor and board members typically are very different from those used to set staff salaries. The key reason is that principles of good governance dictate that individuals should not set their own salaries. Although the central bank often has considerable power in setting staff salaries, an outside body or reference point is used in most cases to set salaries at the board level. In close to half of central banks, the outside body is an oversight board, sometimes operating with government approval or consultation (Table 25). In about one fifth of cases, the government, a government appointed committee, or relevant ministers play a role in the determination of board remuneration. In a few countries, board remuneration is determined by legal provisions. However, in only one institution, the Board of Governors of the Federal Reserve System, is remuneration at such senior levels determined by relevant public sector pay scales (which in turn are set by the Congress).

In the case of part-time non-executive board members, the minister of finance or the government are involved in the determination of remuneration somewhat more often than is the case for the governor and other full-time executive board members. One central bank specifies that the remuneration for non-executive board members will amount to a certain percentage of the governor's salary. It is also worth noting that some central banks do not offer any remuneration beyond travel expenses for non-executive board members.

2.4 Remuneration criteria and determinants

The three most important considerations in determining staff salaries are competitiveness, the evolution of private sector salary levels, and the integrity of the internal salary structure. To these ends, a number of central banks have adopted rigorous and professional methods for determining appropriate remuneration

comparators. That approach limits inconsistency and bias and, equally important, allows any interested party to see that the pay scales are justified by market conditions. Also, some central banks, such as the Reserve Bank of Australia, have widened their pay ranges and adopted more flexible approaches to employment, including a greater use of term employment. These changes were associated with, and in some respects made possible by, a significant increase in the overall pay scale to better align it with comparators. For staff in some of the central banks in emerging market economies, remuneration is along lines similar to those just described. For staff in others, for example, in Hong Kong SAR and Singapore, remuneration for central bank (and other public policy) professionals is designed to be competitive with salaries paid in the private sector (and for high performing professionals in Singapore, competitive with the upper ranges of the public and private sectors).

Table 25
**Approaches to setting remuneration
 for the governor and board members**

Number of central banks
 33 central banks

Determinant of remuneration	Governor, other full-time executives	Part-time, non-executive
Oversight board	11	4
Oversight board with government approval or consultation	6	–
Government or government-appointed salary committee	4	3
Head of State	3	2
Ministers	2	3
General law	1	–
Parliament	2	–
Central bank law or by-laws	–	2
Internally by central bank	1	2
Public sector pay scale for senior officials	1	–
Other	2	2
Total	33	18

Source: BIS (2007b).

Central banks commonly review staff pay by taking account of individual performance, often in conjunction with a performance evaluation process. Almost 80% of surveyed central banks base periodic salary adjustments for individual staff members at least in part on performance, and those performance based pay systems are generally used across the bank and for all types of regular staff. At the relatively few central banks where adjustments in pay are made primarily according to length of service (about one fourth of cases), legal restrictions on using performance related pay, labour union contracts or the nature of public sector pay schemes applying to the central bank are

probably a factor. In addition to performance based pay, the majority of central banks also use one-time bonus systems. At about two fifths of the institutions surveyed, the variable pay component generally does not exceed 10% of basic salary, but at another third it exceeds 10%.

On the whole, central banks have been able to attract and retain a high-quality professional staff. But the constraints on their ability to do so through their salary scales appear to have resulted in greater use of non-salary benefits. Such benefits can take the form of non-salary financial benefits (eg contributions to retirement saving programmes, health care benefits, subsidised housing loans) and non-financial benefits (eg the ability to pursue research interests and the opportunity to contribute directly to an aspect of public policy with a high public profile).

However, some central banks have also sought to reduce their reliance on non-salary benefits, especially subsidised housing finance, which provides less advantage to staff with low mortgage debt (which tends to be senior staff) and thereby distorts overall remuneration structures. Thus, in a 2001 BIS survey (BIS 2001)), subsidised loan finance was the most prevalent form of non-salary benefit provided by central banks, whereas the most recent survey (BIS (2007b)) revealed that subsidised access to training, sabbaticals and other career development initiatives had become the leading form of non-salary benefit.

Another facet of remuneration structures in some central banks has been the creation of special pay streams for selected categories of specialist staff, to enable the central bank to be competitive in those areas without unduly expanding total remuneration costs. Central banking offices in major financial centres can face particular challenges in retaining specialist staff. At the Federal Reserve's New York Reserve Bank, so-called retention contracts are being introduced for key personnel; otherwise known as "golden handcuffs", the contracts provide extra pay if the employee stays for the duration of the contract.

2.5 Recruitment, training and professional development

Traditionally central banks have recruited professional staff from those who have just received an advanced degree. While many, if not most, of these staff at some stage pursue careers outside of the central bank, it has been typical for a proportion to remain with the central bank for their entire career. Central banks have contributed to the process through provision of specialist central bank training (including through programmes offered by, for example, by the Swiss National Bank, the Bank of England, the Federal Reserve, and the SEACEN group of central banks). Another tradition in some central banks (eg the Bank of Japan) has been rotation of staff through a range of central bank functions with a view to building and maintaining a core group of senior staff with a wide breadth of experience.

However, diversification of the traditional career path has become increasingly evident. Elements of that diversity include increased use of term employment contracts (Australia and Canada); international recruitment (New Zealand, United Kingdom, United States); and staff movements between academia and the central bank. The number of senior central bankers with an academic background, as opposed to a background in the financial sector, has increased in the past couple of decades (see Section 2.1).

2.5.1 Term employment contracts

Central banks are staffed very predominantly by permanent career employees (meaning that their appointments are open ended, not that staff necessarily spend their whole career with the central bank). But some central banks have sought greater

staffing flexibility by employing a significant proportion of professional staff on fixed-term contracts, the renewal of which depends on the central bank's needs, the employee's performance and the employee's preference. Notably, staff on fixed-term contracts represent 35% of staff at the Reserve Bank of Australia and 18% at the Bank of Canada. The approach tends to be adopted mainly for management and specialist professional positions. In the case of the Reserve Bank of Australia, the loss of tenure occasioned by the introduction of the practice was compensated with higher remuneration.

The demands for specialisation may continue to increase with advances in knowledge technologies – especially mathematical technologies such as model-based forecasting to support monetary policymaking and the modelling embedded in methodologies for determining banks' capital requirements. With increased specialisation, the demand for the career central banker, with general skills acquired through experience across a range of central banking functions, may decline. Greater specialisation may also result in cultural differences between different functions as well as between career central bankers and those who are more dedicated to their career or profession than to the central bank. Some central banks have observed, for example, that the culture found in banking supervision divisions is quite different from that in macroeconomic divisions, and that rotating staff across these two areas is not always successful.

2.5.2 *International recruitment*

Consistent with globalisation trends generally, central banks increasingly recruit professionals from the international marketplace, at all levels, including at senior levels. Some emerging market central banks, in particular, have filled senior positions, including executive board and deputy governor level positions, by recruiting experienced central bankers – perhaps approaching retirement age – from advanced economies.¹⁴³ However, some central banks continue to restrict high-level positions mainly to nationals.

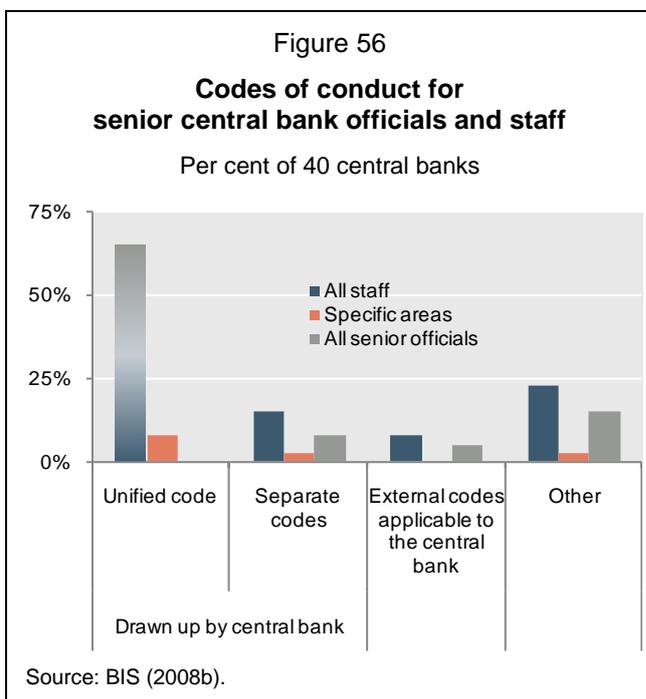
2.6 *Restrictions and codes of conducts*

Central bank officials and staff are typically subject to restrictions on their behaviour to prevent actual or perceived conflicts of interest. Most central banks have some set of rules – based upon statutory provisions, bank issued codes of conduct or a combination of the two – to establish expected standards of behaviour and eliminate personal conflicts of interest (Figure 56). What constitutes a conflict of interest depends upon a mix of national customs, trends in other countries and evolving views about best practices. Devising a code of conduct entails balancing the benefits of such rules against their costs, in that too high a level of restriction may make the central bank an unattractive place of employment for desirable candidates.

The vast majority of central bank laws contain fairly detailed restrictions on the type of outside activities that *senior* central bank officials can engage in while they are working for the central bank. Results from a 2006 BIS survey (BIS (2006a)) showed that outside employment is generally prohibited for the governor and other full-time, internal members of the central bank's board, although an exception is sometimes made for teaching or similar academic engagements, which are permitted in about one third of central banks. Membership in political parties or participation in political activities is

¹⁴³ Examples include the Central Bank of Bosnia and Herzegovina, the Bank of Canada, the Bank of Jamaica, the Reserve Bank of New Zealand, the South African Reserve Bank, and the Bank of England.

expressly prohibited in about one third of central bank laws. External members of policy boards face fewer restrictions on activities outside the central bank, and external members of supervisory boards (non-executive directors) face fewer still.



Aspects of behaviour generally covered by codes on conflicts of interest include general principles of ethical behaviour, rules on the acceptance of gifts (including travel and hospitality), and restrictions on personal financial investments. About one half of central banks surveyed on the matter (BIS (2006b)) provided a specific maximum limit for gifts. Examples of such limits are CHF 500 at the Swiss National Bank for gifts received in the context of a speaking engagement, or €100 for members of the Executive Board of the ECB. Some central banks impose qualitative limits, such as permitting gifts of only “a customary or negligible amount” (Bank of Portugal). Gifts of a higher value

may sometimes be retained if the recipient makes an offsetting payment to the central bank. Otherwise, gifts of a high value that cannot be declined will be retained by the central bank or passed on to charity. Regarding official travel, the typical presumption is that the central bank will pay for it, although some codes of conduct permit the organisers of events to pay for travel or accommodation subject to conditions or qualitative limits on the amounts involved.

Most central banks have rules that restrict the range or nature of the personal investments that some or all of the staff can make. These rules appear to vary considerably in terms of the persons covered, the relevant types of transactions or instruments, the periods in which they apply, and the way in which compliance is monitored. At the Bank of Spain, the members of the Governing Council and some senior officials must place in a registered blind trust all tradable securities owned by them or by their non-separated spouses and dependent children. At the Swiss National Bank, senior officials who participate in monetary policy decisions are required either to use a professional investment manager or to manage their investments passively. Furthermore, some central banks (the Reserve Bank of Australia, the Bank of Mexico and the Federal Reserve, for example) prohibit transactions around the time of monetary policy meetings. Some central banks (for instance, the Bank of Japan and the Swiss National Bank) publicly disclose the personal assets of policy officials or require copies of their tax returns.

In addition, the vast majority of central banks have policies limiting the activity of the governor and other senior officials during a period that extends from some point before to some point after their departures from the institution. Central banks with a significant or full role in banking supervision are more likely to impose post-termination restrictions than central banks with little or no supervisory responsibilities. The length of the restricted period preceding departure generally varies from one to three months, whereas the post-termination restrictions apply for one to two years. In addition, many

central banks prohibit for an indefinite period the disclosure of various types of information received before departing from the central bank.

The approach taken by individual central banks for handling senior staff departures varies widely. For instance, the Swiss National Bank requires three months' notice, after which the official no longer participates in decision-making and no longer has access to sensitive information; however, once the notice period is completed and the official has left the central bank, there are no restrictions placed on future employment. In contrast, the Governor and Deputy Governor of the Bank of Spain may not engage in any professional activity linked to credit institutions or securities markets for two years after leaving the central bank. They are eligible to continue receiving from the central bank 80% of their former salary during this period, although if they choose to take up paid employment in another area, the compensation is not paid. In addition, Governors of the national central banks in the Eurosystem are bound by the code of conduct of the Governing Council of the ECB for 12 months after leaving office. This code requires that they avoid potential conflicts of interest that could arise in private or professional activities and inform the Governing Council in writing before they engage in such activities.

Annex:
List of central banks and monetary authorities
represented on the Central Bank Governance Network

Name of central bank or monetary authority	Country code
Central Bank of Argentina	AR
Austrian National Bank	AT
Reserve Bank of Australia	AU
National Bank of Belgium	BE
Bulgarian National Bank	BG
Central Bank of Brazil	BR
Bank of Canada	CA
Swiss National Bank	CH
Central Bank of Chile	CL
People's Bank of China	CN
Czech National Bank	CZ
Deutsche Bundesbank	DE
National Bank of Denmark	DK
European Central Bank	ECB
Bank of Spain	ES
Bank of Finland	FI
Bank of France	FR
Hong Kong Monetary Authority	HK
Croatian National Bank	CZ
Magyar Nemzeti Bank	HU
Bank Indonesia	ID
Central Bank & Financial Services Authority of Ireland	IE
Bank of Israel	IL
Reserve Bank of India	IN
Central Bank of Iceland	IS

Name of central bank or monetary authority	Country code
Bank of Italy	IT
Bank of Japan	JP
Bank of Korea	KR
Bank of Mexico	MX
Central Bank of Malaysia	MY
Netherlands Bank	NL
Central Bank of Norway	NO
Reserve Bank of New Zealand	NZ
Bangko Sentral ng Pilipinas	PH
National Bank of Poland	PL
Bank of Portugal	PT
Central Bank of the Russian Federation	RU
Saudi Arabian Monetary Agency	SA
Sveriges Riksbank	SE
Monetary Authority of Singapore	SG
National Bank of Slovakia	SK
Bank of Thailand	TH
Central Bank of the Republic of Turkey	TR
Bank of England	UK
Board of Governors of the Federal Reserve System	US
Federal Reserve Bank of New York	
South African Reserve Bank	ZA

References

Archer, D (2005): "Foreign exchange market intervention: methods and tactics", *BIS Papers*, no 24, May.

Arnone, M, B Laurens, J-F Segalotto and M Sommer (2007): "Central bank autonomy: lessons from global trends", *IMF Working Paper*, no 07/88, April.

Aspachs, O, C Goodhart, D Tsomocos and L Zicchino (2006): "Towards a measure of financial fragility", Financial Markets Group, London School of Economics, March.

Bank of England (2006): "Markets and operations", *Bank of England Quarterly Bulletin*, Spring.

——— (2008): *The framework for the Bank of England's operations in the sterling money markets*.

Bank for International Settlements (1995): Survey on central bank functions, structures and processes, unpublished.

——— (1996): "Changing financial systems in small open economies", *BIS Policy Papers*, no 1, December.

——— (2000): Survey on organisational change within central banks, unpublished.

——— (2001): Survey on central bank approaches to salary and compensation issues, unpublished.

——— (2002): Survey on selected aspects of monetary policy decision-making frameworks: the status quo and its evolution in the 1980s and 1990s, unpublished.

——— (2003a): Survey on selected aspects of foreign exchange services and reserves management, unpublished.

——— (2003b): Survey on internal audit at central banks and monetary authorities, unpublished.

——— (2003c): Survey on the number of professional staff and aspects of their remuneration, unpublished.

——— (2004): Survey on central bank services to government, unpublished.

——— (2005a): Report of a BIS study group on central bank capital, unpublished.

——— (2005b): Survey on provision of information on expenditure budgets, unpublished.

——— (2005c): Survey on the organisation of international relations functions, unpublished.

——— (2005d): Survey on the relationship between the central bank and the government, unpublished.

——— (2006a): Survey on post-termination employment restrictions for central banks, unpublished.

——— (2006b): "Conflicts of interest for senior central bank officials", Background note for a meeting of the Central Bank Governance Group, unpublished.

——— (2007a): Report of the study group on risk management at central banks, unpublished.

——— (2007b): Survey on central bank approaches to salary and remuneration issues, unpublished.

- (2007c): Survey on communication of monetary policy by central banks, unpublished.
- (2007d): Survey on the public image of the central bank, unpublished.
- (2008a): “Monetary policy frameworks and central bank market operations”, Markets Committee, April.
- (2008b): Survey of central banks undertaken for BIS: *Issues in the governance of central banks: a report from the Central Bank Governance Group* (2009), unpublished.
- Barabas, G, I Hamecz and J Nemenyi (1998): “Fiscal consolidation, public debt containment and disinflation”, *NBH Working Paper*, no 1998/5, May.
- Basel Committee on Banking Supervision (2003): *The compliance function in banks*, October.
- Berger, H, V Nitsch and T Lybek (2006): “Central bank boards around the world: why does membership size differ?”, *IMF Working Paper*, no 06/281, December.
- Blinder, A (2007): “Monetary policy by committee: why and how?”, *European Journal of Political Economy*, vol 23, no 1, pp 106–23.
- Blinder, A, M Ehrmann, J de Haan, M Fratzscher and D-J Jansen (2008): “Central bank communication and monetary policy: a survey of theory and evidence”, *Journal of Economic Literature*, vol 46, no 4, December.
- Blinder, A and J Morgan (2005): “Are two heads better than one?: monetary policy by committee”, *Journal of Money, Credit and Banking*, vol. 37, no 5, October.
- Borio, C, G Galati and A Heath (2008): “FX reserve management: trends and challenges”, *BIS Papers*, no 40, May.
- Borio, C and P Lowe (2002): “Asset prices, financial and monetary stability: exploring the nexus”, *BIS Working Papers*, no 114, July.
- Borio, C and I Shim (2007): “What can (macro-) prudential policy do to support monetary policy?”, *BIS Working Papers*, no 242, December.
- Bradley, C and V Craig (2007): An evaluation of further possible changes to the deposit insurance system”, *FDIC Staff Study*, February.
- Brealey, R, A Clark, C Goodhart, J Healey, G Hoggarth, D Llewellyn, C Shu, P Sinclair and F Soussa (2001): *Financial stability and central banks: a global perspective*, Central bank Governors’ Symposium Series, Routledge.
- Brown, R (1989): “Group polarization”, Chapter 6 in *Social Psychology* (2nd edition), Free Press.
- Brunnermeier, M, A Crockett, C Goodhart, A Persaud and H Shin (2009): “The fundamental principles of financial regulation”, *Geneva Reports on the World Economy*, 11.
- Caillaud, B and J Tirole (2007): “Consensus building: how to persuade a group”, *American Economic Review*, vol. 97, no 5, December.
- Capie, F and G Wood (2002): *The lender of last resort*, Routledge.
- Committee on the Global Financial System (2008): “Central bank operations in response to the financial turmoil”, *CGFS Papers*, no 31, July.
- Crowe, C and E Meade (2007): “The evolution of central bank governance around the world,” *Journal of Economic Perspectives*, vol 21, no 4, Fall.

- Cukierman, A (1992): *Central bank strategy, credibility, and independence: theory and evidence*, MIT Press.
- Cukierman, A, S Webb and B Neyapti (1992): "Measuring the independence of central banks and its effect on policy outcomes," *World Bank Economic Review*, vol 6, no 3, September.
- Dalton, J and C Dziobek (2005): "Central bank losses and experiences in selected countries", *IMF Working Paper*, no 05/72, April.
- Dexia (2009): *Central Bank Directory*, Central Banking Publications.
- Dincer, N and B Eichengreen (2007): "Central bank transparency: where, why and with what effects?", *NBER Working Paper Series*, no 13003, March.
- Erhart, S and J Vasquez-Paz (2007): "Optimal monetary policy committee size: theory and cross country evidence", *Kiel Advanced Studies Working Papers*, no 439, March.
- Ernhagen, T, M Vesterlund and S Viotti (2002): "How much equity does a central bank need?", *Sveriges Riksbank Economic Review*, vol 2002, no 2, pp 5–18.
- European Central Bank (2008): *Convergence Report*, May.
- Financial Stability Institute (2006): "Institutional arrangements for financial sector supervision", *Occasional Paper*, no 7, September.
- Flandreau, M (2007): "Pillars of globalization: a history of monetary policy targets, 1797–1997", Centre for Economic Policy Research, *Discussion Paper Series*, no 6252, April.
- Frisell, L, K Roszbach and G Spagnolo (2008): "Governing the governors: a clinical study of central banks", *Sveriges Riksbank Working Paper Series*, no 221, March.
- Fry, J, R Mahadeva and G Sterne (2000): "Key issues in the choice of monetary policy framework", in R Mahadeva and G Sterne (eds), *Monetary Policy Frameworks in a Global Context*, Routledge.
- George, E (2008): "Mr George reviews the role and structure of the New Lady of Threadneedle Street", text of the Vital Topic Lecture given by the Governor of the Bank of England, at the Manchester Business School, 24 February.
- Geraats, P (2006): "Transparency of monetary policy: theory and practice", *CESifo Economic Studies*, vol 52, no 1, March.
- Goldstein, M and P Turner (2004): *Controlling currency mismatches in emerging markets*, Peterson Institute.
- Goodhart, C (2000): "The organisational structure of banking supervision", Financial Stability Institute, *Occasional Paper*, no 1, November.
- Goodhart, C and G Illing (eds) (2002): *Financial crises, contagion and the lender of last resort: a reader*, Oxford University Press.
- Havrilesky, T (1995): *The Pressures on American Monetary Policy*, Kluwer.
- Hawkins, J (2003): "Central bank balance sheets and fiscal operations", *BIS Papers*, no 20, October.
- Healey, J (2001): "Financial stability and the central bank: international evidence", in Healey and Sinclair (eds), *Financial Stability and Central Banks. A report from the 7th Central Bank Governors Symposium hosted by the Bank of England*, Routledge.
- Issing, O (1999): "The ECB and its watchers", speech given at the ECB Watchers Conference, 17 June.

- La Porta, R, F Lopez-de-Silanes, A Schleifer and R Vishny (1998): "Law and Finance," *Journal of Political Economy*, vol. 106, no 6, December.
- Lybek, T and J Morris (2004): "Central bank governance: a survey of boards and management", *IMF Working Paper*, no 04/226, December.
- Maier, P (2007): "Monetary policy committees in action: is there room for improvement?", Bank of Canada, *Working Paper*, no 2007-6, February.
- Marshall, J (2003): "Fiscal rule and central bank issues in Chile", in *BIS Papers*, no 20, October.
- Masciandaro, D (2004a): *Financial intermediation in the new Europe: banks, markets and regulation in EU accession countries*, Edward Elgar.
- (2004b): "Unification in financial sector supervision: the trade-off between central banks and single authority", *Journal of Financial Regulation and Compliance*, vol. 12, no 2.
- Masciandaro, D, M Nieto and H Prast (2007): "Budgetary governance of banking supervision: a primer", in D Masciandaro and M Quintyn (eds), *Designing financial supervision institutions: independence, accountability and governance*, Edward Elgar.
- McCauley, R (2006): "Consolidating the public debt markets of Asia", *BIS Papers*, no 30, November.
- Mihaljek, D (2007): "Fiscal transparency from central banks' perspectives: off-budget activities and government asset funds", in *Temporary measures and off-budget activities*, Magyar Nemzeti Bank.
- Moreno, R (2002): "Fiscal rule and central banking in emerging economies: an overview", in *BIS Papers*, no 20, October.
- Morgan Stanley (2008): *Central Bank Directory*, Central Banking Publications.
- Moser-Boehm, P (2006): "The relationship between the central bank and the government", in *Central banks and the challenge of development*, Bank for International Settlements, May.
- Oritani, Y (forthcoming): "The public governance of the central bank: an approach from new institutional economics", mimeograph from Meiji University.
- Padoa-Schioppa, T (2003): "Central banks and financial stability: exploring a land in between", in V Gaspar, P Hartmann and O Sleijpen (eds), *The transformation of the European financial system*, Second ECB Central Banking Conference, European Central Bank.
- Peek, J, E Rosengren and G Tootell (1999): "Is bank supervision central to central banking?", *Quarterly Journal of Economics*, vol 114, May.
- Pruski, J and D Zochowski (2006): "Changes in the financing structure of the real economy in Poland", *BIS Papers*, no 28, August.
- Reserve Bank of Australia (2003): "The variability of Reserve Bank profits", *Annual Report*.
- Reserve Bank of New Zealand (2007a): Memorandum to Minister of Finance, and Balance Sheet Review Qs and As, 19 June.
- (2007b): "Reserve Bank announces changes to FX management", Reserve Bank of New Zealand, press release, 13 July.
- Santomero, A, S Viotti and A Vredin (2001): *Challenges for central banking*, Kluwer.

- Sibert, A (2006): "Central banking by committee", *International Finance*, vol 9, no 2.
- Siklos, P (2002): "Frameworks for the resolution of government-central bank conflicts: issues and assessment", Wilfrid Laurier University, August.
- Stella, P (1997): "Do central banks need capital?", *IMF Working Paper*, no 97/83, July.
- (2002): "Central bank financial strength, transparency and policy credibility", *IMF Working Paper*, no 02/137, August.
- (2008): "Central bank financial strength, policy constraint and inflation", *IMF Working Paper*, no 08/49, July.
- Surowiecki, J (2004): *The wisdom of crowds: why the many are smarter than the few and how collective wisdom shapes business, economies, societies and nations*, Doubleday.
- US Department of the Treasury (2008): "The Department of the Treasury blueprint for a modernized financial regulatory structure", March.
- Vandenbussche, J (2006): "Elements of optimal monetary policy committee design", *IMF Working Paper*, no 06/277, December.
- Van den End, J (2006): "Indicators and boundaries of financial stability", Netherlands Bank, *Working Paper*, no 097/2006, March.
- Weber, A (2007): "From academic to policy maker", lecture given at the Centre pour la recherche économique et ses applications, 29 May.
- White, B (2001): "Central banking: back to the future", Reserve Bank of New Zealand, *Discussion Paper Series*, no 2001/05, September.
- White, W (2006): "Is price stability enough?" *BIS Working Papers*, no 205, April.