

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

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– 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.

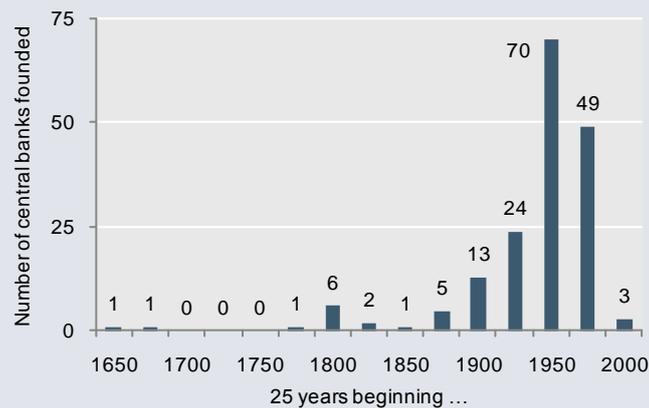
⁵ Some central bank laws provide a statement of the “purpose” for which the central bank performs a certain function but in a manner that does not establish the objective by which the performance of that function should be guided. Thus, the Saudi Arabian Monetary Agency has a function whose purpose is “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.

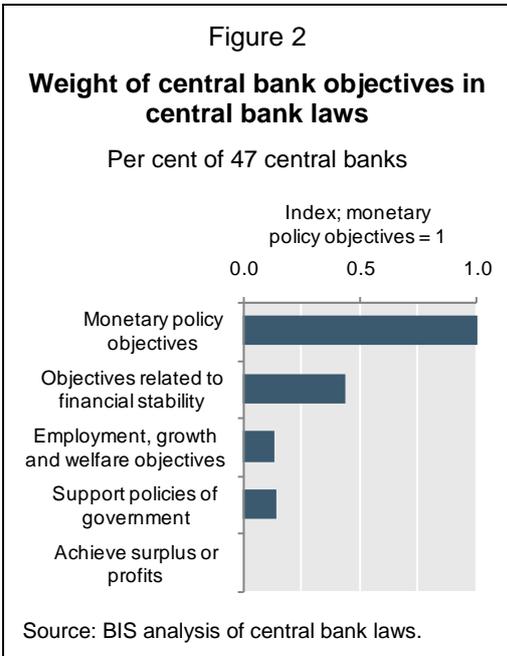
The **oversight and regulation** function became increasingly formalised and direct, pushed also by shifting attitudes towards the role of government in intervening to regulate and guide economic activity. The creation of the Federal Reserve System in the United States, with extensive regulatory and 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, (Eurosystem), NZ, PL, UK	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 responsibility																			
	Exchange rate policy	Full responsibility																			
2. Financial stability & regulatory functions	Prudential policy development	Shared or partial responsibility																			
	Supervision/oversight	Shared or partial responsibility																			
3. Policy operation functions	FX intervention	Full responsibility																			
	FX reserves	Full responsibility																			
	Liquidity management	Full responsibility																			
	Lender of last resort	Full responsibility																			
4. Financial infrastructure provision functions	Currency provision	Shared or partial responsibility																			
	Banking/account management services	Full responsibility																			
	Payment system (inter-bank)	Full responsibility																			
	Settlement system for central bank money	Full responsibility																			
	Other settlement systems	Shared or partial responsibility																			
5. Other public good functions	Registry provision	Shared or partial responsibility																			
	Debt management	Shared or partial responsibility																			
	Asset management	Shared or partial responsibility																			
	Development functions	Shared or partial responsibility																			
	Research (other than for functions above)	Shared or partial responsibility																			
	Statistics	Full responsibility																			
6. Other functions	Consumer services	Shared or partial responsibility																			
		No or very minor involvement																			
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	Full
	Exchange rate policy	Shared	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	Shared
	Supervision/oversight	Shared	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	Full
	FX reserves	Full	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	Full
	Lender of last resort	Full	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	Full
	Banking/account management services	Full	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	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	Full
	Other settlement systems	Shared	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	Shared
	Debt management	Shared	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	Shared
	Development functions	Shared	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	Shared
	Statistics	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full
6. Other functions	Consumer services	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
		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.

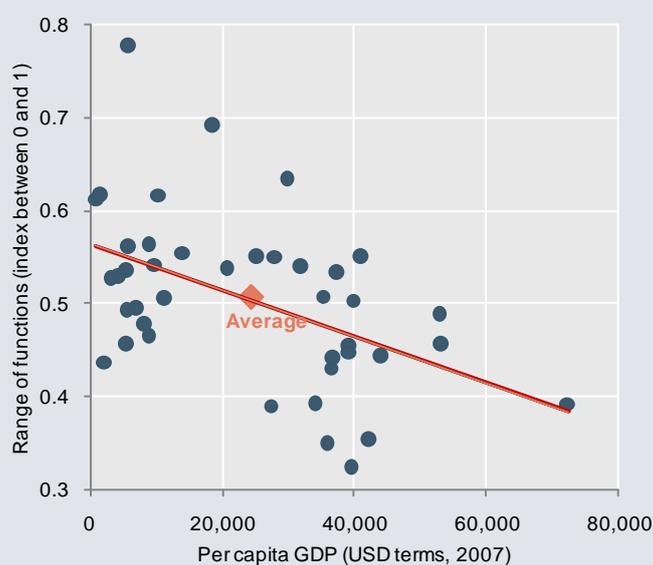
Box 2 The range of central bank functions relative to the stage of financial and economic development

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



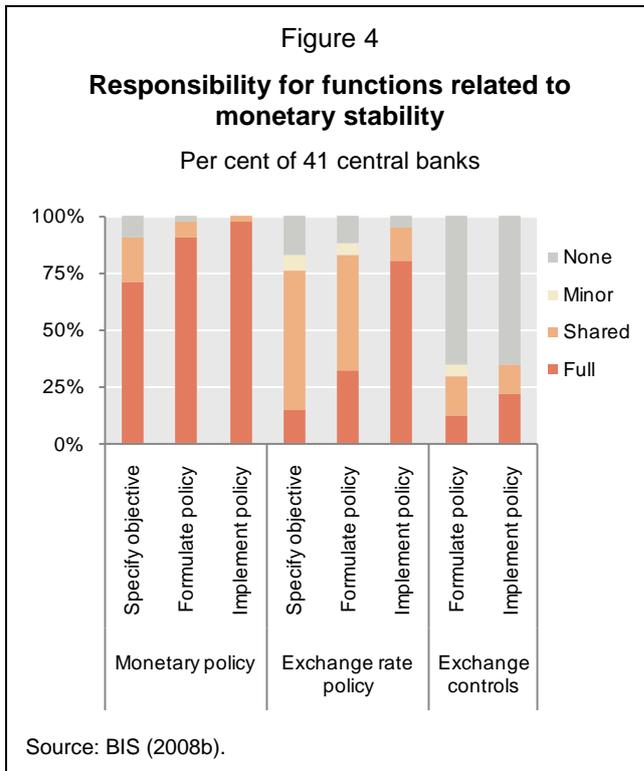
Source: BIS (2008b).

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.

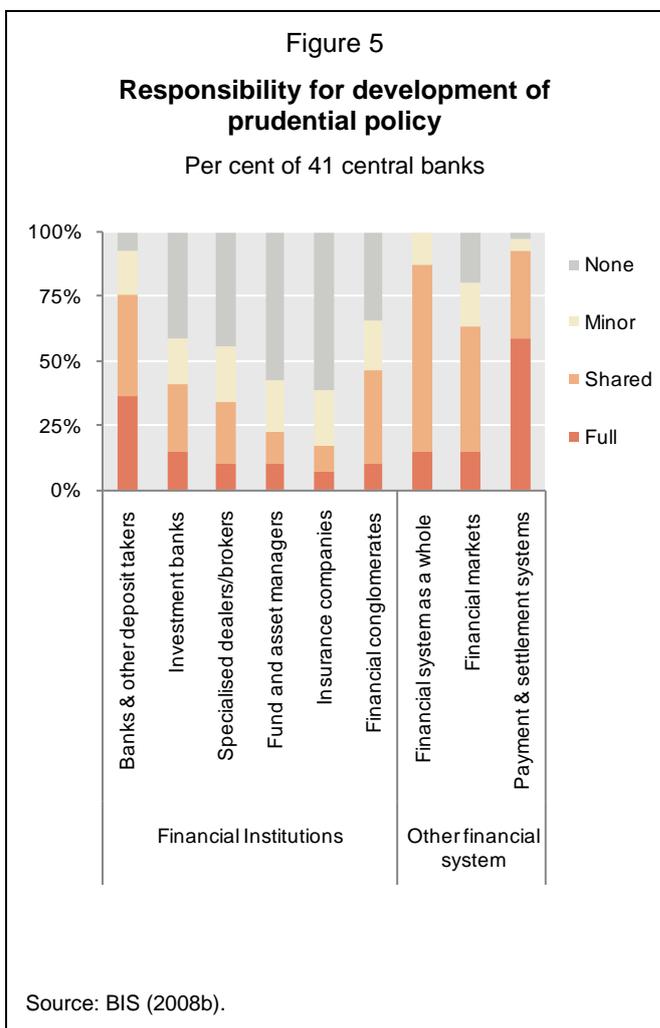
4.2 Financial stability and regulatory functions

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.

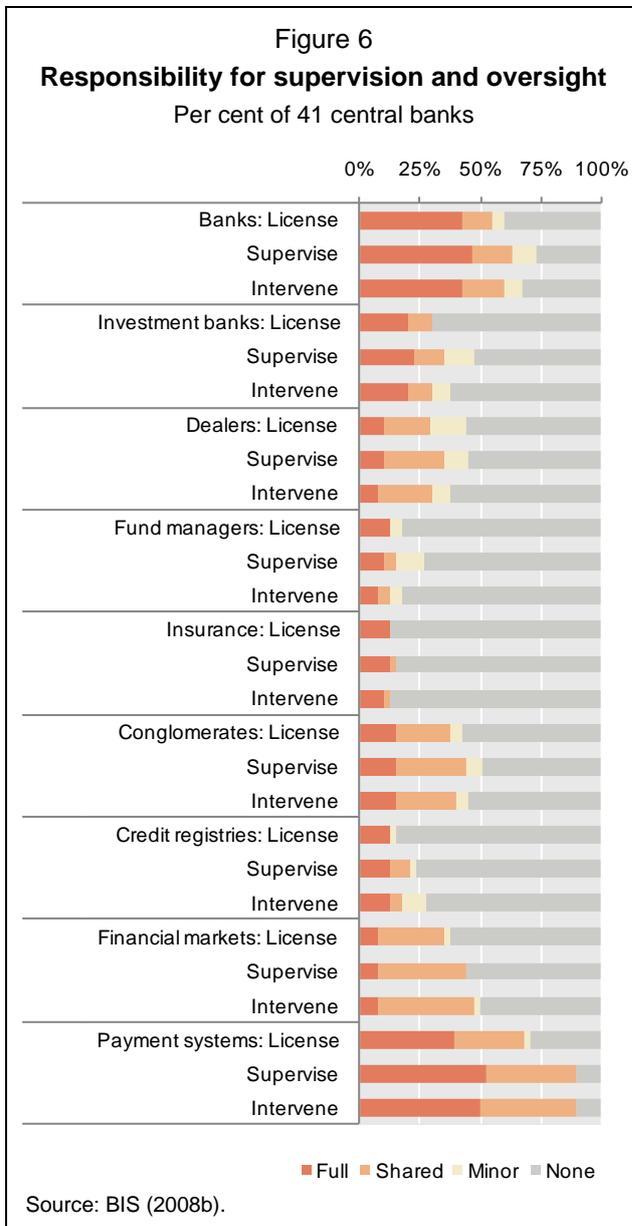


The breadth of the dimensions of financial stability functions is shown in Figure 5 and Figure 6, which go behind the aggregations represented in Table 2. The main focus of responsibilities has long been on banks (allowing that financial conglomerates are usually based around banks) and payment systems, 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

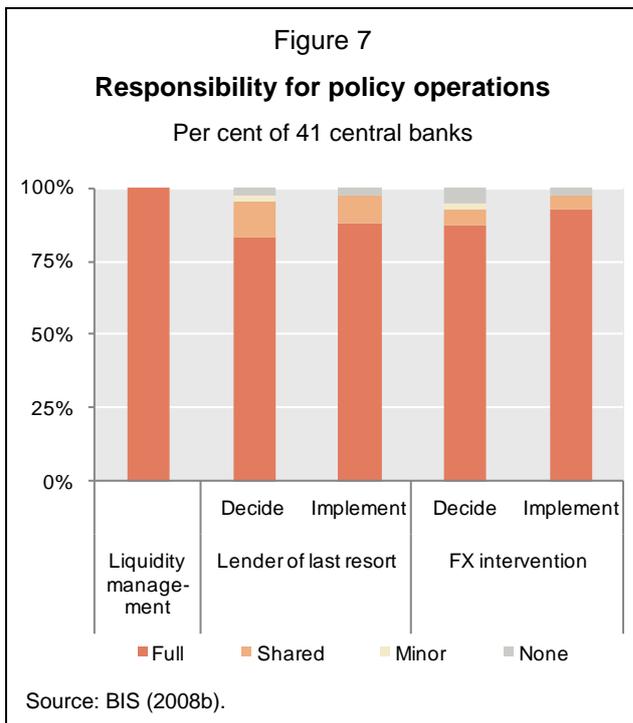
²¹ This shift towards a systemic focus has been associated, in some cases, with the transfer of operational responsibility for banking supervision from the central bank to another agency.

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.

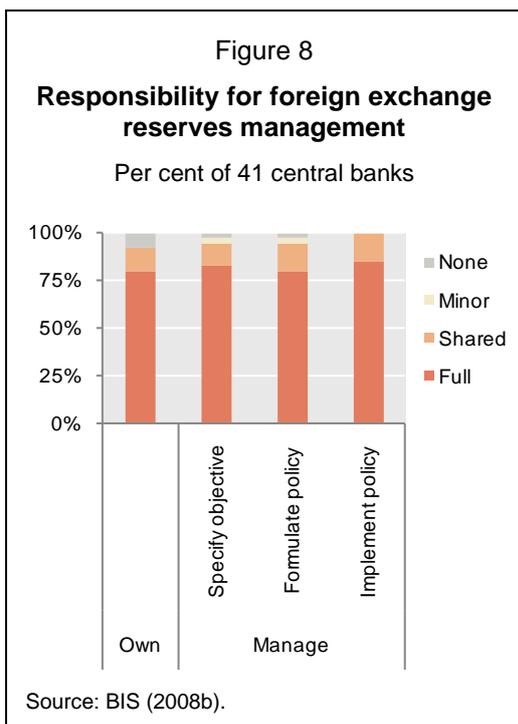
These exceptional circumstances have also drawn attention to ***lender of last resort*** operations, another dominant function of central banking. Lender of last resort operations in principle can be distinguished from liquidity management operations by their counterparty characteristics. Liquidity management 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.

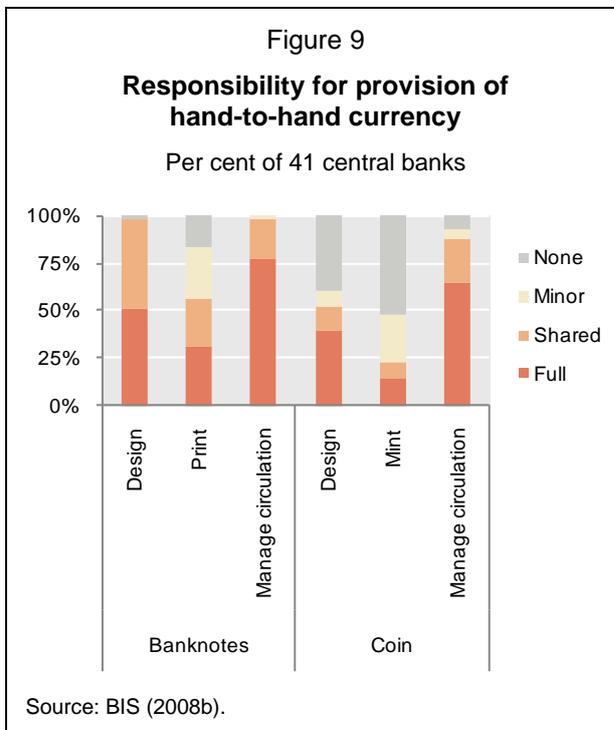
²⁸ In the ECB’s view (see ECB Opinions CON/2008/42 and 45), the statutes of individual national central banks should stipulate the same independence for the task of providing emergency liquidity assistance as is available for other ESCB-related tasks.

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.

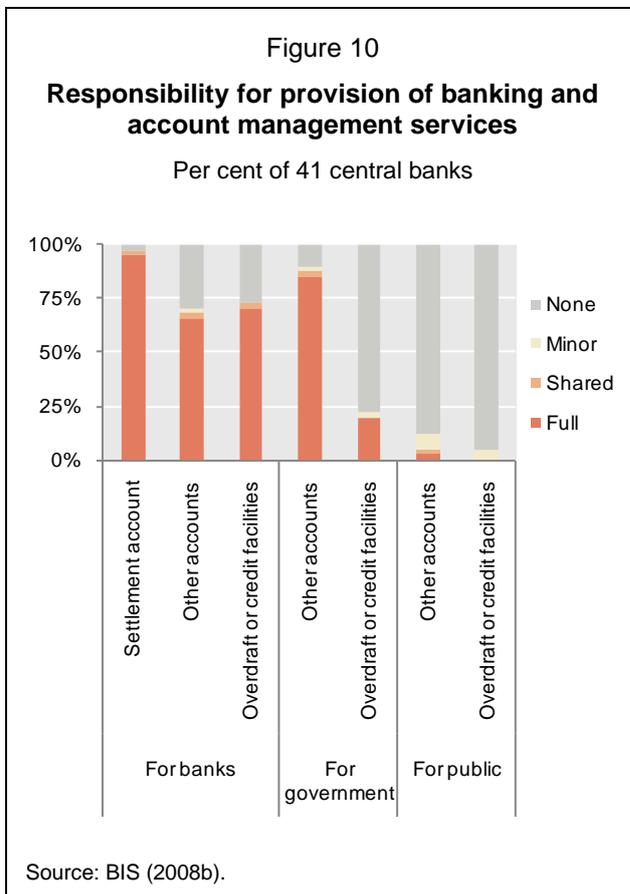
A commonly accepted means of hand-to-hand exchange has long

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.



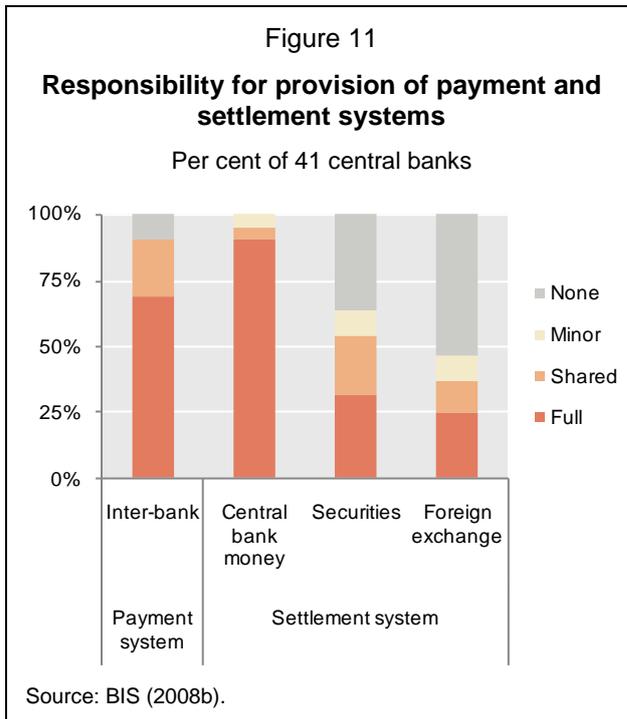
Another important element of the provision of the infrastructure underpinning economic exchange is the supply of banking services to banks and to the government (Figure 10). All central banks provide on-demand accounts for banks that can be used for settlement of their own and customer obligations via 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

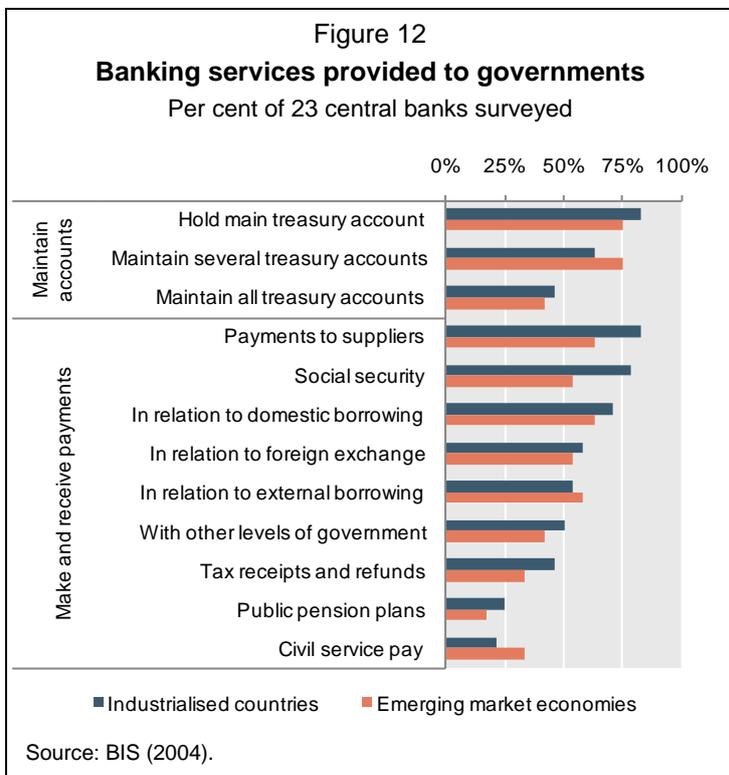
sector, although there may be public good aspects to their provision. In some settings the commercial incentives are strong enough to warrant their creation by the private sector. But just as developed economy central banks did before them, many emerging market central banks have invested in elements 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.

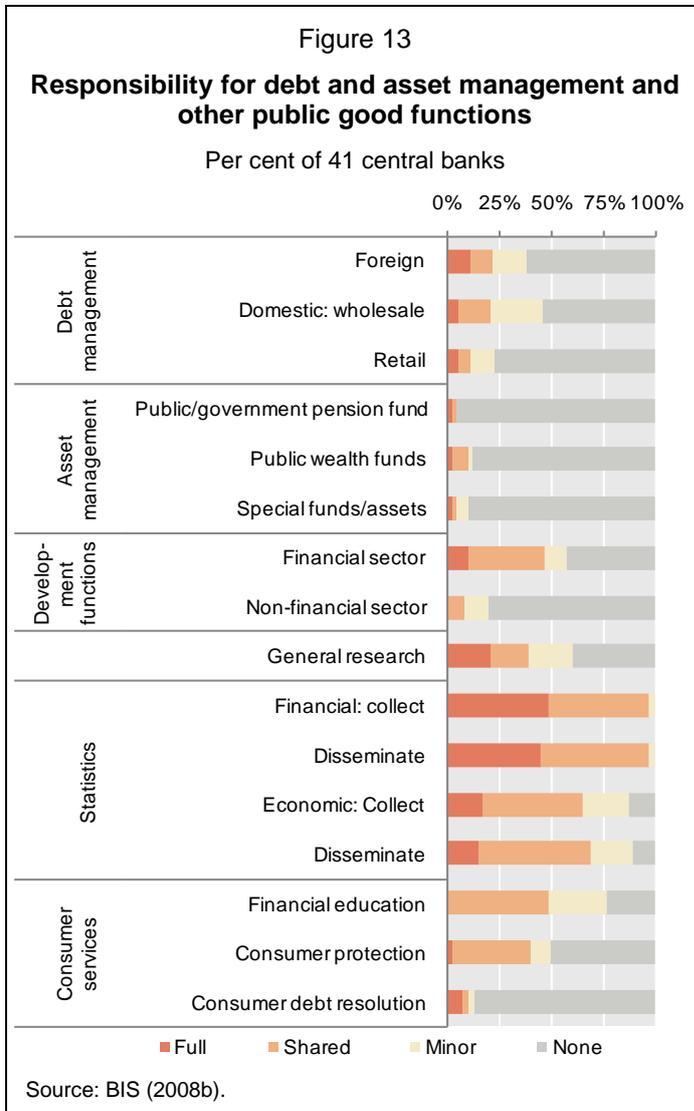
A related factor is the ability of central banks to price services or the obligation to do so competitively. The Reserve Bank of Australia is, for example, obliged to charge competitive prices for services that it provides, as were – to a greater or lesser extent – a quarter of the sample of central 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.

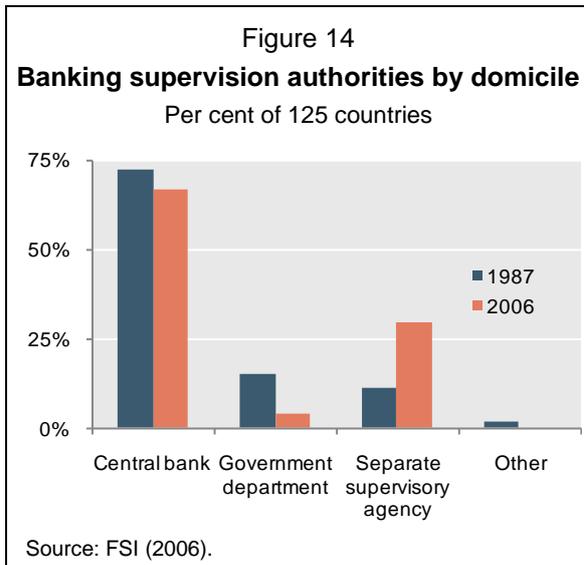
While supervisory responsibility has been shifted out of the central bank and into integrated supervisors more often than the other way around, the FSI survey mentioned earlier (FSI (2006)) shows that central banks are still the main supervisors in most countries (Figure 14). An earlier survey (Healey (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).