



CENTRAL BANK CAPITAL ADEQUACY FOR CENTRAL BANKS WITH OR WITHOUT A MONETARY POLICY

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monetary policy**

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Introduction

In the economic literature the large number of papers dealing with the issue of central bank independence surprisingly contrasts with the limited attention that has been paid to analyses and determinants of central banks' *financial* autonomy. Only over the last few years has the issue of central banks' financial autonomy attracted the interest of some scholars. There are many explanations for this new interest. First, there is a direct connection with the more general concept of central bank independence from the spheres of politics and industry, given that financial autonomy or central bank capital adequacy (CBCA) can be seen as an important precondition for pursuing and gaining institutional and instrument independence. Second, the low inflation levels and low interest rates of recent years have brought with them a significant decline in central banks' revenues and profitability and consequently in the level of central banks' capital. Third, over the last few years some central banks have incurred large losses, depleting their capital and in some cases bringing it into negative territories. Fourth, there is a potential risk that financial innovations, through the increasing use of e-money and other cashless payments, might cause a reduction in the demand for banknotes, hence reducing the seigniorage of central banks. Finally, the issue of insufficient resources of central banks and financial regulators might also be associated with recent financial scandals; in fact inadequate financial resources of regulators and supervisors might have brought forward insufficient financial monitoring and supervision jeopardizing financial stability and investor protection.

Despite such growing interest, most of the theoretical arguments and empirical findings presented in the literature have associated CBCA with the conduct of monetary policy without considering those institutional cases where a central bank or a monetary authority exists but is not responsible for the conduct of monetary policy. This is particularly true for those countries which do not have their own currency: typically the smallest countries. This situation also applies to those countries which – despite having the opportunity to issue their own currency – have chosen to adopt

another country's currency as the predominant or exclusive legal tender (official dollarization/euroization). A further example consists of countries which are experiencing a de facto dollarization/euroization process in which the local currency remains the legal tender but financial and payment transactions are allowed to be denominated in a foreign currency. The regimes of currency boards and monetary unions are also two other cases in point.

In the aforesaid countries, despite the lack of monetary policy, central banks and/or financial authorities can still retain several functions, including financial regulation and supervision. This is especially the case in small and less financially developed countries where giving supervisory powers to a central bank can be particularly advantageous, especially if public institutions and legal systems are weak, co-ordination among public sector agencies is troublesome and financially skilled human resources are scarce. In particular, small countries can achieve significant economies of scope and scale if they choose to establish a single financial authority (Llewellyn, 1999).

These institutional settings, in which a sole authority exists but there is no domestic currency – and hence no monetary policy to be conducted – raise the issue of CBCA, or more generally the issue of financial autonomy, in a framework where the assignment of managing the monetary policy loses its meaning. In other words: Is CBCA still a relevant objective when the country does not run its own monetary policy? This chapter attempts to address this question by maintaining that central bank financial autonomy does indeed matter even in contexts in which the central bank carries out other economic functions; this is particularly true if it is responsible for financial regulation and supervision.

The literature on central bank capital adequacy

In economic literature the high number of studies on central bank independence surprisingly contrasts with the limited number of papers on the issue of CBCA. Only very recently has there

been increasing discussion about whether CBCA should be seen as a relevant concept, and, if so, how much capital central banks should hold.

Generally speaking, the issue of CBCA has been coupled with the attainment of central banks' macroeconomic objectives, primarily price stability and exchange rate policy. In fact, there is a link between the financial situation of a central bank, the possibility that it may become illiquid and the probability of abandoning the goal of price stability.

It can be argued that a financially weak central bank making repetitive losses will react through one – or a combination – of the following remedies: reserve money injection, financial repression, debt issuance or through the very last alternative that implies the request of some form of central bank recapitalization. If the money injection is consistent with the macroeconomic and monetary equilibria, then no immediate difficulty arises, but, if not, then the central bank needs to react through some countervailing measures. A possible option is to impose direct costs on the banking sector through some kind of financial repression. For instance, this can be realized through high non-remunerated reserve requirements or equivalent measures, which eventually will cause unsustainable efficiency losses. Consequently, more market-friendly indirect measures requiring a voluntary action on the part of the public would be a more preferable solution. For example, the central bank could offer the public its liquid assets bearing a market rate in exchange for reserve money. This operation, however, will lead to future additional losses due to the reduction of the central bank's sources of revenues. Similarly, the central bank could issue its own liabilities, which in turn will cause further operational expenses in the future. It has been argued that the sustainability of the central bank debt issuance should be a function of the same factors that determine the sustainability of the government debt (Stella 1997). However, theoretically and unlike the government, a central bank could always collect the needed funds by crediting the commercial banks' accounts at the central bank. But such a response would create excess liquidity in the system, making the interest rate fall and resulting in a too loose monetary policy that eventually will lead to an increase in the inflation level. At the end of the day, in one way or another, issuing debt

certificates will force the central bank to accumulate an unsustainable debt burden. creating excess liquidity, a loose monetary policy, high expectations of future money growth and therefore jeopardizing the goal of price stability.

The last available alternative for dealing with a central bank suffering from repetitive losses and negative net worth is strengthening its financial position through a lump-sum recapitalization or covering its losses on a periodic basis from the government budget. Of course this raises, on the one hand, the issue of the credibility of the government's promise to intervene in strengthening the central bank's financial position; and, on the other hand, this could undermine the institutional independence of the central bank, which should rely on the goodwill and availability of the government to undertake the needed actions entailed by the central bank law.

Another line of thought concerns the idea that financial vulnerability could impact on a central bank's effective independence (Martinez-Resano, 2004), which in turn might again reduce its capacity to attain and maintain price stability. In a similar way, Dalton and Dziobek (2005) maintain that a failure to address financial losses may jeopardize the central bank's credibility and eventually its independence. Following the same line of reasoning, Stella (2003) recognizes that a higher level of financial strength reduces the probability that a treasury rescue will be needed, consequently increasing the credibility of the central bank to successfully achieve price stability.

On the empirical side, the issue of financial autonomy and its practical consequences has received even less attention. Stella (2002, and 2005), using a wide sample of central banks over a period of three different years, investigates whether a proxy for central bank strength is correlated with the attainment of price stability. His results confirm the hypothesis that central banks with weak financial positions tend to be associated with higher inflation. Similarly, Ueda (2004) cites evidence from developing countries where higher levels of inflation occurred in cases where central bank capital positions were weak.

However, there are also examples of central banks with negative capital which have not suffered from credibility problems (the Bank of Chile and the Czech National Bank are two cases in point).¹ Sometimes, especially when the negative net worth is brought about by valuation losses only, a central bank may work well, even with negative capital, which in turn could be considered neither a signal of potential illiquidity, nor a signal of insolvency or limited credibility.

In sum, the empirical evidence can still be considered very limited and weak, showing only anecdotal evidence with mixed results, but, and this is what is relevant for our context, it always relates only to the effects of central banks' financial positions on their capacity for addressing the issue of price stability.

Central bank capital adequacy in countries without a monetary policy

As we have briefly reviewed in the previous section, the issue of CBCA has been mainly discussed in terms of the consequences of central bank financial strength in relation to its support of the credibility of monetary and exchange rate policies, which implies considering only those countries where the respective central banks have a domestic currency to manage. This seems perfectly logical, given that the theoretical basis that defines the central bank's activities is obviously money. However from a more pragmatic perspective, in many countries those institutions labelled central banks or monetary and financial authorities often carry out many different functions.

In the real world a central bank typically plays a combination of three main roles. First, it might have a macroeconomic function through the exercise of a discretionary monetary policy which affects the price level and, in some cases, through its exchange rate policy. Second, it might have the sector-level and microeconomic function of providing support and regulatory and supervisory services oriented towards maintaining the health of the banking and the financial sector. Third, the central bank has often a special relationship with the state and can carry out

several other functions, including acting as its banker and fiscal agent, or its economic consultant.

Among these functions the first one is strictly linked to the presence of a national currency; without it, the issue of operating discretionary monetary and exchange rate policies disappears. Similarly, in the absence of a domestic currency even some sector-level functions are no longer relevant: for instance, providing assistance as the ‘lender of last resort’ is strongly constrained if the central bank is not able to create sufficient new liquidity (typically through new monetary base) to deal with a banking crisis. However, the remaining functions, and in particular that of regulating and supervising the financial sector, maintain their significance even in scenarios where a country is adopting another country’s currency. The question of central bank financial autonomy is therefore kept alive by the existence of these remaining functions. In other words, in such a context we should ask ourselves whether a central bank’s sound financial situation is a necessary prerequisite for establishing the most appropriate institutional framework from which to perform the remaining functions efficiently from a social and economic point of view.

As we know, the economic literature has identified three conditions (or market failures) requiring governmental intervention through some form of regulation. The first condition relates to the existence of possible natural monopolies, and is generally considered to bear little relevance in the case of financial service regulation. The second condition relates to the possible existence of externalities due to financial and banking crises; the potential negative consequences for the whole sector have been advocated to justify regulation in support of the system. Finally, the third condition involves information asymmetries between the seller of financial products (who has more information) and the investor. These three justifications for financial regulation are then used to highlight the main objectives of financial regulation. These can be summarized as: pursuing macroeconomic stability through various kinds of controls (over currencies, interest rates and assistance as a ‘lender of last resort’), assuring financial sector

stability through specific rules for financial intermediaries,² and providing investor protection through transparency and information rules.

With the exception of the first objective regarding macroeconomic stability – which, to make the various kind of controls effective implies full control over the creation of the domestic currency – all the remaining financial regulation objectives are still equally relevant in a situation in which the central bank has no power to control the amount of money in circulation.

This chapter argues that even if the central bank does not conduct its own monetary policy but performs a set of other functions, a certain degree of financial autonomy is required for it to act effectively. This is above all true if the central bank is also the authority in charge of financial regulation and supervision.

In order to analyse the relevance of CBCA in those countries where legal tenders are other countries' currencies, we have to discuss which factors affect central bank capital, and we have to investigate whether there is an optimal level of capital for central banks. All these questions have to be answered highlighting the main differences between central banks in charge of monetary and exchange rate policy and central banks without these responsibilities.

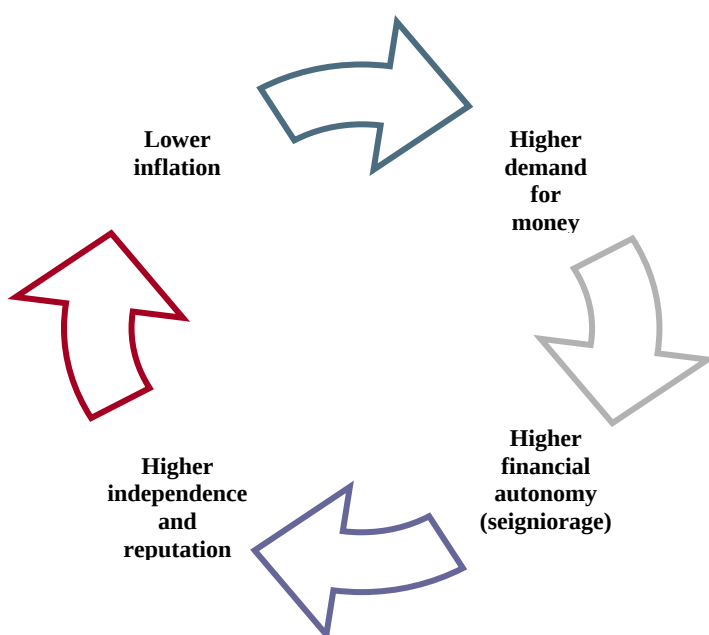
In the available literature capital needs have been mainly coupled with the existence of the domestic currency and the conduct of monetary policy and exchange rate control. However, the motivations for holding capital are wider, some of which are common to private companies whereas other pertain to central banks.

First of all, there are motivations to hold capital that are typical for a central bank. As in the private sector, capital has to cover potential losses, but in the case of a central bank some of these potential losses can be incurred as a consequence of the central bank's institutional mandate. The typical mandate for a central bank comprises conducting the monetary and foreign exchange policy, maintaining a secure payment system and a stable banking sector. Consequently, losses can be incurred in many ways: for instance, losses can be a consequence of the day-to-day management of the currency reserves,³ or brought about by sterilization operations, or be a consequence of

emergency liquidity assistance when the central bank has to grant concessional credit to rescue ailing institutions. These contingent liabilities tend both to reduce the transparency of central bank accounts and to make the assessment of central bank's financial position more difficult (Blejer and Schumacher, 1998).

Despite these potential losses deriving from a central bank's institutional mandate, central banks should be considered very profitable institutions in view of their monopoly power. Strictly linked with their monopoly power, central banks can enjoy seigniorage arising both from the issue of the currency and from banks' funds held with the central bank. In fact, in the long run a central bank's profitability should be secure as long as the demand for banknotes is maintained and the central bank keeps monopoly power over money issuing. In this case there is a sort of virtuous circle between price stability and financial autonomy because low inflation ensures adequate demand for money, and demand for money ensures seigniorage and hence financial independence, which in turn is key for autonomy and reputation – necessary conditions to achieve price stability (Figure 6.1).

Figure 6.1 The 'virtuous circle'



Second, and similarly to private banks, a new central bank needs capital to fund the start-up costs of the new institution. Third, capital has also to generate continuing operating income to secure the long-term financing of the central bank's operating costs. In this respect adequate capitalization is key, also to ensure income to cover any kind of future costs. Finally, the amount of capital also provides a signal to stakeholders about how well the institution is being managed, although this signal is different from that of private companies because central banks sometimes may incur losses for legitimate policy reasons. In any case, if the public considers negative capital as indicating that the central bank is poorly run, it may erode the bank's general reputation⁴ (Vaez-Zadeh, 1991). Moreover, approaching the government frequently would compromise the actual and perceived autonomy of the central bank. In sum, central bank autonomy can easily be eroded unless it is supported by an adequate financial strength.

The above-mentioned factors accounting for the demand for capital by central banks are different when a country has no domestic currency or it has decided to adopt another country's currency. Table 6.1 highlights the main determinants of central bank capital in cases both with or without a domestic currency. In the case of central banks without a domestic currency, the identification and the relevance of potential liabilities and risks faced by central banks is considerably simpler. But even in this case the question is still one of defining properly both the relevant overall assets or resources of central banks and their potential liabilities in the future.⁵ In any case the issue can be dealt with in a similar way by looking at the central bank capital as a function of the following variables: the level and type of risks faced; past, present and future profitability, and, finally, the financial arrangements regulating the relationship between the central bank and the government (profit sharing rules, obligations of the national treasury in case of need, fiscal treatment).

Table 6.1: Factors affecting central bank capital	
Central banks with domestic currency	Central banks without domestic currency
• Seigniorage arising from the issue of currency (+) • Seigniorage arising from banks' funds hold with the central bank (+) • Profit/losses generated from monetary policy and forex operations (+/-) • Losses when providing emergency liquidity assistance in case of banking crisis (-) • Generation of net revenues (+/-) • Distribution of profits to shareholders (-) • Tax payment (-) • Capital injections (+)	• Not applicable • Negligible • Not applicable • Negligible • Generation of net revenues (+/-) • Distribution of profits to shareholders (-) • Tax payment (-) • Capital injections (+)

Central bank risks are related to several aspects, among which: are the number of central bank functions; the level of development of the financial sector and the prospects for adverse events affecting its financial stability; the exchange rate regime; and the level of inflation. Consequently, as far as risk assessment is concerned, we should expect that potential risks should be lower for central banks without a domestic currency given that there is no contingency for monetary and exchange rate policies and banking sector crises. However, some possible situations where central banks could be called on to deploy their resources are not applicable. These situations include requests for support to defend the exchange rate, or interventions through sterilization operations to

keep the monetary aggregates under control, or even to inject new liquidity to rescue ailing banks. On the other hand, in order to perform its refinancing function in case of a banking crisis, we would expect a central bank without a domestic currency to hold more capital, provided that it cannot create additional liquidity by issuing a new monetary base. Moreover, since in such a situation the central bank would be unable to create additional liquidity, commercial banks require to retain more capital since they would be unable to access the lender of last resort facility. However, even without monetary and exchange rate policies, a central bank might face the prospect of financial losses on initiatives and policy actions that are warranted on public interest grounds (for instance, initiatives to rescue ailing institutions, or initiatives for the payment systems, or for the setting up of a credit register, etc). In these cases there is a risk that they might be reluctant to act unless they have adequate financial resources to absorb such additional expenses. There are also significant differences as far as the profitability level and financial arrangements are concerned. In the absence of a domestic currency, the central bank has no monopoly power over money creation, and hence no seigniorage to exploit. In this case the central bank has more limited sources of income. Without seigniorage the central bank has to rely only on government funding, return from its own capital and, if any, commissions or fees from regulated sectors. In terms of the relevant sources of income, there is a much greater role for the capital to serve as a means for generating operating income, and a greater need for adequate financial arrangements to protect it.

In sum, when central banks cannot rely on the management of the domestic currency, an adequate level of capital (certainly not one of negative value) becomes a key variable for both operating effectively and for avoiding approaching the government too often, which in turn might affect the actual and the perceived level of central bank autonomy.

But how much equity does a central bank need? Again to answer this question we should consider whether the country has or does not have its own domestic currency. For central banks without a domestic currency, a simple rule might calculate the amount of capital by considering the goal of covering operating costs – assuming a certain level for the interest rate and assuming that

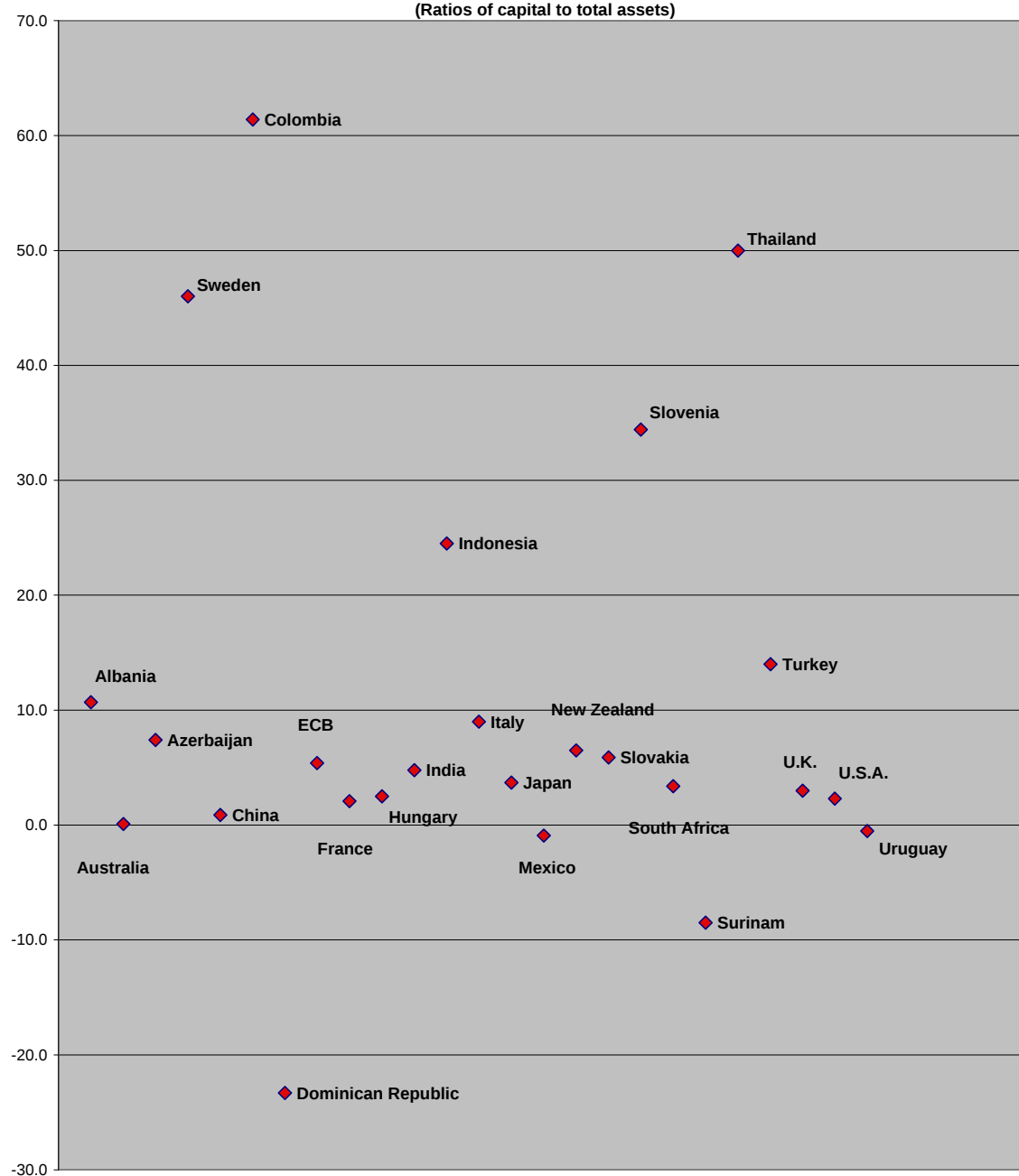
the central bank cannot rely on seigniorage income. More generally, a central bank should have adequate financial resources to enable it to cover both operating costs as well as potential losses arising from the carrying out of its mandate. This in turn implies considering which areas of responsibility the central bank has. In this respect some general qualitative considerations can be put forward. Very generally, the more numerous the areas of responsibility given to the central bank, the larger the recommended level of capital should be. For instance, central banks that manage foreign exchange reserves should have higher levels of capital. Similarly, central banks that run monetary policy should have, other things equal, more capital too; in particular, the larger the magnitudes and the variance of shocks that monetary policy is expected to react to, the larger should be the amount of capital at the disposal of the central bank. The size of the country might also be considered, since in very small countries it is more common to find simple institutional arrangements with only one monetary and financial authority. In these cases it is likely that the central bank will have wider responsibilities. Furthermore, the issue of capital, adequate financial resources and financial autonomy could be even more relevant in small countries if there are substantial fixed costs and scale economies in operating a fully fledged central bank or financial regulator. Consequently, the operating expenditures of central banks in small countries cannot be expected to match, as a ratio to a chosen scale variable (GDP, personnel or currency), those of larger countries. For small countries this could be considered as an argument in favour of simpler institutional arrangements in terms of both monetary and exchange rate regimes and a framework for authorities. Similarly, this could be viewed as a pointer towards the need for sharing the burden of sustaining the central bank's finances with others like the government and financial intermediaries, although in this case a high level of transparency and accountability would clearly be called for.

Another general consideration concerns the nature of the institutional arrangements defining the relationship between the government and the central bank, provided that the amount of central bank capital is only one aspect of a system of institutional arrangements between the two

institutions. In practice, the nature and extent of a central bank's financial autonomy is shaped by its relationship with the government and how this relationship is reflected in the structure of possible arrangements for financing central bank activities and for sharing risks, and also in the rules governing the distribution of its profits and losses. For instance, alternative financing arrangements could entail direct transfers from the treasury to the central bank, making its financing similar to that of other government agencies and hence reducing the need for central bank capital. Of course in these cases pre-agreed mechanisms and rules should be in place to avoid compromising central bank financial autonomy. Risk treatment and risk bearing could also be affected. Risky balance sheet items or contingent liabilities could be held by the government. For instance, the government could take over some quasi-fiscal activities from the central bank. Similarly, the government could take the responsibility for providing financial support to banks in difficulties. Finally, given that central banks are often in a position to generate revenues, it is important to assess the rules and conventions governing its profit distributions.

In fact there is a high variance in the capital amounts kept by central banks around the world. Figure 6.2 shows the ratio of capital to total assets for a number of central banks. A point to notice is that the ratio varies significantly from country to country. This variance reflects differing motivations ascribed to central bank activities, different kinds and amounts of risks, different profit and sharing rules with national governments,⁶ etc. However, the significant disparity in the ratios might also suggest a lack of consensus among central banks about the desirable level of capital.

Figure 6.2 Capital ratios of central banks
(Ratios of capital to total assets)



Source: K. Ueda (2004)

Central bank capital adequacy and accountability

An essential counterpart of having central bank financial autonomy, and even more with respect to general central bank independence, is accountability. The advantages of delegating power to an autonomous regulatory authority must be weighed against the costs of the so-called bureaucratic drift: namely the ability of an agency to enact outcomes that differ from the policies preferred by those who originally delegated power and who have been democratically elected. Delegation poses potential risks to the extent that it involves handing authority to unelected bureaucrats who may pursue policies that serve narrow and private goals rather than the interests of the public at large. Put another way, even agency autonomy could provide bureaucrats with a degree of discretion that could be used to pursue goals other than those objectives and purposes for which the agency was originally established. Paraphrasing Dodd and Schott, central banks and financial regulators might be considered, in many respects, a sort of prodigal child: although born of legislature's intent, they might take on a life of their own, maturing to a point where their muscles could be turned against their creator (Dodd and Schott 1979). But accountability measures should contribute not only to minimizing any abuse of power,⁷ but should also ensure that the central bank manages its financial resources efficiently.

A proper financial management framework and close external oversight over the central bank's financial resources can represent crucial factors for entrusting the central bank with an adequate capital base. For this reason, it is important that the bank have transparent financial procedures, effective internal audits and strong ex-post financial accountability mechanisms to provide a full accounting for the funds entrusted to the central bank. Regular reports detailing the central bank's financial performance, the trends of its operating costs and commenting more generally on its operational efficiency, its risk exposures, and the like, are examples of such ex-post financial accountability. More difficult is to design proper ex-ante financial accountability measures (cash budgets, strict rules for expense and cost allocation) since there is a risk that they could be

used to undermine its financial autonomy and flexibility. In this respect the role of the central bank board is crucial for ensuring that the central bank is efficiently managed while acting as a prudent steward of its financial resources. Explicit and clear rules for the allocation of the central bank's profits can also help to generate confidence in the bank on the part of other institutions and the public as well.

Moreover, proper accountability measures are also crucial for making the central bank autonomy work. Sound business practices and clear and transparent procedures are important for the credibility and reputation of the central bank and the maintenance of its autonomy. In this regard, some recent papers have also shown how greater transparency in central bank operating procedures contribute positively to building a better reputation.⁸ However the conclusions found in economic works that discuss the pros and cons of opaqueness and transparency are again fully focused on the conduct of monetary policy. When they provide explanations for secrecy, or when they advocate openness, they always discuss how information disclosure eventually affects monetary policy effectiveness without paying attention to the issue of transparency with respect to the other functions of a central bank. However, transparency is a multifaceted concept and some of its aspects are certainly relevant for a financial regulator as well. For instance, elements like transparency about policy objectives (political transparency), disclosure of economic data (economic transparency), or about internal policy deliberations (procedural transparency), statements about policy decisions and future actions (policy transparency) are concepts fully applicable to all central bank functions. As in the case of results obtained in the field of monetary control, we might therefore maintain more generally that greater transparency should be beneficial for building a central bank's reputation – the main central bank asset in all its activities.

In fact, transparency and accountability may help a central bank's management to become more autonomous through two main channels. First, high accountability entails sharing more information with others which in turn can contribute to developing a public consensus around the central bank's policies. Second, transparency and accountability should also help both in shielding

the institution from external interference – making more difficult for outsiders to exercise pressure – and making it more difficult and costly for insiders to satisfy outsiders’ requests. Similarly, the fewer checks and balances there are, the easier and less costly it is for the political authorities to undermine central bank autonomy. This is particularly true and relevant for young central banks and small countries, given the relationship between central bank autonomy on one hand and the prevailing political culture and institutional checks and balances on the other. Compared to larger countries, small countries are usually characterized by less transparency in political processes, fewer political checks and balances, a minor role by the media, and a closer government–business nexus. If these features are combined with the results of some recent empirical studies showing the key relevance of broader political and institutional conditions for the actual degree of autonomy, it is easy to argue that in small countries greater attention should be dedicated towards the foundation of the appropriate institutional conditions that will ensure effective and real central bank autonomy.⁹

The issues of financial accountability – namely the fact that the central bank has to satisfy certain standards of financial management – are, in essence, no different from those encountered in the principal–agent literature. However, they pose greater challenges when accountability refers to a public and institutional setting. In fact, when accountability problems arise in a private context, they involve a homogeneous group of principals and agents, typically between shareholders and company managers. This can be alleviated by both contractual constraints (for example, the terms and conditions of contracts) and market constraints (for example, competition for corporate control and the threat of takeovers). The opposite is true in a public setting, such as autonomous financial authorities, where a diverse set of interests exists, including that of politicians, financial intermediaries, debtors and investors. Furthermore, accountability is more difficult to monitor, especially in a context without a monetary policy and therefore without explicit targets for the inflation rate. Whereas performance is easily measurable in a private company’s financial statements, this is not so for a central bank. For the latter, performance should be measured by assessing the degree to which it has achieved its various institutional objectives. An additional

problem in a public context is the fact that there is no market for central bank functions, and hence no market discipline to alleviate principal–agent problems. Finally, these difficulties are exacerbated by the special need for confidentiality inherent in supervisory work within the financial sector.

Concluding remarks

In the recent economic literature the notion of CBCA has been discussed in relation to the conduct of monetary policy. However, there are countries which do not have the problem of managing their own monetary policy, but still have a central bank or a financial authority performing a variety of functions. The number of these countries is on the rise, and not only includes the smallest nations which adopt other countries' currencies, but also those with 'extreme' monetary regimes such as dollarization, currency boards or monetary unions. These institutional settings raise the question of CBCA in a framework where there is no monetary policy to run.

This chapter has argued that even when a central bank does not conduct its own monetary policy but performs a set of other functions, and – above all – is also the financial authority in charge of financial regulation and supervision, a certain degree of capital is required for it to act effectively, achieve its final objectives and minimize the risk of interference by external factors (both political and industry-level pressures). Such factors could negatively impact on the reputation of the regulatory agency, and a damaged reputation will eventually cause investors to defer or revise their investment decisions. The end result of such a scenario would be a hampered financial sector.

The chapter has also discussed which factors affect CBCA, highlighting the main differences between those central banks in charge of monetary policy and central banks without this responsibility, showing why even for a central bank without a monetary policy an adequate level of capital remains a key factor in order to operate both effectively and autonomously. Finally, the chapter has analysed the complementary relationship existing between CBCA and financial accountability, focusing on how the relevance of CBCA and accountability changes in a context in

which the central bank does not run its monetary policy, but is in charge of regulating and supervising the financial sector. The conclusion is that in these situations, despite the presence of more binding constraints, the necessity for CBCA could become even more compelling. This is undoubtedly so if financial sector growth is to remain a key final objective of such countries' economic policies.

Notes

¹ The Central Bank of Chile has largely achieved its macroeconomic goals having had negative net worth and losses for an extended period of close to 20 consecutive years; in a similar way, the Czech National Bank has accumulated significant losses, due to valuation losses on foreign exchange reserve holdings, but has maintained its credibility and achieved a very positive macroeconomic performance.

² For instance, for commercial banks, rules in this area are supported by the now well-established body of international best practice standards for banking supervision and regulation. The key document for these standards is the Basel Committee's Core Principles for Effective Banking Supervision. There are also similar standards for insurance companies (the IAIS Insurance Core Principles) and for securities markets (the IOSCO Objectives and Principles of Securities Regulation).

³ Accounting losses can also be brought about by a devaluation process of the central bank's foreign assets due to the appreciation of the domestic currency.

⁴ This effect might be even greater if private financial institutions have a stake in the capital of the central bank.

⁵ Problems are simpler when we consider the financial accounts and positions of central banks without monetary power. For instance, central banks without a domestic currency might have lower franchise value and balance sheet capital might be closer to its net worth level. In this sense, central banks without domestic currencies are more similar to other private institutions.

⁶ Of course the amount of capital that any central bank holds is also a product of its history and of earlier decisions about what arrangements for its financing have been in place.

⁷ Including also the special risk of over-regulating the system.

⁸ Gerrats (2001) presents a formal argument showing how transparency is beneficial for central banks through positive effects on their reputation; see also, among others, Faust and Svensson (2001).

⁹ See Keefer and Stasavage (2001), Keefer (1999) and Moser (1999) for some empirical evidence showing that an independent central bank is most effective in the presence of credible and effective political checks and balances.

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