

# The Capital Needs of Central Banks

*Edited by*

**Sue Milton and Peter Sinclair**



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# Abbreviations

€	euro
ALM	asset liability management
BCCR	Banco Central de Costa Rica
BIS	Bank of International Settlements
BoJ	Bank of Japan
BOJam	Bank of Jamaica
CB	central bank
CBCA	central bank capital adequacy
CBGA	Central Bank Gold Agreement
CBI	central bank independence
CBL	Central Bank of Liberia
CDs	Certificates of Deposit
CEPR	Centre for Economic Policy Research
CNB	Czech National Bank
DA	democratic accountability
DNB	De Nederlandsche Bank
EC	European Commission
ECB	European Central Bank
EMBI	Emerging Market Bond Index
EMI	European Monetary Institute
EMU	Economic and Monetary Union
ESCB	European System of Central Banks
EU	European Union
GB	government bonds
GFECRA	Gold and Foreign Exchange Contingency Reserve Account
GDP	gross domestic product
IFRS	International Financial Reporting Standards
IFS	International Financial Statistics
IMF	International Monetary Fund
MRO	main refinancing operation
NBH	National Bank of Hungary
NCBs	national central banks
OIN	other items net

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OMOs	open market operations
P&L	profit and loss
RBI	Reserve Bank of India
SARB	South African Reserve Bank
SDR	Special Drawing Rights
SOMA	system open market account
TCMB	Central Bank of Turkey
VaR	Value-at-Risk
WB	World Bank

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# 1 Central banks' capital

## An introduction

*Peter Sinclair and Sue Milton*<sup>1</sup>

### 1 Introduction

How much capital does the central bank need? What contingencies does it need capital for, and why? What determines the size of its income flow, and the uncertainty that surrounds it? What proportion of the profits – or the losses – should be received (or borne) by the bank itself? Can central banks survive with negative capital?

These are pressing questions, and never more so than in the financial turbulence that has swamped the world in 2008 and 2009; recent research highlights the critical role of balance sheet effects on private sector financial institutions,<sup>2</sup> and prompts one to wonder about central bank balance sheets in this context too.

However, this volume is not concerned with the crisis that emerged in 2008. Instead, it aims to provide a comprehensive and historical analysis of the issues of central bank capital and of the questions posed above. The book that we are introducing here consists of papers produced for a conference at the Centre for Central Banking Studies in London, hosted by the Bank of England and concluded before the events of 2008. It encompasses a wide and impressive range of international experts. Some are accountants, others legal professionals, and yet others bring specialized economic knowledge to the issues. They all have current or recent central banking experience, with distinguished service for, or respected links with, no less than nine central banking institutions around the world.

After this introduction, the present chapter offers seven further sections. Section 2 probes lessons from the history of the central bank. In Section 3 we present three views about its need for capital: that it is irrelevant, that we can derive it from first principles and that we can learn about it from evidence. After concluding that the irrelevance view is erroneous, we proceed to explore the second view in Section 4, and judge it appealing in general but very hard to apply. Section 5 presents and examines evidence about the capital of 39 central banks, both at or soon after their foundation, and in 2007, as well as a range of other relevant data.

The 2007 statistics reveal enormous and bewildering variation here. These result from the patterns of shocks and drifts, and occasional recapitalizations. But our data for banks' capital at inception permit us to say something much

more concrete. The capital with which a central bank starts out is best expressed as a ratio to annual national income; this ratio declines as real national income rises, with an elasticity of almost one-third; the ratio tends to drift downward; it is higher for currency board central banks, central banks founded before 1900 and those with a particular credibility-building need, or fresh memories of national war with neighbours, but lower in countries well endowed with oil, or recently regaining autonomy from a foreign power. After Section 6, which provides some important qualifications, we then pick out, in Section 7, some of the main features and findings of the ten chapters that follow, and conclude briefly with some questions in Section 8.

## **2 The lessons from history: the genesis of the central bank**

When money was mostly specie, and banks only rented out safety deposit facilities, all the state needed was a mint. And all the country needed was a state that forswore temptations to debase its coins.

Two novelties were to change that. One was paper money. The other was the fractional reserve. Both offered the prospect of great savings on real resources. But both had their dark side. Debasement was a much easier trick to keep playing on holders, than shrinking or clipping the little discs of silver or gold. And the retail bank would work fine, so long as numerous depositors never sought to liquidate at the same time. You could never say “Don’t liquidate”; so a bank was a living violation of the categorical imperative, “Never do what would be harmful if everyone did it”.<sup>3</sup> The bank was a test of the law of large numbers, a gamble that correlations would stay imperfect in that dimension, as in others. But, unlike a pyramid scheme, at least the gamble would not depend on business growing indefinitely!

But how to reap the benefits of paper money, while safeguarding the currency’s buying power in goods? How to keep banks stable, while harvesting the gains – and not the risks – from all the extra credit that should flow?

Both novelties spread slowly. So it took much time for the opportunities and the threats they posed to be perceived. Many well meant but rather unconvincing answers appeared. Ban usury, for example. Regulate and restrict trade through fairs. Conjoin the monopoly rights to trade and its finance, and sell them to the highest bidder or – worse – grant them to a key political ally or court favourite. As the great debaucher of currency was war, simply keep the peace.

Eventually, and more by accident, or trial and error, than design, a better idea suggested itself. This was the central bank. It would be at arm’s length from the treasury; sometimes a formal part of the state’s machinery, and sometimes not; but always founded with some official imprimatur. It would act as banker to the state. It would arrange its loans as needed. It would usually come to hold its reserves safe from the fingers of less altruistic politicians. It would steer a politic middle course between the Banking School and the Currency School,<sup>4</sup> and thus serve the needs of trade for cash and credit, but also sedulously aim to prevent runaway inflation. It might lend to others in emergency, while aiming to guard



the banks from the possible turpitude, or folly, of some of its commercial and merchant bankers.

In due course every central bank would have some of these functions, and some would have all. To provide these services, the institution must be remunerated. But how? Where will it get its income from, and how much does it need? Equally important, when we move from flows to stocks, *how much capital should the central bank have?*

The present volume is concerned with the question of the central bank's financing arrangements – both what they are in practice, and also what they should be – and above all with its capital base. If Basel rules have enjoined commercial banks to adhere to a minimum 8 per cent capital rule, why not central banks too? *Should they not lead by example? Or as Cukierman suggests at the start of his chapter in this volume, are central banks so different from commercial banks that that answer is naive and inappropriate? If so, why?*

Three different viewpoints can be discerned on the issue of how much capital a central bank should have. One is that it is an irrelevance, at least for a central bank wholly owned by the state. The second is that one should be able to derive the result from first principles. And the third is that we should inspect evidence, and infer that financing arrangements for central banks are “correct”, at least on average. We shall discuss each in turn, beginning with the first.

### **3 Examining the case for thinking that central bank capital is irrelevant**

Start with the first view. One argument in favour of this runs as follows. Really no department of central government has “capital” as an accounting entity, in the sense of a credit item, notional or real, that is added to the total for its liabilities to match the (higher) value of its assets. This is for the good reason that the state's liabilities are not normally disaggregated by department. Assets, possibly. But liabilities are usually pooled. Most general government bonds have no specific departmental tag attached to them. And if they do, the tag is rather arbitrary. Flows of departmental revenue and outgoings are the norm: but there is generally little, if anything, about the stocks. Income and expenditure statements, yes,<sup>5</sup> balance sheets, no.

But there is a counterargument to this: even when fully state owned, as nearly all now are, the central bank is not quite a department of government. A closer parallel for the central bank would be with a nationalized industry. And nationalized industries do keep full accounts, which are not just mere records of flows of income and expenditure. Furthermore, nationalized industries do have capital in the sense that accountants use the term, even if its definitions are apt to be imprecise and often idiosyncratic in practice.

The main reason those definitions are rather woolly is that the real capital of the state-owned central bank – what Bagehot would have called *efficient* capital as opposed to *dignified* capital – is the government's power to levy taxes. Extra tax revenue could then make good any loss the central bank might incur. A small