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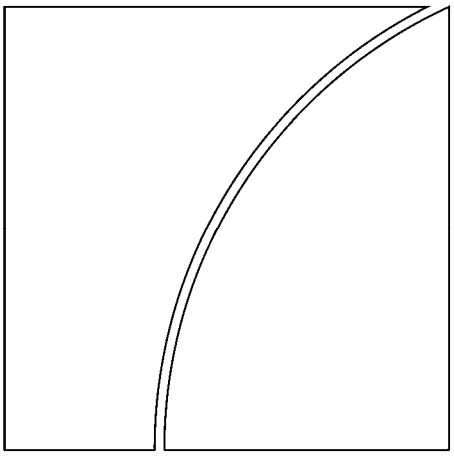

# BIS Working Papers

No 330

# Minimising monetary policy

by Peter Stella

Monetary and Economic Department

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Keywords: Monetary Policy, Central Banking

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# Foreword

On 24–25 June 2010, the BIS held its Ninth Annual Conference, on “The future of central banking under post-crisis mandates” in Lucerne, Switzerland. The event brought together senior representatives of central banks and academic institutions who exchanged views on this topic. The papers presented at the conference and the discussants’ comments are released as BIS Working Papers 326 to 331. A forthcoming BIS Paper will contain the opening address of Stephen Cecchetti (Economic Adviser, BIS), a keynote address from Baron Alexandre Lamfalussy, and the contributions of the policy panel on “Do central bank governance arrangements need to be altered?”. The participants in the policy panel discussion, chaired by Jaime Caruana (General Manager, BIS), were Mark Carney (Bank of Canada), Andrew Crockett (JP Morgan Chase International), Stefan Ingves (Sveriges Riksbank), Lucas Papademos (Former Vice President, European Central Bank), and Duvvuri Subbarao (Reserve Bank of India).

# Conference Programme

## Thursday 24 June

| | |
|---|---|
| **Opening remarks** | **Stephen Cecchetti (BIS)** |
| **Session 1:** | **The future role and mandate of central banks** |
| Paper title: | The changing roles of Central Banks |
| Chair: | Armando M Tetangco, Jr. (Bangko Sentral ng Pilipinas) |
| Author: | Charles Goodhart (London School of Economics) |
| Discussants: | Stanley Fischer (Bank of Israel)<br>Randall Kroszner (University of Chicago) |
| **Session 2:** | **International governance** |
| Paper title: | Central banks: between internationalisation and domestic political control |
| Chair: | Henrique de Campos Meirelles (Central Bank of Brazil) |
| Author: | Harold James (Princeton University)<br>Paper: Central Banks: Between Internationalization and Domestic Political Control |
| Discussants: | Gianni Toniolo (Duke University)<br>Már Gudmundsson (Central Bank of Iceland) |
| **Keynote lecture** | |
| Speaker: | Alexandre Lamfalussy |

## Friday 25 June

| | |
|---|---|
| **Session 3:** | **Lessons from history for future central bank design** |
| Paper title: | The Federal Reserve, the Bank of England, and the Rise of the Dollar as an International Currency, 1914-1939 |
| Chair: | Ms Zeti Aziz (Central Bank of Malaysia) |
| Author: | Barry Eichengreen (University of California) (joint work with Marc Flandreau) |
| Discussant: | Robert Keohane (Princeton University)<br>Leszek Balcerowicz (Warsaw School of Economics) |
| **Session 4:** | **Lessons from political economy for future central bank design** |
| Paper title: | The Governance of Financial Regulation: Reform Lessons from the Recent Crisis |
| Chair: | Christine Cumming (Federal Reserve Bank of New York) |
| Author: | Ross Levine (Brown University) |
| Discussants: | Gill Marcus (South African Reserve Bank)<br>Howard Davies (London School of Economics) |

| | |
|---|---|
| **Session 5:** | **Central bank finances: Policy relevant? Politically relevant?** |
| Paper title: | Minimizing Monetary Policy |
| Chair: | Zdenek Tuma (Czech National Bank) |
| Presenting author: | Peter Stella (Consultant) |
| Discussants: | Marc Flandreau (Graduate Institute of international and Developmant Studies)<br>José De Gregorio (Central Bank of Chile) |
| **Session 6:** | **Are central banks special?** |
| Paper title: | Central banks and competition authorities: institutional comparisons and new concerns |
| Chair: | Masaaki Shirakawa (Bank of Japan) |
| Presenting author: | John Vickers (All Souls College, Oxford) |
| Discussants: | Allan Bollard (Reserve Bank of New Zealand)<br>Mario Monti (Universita Commerciale Luigi Bocconi) |
| **Session 7:** | **Panel discussion: "Do central bank governance arrangements need to be altered?"** |
| Chair: | Jaime Caruana (BIS) |
| Panellists: | Mark Carney (Bank of Canada)<br>Andrew Crockett (JP Morgan Chase International)<br>Stefan Ingves (Sveriges Riksbank)<br>Lucas Papademos (Ex Vice President, European Central Bank)<br>Duvvuri Subbarao (Reserve Bank of India) |

# Minimising monetary policy

Peter Stella

## Abstract

The response of leading central banks to the current financial crisis has raised the magnitude of the financial and governance risks they face. An evaluation of the financial strength of a number of those banks suggests that they are in little danger of being forced by financial losses to alter their policies. Governance risks cannot be dismissed so lightly. In engaging extensively in unorthodox policies – bearing similarities to fiscal policy – a number of central banks have risked a critical examination of their governance structures and thereby potentially jeopardised their monetary policy independence. In order to forestall this risk to monetary policy, it is argued that unconventional policies be placed under a separate governance structure that would allow them to be brought under greater political control and accountability while preserving the operational independence of monetary policy.

JEL classification: E42, E52, E58, E63

Keywords: monetary policy, central banking.

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# Minimising monetary policy

Peter Stella[1]

## Introduction

Crises demand rapid policy responses from existing institutions but eventually give way to a more reflective period during which the flaws exposed in the previous architectural arrangements are inevitably scrutinised. The role of central banks, particularly their relationship with national treasuries, has been controversial from the dawn of the current crisis. The rapid central bank response to increased liquidity demand and willingness to absorb fiscal risk as part of that response undoubtedly lessened systemic risk. However, the juxtaposition of the operational freedom enabling bold central bank responses and direct legislative control over conventional fiscal policy – that some might argue hamstrung the response of national treasuries – has sparked a debate over appropriate central bank governance structures that might ultimately lead to a legislative curtailment of central bank operational independence with adverse consequences for monetary policy execution.

The two primary questions relating to central bank fiscal risk examined in this paper are:

- Might central bank losses take on a macroeconomic dimension and interfere with the execution of monetary policy? This is essentially an empirical question, examined in the next section.
- Could the perception that central banks have executed quasi-fiscal policies, such as credit allocation to select institutions or sectors, lead to an eventual legislative curtailment of monetary policy independence – even if material losses do not occur? This issue, and how monetary policy independence may be preserved through a shrinking of the monetary authority balance sheet and transfer of market intervention responsibilities to an alternative governance structure, will be examined in the latter sections of the paper.

## Assessing the magnitude of central bank fiscal risk

Prior to the crisis, monetary policy in the advanced countries was undertaken almost exclusively through indirect influence on short term money market rates. Financial market interventions requiring the injection of large amounts of central bank liquidity had become rare. Confronted with the "zero lower bound" on interest rates, central banks during the crisis have resorted to unconventional policies or balance sheet management to achieve policy goals. Financial market stress has also been remedied by historically large interventions by central banks. Even in those cases where the monetary base has not expanded, central banks have expanded their role in financial intermediation.

In their unconventional operations, central banks have taken on greater risk of a fiscal nature than had heretofore been the case and exposed themselves to potential losses. The

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[1] Director, Stellar Consulting LLC, formerly Chief, Central Banking Division, International Monetary Fund.

I would like to thank participants in the Ninth BIS Annual Conference and Jérôme Vandenbussche, Steve Meyer, Kotaro Ishi, Kenji Fujita and Ragna Alstadheim for valuable comments on earlier drafts of this paper.

question discussed in this section is whether the size of potential losses could take on a macroeconomic dimension, ie become so large that losses must be financed with money creation beyond what is compatible with the monetary authority's inflation target.[2]

While there have been a number of cases worldwide where central bank losses have contributed to a loss of macroeconomic stability,[3] it is not obvious whether a similar scenario is currently realistic in the major developed country central banks. Stella (2009) examined this possibility in the case of the Federal Reserve and found that even under very adverse macroeconomic and financial assumptions, the Fed's ability to generate seigniorage owing to its very large stock of banknotes outstanding would enable it to easily recover from a significant shock without losing control of inflation. In this section, I take another look at this question for the Fed and 12 other central banks.

Before proceeding with the analysis, it should be emphasised that we are not concerned here with whether the central bank might be exposed to a period of negative capital. This is largely irrelevant from a policy context – as witnessed by the cases of Chile and the Czech Republic, both of whose central banks have successfully adopted inflation targeting while suffering from negative capital. What we are concerned about is whether a central bank retains a level of financial strength (CBFS) consistent with attaining its policy goals. That is, a central bank has sufficient financial strength if, in most future states of the world, it can achieve its *policy* objectives without recourse to treasury financial resources.[4]

Figures 1–3 provide basic snapshots of central bank financial strength to provide some sense of the empirical likelihood that advanced and emerging market country central banks would come under pressure in the wake of a sizeable shock.

Although I have argued elsewhere that capital can be a very misleading metric for CBFS, it may provide a useful starting point for the analysis when adjusted for cross-country differences in accounting methodologies.[5] Figure 1 provides a comparison of capital – adjusted to the extent possible to International Financial Reporting Standards (IFRS) – for a select group of central banks. Although some banks have negative adjusted equity, it should be noted that this is only one component of CBFS. A second important component of the strength of the balance sheet, the volume of currency outstanding, will now be examined.

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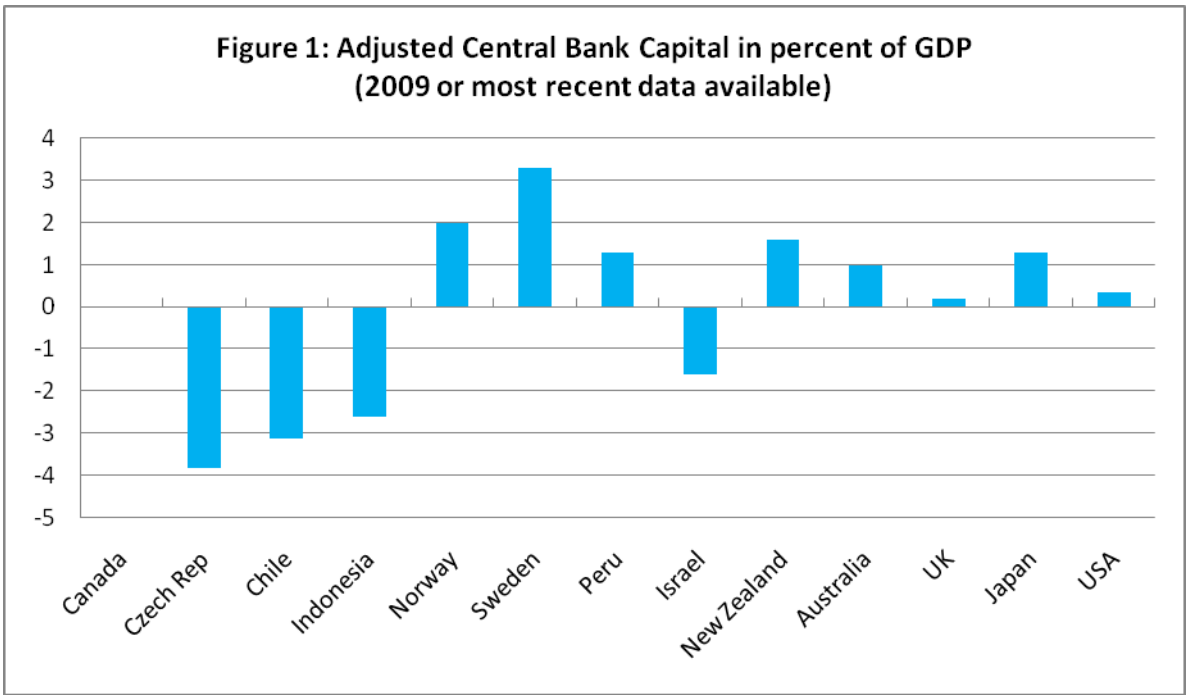
[2] For a theoretical discussion of this issue in the context of a fiscal theory of the price level model, see Sims (2003).

[3] See Stella (2005) for a discussion of some of those cases.

[4] Ideally, this issue should be examined empirically for each central bank in the light of its objectives and unique macroeconomic environment. For ease of cross-country comparison here I adopt a simpler approach.

[5] See Stella (1997) for the original argument.




In a floating exchange rate environment, currency and non-interest bearing deposits at the central bank play a financial role very similar to capital. To illustrate this, consider the hypothetical central bank balance sheet shown in Table 1.

Table 1

**Illustrative central bank balance sheet**

In local currency units

| **Assets** | | **Liabilities** | |
|---|---|---|---|
| Foreign exchange | 1,300 | Currency | 860 |
| Domestic credit | 640 | Non-interest bearing deposits | 40 |
| | | Interest bearing debt | 1,000 |
| Other assets | 70 | Other liabilities | 70 |
| Liquidity-providing repo agreements | 60 | Capital | 100 |
| Total assets | 2,070 | Total liabilities | 2,070 |

Total liabilities may be divided into those that bear no interest – currency, non-interest bearing deposits and capital – and those that are costly, primarily interest bearing debt. Assuming that the domestic currency equivalent interest rate on all interest-bearing assets and liabilities is the same, the respective assets and liabilities may be netted against one another to arrive at the simplified balance sheet shown in Table 2.[6] It is evident that for the

[6] In countries where the sovereign risk premium is high and foreign reserves comprise a large component of central bank assets, this assumption cannot legitimately be made and the calculation of the sustainable balance sheet is more complicated. Nevertheless, the principle discussed here – that capital and currency play equivalent financial roles – remains valid.

central bank intertemporal budget constraint to hold, the revenue obtained in the steady state from net interest-earning assets must be sufficient to finance central bank operational expenditures at the target inflation rate.

Table 2

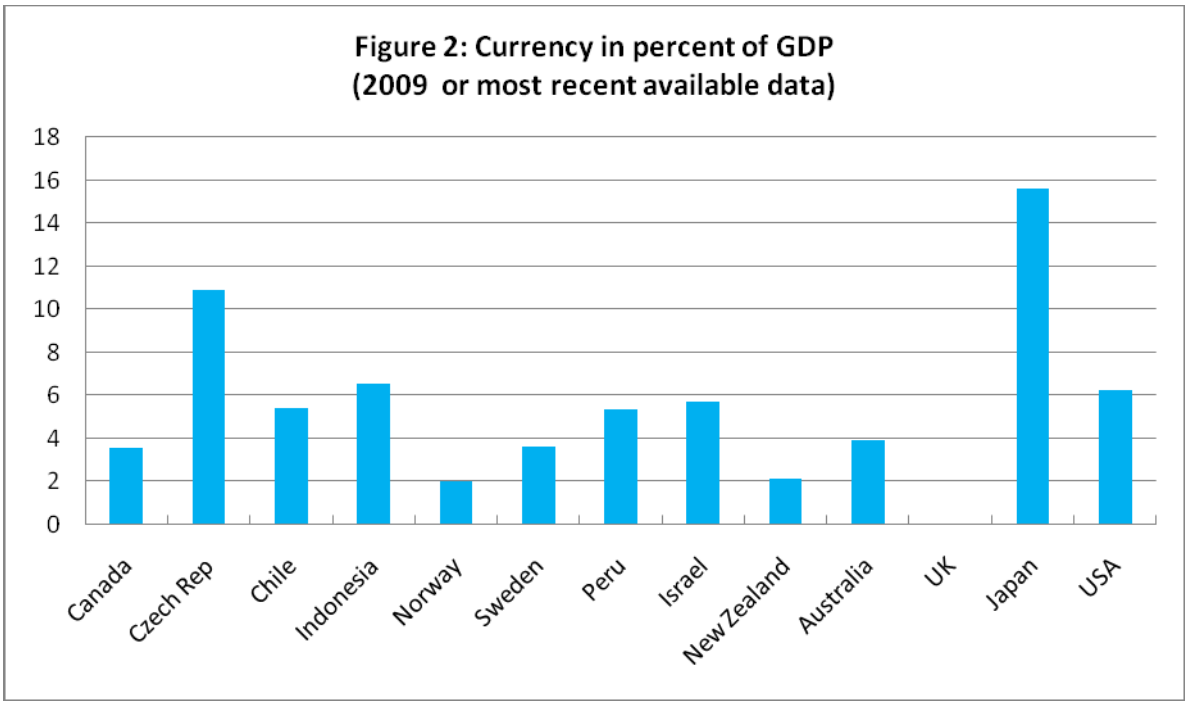
**Simplified illustrative central bank balance sheet**

In local currency units

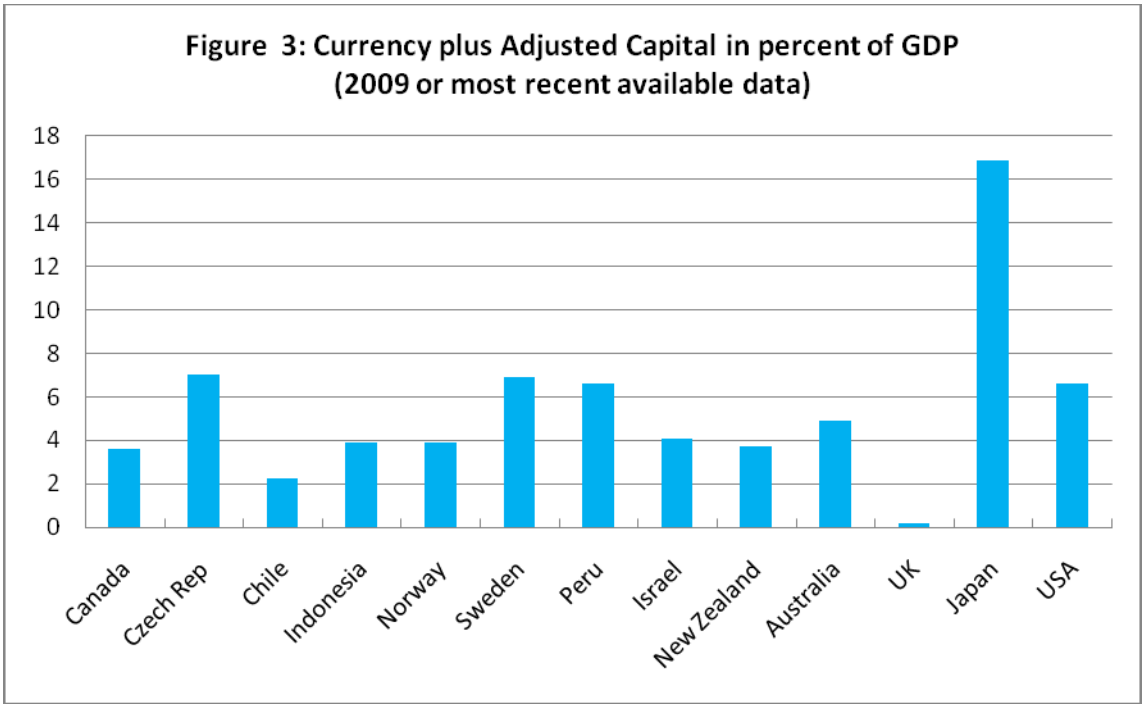
| Assets | | Liabilities | |
|---|---|---|---|
| Net interest-earning assets | 1,000 | Currency | 860 |
| | | Non-interest bearing deposits | 40 |
| | | Capital | 100 |
| Total assets | 1,000 | Total liabilities | 1,000 |

If interest revenue is consistently inadequate to cover operating expenditures, any of five outcomes is possible: currency issuance is increased in order to generate additional seigniorage, thereby jeopardising the attainment of the inflation target; the inflation target is relaxed for similar reasons; an injection of capital is obtained which may impair central bank independence; operational expenditures are reduced to bring the central bank budget back into a sustainable equilibrium; or more risk is taken in the management of central bank assets, which may not be prudent.

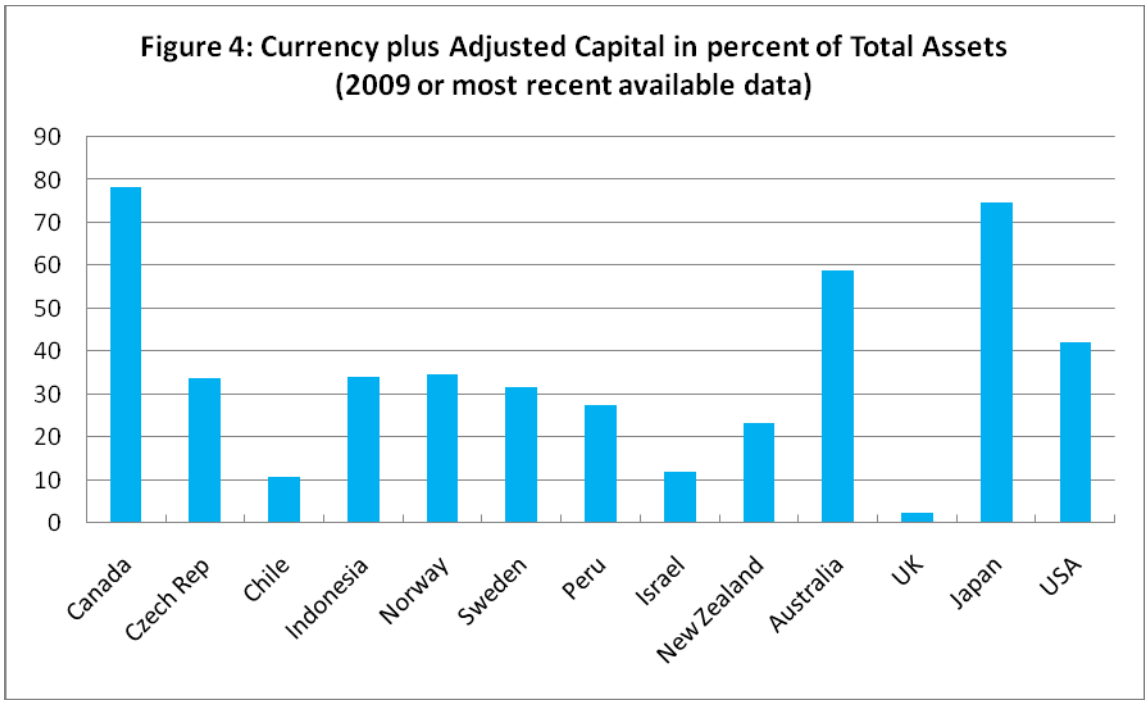
Figure 2 provides data on currency as a ratio to GDP for the selected central banks.




In Figure 3, currency is added to capital to obtain a superior measure of the ability of the central bank to generate seigniorage and finance its operational and quasi-fiscal expenditures.




For all countries in the sample, this summary measure exceeds zero, and for many it exceeds 30% of balance sheet assets (Figure 4), suggesting that significant buffers exist to withstand losses.[7]

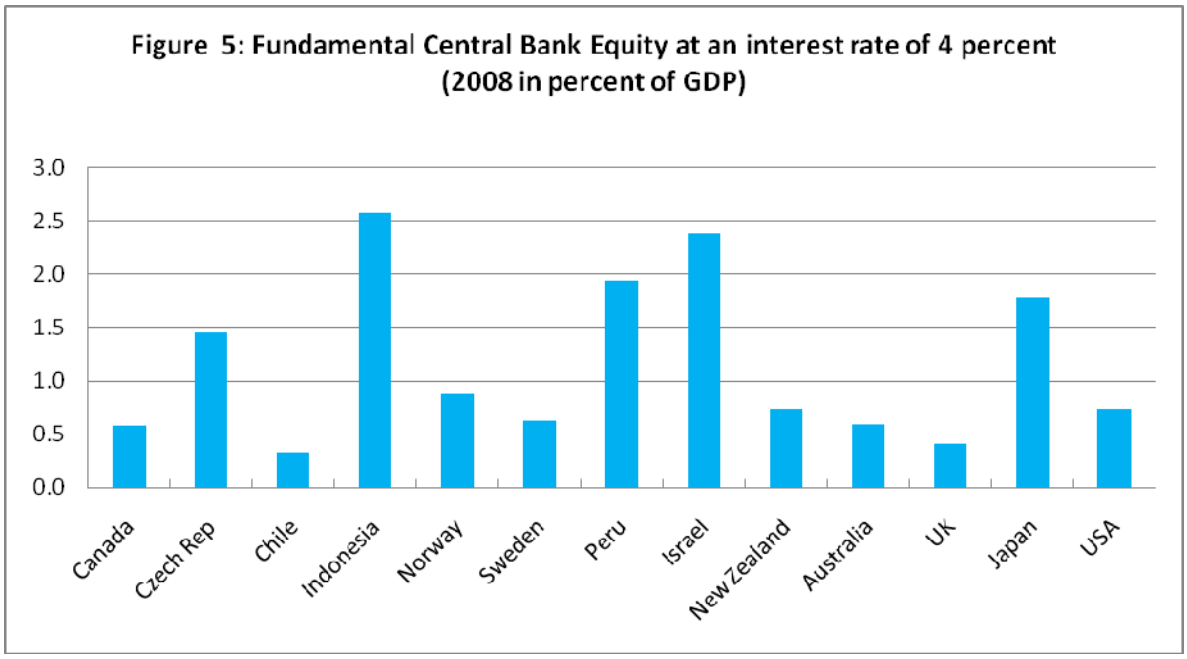



Sources: Various central bank annual reports; author's calculations.

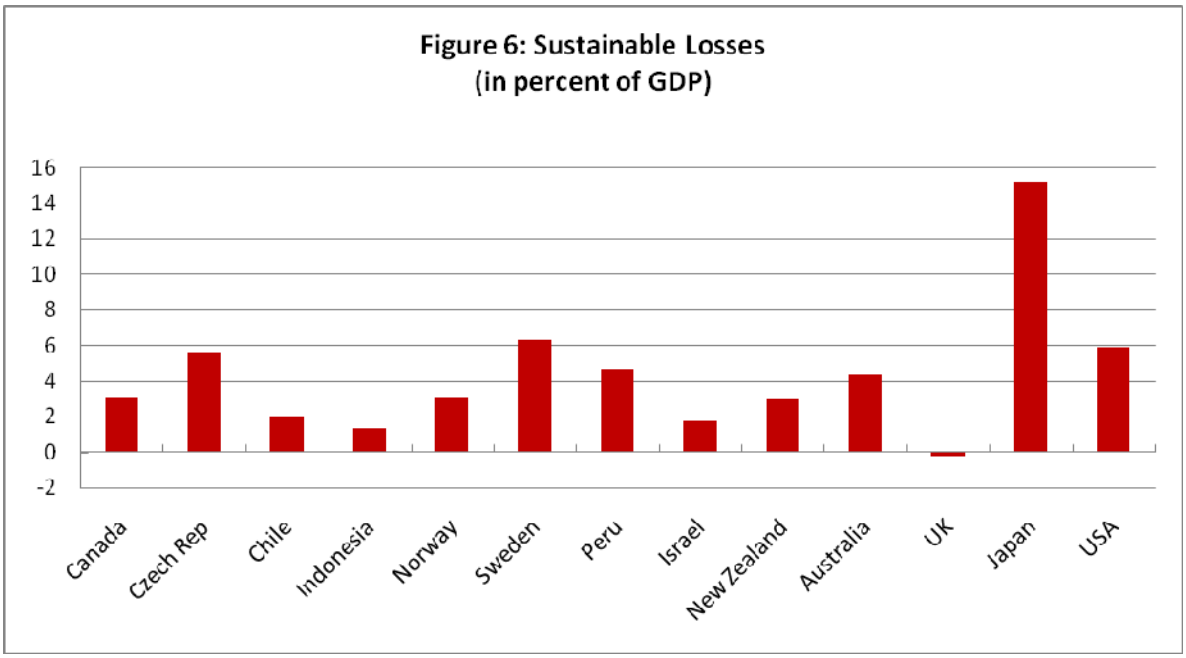
[7] As has been argued extensively elsewhere, it is impossible to meaningfully discuss the necessary degree of central bank finance strength absent knowledge of the policy regime. A monetary authority with an inflation target of 2% cannot generate the same amount of seigniorage as one willing to live with higher inflation, and consequently must have a relatively stronger balance sheet.

In order to determine whether the calculated buffers are adequate, it is necessary to first determine the minimal level of currency plus capital that is necessary to sustain central bank operational expenditures, and then subject the balance sheet to a robust stress test.

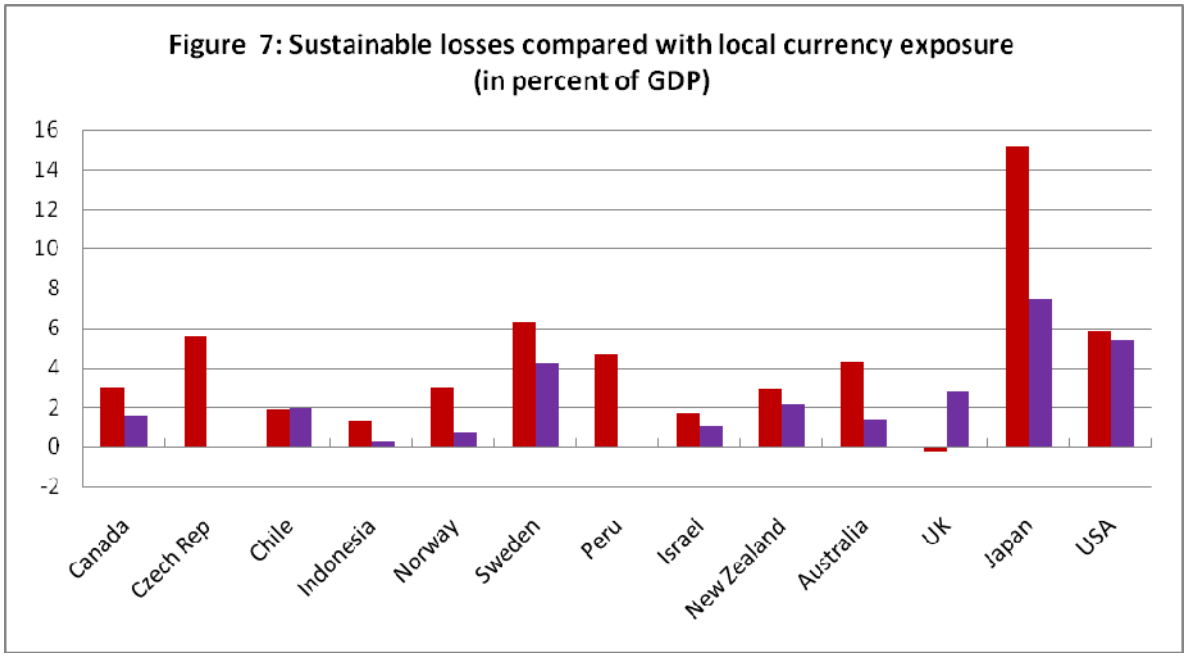
*Fundamental equity* is defined as the level of capital plus currency that is sufficient to finance normal operating expenditures at a given interest rate. Combining an assumed average rate of return on net assets of 4% (a 2% real return plus 2% inflation) with knowledge of the current balance sheet structure and operational expenditures, fundamental equity for each country can be calculated and is shown in Figure 5.




For each country, the difference between the current level of capital plus currency and fundamental equity is equal to the present discounted value of exceptional losses that may be sustained without violating the central bank budget constraint. This is shown in Figure 6.



It is then necessary to determine the risk actually faced by each central bank from conventional and unconventional losses. As a very strong stress test, a hypothetical 35% loss on total local currency assets (Figure 7, in purple) is compared with sustainable losses (in red).[8]




Even in this incredibly high-loss scenario, in only the case of the Bank of England (BoE) is there reason to be concerned with the macroeconomic level of losses. However, the BoE is largely indemnified by the UK Treasury for potential losses; thus, it is not plausible that it would have to assume losses of that magnitude. In presenting the data for the United Kingdom I have used an adjusted combined BoE balance sheet which excludes currency.[9] As seigniorage from banknote issue is directly transferred to the Treasury, it cannot be considered as financing the Bank. Consequently, the BoE has the lowest currency plus capital within the sample, and sustainable losses are actually negative as calculated here (Figures 3 and 6). On the other hand, the UK Treasury explicitly indemnifies the BoE for its lender of last resort operations.[10] During the current crisis, it has also indemnified other unconventional operations. From the financial standpoint, the BoE is essentially operating under a Treasury agency arrangement, and consequently need not hold capital against the imputed fiscal risks. The United Kingdom also explicitly sets an unremunerated reserve requirement held by eligible commercial banks in the form of cash ratio deposits (CRD) to

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[8] Only losses on domestic assets are considered owing to the high probability that an idiosyncratic financial crisis in a given country would probably lead to a depreciation of the local currency and generate gains in the local currency value of the foreign reserve portfolio. It is furthermore assumed that foreign reserves are invested in assets with little credit risk denominated in strong currencies. In that respect, it is illustrative that the best-performing asset class during 2008 – during the depth of the current crisis – was US Treasury securities, a very conventional choice for central bank asset managers.

[9] The combined balance sheet includes both the Issue and Banking Department balance sheets. I have subtracted banknotes and the assets backing the banknote issue (held by the Issue Department).

[10] The Treasury may also take lender of last resort operations onto its own balance sheet, such as in the case of Bradford & Bingley plc: "By 28 February 2009 the responsibility of providing the working capital facility had been transferred to HM Treasury and no facility with the Bank remained outstanding" (Bank of England (2009), p 86).

generate the income necessary to fund BoE operations so that significant funding capital is not required. Adding the CRD (approximately GBP 2.5 billion in 2008) to the calculated BoE currency plus adjusted capital yields sustainable losses very close to zero.

In sum, it would seem that the central banks examined here are not in significant danger of witnessing losses that would prevent them from attaining their inflation targets.[11] I will therefore turn to an examination of the other element of fiscal risk, which is perhaps more relevant.

## Political governance risk

The second important dimension of fiscal risk is political. That is, the issue is not that central bank losses would directly interfere with the attainment of monetary policy goals, but that political pressure might be brought to bear on operational independence as a consequence of the central bank straying into what would appear to be expenditures of a fiscal nature. Therefore, even if central bank operations are fully collateralised and generate ex post profits, legitimate questions may be raised as to why, for example, the housing market was supported and not automobile manufacturers, airlines or farmers. Similarly, why were certain institutions perceived to have been "rescued" and others allowed to fail?

Along this dimension of fiscal risk, the key difference between central bank and fiscal policies is neither the nature of the operations nor their fiscal impact; it is that the scope of central bank policy is unrestricted by budgetary considerations – independent of the budget process – while fiscal operations are thus restricted. The very absence of distinguishing characteristics between fiscal and unconventional monetary policy makes all the more apparent that it is illogical for them to be directed by different governance structures. In these circumstances, the *size* of central bank balance sheets becomes important as an indication of the extent of extra-budgetary financial market intervention.

"There is one significant difference between lending performed by the US Treasury and lending performed by the Federal Reserve Banks, however. The Treasury can lend only under explicit authorisation from Congress. The Federal Reserve, in contrast, has independent control of its balance sheet and funds itself outside of the normal appropriations process." (Lacker (2009), p 6).

If no clear distinction can be made between monetary and quasi-fiscal operations, legislatures may, with some justification, wish to bring central bank operations under their control, much as they govern fiscal policy. This may lead to an unintended and undesired constriction of monetary policy operational independence. As Bank of Japan Governor Shirakawa recently posed it, this issue is who should ultimately be responsible for actions that fall into the grey area between monetary and fiscal policy: "… when central banks try to create 'productive' policy measures, in an environment where the effectiveness of traditional monetary policy is constrained, they naturally come close to the area of fiscal policy. As a result, the policymakers need to face up to the issue of who should be responsible for such policy actions in a democratic society."[12]

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[11] Somewhat ironically, a need to create money to finance losses could be helpful to achieve an inflation target in an economy facing deflationary pressures.

[12] Shirakawa (2009), p 3.

## Monetary, fiscal and financial market intervention policies

In most cases it is not difficult to separate monetary and fiscal policies, particularly in recent years as monetary authorities have increasingly – and in the last 15 years almost exclusively – utilised indirect instruments at market-based prices for monetary policy implementation.[13] In some cases, such as the 1992 Central Bank of Peru law, quasi-fiscal operations previously widely used by the central bank were explicitly prohibited in new legislation while in other countries the revision of monetary policy philosophy was sufficient to lead to changes in operating procedures emphasising the minimisation of the impact of monetary policy on relative prices and the allocation of credit. In the United States, the implication of this approach for the Federal Reserve balance sheet has been called "Treasuries only". This worldwide trend had a counterpart in the adoption of interest rate operating targets and instruments at the expense of quantitative approaches, the "divorce" of money from monetary policy and a decline in the weight of monetary operations in overall financial market transactions.[14]

During the current crisis, the previously broad line between fiscal and monetary policies in the advanced economies became extremely thin and in some cases invisible, when financial stability concerns led to the adoption of unconventional central bank operations.[15]

To again quote Governor Shirakawa: "Measures to take on individual credit risk such as corporate debt are extraordinary steps for a central bank since they come close to the area of fiscal policy which deals with resource allocation at the micro level… since it is in essence close to the realm of fiscal policy, a clear understanding of which authorities are taking on the risk involved is indispensable. This is also important from the perspective of maintaining public confidence in the financial strength of the central bank. If the central bank's financial strength is perceived to be weakened, concerns may arise, subtly through various channels, with regard to its ability to effectively fulfil its monetary policy mandate" (Shirakawa (2009).[16]

In the United States, the FOMC statement of 16 December 2008 essentially announced the attainment of the zero lower bound on the fed funds rate and the end of conventional operations: "the Federal Reserve will purchase large quantities of agency debt and mortgage-backed securities to provide support to the mortgage and housing markets… The Federal Reserve will continue to consider ways of using its balance sheet to further support credit markets and economic activity." Indeed, the System Open Market Account desk did not conduct a single conventional repurchase operation in 2009, whereas prior to 2007 this was virtually the only actively used instrument.[17]

In the United States, there has been a good deal of controversy over the nature of the assets acquired as the result of unconventional operations. Kohn (2009) argues that "our non-traditional policy actions… remain consistent with the traditional goals and principles of

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[13] See Borio (1997). Directed credit and unremunerated reserve requirements had decidedly fallen out of fashion by the mid-1990s. See p 314 on reserve requirements.

[14] In commenting on the draft papers soon to comprise the new *Handbook on Monetary Economics*, one participant at a 2009 Federal Reserve conference remarked how infrequently the papers mentioned "money".

[15] Some of these issues were foreshadowed in policy debates before the crisis in the advanced countries. Whether the US discount rate provided subsidised credit is one example. Another is Small and Clouse (2004): "even if the Federal Reserve could take more credit risk onto its balance sheet, any social benefits from the Federal Reserve doing so would need to be balanced against the potentially substantial drawbacks associated with placing the Federal Reserve squarely in the process of allocating credit among private sector borrowers" (p 16).

[16] See also Stella (2009) regarding the Federal Reserve's assumption of fiscal risk.

[17] Federal Reserve Bank of New York (2010), p 6.

monetary policy… we have structured these policies with the aim of accomplishing our objectives with few, if any, fiscal consequences" (Kohn (2009)).

On the other hand, Plosser (2009) argues that "Our lending programs were created for extraordinary times… but they run contrary to a long-standing and sound Fed practice of trying to minimize the effect of its actions on the allocation of credit across market segments. In my view, such programs are not, and should not, be part of the normal operation of a central bank… My third and final suggestion is to draw a clear distinction between monetary policy and fiscal policy and to ensure that the Federal Reserve retains its independence to conduct sound monetary policy."

Note that here the focus is not on the potential quasi-fiscal cost of the operations but on their allocative nature and the extent to which they may favour one sector or market segment over another.

Taylor (2009) has argued for an end to unconventional policies (which he describes as "monoindustrial") and the return to the previous monetary policy framework: "If we are to have an extensive industrial policy, it should be approved by the Congress with the purposes stated and debated transparently... If policy does not go back to a monetary policy framework, then questions must be raised about the fundamental role, independence, and governance structure of the Federal Reserve."

Lacker (2009) is similarly direct. Citing Goodfriend (1994), he argues that "credit policy" is "a form of fiscal policy in that it uses the public sector's balance sheet to alter the allocation of resources." Furthermore, "Government lending, whether by the Fed or Treasury, fundamentally represents fiscal policy in the sense that it channels taxpayer funds to private sector entities. The presumption ought to be that such lending is subject to the checks and balances of the appropriations process laid out in the Constitution. Using the Fed's balance sheet is at times the path of least resistance, because it allows government lending to circumvent the Congressional approval process. This risks entangling the Fed in attempts to influence credit allocation, thereby exposing monetary policy to political pressures."

Goodfriend (1994) defines "credit policy" as policy-directed changes in the composition of the monetary authority's asset portfolio without a change in the quantity of central bank liabilities. The policy of the Federal Reserve seems to fit neatly within this definition during two distinct periods. From late 2007 through mid-September 2008, the Fed provided credit through various innovative programmes while simultaneously sterilising the impact on systemic liquidity with sales from its government securities portfolio. Following an interlude between mid-September and year-end 2008 when the monetary base was permitted to expand enormously, the Fed again stabilised the size of its balance sheet while engineering another dramatic change in the composition of its assets as more than $1 trillion of its "new" operations were replaced with holdings of MBS and government-sponsored enterprise debt.

Bernanke (2009a) describes this policy as "credit easing": "the Federal Reserve's credit easing approach focuses on the mix of loans and securities that it holds and on how this composition of assets affects credit conditions for households and businesses."

Thus, one perspective on separating unconventional monetary and fiscal policies focuses on the nature of the *assets* acquired. A second perspective is that the nature of the *liabilities* that finance the operations distinguishes monetary from fiscal policy. That is, operations financed with monetary base are considered monetary and those financed with debt are fiscal. The latter, when they involve government debt exclusively, amount to debt management.[18]

[18] Analytically, it is virtually impossible to differentiate a central bank sale of short-term government debt used to finance the purchase of long-term government debt in the secondary market from the same purchase by a

Separating monetary and fiscal policy by describing actions only the monetary authority can perform requires the identification of operations that are financed with monetary base. That is, the distinguishing feature is not on the asset side of the balance sheet but on the liability side. Unfortunately, it can be very difficult to trace a one-to-one correspondence between those policies financed with money and those financed with debt, and even more difficult to draw a correlation with the degree of their fiscal nature. If we consider the most prima facie quasi-fiscal Fed policies – the establishment of Maiden Lane I, II and III,[19] and the funding provided directly to AIG – MLI was essentially financed by debt in order to keep the fed funds rate at target (225 basis points at the time (18 March 2008)). In contrast, the direct loan to AIG and the creation of MLII and MLIII (after Lehman Brothers filed for Chapter 11 bankruptcy protection on 15 September 2008) were financed by base money creation.[20]

In sum, it is very difficult to conclude that the nature of financing is particularly relevant. Under these circumstances, when it is not possible to draw a fine line in this grey area, it would seem advisable to consider the possibility of a third intermediate governance structure for the grey area which would enable a clear line to be drawn between conventional monetary and fiscal policies.

In the following section, I will discuss preserving monetary policy operational independence by isolating it from what I term market intervention (MI) activities, which should, in turn, conform more closely to the national budgetary process.

## The false identity equating central banking with monetary policy

In this section, I discuss the difference between central banking and monetary policy functions and governance structures. In so doing, I set aside the many activities and functions of central banks apart from monetary and financial intervention policies.[21] To simplify the conceptualisation of the issue, from this point on we may think of *monetary policy* as "interest rate policy": the process by which an operational interest rate target is set and liquidity conditions managed to achieve a close correspondence between a market rate and the target rate so as to meet an inflation objective. *Central banking* may be thought of as intervening in identified markets or institutions to affect relative prices or to provide liquidity, thereby improving market or institution functioning.

Common language equates central banking (the central bank) with monetary policy (the monetary policy authorities). The use of these two terms interchangeably leads directly to the assumed identity of central bank independence and monetary policy independence – as if these were logically inseparable.

I believe much of the current controversy surrounding central bank independence within informed circles has little to do with monetary policy independence – about which there remains a consensus in favour – and very much to do with the ability of the central bank to engage in unconventional market interventions which bear a close similarity to fiscal policy. This functional similarity of powers raises the very legitimate question as to why there should

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government financed in the primary market. See McCauley and Ueda (2009) for a discussion of the similar possibilities open to "quantitative easing" and debt management at low interest rates.

19 MLI was formed on 24 March 2008 to facilitate the acquisition of Bear Sterns by JPMorgan. ML II and III were set up to finance the acquisition of certain assets and liabilities of AIG and its subsidiaries.

20 Excess commercial bank reserves rose from $2 billion in August to $798 billion by end-December 2008.

21 This means, inter alia, that I will not discuss the central bank's role in payment systems, nor financial market regulation and/or supervision.

be two, quite different, governance structures, one determining central bank interventions and another government budgetary interventions.

In tracing the history of modern theoretical contributions to the idea of central bank independence, the development of its identity with monetary policy independence becomes apparent.[22] The first models were largely silent about how monetary policy is implemented. The seminal academic articles arguing the case for monetary policy rules did not mention the "central bank" and gave scant recognition to the existence of a monetary authority, not to mention monetary "policy".

Nobel laureate Robert E Lucas (1972) does not mention central banks. In his model, fiat money is "issued by a government which has no other function… unspent cash balances revert… to the monetary authority". Nor do fellow Nobel laureates Finn Kydland and Edward Prescott (1977) mention central banks, apart from a footnote acknowledging the support of the Central Bank of Norway. Although they illustrate their theory using patent policy, flood insurance, constitutional law, windfall taxes on oil companies and the "inflation-employment example", they mention monetary policy explicitly only twice. The first reference compares their "inflation-employment example" to the description of monetary policy in Taylor (1975); the second is in the penultimate sentence of the paper: "One possible institutional arrangement is for Congress to legislate monetary and fiscal policy rules". Thus, in both cases monetary policy is portrayed as a written rule or computer algorithm that generates the value of a stylised model variable largely without human intervention.

Central banking first appears in what might be termed the classic second generation references. This literature was concerned with how to ensure rules were followed, ie how to solve what was known as the "precommitment" problem in a practical way – recognising human intervention would be required to set the policy instruments. Both Rogoff (1985) and Walsh (1995) discuss how to create an institution or governance structure to ensure the independence of monetary policy from short-run political influence. Rogoff's solution is to rely on a "conservative" central banker, that is, to endow the governance structure with a natural desire for tight monetary policy (compared with an "average" person) combined with the ability to freely manipulate a policy instrument to maximise the private objective function (independence). Walsh's solution is essentially the agreement of a contract with the "central banker" to maximise the socially optimal objective function given instrument independence.

The identity of central bank independence and monetary policy came from the identification of the central bank(er) as the agent governing the monetary authority. In these important theoretical contributions, the "subsidiary" functions of central banking were set aside and, indeed, until the current crisis the alternative powers of central banks and the delineation of the difference between central bank and fiscal functions were not emphasised.[23] Thus, the argument in favour of monetary policy independence became the argument in favour of independence of the governance structure for monetary policy, which in some cases inadvertently gave the central bank autonomy in subsidiary policies. The exercise of those powers in a politically charged atmosphere – particularly in countries where the budget restricted those very same powers from being employed by the fiscal authorities – has now placed monetary policy independence in jeopardy.

A corollary derived from the assumed identity of central banking and monetary policy is that there is only "one" central bank, ie there is only one identical governance structure setting all

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[22] Although Bernanke (2004) discusses only Kydland and Prescott (1977), Rogoff (1985) and Walsh (1995), I include Lucas (1972) as he was clearly influential in the work of Kydland and Prescott. Interestingly, Kydland and Prescott (1977) cite Chris Sims as the person whose comments led them to their path-breaking results.

[23] It should be noted that in the many developing and emerging market countries suffering banking crises in the 1980s this issue was very actively discussed and researched.

central bank policies. This is clearly not the case (neither formally nor informally), as evidenced by countries' diverse experiences.[24] This derivative error strengthens the belief that the same degree of political independence must be given to all central bank functions.[25]

Not only are different central bank functions frequently subject to different governance arrangements, but the use of committees to govern provides an opportunity to fine-tune the degree of independence given to any particular function. As noted by Blinder (1998), "My experience as a member of the FOMC left me with a strong feeling that the theoretical fiction that monetary policy is made by a single individual maximising a well-defined preference function misses something important. In my view, monetary theorists should start paying attention to the nature of decision-making by committee, which is rarely mentioned in the academic literature."[26] Indeed, the representation of the ministry of finance on the governing bodies of the central bank has been one of the more controversial issues over the years.

In this section, I have argued the importance of recognising the distinction between central banking and monetary policy. In the remainder of the paper, I will focus on the distinction between financial market intervention (MI) and monetary policies and draw out the sharply different implications for their appropriate governance and balance sheet structures.

## Governance structures and balance sheets

Once we admit the difference between central banking (MI) and monetary policies, we can entertain the possibility of different governance structures with different degrees of independence. That is, we can conceive of a "third" governance structure operating in the grey area between monetary and fiscal policies. We can also begin to differentiate among the different policy instruments that may be assigned to those governance structures, the corresponding financial resources with which they may be endowed and their accountability frameworks.

### Monetary policy: governance structure

The ability to issue money exclusively and without budgetary limitation and the freedom to set a short-term interest rate are among the most frequently cited elements of monetary policy independence. The trend towards central bank independence has largely focused on creating an institutional framework to enable operational independence. Consequently, the task going forward is not so much the refinement of current *monetary* frameworks but the reform of residual central banking frameworks and governance structures. Separating the monetary authority and MI decision-making structures would allow more focused boards dedicated to the two tasks but would not necessitate their isolation from one another. For example, some individuals might sit on both boards, but monetary specialists would hold the predominance of voting power on monetary policy issues while financial stability specialists would dominate voting on MI issues.

Separating the monetary policy and central banking authorities may also in some cases enable the unification of disparate monetary policy governance structures. In the United

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[24] BIS (2009).

[25] Fischer (1995), and in his work comparing operational and goal independence, clearly points out that different central bank functions are subject to different governance regimes, in particular to the frequent controlling interest of government in exchange rate policy.

[26] See Blinder (1998), p 22, and Vandenbussche (2006) for a survey of this issue.

States, the FOMC determines the policy rate and directs open market operations, while the Board of Governors has the authority to set required reserves and authorise changes in the discount rate. The Board also has the exclusive power to invoke the provisions of Section 13.3 under the Federal Reserve Act (see below).[27]

### Monetary policy: financial and accountability structures

The balance sheet of a monetary authority may be very small provided that operational procedures are well defined and communications advanced (just how small will be discussed in the next section). Corresponding to a small, focused balance sheet, the "capital" required to fund the monetary authority may also be very small. "If a central bank's monetary, exchange rate and financial arrangements expose it to very little risk, it arguably needs very little capital. Such central banks include those with floating exchange rates, those that manage foreign exchange reserves only as an agent for the government, and those that would be indemnified for losses resulting from loans of last resort" (BIS (2009), p 125).

Accounting for monetary policy performance would be facilitated by a very small balance sheet. The current emphasis on goal-based reporting through "inflation reports", published minutes of policy meetings, widely given speeches and testimony before legislatures would continue. The existence of very small seigniorage profits and small, "boring" balance sheets would limit interest in financial results reporting, beyond what is legitimate for a correspondingly sized autonomous government agency.

### Financial market intervention policy: governance structure

The market intervention authority (MIA) would aim to preserve market stability through interventions in financial markets. It would not issue money but would have the authority to issue government-guaranteed debt within confines determined through integration with the government budgetary process. Although it might, in the steady state, have a modestly sized balance sheet, it would need to have the capacity to scale up relatively quickly. The authority would take responsibility for lender of last resort operations, could take on credit and interest rate risk and would, in so doing, probably affect the allocation of credit within the economy. Although experience during the current crisis suggests that the MIA would have to extend its operations beyond strictly banking borders, its objectives and operations would be similar to those undertaken by central banks during the gold standard era – before the advent of modern monetary policy. In this respect, the discussion of the appropriate extent of market operations in the first US Federal Reserve Board Annual Report is illustrative: "to influence the market a Reserve Bank must always be in the market, and in this sense Reserve Banks will be active banking concerns when once they have found their true position under the new banking conditions".[28]

Whether the MIA would be lodged within current central banking structures or take on a more independent life would doubtless depend on country-specific considerations. What is essential is that its governance structure differ from that of the monetary policy authority. Along the independence spectrum, monetary policy should be more independent from the treasury and political processes than the MIA. In this respect, legislators in many countries have already recognised the difference between market intervention and monetary policies and have created separate governance structures to authorise or trigger MI under

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[27] Since the Board does not have any direct capacity to intervene in financial markets, one of the Federal Reserve Banks must originate the lending permitted under Section 13.3.

[28] Federal Reserve Board (1914), p 18.

exceptional circumstances. In other countries, MI is taken on by central banks in an agency role, or is considered the role of the treasury.

Authority granted to the Fed in the Federal Reserve Act under Section 13.3 "in unusual and exigent circumstances" to provide discounts to individuals, partnerships and corporations requires "the affirmative vote of not less than five [out of seven] Board members".[29] Similarly, Argentina, Chile, Costa Rica, the European System of Central Banks, Korea and the Philippines require a supermajority vote to authorise extraordinary or emergency central bank operations. Legislation signed by President Obama on 21 July 2010 requires that lending under the abovementioned Federal Reserve Act Section 13.3 be approved in advance by the Secretary of the Treasury.[30]

In Japan, BoJ emergency lending must be approved by the prime minister and the minister of finance. In Thailand, both the Bank of Thailand Financial Institutions Policy Board and the cabinet must approve emergency lending. Such operations must be approved in Jordan by both the central bank board and the Council of Ministers. In both Korea and the Philippines, the monetary policy board, not the general board of the central bank, holds power in an emergency.

"The voting rule of the [ECB] Governing Council gives each member an equal vote; but when the Governing Council decides on financial matters of the institution, it uses a special procedure set out in the statute in which the vote of each national central bank is weighted according to its share in the subscribed capital of the ECB."[31] Thus, when fiscal risk is at stake, the ECB provides for voting power proportional to the share of the risk being borne by each country.

Although some of the governance structures outlined above enhance the influence of the state in unusual circumstances, the precise allocation of authorities and financial responsibilities is often unclear.

When the central bank operates under an agency arrangement, as in the United Kingdom, financial responsibilities tend to be clearer, as is the political legitimacy of the operations. However, retaining the operations within the same institutional framework as the monetary policy authority can lead to certain confusions and, in any event, coordination between the MIA and government must be ensured.[32]

In other countries, MI is under direct fiscal control. In Norway, the principle that operations implying a fiscal or quasi-fiscal risk must be financed by the central government was affirmed during the current crisis, when the government assumed the risk onto its own balance sheet: "… funding support for banks came from the government's balance sheet, not as loans from Norges Bank. This provided transparency… The Norwegian measures were designed in such a way that Norges Bank's balance sheet has not increased to the same extent as that of a number of other central banks."[33]

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[29] In contrast, FOMC voters consist of all seven Board members, the President of the FRBNY and four Reserve Bank presidents alternating among the remaining 11 Federal Reserve Banks.

[30] This legislation also terminated the Fed's power under Section 13.3 to lend to "individuals, partnerships or corporations". Such lending is now restricted to "participants in any program or facility with broad-based eligibility".

[31] BIS (2009), p 82.

[32] The Bank of England established a new company to undertake transactions under the Asset Purchase Facility. However, extending the scale and operation of the Facility to permit its use for monetary policy purposes requires the authorisation of the Chancellor of the Exchequer. See King (2009).

[33] See Gjedrem (2009) for a discussion about the Central Bank of Norway's response to the current crisis in 2008–09.

During the 1990s Swedish financial crisis, Sweden's Debt Management Office (DMO) became responsible for managing the fiscal risk associated with financial sector crisis interventions. Owing to its long-standing independence from the Ministry of Finance, the DMO balances the need to integrate financial market stability concerns within the overall fiscal environment while maintaining political distance from the government.

Although the Central Bank of Chile bore the brunt of the financial intervention undertaken during the Chilean financial crisis in the early 1980s, in 2009 the Ministry of Finance intervened by repatriating foreign assets and auctioning the foreign exchange to local banks and injecting capital into the state-owned BancoEstado.

This review of country experience shows that the MIA could be part of the existing central bank simply with a different governance structure that carries greater political legitimacy and operates within certain budgetary or risk control parameters. Alternatively, it could take the form of a separate institution or, lastly, MI functions could be assigned to the treasury. In concept, the MIA would be intended to be active in capital markets – as the founders expected the Bank of England and Federal Reserve Banks to be in the money market. While in normal times it would engage in a modest amount of activity, in a panic it would need to quickly scale up. Its capital structure should therefore allow for scalability – relatively small paid-in capital with legislative pre-authorisation to expand under certain conditions. The risks and profit from the MIA should be clearly on the fiscal accounts, avoiding potential conflict with monetary operations.

The speed with which the central bank can act without legislative approval is frequently posed as the reason for locating emergency power there. Consequently, this power would need to reside with the MIA, with the parameters of operations established by the legislature well in advance of a crisis. This emphasis on speed is perhaps no more colourfully put than by Bagehot quoting from the Governor of the Bank of England regarding the panic of 1866: "'It was not unnatural that in this state of things a certain degree of alarm should have taken possession of the public mind, and that those who required accommodation from the Bank should have gone to the Chancellor of the Exchequer and request the Government to empower us to issue notes beyond the statutory amount, if we should think that such a measure was desirable. But we had to act before we could receive any such power, and before the Chancellor of the Exchequer was perhaps out of his bed we had advanced one-half of our reserves, which were certainly thus reduced to an amount which we could not witness without regret. But we could not flinch from the duty which we conceived was imposed upon us of supporting the banking community...'" (*Lombard Street*, p 158).

### *Financial intervention policy: financial and accountability structures*

Until 2007, major central banks had managed quite successfully through operations of minimal size to steer short-term interest rates to influence economic activity and inflation. Intervention in the crisis, however, required an immense balance sheet expansion and important changes in asset composition. This intervention quickly expanded to encompass not only conventional monetary operation counterparties but also more distant institutions – including investment banks and insurance companies – and more distant markets such as those for commercial paper and ABS.

Central banks have effectively placed their capital at risk to become market-makers to the broader financial system. In this role they have attempted to replace the withdrawn capital of bankrupt or diminished market intermediaries, in order to curtail the widening of spreads. The theoretical basis for this approach is clear in Shleifer and Vishny (1997). In practice, however, it is not necessary for the intervention to take the form of money, that is, be conducted by the monetary authority. The private traders who are being replaced are not able to create central bank money. Therefore, an MIA with an ability to issue high-quality securities – backed by government – could undertake this role.

Taking risk will be inevitable in fulfilling the MIA role, as will activity in markets well beyond the money market within which the monetary authority would be expected to act. Legal authority will need to be commensurate with the market stability and intervention role. Bernanke (2009b) pointed to the constraints on Fed lending and the lack of an adequate resolution authority for US investment banks as the decisive factors in the Lehman crisis discussions.[34]

In the light of the nature of its role and operations – and in contrast with monetary authority financial reporting – the MIA would need to provide risk-adjusted financial performance measures and a careful quantification of the quasi-fiscal impact of its MI operations. In that respect, IFRS-based accounting will be much more amenable for adoption than it has been for monetary authorities.

## How small can a monetary authority be?

In this section, I examine 13 advanced and emerging market central bank balance sheets to determine the current sizes of the MI and monetary authority functions. I start by constructing an analytically streamlined and standardised balance sheet for each central bank using the latest available audited accounts. I then subtract from the liability side of the balance sheet banknotes and capital, and from the asset side a proportional reduction is imposed, ie foreign and domestic financial assets are reduced in proportion to their original size on the balance sheet.[35] This provides us with a balance sheet consisting only of assets used for policy purposes and deposit and debt liabilities. (Cash is assumed to be managed passively while capital is the residual accumulation of retained earnings, which should play no role in the policy management of the bank.)[36] Policy assets may be classified as comprising foreign reserves, conventional (monetary policy), and unconventional (MI) instruments.

The next step hypothesises that the central bank manages the foreign reserves under an agency arrangement with the government. I consequently remove from assets the remaining foreign exchange reserves. The resulting balance sheet I consider to be the consolidated central banking (market intervention) and monetary authority balance sheet. From this latter balance sheet I subtract the amount of identified crisis-related market intervention operations. These are the MI function assets. The remaining balance sheet is called the "minimal monetary policy" balance sheet.

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[34] "The company's [Lehman] available collateral fell well short of the amount needed to secure a Federal Reserve loan of sufficient size to meet its funding needs. As the Federal Reserve cannot make an unsecured loan, and the government as a whole lacked appropriate resolution authority or the ability to inject capital, the firm's failure was, unfortunately, unavoidable" (Bernanke (2009b), p 2).

[35] In this step I exclude assets identified as unconventional.

[36] "Cash is purely demand-determined, automatically accommodated by the central bank, and plays no substantive role in policy implementation" (Borio and Disyatat (2009), footnote 8, p 7).

The starting size of the balance sheets in relation to GDP is provided in Figure 8.

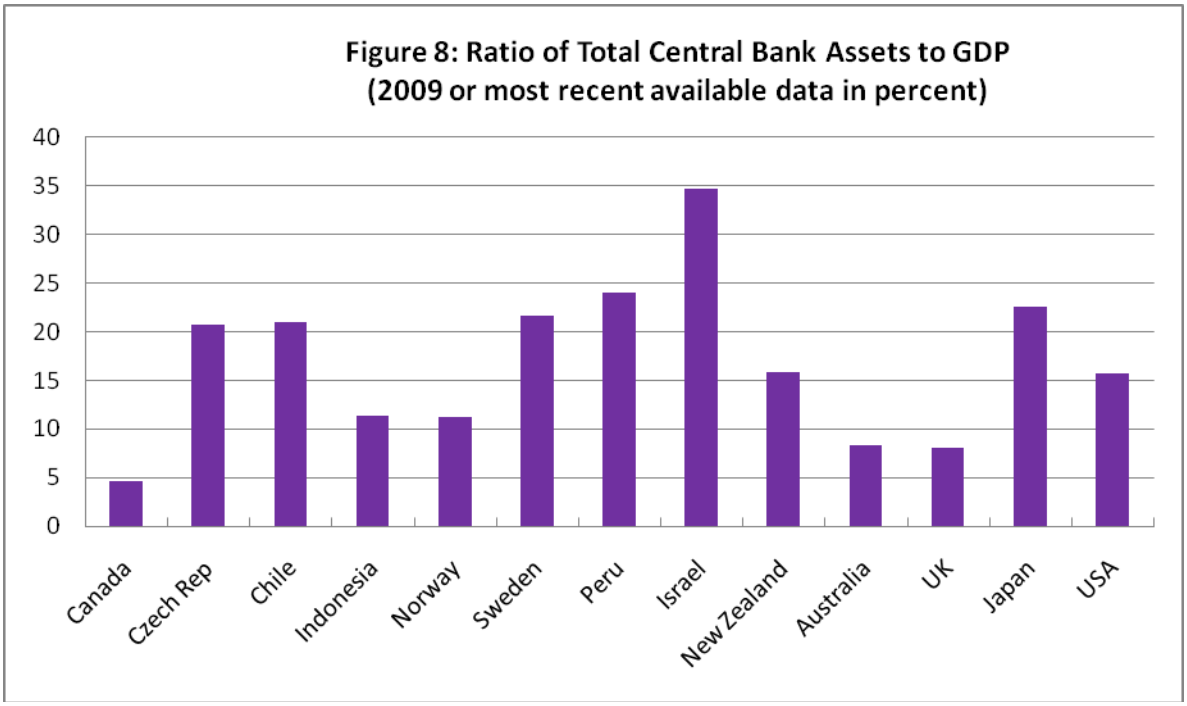



Figure 9 shows the size of the balance sheet after the adjustment for currency and capital.

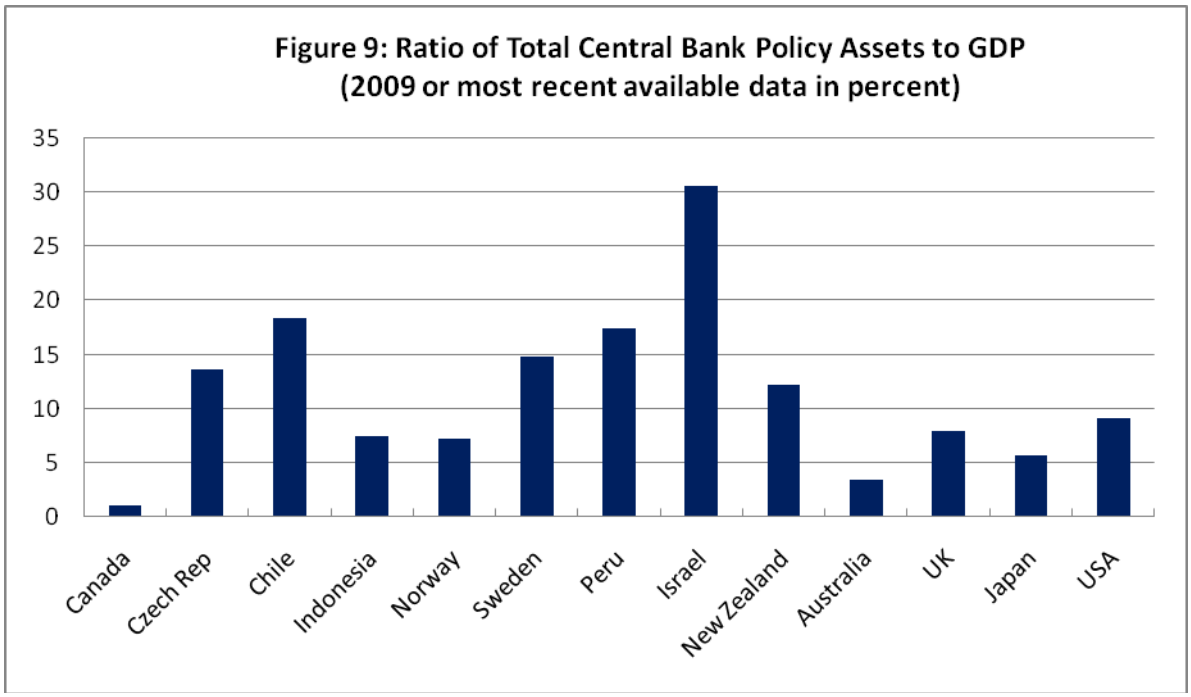
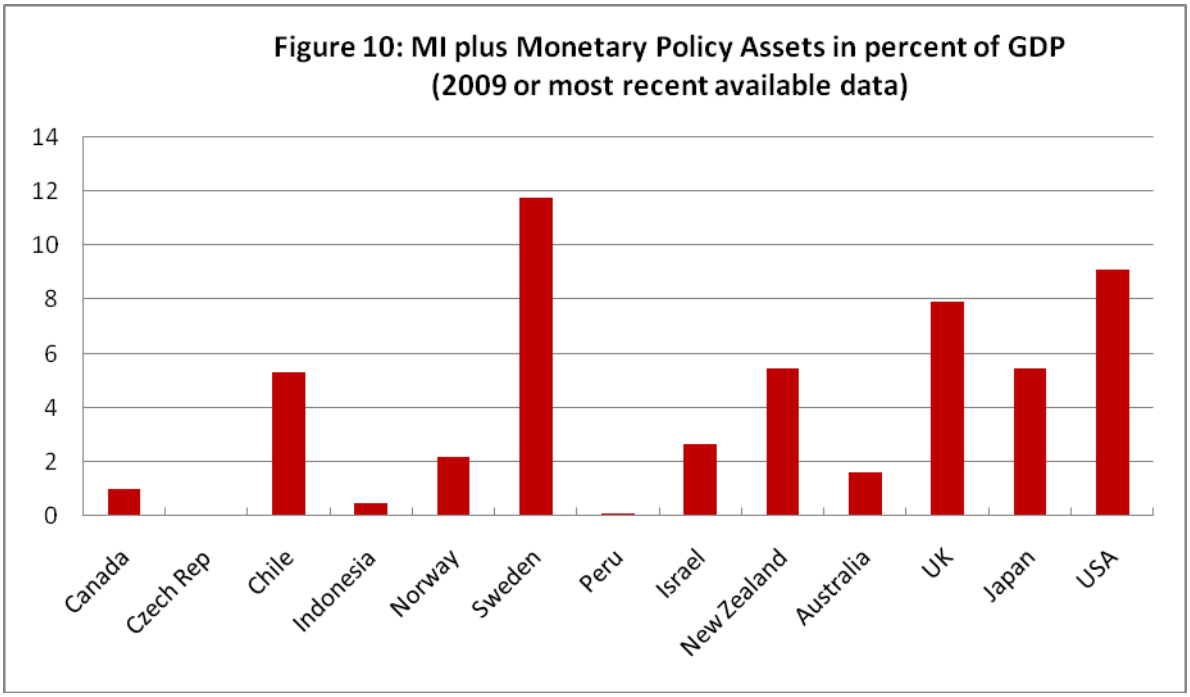


Figure 10 provides the comparative size of the balance sheets subtracting the foreign reserve function.




This is what I have called the consolidated monetary and market intervention policy balance sheet. Figure 11 shows the comparison of the size of the latter balance sheet with the original starting point.

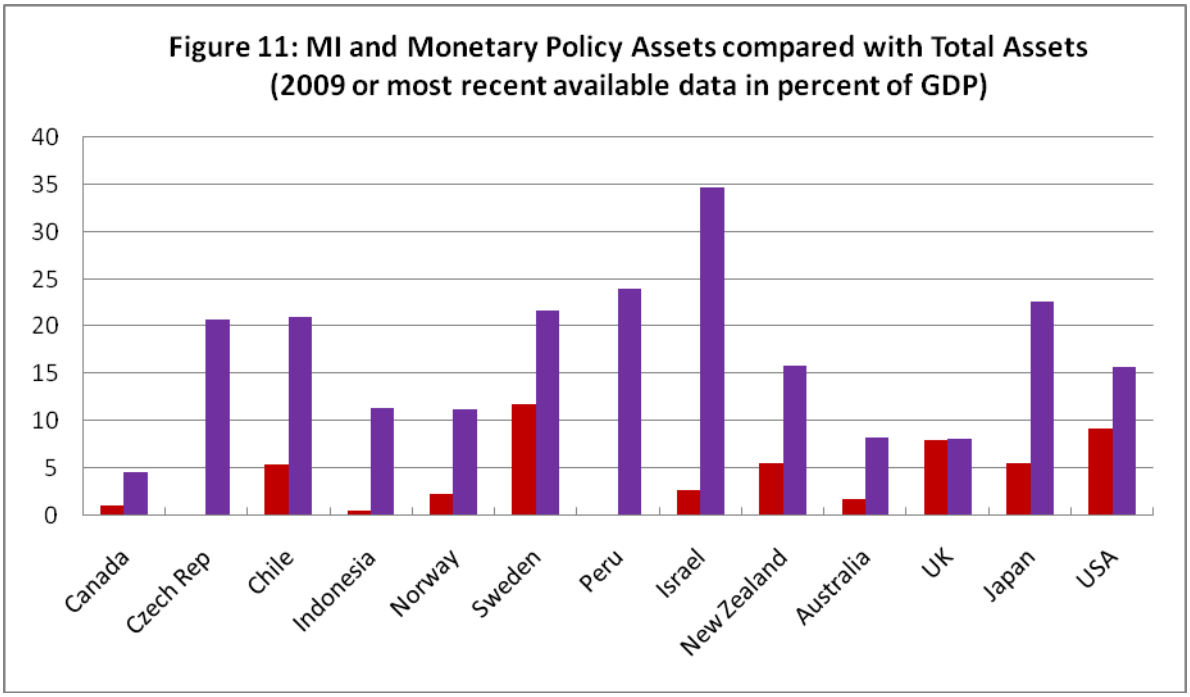
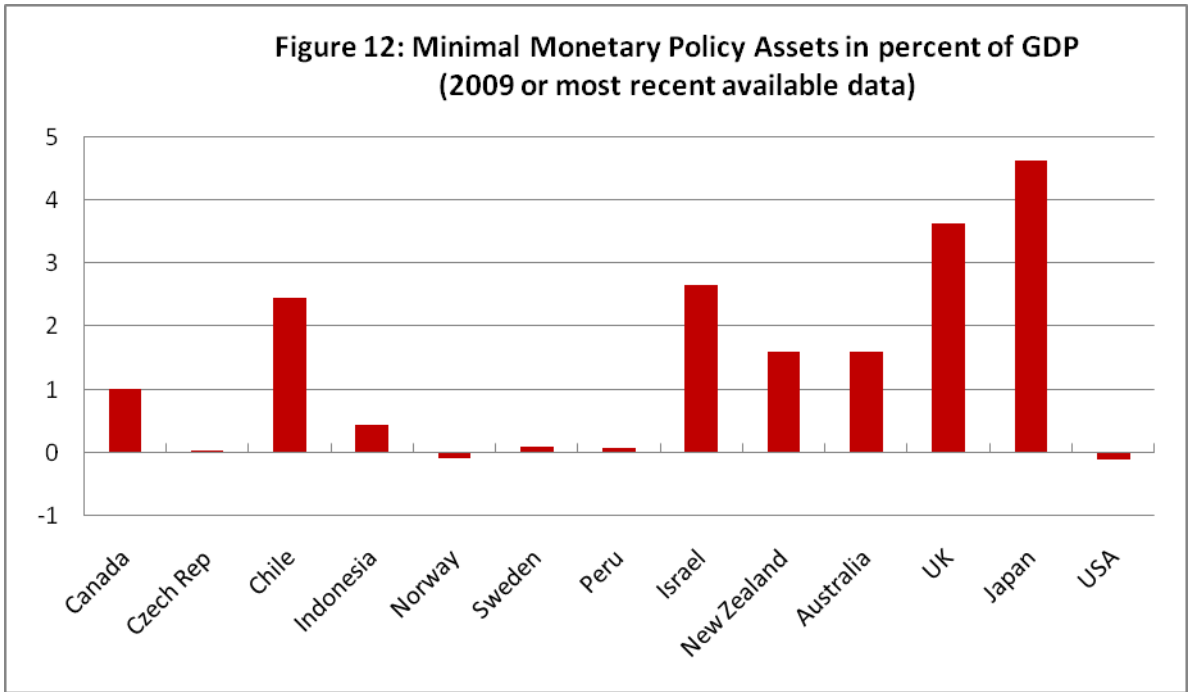


Figure 12 shows the total assets of the conceptualised minimal monetary authority, which is obtained after subtracting from the balance sheets in Figure 10 those assets identified as unconventional (MI). As can be seen, these balance sheets are, for the most part, very small.[37]




Constructing the minimal monetary authority balance sheet is complicated when considering a crisis-impacted situation. To the extent that quantitative easing actions have been taken (an expansion of excess bank reserves resulting from the purchase of government debt) or conventional lending has expanded owing to the crisis interventions, the minimal monetary authority balance sheet may be overstated. In other words, a smaller balance sheet may have been adequate to enable monetary operations to attain the zero lower bound.

## Transitioning to the new arrangements

Most existing central banks have very large excess assets and capital compared to the minimal size monetary authority. Those excess assets and capital could provide the financial basis for establishing an MIA where one is needed. The precise modalities of creating the MIA would naturally be country-specific.

[37] The value of the assets identified as MI is shown in Figure 13 in the Annex. Minimal monetary policy assets may be negative in Figure 12 if the central bank balance sheet expanded by less than the expansion in MI assets, that is, if conventional monetary policy was used to contract part of the expansion in the monetary base caused by the MI actions. In the United States, this occurred as the Federal Reserve's outright sales of its short-term Treasury securities and elimination of repos absorbed part of the monetary base created by the purchase of MBS and expansion of other innovative facilities. In 2006, average Fed repo operations outstanding were $25 billion, which may be considered to be indicative of the "normal" size of US minimal monetary policy assets.

In the United States, Congress has appropriated Federal Reserve capital on at least three occasions. In 1933, Congress required the Federal Reserve Banks to subscribe an amount equal to one half of their accumulated surplus ($140 million) for non-dividend stock of the Federal Deposit Insurance Corporation.[38] Sixty years later, the 1993 Omnibus Budget Reconciliation Act required the Federal Reserve to make transfers from its surplus to the Treasury in fiscal years 1997 and 1998, and Congress amended the Federal Reserve Act in 1999 to require the Fed to make a transfer from surplus to the Treasury in fiscal year 2000.[39]

In the United States, the transfer of capital from the Fed to the MIA would enable the new entity to take on the Maiden Lane facilities as well as the Fed holdings of MBS.[40] This would remove both the credit and interest rate risks from the monetary authority balance sheet.

Both the United Kingdom and the European Union have pre-empted the need to transfer certain assets from the monetary authority balance sheet by creating separate companies to handle the related MI activities from the outset.[41]

## Conclusions

Limiting the risk to monetary policy independence requires that those central bank assets and operations not intimately related to conventional monetary policy be removed rapidly from the monetary authority balance sheet and placed with national treasuries or an MIA. More fundamentally, devolving market crisis intervention powers to a new and separate authority responsible for financial market stability – absent the power to create money – would enable the preservation of monetary policy independence. The careful design of the new authority, its governance structure and its role within a revised supervisory and regulatory framework represents a key challenge for the designers of the new financial architecture.

The global consensus stressing the benefits of independent monetary policy that has emerged over the past two decades is worth preserving. But it is essential to draw a distinction between "central bank" and "monetary policy" independence. While the case for an independent monetary authority is clear, the case for central bank autonomy in the field of crisis intervention – when fiscal resources are placed at risk outside the national budgetary framework – is much less so. In the light of contentious political debates over fiscal policy it is not evident that the political champions of central bank independence intended to provide central banks with "fiscal" independence.[42] Should political authorities find current central bank activism an affront to their legislative authority, a backlash might ensue which could lead to a curtailing of monetary policy independence. For this reason, it may be wise to develop an alternative governance structure to handle the "banking" or, in the modern financial system, "market-making" roles that central banks have taken on during the current crisis, and thereby preserve monetary policy independence.

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[38] Banking and Monetary Statistics of the United States, p 329. Federal Reserve Bank of St Louis, FRASER online database.

[39] Stella (2005), p 348.

[40] Alternatively, the US Treasury could directly remove the Maiden Lane facilities from the Fed balance sheet as it pledged in March 2009.

[41] The European Financial Stability Facility (EFSF) was established as a limited liability company under Luxembourg law. Shareholdings in the EFSF will correspond to the founding countries' paid-in capital contribution to the ECB.

[42] See Cukierman (2008) for further discussion of the development of the idea of central bank independence.

# Annex

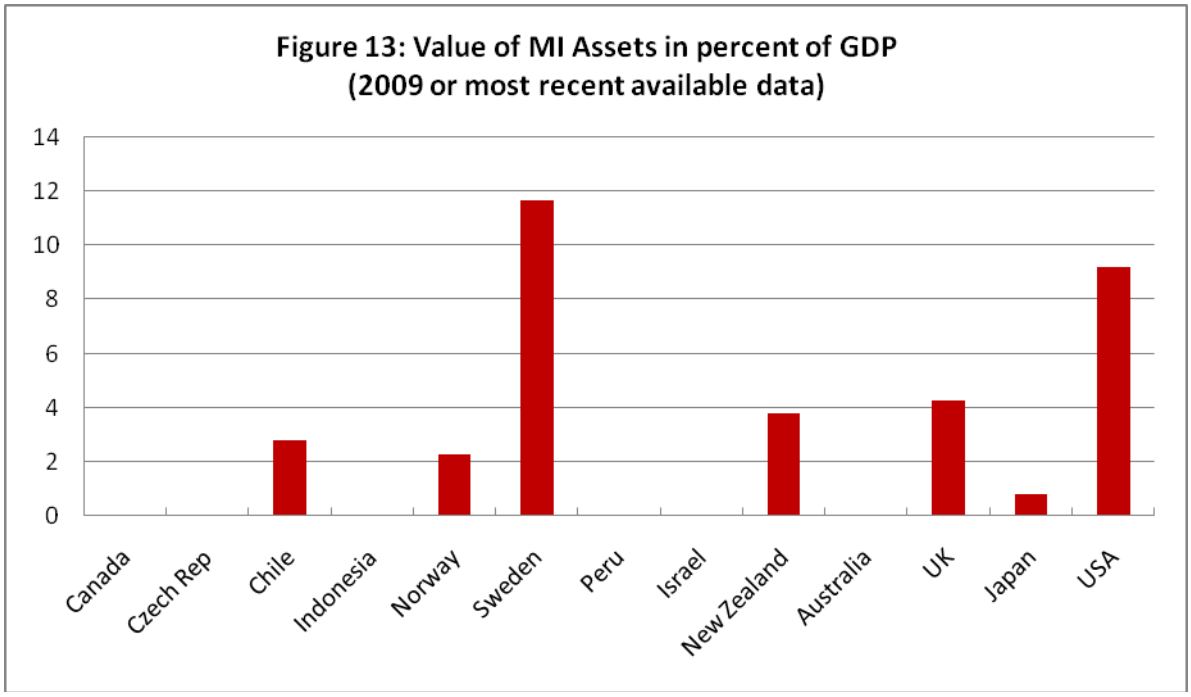
Figure 13: Value of MI Assets in percent of GDP
(2009 or most recent available data)
14
12
10
8
6
4
2
0
Canada
Czech Rep
Chile
Indonesia
Norway
Sweden
Peru
Israel
New Zealand
Australia
UK
Japan
USA

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# Comments on Peter Stella's paper "Minimising monetary policy"

José De Gregorio[43]

This is a very interesting paper about the role of central banks in conducting monetary policy and maintaining financial stability. The analysis is made from the perspective of the balance sheet of central banks, and who better to analyse this issue than Peter Stella, one of the main authorities on the topic. The paper looks for ways to strengthen the independence of central banks when they are dealing with periods of serious financial distress.

The paper distinguishes monetary policy from central banking activities. It argues that the difference between the two widens in times of financial upheaval. During a crisis, the central bank can be subject to political and fiscal pressure to expand its balance sheet. The author suggests that, when this happens, central banks are actually conducting fiscal policy, which could jeopardise their independence. The independence of the central bank and of monetary policy is essential if price stability is to be achieved. However, it is sometimes difficult to distinguish whether the central bank board is taking fiscal or monetary decisions.

During the recent financial crisis, monetary authorities have taken actions that would normally fall under the scope of the government. Unconventional policies – for example, those carried out by the Fed – have allocated resources to specific sectors. The purchase of risky assets from the housing sector can be construed as being non-neutral in that they affect the allocation of resources. In principle, such an action should fall under the scope of fiscal policy. However, when central banks are obliged to pursue financial stability, their intervention in dysfunctional segments of the financial markets may be warranted.

Therefore, during a crisis, the line between monetary and fiscal policies becomes blurred. Hence, I am not sure that this limit can be clearly defined ex ante. This makes it difficult to think of institutions that have well defined roles regarding price and financial stability.

Central bank autonomy may be affected by political pressures for one of two reasons. The first is the temptation to create seigniorage beyond what would be consistent with inflation targeting. In countries that have central banks with positive net worth and where profits are distributed to the government, seigniorage is the main source of dividends. During a crisis, the central bank could face fiscal pressure to deviate from the goal of price stability in order to obtain more resources. This is especially important in developing countries (Stella (2009)). A commitment to an inflation target, where deviations are explicitly announced to the public together with the strategy for achieving the target, can mitigate this risk. The second risk is related to budget: whereas the treasury is restricted by budgetary concerns, the central bank is not. However, this adds flexibility during periods of turmoil, and hence, rather than a risk it may turn out to be an advantage.

In my comments I will focus first on the role of central banks regarding price and financial stability. Then, I will discuss the proposal advanced by Stella to create an institution, separate from the central bank, that would take charge of market intervention during critical

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times. Finally, in the light of the Chilean experience, I will discuss ways to ensure independence even in periods of financial stress. I will conclude with some final thoughts.

## On central banks, financial stability and monetary policy

Stella's paper, to which I will refer with greater detail in the next section, proposes the creation of an agency that would be responsible for market interventions. This body would be tasked with the management of financial crises, separating this role from monetary activities. The idea would be to split the balance sheet of the central bank between this agency and a central bank in charge of monetary policy. To conduct regular monetary policy, the central bank needs only a small amount of capital, from which consideration comes the idea of "minimising monetary policy". The concept could make monetary policy more independent and effective.

The agency would be the lender of last resort (LOLR), while the central bank would conduct normal liquidity management. In a world where central banks set the short-term interest rate, they also have to manage liquidity. Thus, in times of financial upheaval, the LOLR role of a central bank is a natural extension of its liquidity provision function.

The unconventional policies applied in many countries to deal with the zero lower bound of interest rates were fully coherent with both price and financial stability. In Chile we implemented foreign exchange swap lines, broadened the range of collateral for open market operations, issued one-year repos at the lowest monetary policy rate and provided other special liquidity facilities. There was no need for a special agency to deal with these operations, whose main purpose was to ensure that rates would remain low for an extended period of time, over the entire yield curve. This is the natural way to increase the monetary stimulus when the policy rate cannot be further reduced. Therefore, large expansions of the balance sheet of central banks can help to conduct monetary policy in a way that is consistent with price and financial stability objectives.

The advantage of allowing the central bank to conduct unconventional policies and become an effective LOLR in times of crisis is that it is better equipped than government agencies to react quickly. Of course, the important issue remains of how to finance the resulting losses, and this cost should be borne by the fiscal authority, with the exact method of proceeding spelled out in advance.

Finally, the idea of minimising monetary policy would drive foreign exchange reserves out of the central bank. Exchange rate misalignments can certainly be a serious source of financial instability if they stem from a currency crisis and a weak banking system. Nevertheless, exchange rate management should be conducted by the central bank. First, when monetary policy sets the interest rate, the exchange rate must be flexible because of the well known impossible trinity. However, central banks can intervene on an exceptional basis, in particular when there are signs of bubbles or misalignments that can threaten financial stability. However, the intervention must be done in full accord with the inflation outlook, or the inflation anchor will lose credibility. As the central bank is best positioned to make that call, it should run exchange rate policies. The exchange rate is also subject to significant political pressures, which is an additional reason for exchange rate policy to be conducted by an independent institution that pursues price and financial stability, the two channels through which the exchange rate affects the economy as a whole.

## The market liquidity maintenance (MLM) corporation

The paper proposes the creation of an agency that would be in charge of helping stabilise financial markets in times of financial disruption. Such an agency would operate only during financial crises, and hence it would have few activities during normal times. This agency would intervene by having the authority to rapidly expand its balance sheet by having pre-approved powers to issue government-backed debt. While we know that this is part of what was needed to deal with the recent financial crisis, we question whether the lesson should be drawn that this type of assistance should be institutionalised.

The main lesson from the crisis, I believe, is that we need to focus on limiting the exposure of critical intermediaries to asset price fluctuations, so that the need for intervention is obviated. The problem with focusing on creating an institution to stabilise markets is that serious moral hazard problems are raised. As the agency would provide insurance against extreme events in asset markets, private agents would increase their exposure under the belief that, in a crisis, somebody else would take the appropriate action. In addition, the proposal also creates moral hazard for regulators and policymakers, who would also benefit from this insurance and hence be tempted to overlook financial vulnerabilities. In this way, a two-way moral hazard could be created.

It might be argued that the authorities would be forced to act anyway, and so they had better be prepared. Even so, it is an open question whether the costs of a slower intervention are larger than the benefits of being ambiguous about a possible market intervention – and thereby encouraging market participants to behave more prudently. The MLM concept militates against this ambiguity.

In a constantly changing financial environment it appears difficult to implement a credible, well specified set of rules for intervention. Instead, there must be room to assess each situation on its own merits and respond with discretionary powers.

Finally, the next crisis is most likely to strike in areas that are not well prepared to face disruptions. Indeed, a key factor behind the recent financial crisis was regulatory arbitrage. Much financial innovation aimed at reducing the regulatory burden, with a resulting increase in vulnerability. As it is unlikely, therefore, that the activities of the MLM corporation would cover all contingencies, crisis management will always require some improvisation and rapid, original policy responses.

## Strengthening and safeguarding central bank independence

The law as well as the practice of central banks can ensure the independence of monetary policy decisions. In this section, I will comment on ways to safeguard central bank independence in the light of the Chilean experience.

The Central Bank of Chile's autonomy is affirmed in a constitutional law that cannot be amended without a special quorum. This law forbids the central bank from directly or indirectly lending to the government. Indeed, the central bank cannot buy government debt, even in the secondary market, and government debt can be used as collateral for monetary operations only under very strict conditions. If a borrower fails to comply with its obligations, the regulations passed by the central bank prevent the central bank from acquiring such collateral and set out a procedure by which such instruments can be sold in the stock market at fair value. Open market operations in Chile are conducted with the central bank's own debt.

Regarding financial stability, Section 36 of the central bank law, which deals with "the authority to maintain the stability of the financial sector", establishes that in case of emergency (temporary cash emergency) the central bank can provide credit to banking

entities for up to 90 days, and can also acquire instruments from their credit and investment portfolios. This period can be extended by the majority of board members, upon the prior opinion of the banking regulator. This provides wide scope for dealing promptly with financial distress.

As for monetary policy, the central bank has adopted an inflation target of 3%, with a tolerance range of ±1 percentage point and a policy horizon of two years. There are four monetary policy reports every year, which include detailed discussion on whether the target has been achieved, as well as inflation and growth forecasts. This communication reinforces the bank's commitment to price stability, especially given that models and most inputs in the forecast are transparently presented.

Regarding the relationship between the central bank and public finances, the bank has to transfer 90% of its profits to the government if its net worth amounts to about 2% of GDP or more. Since the early 1990s, and as a result of the peso's appreciation, reserve accumulation, and especially the cost of the financial crisis of the early 1980s, this limit has never been reached, and so no transfers to the government have been made (Restrepo et al (2009)). The bank's negative net worth is potentially problematic, since there could be limits to the bank fulfilling its role as lender of last resort. In this case, it might need to ask the government for capitalisation, which might hinder the bank's independence and hence subordinate monetary to fiscal policy. However, serious problems have not so far arisen in Chile, thanks to the country's strong fiscal position. On the other hand, central banks with high levels of net worth could potentially be subjected to pressures to transfer to the government not only seigniorage profits but also reserves, as has been the experience in other emerging markets.

## Final remarks: crisis prevention vs crisis management

I conclude with two observations and one conclusion.

First, a crisis is a rare event. For example, according to Glick and Hutchinson (2001), a banking crisis happens once every 20 years in most countries. Currency crises are somewhat more frequent, happening once every 10 years. Crises have become slightly more frequent but, during the 1990s, they took place on average once every 14 years (see also Bordo et al (2001)).

Second, the financial crisis was appropriately handled, though poorly anticipated. The initial shock, in terms of lost wealth, was not very different from that of the Great Depression, and certainly it is possible to argue that the shock was even larger. By looking at the performance of the global economy at the onset of the crisis, the picture did not look that different from that of the 1930s (Eichengreen and O'Rourke (2010)). However, towards mid-2009, the world economy showed the first signs of recovery and there was, fortunately, a "decoupling" from the pattern of the 1930s crisis. This was the result of stabilising the financial system, after strong monetary and fiscal expansions were put in place and, particularly in emerging markets, the exchange rate was allowed to float.

Therefore, in my view, the first task must be to reduce the probability of a crisis happening again. There is certainly a need to improve crisis resolution mechanisms. But the top priority must be crisis prevention, and this is perhaps where the largest gap exists with regard to ideal policies. Crisis prevention requires the private sector to be appropriately incentivised to manage risk and avoid excessive exposure to financial fragilities. Authorities have to improve regulation, availability of information and tools to monitor financial stability. Incentives are central, and this requires being very clear about moral hazard. Indeed, resolution mechanisms could be a serious source of moral hazard and, hence, all proposals must be carefully examined with reference to such distortions.

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# Comments on Peter Stella's paper "Minimising monetary policy"

Marc Flandreau[44]

Peter Stella's paper is both intriguing and ambitious. It makes a useful contribution to the ongoing discussion on organisational and central bank design issues raised by the subprime crisis. His starting point is that the crisis reopened the debate about central bank independence. In the past 30 years an emerging consensus has held that monetary policy is better conducted if delegated to an independent body. This independence takes the form of delegating the pursuit of monetary policy targets (either formal or informal) to an unelected bureaucracy. The theoretical contributions of Rogoff and later Walsh, among others, have provided a rationale for central bank independence. The intuition is that the conflicts of interest of the independent monetary authority are not quite the same as those of central bankers and as such provided for superior monetary policy performance. However, Stella emphasises, this says nothing about the optimal framework for crisis management. He argues that a case should be made that financial policy (or the central bank's attitude towards the financial system and crisis lending) is distinct from monetary policy. As a result, central bank independence should be revisited with this distinction in mind.

The current financial crisis, he argues, has seen a blurring of lines between monetary and financial policy. This has become apparent at three levels: first, credit policy (the portfolio choices of the central bank – in short its buying of subprime or government debt); next, funding policy (the creation of ad hoc vehicles to hold distressed instruments and funded by government debt at a time when interest rates are nearing zero is not very different from their funding by high powered money or debt?); and last, risk exposure (monetary policy is risk-free while financial policy isn't, but recent central bank moves have pushed them into territory where they would bear significant exposures).

This situation, according to Stella, provides a rationalisation for identifying different governance and balance sheet setups for monetary and financial policy. Monetary policy involves little or no exposure. As a result it can be handled with little capital, a slim balance sheet and large operational independence. Financial policy, however, because it involves risk ex ante and transfers ex post, is part of fiscal policy and should involve a large balance sheet, a large capital cushion against potential losses and limited independence.

These considerations lead Stella to formulate a blueprint for central bank reform – in practice a split between a minimal monetary authority (MMA) and a market liquidity maintenance corporation (MLM). The first would be in charge of monetary policy, while the second would take care of financial policy. He suggests that this is feasible because more sweeping reforms have been carried out in the past (think of the New Deal). He also emphasises that this would put Parliament in the driver's seat to control and fund the MLM, which would be endowed with a hybrid governance structure that would be neither monetary nor fiscal. Stella's conclusion is that one can only protect *monetary policy independence* by recognising that *central banking* is not monetary policy, that it should not be independent, and that it should be endowed with an alternative and innovative governance structure.

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Since Stella alludes on several occasions to historical precedents and also draws on history to make claims about the feasibility of his scheme, my comments will seek to expand on this and provide a historical perspective on the proposal. At one stage Stella argues that the MLM's "objectives and operations would be similar to those undertaken by central banks during the gold standard era -- before the advent of modern monetary policy". His intuition is that 19th century central banks were in charge of implementing a simple monetary policy rule (gold convertibility – or the maintenance of the gold standard) and were thus "minimal" in this sense. However, a more complete representation would recognise that "gold standard era" central banks did combine a monetary policy function delegated to an independent agency (for instance in the case of England, the gold peg was encapsulated in the so-called Peel Act of 1844) and a more or less formalised contingency plan (which took the form of a suspension of the Peel Act during crises such as 1847, 1857, 1866 etc). Suspension of the Peel Act also altered some fundamental aspects of the "normal" way monetary policy was conducted, including provisions for the way profits would be booked etc. The question I raise therefore is: why was it that earlier designers found it preferable to endow the same agency with different goals rather create a separate agency?

One possibility is operational issues in the separation of monetary and financial policy: can one separate the mezzanine level of monetary policy from the subprime level of financial risks? For one thing, there do exist other risks than financial ones. While it is reasonable to argue that the conduct of monetary policy involves "less risk" than financial policy, history suggests that "monetary policy" can be exposed to serious risks. The example of foreign exchange reserves is a very relevant one. The sterling crisis in 1931 had the effect of inflicting massive losses to the Bank of France and the Netherlands Bank (the Bank of France was technically bankrupt) and led to a Treasury-supported recapitalisation of the Bank of France followed by the transfer of foreign reserve management to the French Treasury. Today, the control of the Chinese executive over China's foreign exchange reserves is obvious.

At another level, history suggests that when the MLM and MMA coexisted for a while with a Treasury agency taking an active role in money markets, generally in relation to crisis management, some merger was eventually implemented after a period always described as frustrating. Technically, the monetary authorities had to cope with another institution performing de facto open market operations. The US experience with the "Independent Treasury" in the 19th century, which was an attempt to grow crisis management functions in a system that was prevented from having a central bank, is a reminder that independence may be required in crisis management, just as it is in monetary policy and perhaps even more so.

I am not sure either how the two agencies would divide roles when it comes to bubbles. Would one agency (in charge of monetary policy) prick them while the other would clean up the mess? Or would the bubble be entirely dealt with by the MLM (on the grounds that bubble bursting would involve redistributive conflicts) – in which case wouldn't the minimal monetary authority be somewhat sidelined, to say the least?

Finally, I note that historically, several central banks were created to mop up government debt and deal with the financial problems resulting from inadequate monetary policy and yet they inevitably ended up being placed at the centre of the banking system. Could this just be a coincidence? My understanding is that a central part of this is that the identification of "liquidity" has implications for both crisis management (what can be brought to the central bank in a crisis) and monetary policy (what banks as a result routinely hold in their books). The Bank of England offers a good illustration of this. It was a combination of MMA (gold standard) and MLM ("Bagehot rules"). Its ability to perform adequate monetary policy functions, I would argue, was tied to its ability to supervise crisis lending *and vice versa*.

Another aspect of Stella's suggestion to separate monetary policy from financial policy is the notion that crisis lending creates exposure. While such a view is implied by popular

expressions such as “bailing out” or “rescuing” banks, it may be misleading. Bignon, Flandreau and Ugolini (2010)[45] cover the experience of the 19th century and show that the emergence of modern lending of last resort was accompanied by a *reduction* of Bank of England losses during crises. This may be explained by two factors. First, crisis lending need not be loss-making. In fact, the central bank is lending using the cash it produces and can thus buy good assets at distress prices. The recent profits posted by the US Treasury on its purchases of US bank stocks are an illustration of this. A case could be made that sound liquidity support is profit-making (see also Flandreau (2008)[46] for a discussion of this matter in a historical perspective, and Figure 1 below showing Bank of France dividends rising in crises). Second, generous crisis lending can be accompanied by prophylactic measures aimed at minimising central bank exposure (collateral, haircuts, etc). I am therefore not quite convinced that, because of its redistributive implications, central banking belongs to fiscal policy.

My general impression is that the main lesson from the subprime crisis is that it led to a sequence of events that created fiscal commitments over and beyond what was anticipated or desirable. The biggest commitments were the result of the operation of automatic stabilisers, however, and thus happened wholly in the realm of fiscal policy – and not monetary policy. What we want now is to limit the probability and occurrence of similar problems in the future. “Fiscalising” a body in charge of crisis management may not be the best way to go. After all, whatever policy leverage governments had over central banks was used to involve them in the crisis in ways that future historians will have to assess. As a result, central banks became captives of a banking system whose failures they had not been able to monitor. In the past, we have made central banks independent from the government. It may be time to make them independent from the banking system?

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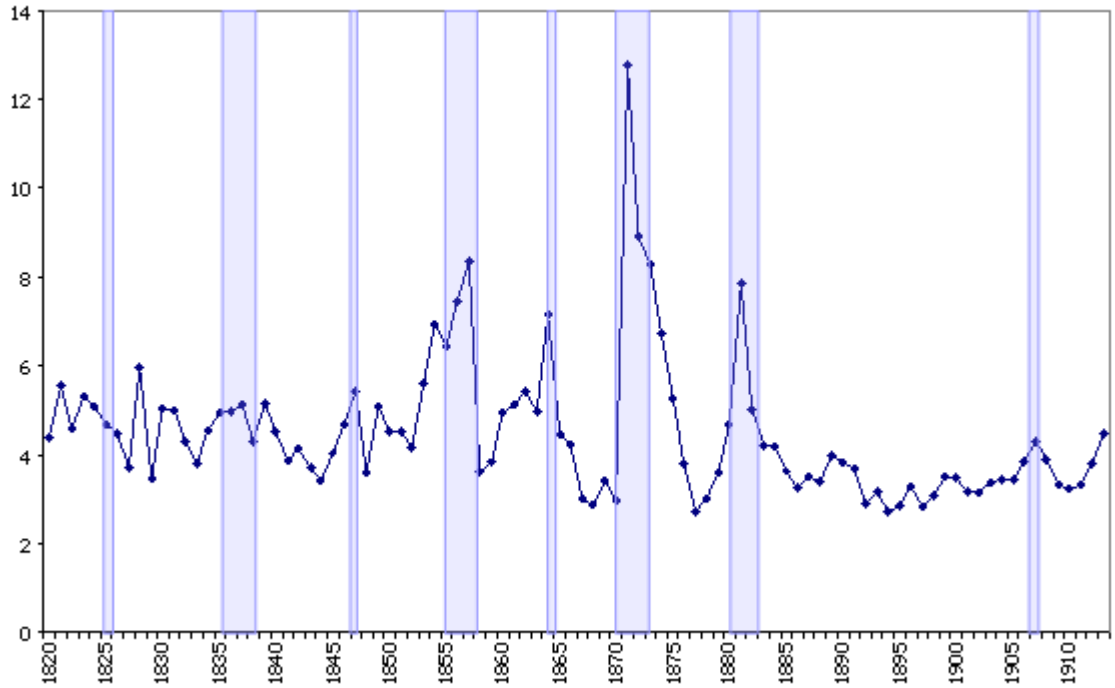
[45] Bignon, Vincent, Marc Flandreau and Stefano Ugolini (2009), "*Bagehot for beginners: The making of lending of last resort operations in the mid-19th century*" Norges Bank Working paper 2009/22.

[46] Flandreau, Marc (2008), “*Pillars of Globalization: A History of Monetary Policy Targets, 1797–1997*”, in Andreas Beyer and Lucrezia Reichlin (eds.), The Role of Money: Money and Monetary Policy in the 21st Century, Frankfurt-am-Main: European Central Bank, pp 208–43.

Figure 1

**Dividends and crises at the Bank of France**




Source: Flandreau (2007).