

Minimizing Monetary Policy

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Outline of the Presentation

- During the current financial crisis central banks have taken on fiscal risk—of which there are two primary components of interest to us:
- May losses take on a macroeconomic dimension and interfere with monetary policy? This is an empirical question examined here.
- Could proximity to fiscal policy—credit allocation—lead to an eventual legislative curtailment of monetary policy independence even if material losses do not occur? If so, monetary policy independence may be preserved through a shrinking of the balance sheet and transfer of market intervention responsibilities to an alternative governance structure



The size of central bank balance sheets has suddenly become a topic of discussion

- Prior to the crisis, monetary policy 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. Conceptually, in those cases where the monetary base has not expanded, this has increased the central bank role in financial intermediation.
- For example, by some measures the Federal Reserve has become the largest bank in the United States. The FOMC has expressed its determination to reduce the size of the FR balance sheet over time.



What concerns have been expressed about central bank balance sheet intervention (1) ?

Monetarists are concerned that the large expansion of liquidity—which in percentage terms is much larger than the expansion in the overall balance sheets—will eventually lead to inflation through money and credit expansion.

Fear that central banks will not be willing or able to absorb the liquidity expansion in time to avoid inflation. Hard won credibility may be lost...voices on the “Keynesian” side arguing to raise inflation targets



What concerns have been expressed about central bank balance sheet intervention (2) ?

Financial stability motivated interventions have led central banks to take on fiscal risks. These risks, if they cause material losses, could interfere with the attainment of monetary policy goals—this is an empirical question. Even if not associated with material losses the expansion of central banks into “fiscal” policy may lead legislatures to seek a curtailment of their operational independence.

Moral hazard issues related to the decision to support such a large portion of the financial system



Risks associated with executing central bank “fiscal” policy

1. Macroeconomic issue: losses may become so large that they must be financed with money creation leading to a loss of inflationary control (see Chris Sims “Limits to inflation targeting” for theory). This fear may lead to excessively “conservative” policy.
2. Behavioral issue: monetary policy may be altered to avoid or limit losses even though they are not a macroeconomic danger. (the desire to limit losses also may become manifest in foreign exchange management policy).
3. Governance issue: legislatures may seek to curtail central bank operational independence if they are perceived to stray into fiscal policy. (This may be the reason for changing behavior in point 2).



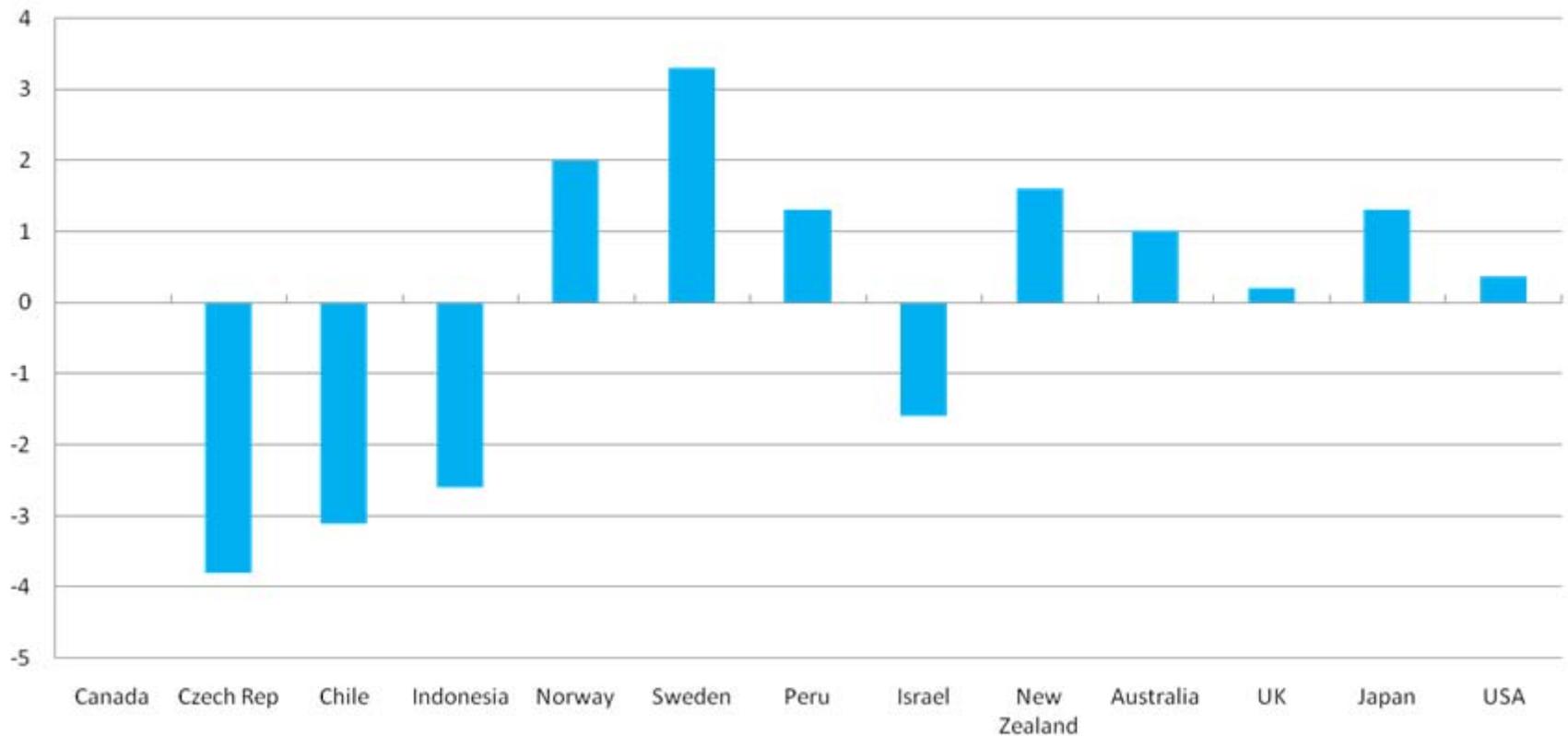
Has central bank fiscal risk become a macroeconomic concern during the current crisis?

1. An empirical issue that needs to be thoroughly examined for each central bank in light of its objectives and macroeconomic environment. What is needed is a model to project the balance sheet sensitive to macroeconomic variables and the monetary policy objective(s). 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
2. Alternatively we can use certain rather crude measures of central bank financial strength and compare them with potential losses to come to an empirical judgment.



Although capital is often a misleading indicator of CBFS, it is frequently used

Figure 2: Ratio of adjusted capital to GDP
(2009 or most recent data available in percent)





Why is it important to take into consideration currency when considering the central bank's ability to absorb losses?

Table P1. Illustrative central bank balance sheet
(in local currency units)

Assets L		liabilities	
Foreign Exchange	1300	Currency	860
Domestic Credit	640	Non-interest bearing deposits	40
		Interest bearing debt	1000
Other Assets	70	Other liabilities	70
Liquidity providing repo agreements	60	Capital	100
Total Assets	2070	Total Liabilities	2070

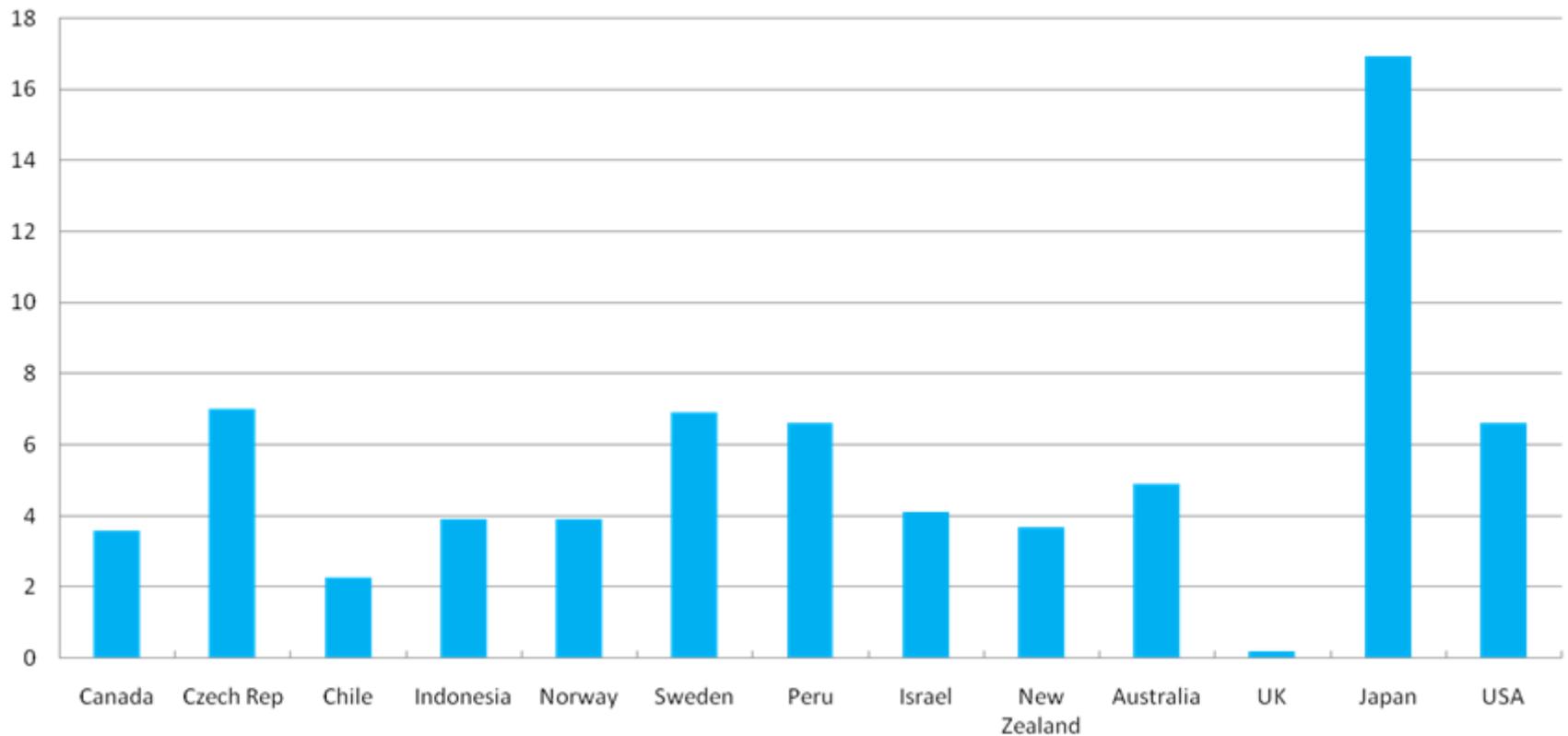
Table P2. Simplified illustrative central bank balance sheet
(in local currency units)

Assets Li		abilities	
Net interest earning assets	1000	Currency	860
		Non-interest bearing deposits	40
		Capital	100
Total Assets	1000	Total liabilities	1000



Currency plus capital provides a better snapshot of the central bank's ability to withstand losses

Figure 4: Ratio of Currency plus Adjusted Capital to GDP
(2009 or most recent available data in percent)





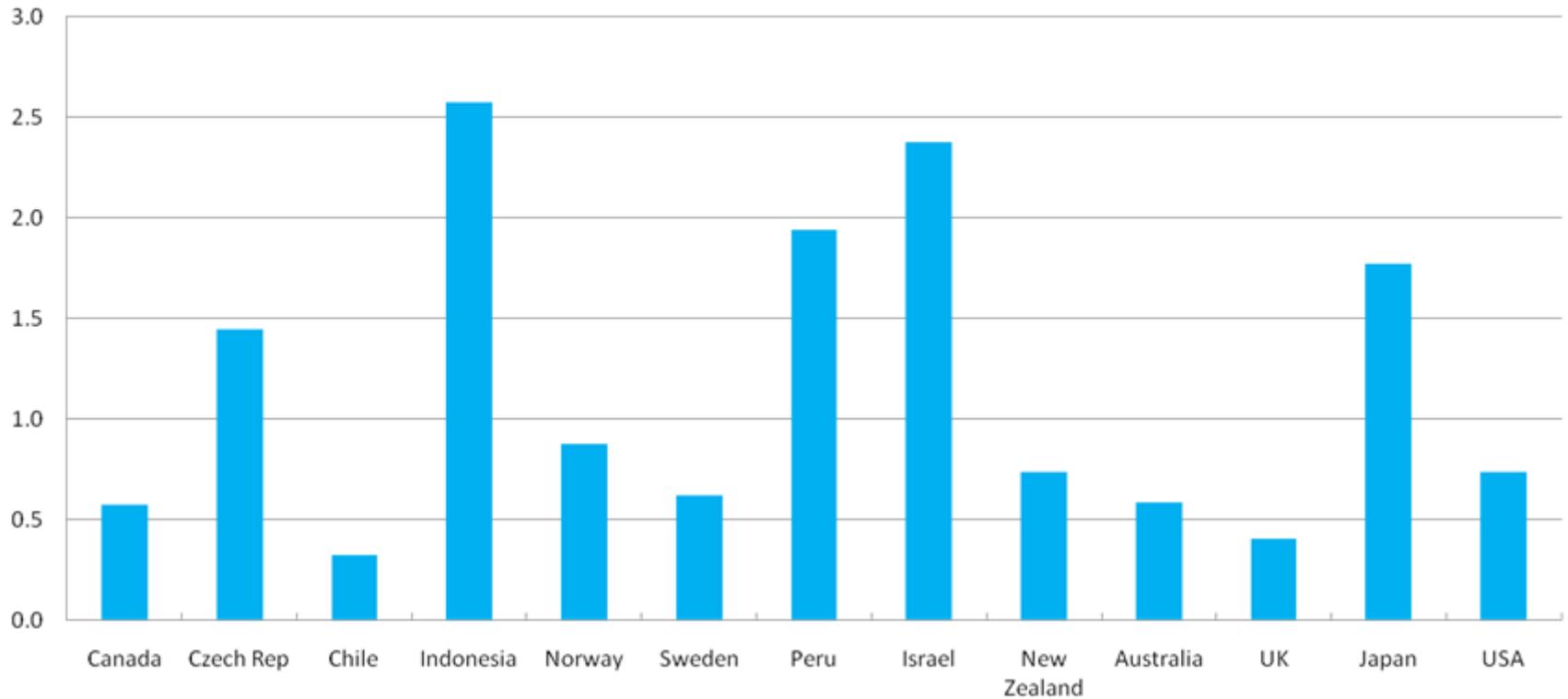
Capital plus currency must be large enough to finance central bank operations

- *Fundamental equity* is 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 percent with knowledge of the current balance sheet structure and operational expenditures, fundamental equity for each country can be calculated. (Figure P1).
- 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 P2.
- It is then necessary to determine the risk actually facing each central bank from conventional and unconventional losses. As a very strong stress test, a hypothecated 35 percent loss on total local currency assets is compared with sustainable losses in Figure P3. Even in this incredibly high loss scenario, in only the case of the Bank of England is there reason to be concerned with the macroeconomic level of losses. However, as discussed below, the BOE is largely indemnified by the Treasury for potential losses thus it is not plausible it would have to assume losses of that magnitude.



Fundamental Equity calculated at a nominal yield on net assets of 4 percent

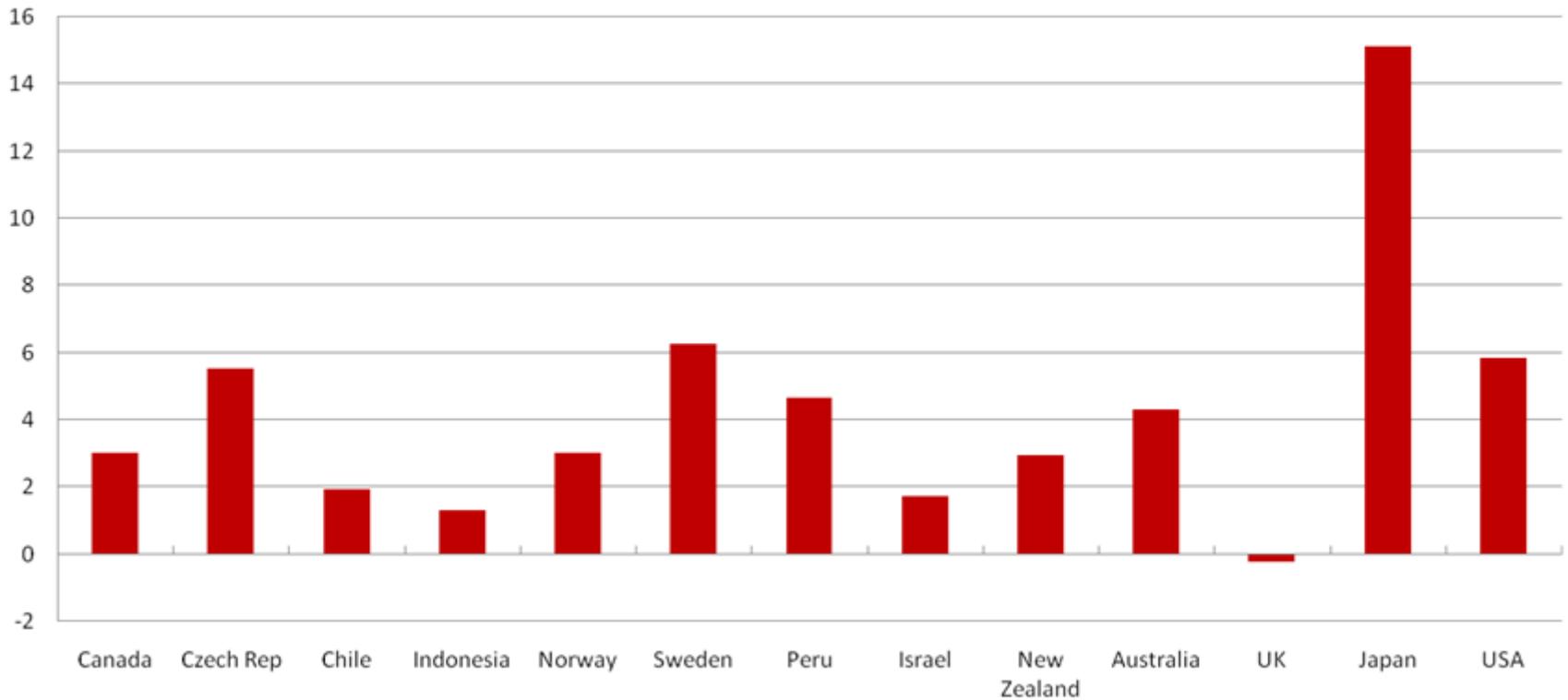
Figure P1: Fundamental equity at 4 percent
(2008 ratio to GDP)





Sustainable Losses calculated at 4 percent yield on net assets

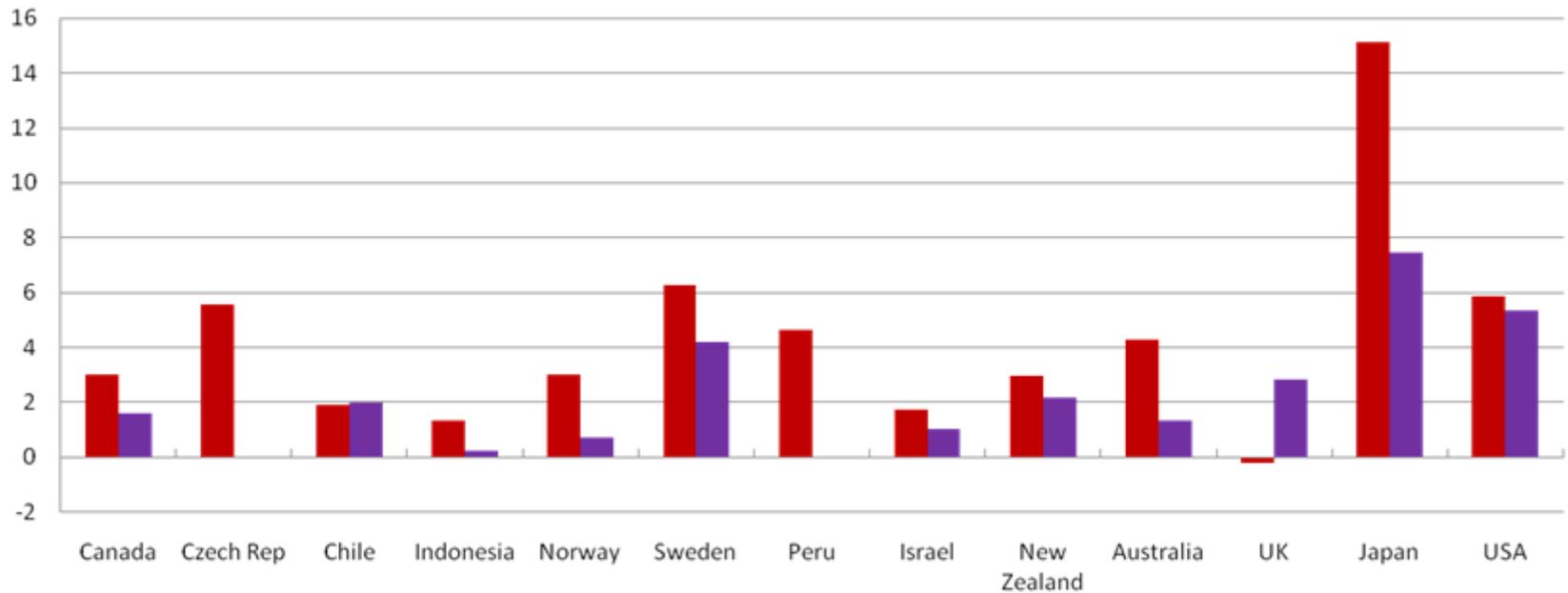
Figure P2: Sustainable Losses
(in percent of GDP)





Sustainable loss reserves seem ample even in a very dire scenario

Figure P3: Sustainable losses compared with local currency exposure
(in percent of GDP)





Czech Republic: Negative equity, very high currency, anticipated real exchange rate appreciation

Balance Sheet Central Bank of the Czech Republic

December

2009

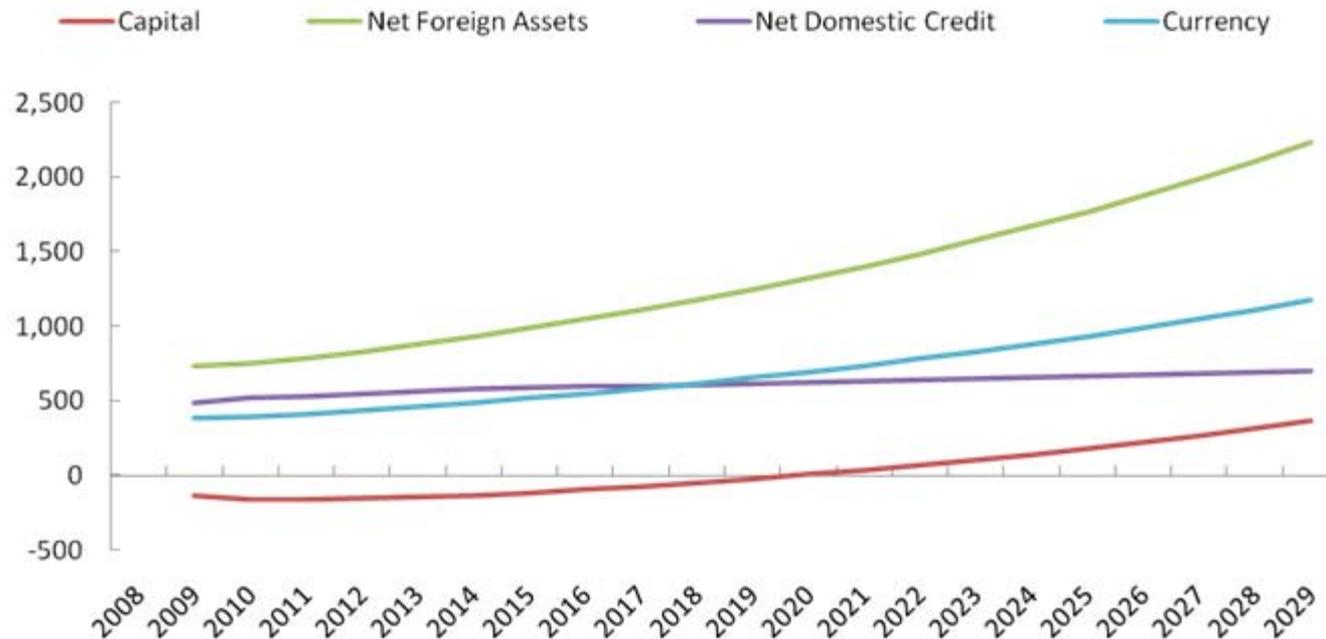
(percent of GDP)

Assets		Liabilities	
Net Foreign Assets	20.6	Currency	10.9
Domestic Credit	0.0	Domestic Debt	13.7
Other Assets Net	0.1	Capital	-3.8
Total Assets	20.7	Total Liabilities	20.7



Czech Republic: CNB would appear to be able to grow out a negative equity problem

- Negative cost of carry on foreign reserves
- Foreign exchange accumulation at $\frac{1}{2}$ rate of GDP growth
- Strong growth in currency





Bank of England: Risk Management

- Bank of England banknotes are not included in fundamental equity as all seigniorage is paid directly to the Treasury by the BOE Issue Department. Only unremunerated bank deposits and capital serve to finance the BOE.
- However, the UK Treasury indemnifies the BOE explicitly for its lender of last resort operations.
- During the current crisis, the UK Treasury has also indemnified unconventional monetary operations, including the associated interest rate risk.
- Essentially the BOE is operating under a Treasury agency arrangement with regard to market interventions and need not hold capital against the imputed fiscal risks. (Nor does the BOE hold UK foreign reserves on its balance sheet)



The challenge would not appear to be macroeconomic but governance risk

- *“Measures to take on individual credit risk such as corporate debt are extraordinary steps for a central bank since they come close to ...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.”*

Bank of Japan Governor Shirakawa (2009)

- *“Our lending programs...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...should not be part of the normal operation of a central bank....My...final suggestion is to draw a clear distinction between monetary policy and fiscal policy to ensure that the FR retains its independence to conduct sound monetary policy.*

FRB Philadelphia President Plosser (2009)



Monetary and Market Intervention Policies: Separate Governance Structures and Balance Sheets?

- Monetary Policy: “interest rate policy” and conventional open market operations independent of the political/fiscal process
- Fiscal Policy: fully integrated within the budget and subject to close political guidance
- Market Intervention Policy: under a mixed governance structure within two polar cases: full independence under the identical governance structure as monetary policy or completely under the control of the fiscal authorities.
- Balance Sheet implications: Monetary authority endowed with fundamental equity—financial considerations of 3rd order importance. Market Intervention authority endowed with significant capital, subject to IFRS, structured as financial institution



Minimal Monetary Policy Assets Based on Recent Balance Sheets

Figure 10: Minimal Monetary Policy Assets
(2009 or most recent available data in percent of GDP)

