

Bank of England

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Jamie Long⁽¹⁾ and Paul Fisher⁽²⁾

Abstract

Central banks retain a portion of their net profits as reserves and distribute the remainder to their finance ministry, typically in the form of a dividend. Few central banks have a reciprocal arrangement in place for covering financial losses with a transfer of capital. This paper reports the findings of a survey of central bank profit distribution and recapitalisation arrangements across 70 jurisdictions and examines the range of features present, such as revaluation accounts and requirements for capital injections. The findings help establish the importance of a robust framework for managing central bank profit distribution and recapitalisation. The presence of such a framework should allow central banks to retain more of profits and access external resources when capital is low, and to function as an income generating asset for the government when capital is high, therefore ensuring both an appropriate use of public funds and the presence of a credible and financially independent central bank that stands ready to act when needed.

Key words: Central bank balance sheet, central bank profit distribution, central bank recapitalisation, monetary policy, financial stability.

JEL classification: E58, E52.

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1. Introduction

Central banks, in general, are allowed by legislation to retain a portion of their net profits as reserves and are required to distribute the remainder to their finance ministry, typically in the form of a dividend. Few central banks have a reciprocal arrangement in place for covering financial losses with a transfer of capital from the finance ministry. Like commercial entities, central banks can incur financial losses on their income statements and can incur an impairment of their capital position on their balance sheet. To ensure that central banks are adequately resourced so they can deliver on their objectives, it is imperative that central banks have a reliable source of income and operate under a robust framework for managing their profit distribution and recapitalisation.

This paper reports the findings of a survey of the central bank profit distribution and recapitalisation arrangements across 70 jurisdictions (detailed results are presented in the Annex).¹ Starting with the income statement, we consider the various sources of central bank income and what drives profits and losses (Section 2). Then moving to the balance sheet, we consider the nature of central bank capital and the extent to which central banks need to hold capital (Section 3). The results of the survey are then used to highlight the range of arrangements that central banks have in place for profit distribution (Section 4) and recapitalisation (Section 5). We then end the paper with concluding remarks on the key features of a robust profit distribution and recapitalisation framework (Section 6).

2. Central bank sources of income

To understand why central banks have profit distribution and recapitalisation arrangements, it is first important to understand central bank income statements and balance sheets. Starting with the income statement, central banks have a range of income sources, reflecting that each central bank is unique in terms of its portfolio of activities. We identify the following sources as being particularly relevant to the workings of most central banks:

- i) **Seigniorage.** The primary source of income for most central banks is the profit generated through being the monopoly issuer of physical domestic currency. These profits arise from the difference between a banknote's (or a coin's²) face value and the cost of its production. Usually, for a banknote, the production cost is a tiny fraction of its face value. Banknotes are a non-interest-bearing liability of the central bank, backed by interest bearing assets. That spread generates a source of income which is always positive unless interest rates fall to zero or the assets realise a loss in value. Currencies which operate as an international reserve currency, such as the US dollar, can often gain a privileged seigniorage income through international demand for their physical currency. Seigniorage income means that central banks are structurally profitable in normal times (Martinez-Resano, 2004).

¹ The survey underlying this paper formed part of a Masters dissertation by Jamie Long submitted in 2022 to Warwick University Business School. The dissertation was titled "A comparative analysis of central bank distribution and recapitalisation arrangements" and was supervised by Paul Fisher.

² In some countries, such as the UK, coins are issued by a national mint. In others the mint is part of the central bank. Banknotes are issued in much greater value and hence we ignore coins for the rest of this paper.

Seigniorage income is not normally readily identifiable in a central bank's financial statements. Seigniorage is associated with the amount of additional money printed (less the physical printing costs which are relatively small). The income flow from that issuance is not the face value of the notes, which form an ongoing liability, rather it is the income flow from the assets into which the proceeds of the note issue are invested. Since most central banks don't identify particular assets to back the note issue, that net income flow is not separately identifiable in their accounts.

Any future introduction of central bank digital currencies (CBDCs) by central banks could impact their seigniorage income, either through a decline in revenue if note issuance were to significantly drop, or by offering a new source of revenue in the form of CBDC seigniorage.

ii) **Unremunerated reserves.** Some central banks require commercial banks to hold an amount of required reserves, or other deposits, at the central bank, which are not remunerated. Such requirements have historically been part of prudential liquidity management for the banking system. The absence of remuneration generates a second non-interest-bearing liability which, also being backed by interest-bearing assets, generates a positive source of income.

iii) **Domestic market operations and net interest from other domestic liabilities and asset holdings.** Central banks are responsible for providing liquidity to the banking system, primarily in the form of commercial bank reserve accounts, which banks can use to clear payments between each other.

Money for these accounts can be created either by lending directly to commercial banks or by acquiring domestically denominated assets in the market - usually via the banks themselves as market intermediaries. In either case the banks' accounts are simply credited by the required amount, to match the assets acquired. Thus, additional central bank (or base money) is created. Reductions in the base money supply is the reverse process of reducing lending and/or asset sales.

Net interest and dividends on these other liabilities and assets will usually be positive because the liabilities generated by liquidity supplying operations are likely to be issued at an equal or lower cost than the returns on the assets created. Any interest paid on commercial bank accounts is likely to be at a rate no higher than the short-term policy rate. In contrast, loans to commercial banks will earn at least the short-term policy rate and may include a premium above that. Other assets, such as fixed-income instruments, will usually be longer-dated, thus earning a higher yield as long as the yield curve is upwards sloping.

We note that rapid rises in the policy rate can undermine that profitability. That's because the higher interest payments apply to all reserve accounts immediately, but the higher yields on (longer-term) bonds only apply to new purchases. Existing fixed-income securities will fall in market value.

- iv) **Foreign Currency Reserves.** Depending on their policy role, central banks may hold a portfolio of foreign currency reserves on their balance sheet. In some cases, these may be hedged for currency risk, creating a net zero holding, in others - particularly countries with a fixed or managed exchange rate regime - there might be a significantly large open position. Either way, absent any policy-generated foreign exchange market intervention, such foreign currency reserves can usually be managed to generate a net positive income, by exploiting various risk premia. But that profit cannot be guaranteed, and if unhedged, is vulnerable to large exchange rate swings. The policy use of foreign currency reserves is one of the main routes historically through which large central bank losses have occurred.
- v) **Regulatory Levy.** For central banks that additionally function as a financial regulator, the recovery of supervisory costs is usually via a direct levy on the firms they regulate and supervise.

Importantly, even though they are financial institutions, central banks are not usually required to use generally accepted accounting principles, even though some (such as the Bank of England) choose to do so. The precise scale of recognised profits will depend on the accounting rules used and thus can be a matter of debate and potentially, tension.

3. Central bank capital and reserves

Having considered the central bank income statement, we can now move to considering the balance sheet and the extent to which central banks need capital. The assets of a central bank are typically comprised of foreign exchange reserves, domestic government bonds, loans and liquidity facilities provided to commercial banks and financial institutions, gold reserves and other assets, such as property. The liabilities of a central bank are banknotes and commercial bank reserves, which together form central bank money. This is the ultimate asset for settling transactions and is the most liquid, risk-free asset in the economy.

The difference in the value of a central bank's assets and its liabilities represents its equity. At first sight, the equity position on a central bank's balance sheet appears similar to that of a private corporation: namely its share capital and own reserves (Rule, 2015). The latter can be thought of as retained profits that have not been distributed. The generic terms of 'capital', 'equity' or 'net worth' are used to cover both elements. The shareholder is usually the government, but some central banks have private shareholders.³ Share capital and own reserves have the same function at a central bank as at a commercial bank: acting as a buffer to absorb any losses.

Own reserves are accumulated through the retention of net profits, as with a commercial firm. As part of the public sector, central bank capital and reserves represent a genuine claim on resources, which is of public interest. Most central banks are highly profitable outside of crisis times, for structural balance sheet reasons explained above, but they are usually required to pay

³ Historically many central banks were privately owned, including the Bank of England which was only nationalised in 1946. The central banks of Belgium, Greece, Italy, Japan, South Africa, Switzerland, and the US are the few remaining examples where there exists at least part private ownership.

dividends to shareholders, mostly their governments, which constrain their long-run ability to accrete net worth.

Share capital represents the funds paid-up by the owners of the central bank at the point of inauguration, which is often small and accounted for at face value. Therefore, it is the 'own reserves' position which fluctuates with profits and losses, and means that the total equity position can become negative.

3.1 Do central banks need capital? The case against.

Central banks do not exist to make profits and generally cannot be declared bankrupt by a court in their home jurisdiction. Rather than having financial objectives, they have policy objectives, with the effectiveness of their policy making being best observed in their ability to achieve and maintain price stability and financial stability, not in their ability to achieve and maintain profitability and a strong balance sheet.

Unlike commercial banks, central banks are not subject to the Basel prudential capital requirements, and it is therefore not necessary for central banks to hold a minimum level of regulatory capital. The rationale for this being that governments stand behind their central banks, implicitly or sometimes explicitly, offering a guarantee to help maintain public confidence. Prudential requirements could potentially undermine this guarantee as it would imply that central banks are subject to the same risk limits as commercial banks.

A central bank can continue to operate with negative net worth in accounting terms because it has the power of money creation and is exempt from normal corporate solvency rules. As the sole issuer of its domestic currency, central banks can always meet obligations arising from liabilities denominated in their domestic currency (IMF, 2015).

The limits on money creation are twofold. Firstly, in all countries, printing money in excess of demand will, at some point, be inflationary and conflict with the central bank's monetary stability objective. Secondly, and in recognition of that fact, a central bank may be constrained by law in how much money it can issue, or to have matching assets. In principle a central bank could effectively default on its liabilities by creating inflation rather than by non-payment.

The same is not true in foreign currency – central banks do have a risk of default on foreign currency obligations if they run out of foreign currency reserves and/or lose market access (e.g., by over-supplying domestic currency). In such circumstances, the problem is a national one and the country usually has to resort to a loan from an international organisation, such as the IMF with attendant conditionality, or seek support from other central banks.

In the absence of any meaningful insolvency constraint, academics and governments have often questioned the extent to which central banks need any capital and reserves to function. Indeed, some of the world's most important central banks such as the US Federal Reserve, the Bank of England and the Bank of Canada, operate with an equity base which is small in the context of their balance sheets.

Historically, many central banks have continued to operate effectively and meet their policy objectives while in negative equity (IMF, 1997). The central banks of Chile, Czech Republic, Israel

and Mexico in recent years have all effectively pursued their policy objectives despite being technically insolvent by private sector standards (BIS, 2013).

Ultimately, central banks, unlike commercial entities, are not backed by their capital, but by the strength (taxing power) of their shareholders, which always includes the finance ministry, even if not solely. As we shall see, it is public finances which, if necessary, are used to recapitalise the central bank. The credit rating of a central bank is conventionally determined to be that of their national government.

3.2 Do central banks need capital? The case for.

There is a common tension between a government's desire for its central bank to be an income generating asset and the central bank's own assessment of how much capital it requires for its operations and credibility (Bandyopadhyay, 2021). Despite being able to operate technically with negative equity, there is a strong case to be made for why central banks should have their own capital and reserves - or at least are better able to deliver their policies with a sound capital base. Financial strength can support central bank independence and credibility, particularly in signalling to the market that they are ready and able to act swiftly, and without constraint, in response to a crisis. There is also an argument that those central bankers who are also prudential regulators, supervising capital requirements on commercial banks, are better placed to do so if their own institution is seen to be financially sound. In both cases, credibility matters, and credibility may be weakened by sub-optimal financial outcomes.

In the latter half of the 20th Century, there was a movement towards the delegation of monetary policy and financial stability to independent central banks to avoid problems of time inconsistency in monetary policy. It had been observed that, once exchange rates were allowed to float, politicians could not resist using monetary policy for short-term political gain, rather than to maintain low inflation (or other nominal targets). Delegation of monetary policy to an independent central bank with an inflation commitment of some kind, can be seen as one of the most successful contributions of economic theory to the modern financial world.

A financially independent central bank is generally recognised as one that has sufficient resources to carry out its functions without over-reliance on the government (Haldane, 2020). In contrast, a financially dependent central bank may find that its policy choices are constrained, explicitly or implicitly, or even directed by the finance ministry and hence by political considerations. When a central bank has insufficient financial resources, market participants may perceive it as losing its political independence and its policy effectiveness; politicians may perceive its governors as having made bad decisions; and taxpayers may perceive it as being at risk of needing a bailout with public money. Having sound financial resources is not just about the money, it is about central bank credibility and independence.

In 2003 the ECB, in response to a request from the Finnish Ministry of Finance, provided a range of reasons for why central bank capital was important (ECB, 2003). These included the discretion that capital confers on central banks to act swiftly during a crisis, the assurance of public confidence in the central bank and the credibility of the central bank's public statements. The ECB asserted that it is for central banks to determine the structure and the composition of their balance sheets, not governments. The ECB's opinion answered the specific question: does it

matter if National Central Banks (NCBs) within the euro area have positive capital? The ECB's opinion was that it does and provides the reasoning why.

3.3 How can a central bank deplete its capital?

There are various channels through which a central bank may deplete its capital. In general, central banks prioritise their policy making over their financial outcomes. But risky operations on a sufficiently large scale may be detrimental to the technical solvency of a central bank's balance sheet. We consider two classic scenarios: liquidity supplying operations and monetary policy operations in both domestic and especially foreign currency.

Central banks have the general responsibility of being the Lender of Last Resort (LOLR) to the financial system. To preserve monetary and financial stability, they must ensure that the banking system has enough liquidity to prevent its collapse in the face of shocks (as part of its LOLR function) and must ensure that the financial system has sufficient liquidity when there is a lack of buyers or sellers to prevent disruption to market stability. LOLR interventions may be through bank-specific Emergency Liquidity Assistance (ELA) for an idiosyncratic shock or through market-wide lending operations for a common shock. This can also include small-scale operations to improve market functioning, in which case they can be viewed as Market Maker of Last Resort (MMOLR).

Interventions can put the central bank's own capital and reserves at risk unless adequately secured by collateral or indemnified by government (Alvarez-Parra et al, 2018). Losses do happen occasionally and while they may be thought to be more likely in less-developed financial systems where bank collateral is either in short supply or of highly uncertain or variable valuation, they do also happen in large, developed economies. When Lehman Brothers went bankrupt in 2008, its German subsidiary Lehman Brothers Bankhaus was reported to owe the Bundesbank €8.5bn secured against collateral, most of which was recovered in the following few years (Deutsche Bundesbank, 2013).

Large central bank losses do not generally result from lending or liquidity provision, because they are or should be, undertaken on a secured basis and coupled with conservative haircuts applied to the collateral taken. Rather, they are more likely to result from unsecured and unhedged large-scale open market operations.

While large unhedged exposures are the primary risk to the central bank capital, there are also other risks. Governments throughout history have been constrained in their ability to spend. The ability to tax or borrow to fund expenditure is ultimately limited. Hence, governments have occasionally sought to extract capital from the central bank, and in particular what they see as hidden reserves sitting in the central bank's vault. This is separate from routine distribution arrangements.

A particular source of tension can be in relation to central bank holdings of gold, partly reflecting the accounting issues previously noted. Gold was widely held by central banks prior to 1971 as part of the Bretton Woods fixed exchange rate system, in which the US dollar was pegged at \$35 for an ounce of gold. In more recent times, many central banks have acquired or maintained gold in their reserves as part of a diversified portfolio to support their currencies. Because the

gold price varies – usually going up in value during any sort of crisis – its market value can impart large swings to a central bank’s accounts. Many central banks choose to account for gold at an historical rather than a marked-to-market value and this can lead to significant under-valuation over time. Governments can be aware of these ‘hidden reserves’ and try to extract its worth (BIS, 2013).

Theft and fraud can also weaken a central bank’s financial strength, as seen with the Bangladesh Central Bank in 2016, where a state-sponsored cyber heist saw \$81m removed from their reserves (Reuters, 2017).

4. Survey of distribution arrangements

Having considered the nature of central bank capital and the potential sources of profit and loss, we can now move on to considering the arrangements that central banks have in place for profit distribution and recapitalisation. The observations presented in this section and the following section are based on a survey of the profit distribution and recapitalisation arrangements of central banks across 70 jurisdictions (see Annex). The survey primarily focused on each central bank’s founding statute, as this is predominately where such arrangements are set out. The absence of such arrangements from the surveyed legislation does not mean they are not provided for in other legislation, regulations or memoranda of understanding. Therefore, where possible and available, supplemental information has been drawn on.

4.1 Distribution arrangements

Every central bank tends to be unique in its finances. There is not currently a single recognised model of best practice for distribution arrangements. Of the 70 central banks surveyed in the Annex, all had arrangements in place for the distribution of profits. The amount that central banks are allowed to retain under normal conditions, i.e., when there is a satisfactory level of capital, varies significantly from as low as 10% in Chile and Venezuela, up to 50% in Finland and Kosovo.

The split between profit retention and distribution can be fixed, discretionary or require consultation with and approval from the government. In South Africa, the distributable amount is fixed at 10% of profits, while in Denmark it is fixed as a minimum numerical amount. In Italy, the central bank has discretion to retain up to 40% of net profits as reserves. In New Zealand, the central bank recommends to the Minister the amount to be transferred to the Government. The Minister then determines the amount to be transferred, while having regard to the central bank’s recommendation. Therefore, how profits are to be split between retention and distribution varies between central banks.

4.2 Distribution arrangements in response to capital targets

Some central banks operate a distribution arrangement based on capital targets, where the amount of profit that can be retained varies in response to either over- or under-capitalisation of the central bank. These can operate on either ‘excess’ or ‘insufficient’ capital accumulation metrics, or on both.

In Taiwan and Ukraine, the distribution arrangements respond to capital being above a threshold. In Taiwan, the central bank retains 50% of net profits as reserves, unless its reserves

exceed its capital, in which case the amount to be retained drops to 20%. In Ukraine, the central bank retains its profits until its reserves equate to 10% of its monetary liabilities. Once this level is reached 100% of profits are transferred to the Government.

Indonesia is an example where the arrangement changes in response to under-capitalisation. In the event that the central bank's reserves and capital falls to less than 10% of its monetary liabilities, it can increase the amount of profit it may retain from 30% to 100%. Similarly in Iceland, the amount the central bank has to distribute drops from two-thirds to one-third in the event that the sum of its capital and reserves equates to less than 2.25% of the amount of lending and domestic securities in their credit system.

Moldova operates a tiered framework model based around three capital triggers. When the central bank's statutory capital is above 10% of its total monetary liabilities, it is required to distribute 100% of its profits, when capital is between 4-10% it must distribute 50% of its profits and when capital is below 4% it can retain 100% of its profits.

4.3 Distribution arrangements in response to central bank losses

For some central banks it is implicit in their governing legislation that when there is a financial loss, then there are not any profits to distribute. Therefore, their legislative framework remains silent on how to treat financial losses. This was the case for 37 of the 70 surveyed central banks. For the other central banks there are specific arrangements in their legislation requiring that their own reserves be used to cover financial losses. Essentially, the typical arrangement sees central bank profits being distributed to the government, while losses are absorbed by the central bank's balance sheet. We refer to this as an asymmetric distribution rule.

Variations to this basic arrangement include provisions for losses to be covered by profits in future years or covered by external resources. In Finland, if the central bank makes a loss, then legislation explicitly requires that the loss be covered by its reserves. If there are insufficient reserves, then profits in subsequent years are retained until reserves are replenished to a sufficient level. In contrast, in other countries, including Lebanon, South Korea and UAE, if the central bank's reserves are insufficient to cover their losses, then the deficit is to be met by the government. The impact of this is that losses are allowed until capital is depleted below a threshold level.

The ECB and the US Federal Reserve (the Fed) both have unique approaches to covering financial losses. As the national central banks (NCBs) of the European Union are the shareholders of the ECB, in the event the ECB has insufficient funds to cover a loss, it is entitled to ask the NCBs to cover an outstanding loss (ECB, 2017).

Under the Federal Reserve's remittance policy, the Fed calculates and transfers all profits to the US Treasury on a weekly basis. The Fed holds almost no capital. Its assets largely comprise of fixed income securities and its liabilities are primarily banknotes and commercial bank reserves, the latter being mostly remunerated at one of the set policy rates⁴. The amount distributed to the US Treasury equates broadly to the net income earned less the Fed's operating expenses, so

⁴ The relevant rate is known as Interest on Excess Reserves (IOER) which is part of the mechanism for supporting the official policy target, which is the Fed Funds Rate.

that the Fed retains no 'own reserves'. In the event that operating expenses exceed net income, a non-interest bearing deferred financial asset is created. This appears on the Fed's balance sheet as a negative liability as part of the entry for "other liabilities and capital" which is noted to include "the liability for earnings remittances due to the U.S. Treasury" (Federal Reserve, footnote 16, 2023). This deferred asset reflects the amount by which the central bank's earnings failed to cover its expenses and therefore also reflects the amount of future earnings that the Fed must retain. At the point the Fed incurs a loss, it then stops remitting earnings to the Treasury until its profitability returns and it has retained sufficient earnings to cover the loss and pay-off the deferred asset. The Fed then resumes distributing profits to the Treasury. Importantly, the Fed's unique accounting treatment allows it to preserve its capital in the event of a financial loss (Carpenter et al, 2015). While other central bank arrangements sometimes provide for losses to be covered by future earnings, the Fed appears to be the only instance where losses explicitly go onto the balance sheet as a deferred asset.

4.4 Distribution arrangements in response to revaluations

Price movements in the foreign exchange, gold and securities markets expose central banks to unrealised gains and losses when relevant assets are marked-to-market. Central banks which have engaged in QE programmes or large-scale foreign exchange interventions, have found these fluctuations to be much more significant recently than they were historically. Where such unrealised gains are accounted for and recognised as distributable profits, the central bank may be required to transfer some or all of these to the state. Since such fluctuations are often temporary, and unrealised losses are not offset symmetrically, such arrangements can provide a one-way route to deplete the central bank's equity. As the market prices of a central bank's assets and liabilities can swing significantly, it is important that the formal arrangements prevent unrealised profits from being recognised as distributable profits.

Mitigating revaluation risk is normally managed in legislation and accounting treatments through the presence of specific revaluation arrangements. Two key features of revaluation arrangements were identified in the central banks that were surveyed. Firstly, the presence of a carve-out that excludes unrealised gains and losses from the calculation of the central bank's distributable profits. Secondly, the presence of a revaluation account to ensure that revaluation gains and losses are retained on the balance sheet rather than flowing through to the income statement. Not every central bank was found to have both features in place. Where only one was in place, typically this was the exclusion of unrealised changes in valuation from profit calculations, rather than the creation of a revaluation account. Belize and Guyana are two of examples of central banks that have both arrangements in place. For central banks where no specific reserve is established to cover unrealised gains and losses that result from revaluations, it is implicitly assumed that they are covered by the central bank's own reserves.

The central banks of Turkey, Kenya and Finland are examples that use unique approaches to tackling revaluations. In Turkey, the central bank's legislation distinguishes between unrealised profits and unrealised losses, with unrealised profits explicitly not being recognised as income and unrealised losses being deducted from profits. In Kenya, the central bank is required to include unrealised gains and losses in the calculation of its profit. However, its legislation also

requires that their accounts distinguish between profits arising from normal operations and those arising from exchange fluctuations. In Finland, discretion is conferred on the central bank for “smoothing out variations in profit” that arise from revaluations. This flexibility in reporting arrangements is for the purpose of “safeguarding the real value” of the central bank’s funds.

5. Survey of central bank recapitalisation arrangements

Having considered arrangements governing profit distribution, we can now turn to those for recapitalisation. We envisage two options for recapitalising a central bank. Firstly, a central bank could respond to low capital by striving for a more prudent and conservative approach to the management of its balance sheet. This could involve avoiding desirable, but risky policy actions that could give rise to a loss, or it could entail using future profits to offset a current capital shortfall. Such a response may invite scrutiny and criticism from a central bank’s stakeholders and others, particularly if such a course of action were deemed to be detrimental to monetary or financial stability. Secondly, a central bank could look outwards and seek to recapitalise its balance sheet through an injection of external capital, usually from its government.

While legislation often requires the automatic transfer of central bank profits to the government, few central banks enjoy statutory arrangements for automatic recapitalisations. As central bank resources are a real claim of the public sector on the economy, losses are ultimately borne by taxpayers, either indirectly as a consequence of the central bank distributing less to its finance ministry or directly through the need for a capital injection (BIS, 2012). Central bank recapitalisations involve public funds, which are typically in short supply, and involve the funding of central bank activities that are often out of the public eye, where the direct benefits can be difficult to understand or explain.

Governments running a significant fiscal deficit are likely to be reluctant sources of external funds, particularly in a scenario where the losses were caused by a wider economic stress that would also have had a negative fiscal impact. Recapitalisations are often a last resort and require careful political and economic handling. In the case of a government constrained by a high debt burden, a central bank recapitalisation could theoretically be undertaken by a foreign agency, such as the IMF, the World Bank or a development bank.

Where existing legislation does provide for a recapitalisation, the triggers for prompting a transfer of capital vary. In Fiji, the central bank’s recapitalisation is triggered when assets are less than the sum of liabilities and paid-up capital, i.e., negative equity. In Moldova, recapitalisation is triggered when statutory capital drops below 4% of the central bank’s total monetary liabilities. In the UK, if the central bank’s capital and reserves is below £0.5bn, a capital injection is made by the government for the purpose of returning capital to its target of £3.5bn.

The amount of capital to be transferred from the government to the central bank can be constrained in legislation by attaching a purpose to it. This may be defined as returning the central bank’s capital to a target level or more broadly for simply preserving its capital. In Botswana if the central bank is in negative equity, then a capital injection can be made to preserve the central bank’s capital from impairment. Similarly, in Tanzania the amount of a capital injection is to be of a sufficient amount to restore the central bank’s level of paid-up capital.

The risk from not specifying a capital target is that a capital injection may improve the central bank's capital position, but still leave its capital precariously low. Attaching a purpose provides a safeguard to help ensure that the central bank is capitalised to the appropriate level.

For some central banks for whom there are no explicit recapitalisation arrangements, there are broad provisions for the central bank's capital to be increased subject to government approval. For example, in Malaysia the central bank can increase its capital subject to approval by the Minister. The Government then pays the amount of the increase to the central bank. In Chile, provided the central bank's board members have a justified reason, a request can be made to the Minister that the Government provide an increase in capital from its budget. In Guatemala, the central bank is required as part of its annual budget to report, if necessary, on the amount it needs to recapitalise its balance sheet. There is no requirement for further action to be taken.

As noted by the IMF (2008), legislation does not and cannot force any government to make such a payment to its central bank if it does not want to. While legislation can provide for a central bank's recapitalisation, the spending of public funds, depending on the country's constitution, usually requires further approval by the legislature.

5.1 Financing recapitalisations

Once the requirement of a recapitalisation is met, the next step is for the government to decide how it is going to finance the capital injection. There are two possible routes.

Firstly, the finance ministry could use its existing budget. This may involve identifying funding cuts or repurposing funds that would have otherwise been allocated elsewhere. The consequence of this is a reduction in government spending and fiscal measures that may potentially be detrimental to the wider economy or society. We include in this the option of raising taxes.

Secondly, the finance ministry could issue new debt directly to the central bank. If the new debt is conventional and interest bearing, the central bank then benefits both from the future income stream of the interest paid on the debt and in having a marketable asset to support policy operations. The downside to this approach is that technically such debt is in issue and if sold by the central bank would add to any pressure limiting government borrowing or putting upwards pressure on term rates.

There are few countries that prescribe in legislation how a central bank recapitalisation is to be financed. In Tanzania and Georgia, capital injections are to be financed via the issuance of interest-bearing securities at the market rate, while in Armenia and Botswana they are to be financed via the issuance of non-interest-bearing securities.

From a central bank perspective, if recapitalisation is to serve a policy purpose, then it should provide either marketable assets or an income flow. An accounting entry of non-transferable, unremunerated capital may balance the books, but does not provide the additional resources that the central bank requires.

5.2 Summary of findings

The following table summarises the findings of the survey. Of the 70 surveyed central banks, 42 (60%) had flexible profit distribution arrangements. This captures arrangements where central banks can retain more profit when capital is low and where there is discretion to retain profits up to a fixed percentage. Arrangements allowing more profit to be retained only with ministerial authorisation were not included in this count. Only 24 central banks (34%) were able to exclude unrealised gains and losses from their calculation of distributable profit. Just 32 central banks (46%) had arrangements in place that allow access to external resources, either specifically for restoring capital shortfalls or more generally for other purposes. Only 11 central banks (16%) benefitted from having a form of all three arrangements in place.

	Flexible profit distribution	Exclusion of unrealised gains/losses from calculation of distributable profit	Access to external resources	All three arrangements
Number of central banks	42 of 70 (60%)	24 of 70 (34%)	32 of 70 (46%)	11 of 70 (16%)

Table 1 – Categorisation of arrangements regarding flexible profit distribution, exclusion of unrealised gains/losses and access to external resources.

6. Concluding remarks

This paper argues that, given the importance of a central bank's objectives for the economy and the role played by its capital in supporting credibility as well as operational capacity, it is important that central banks are adequately resourced financially, without reliance on government decisions which may be driven by political rather than economic considerations. This is best achieved through (i) a reliable source of income to maintain capital and fund policy functions, and (ii) a robust framework for profit distribution and recapitalisation.

There is not currently a single recognised model of best practice concerning a central bank's profit distribution and recapitalisation arrangements.

Given that central banks do not need to hold large amounts of capital, excess capital represents an opportunity cost to the government and wider society. Therefore, the arrangements regulating how a central bank manages its capital must strive to ensure that a balance is maintained between these objectives. Overall, the management of central bank distributions and capital requires a considered, flexible and responsive approach. Unrealised gains and losses should be excluded from the calculation of distributable profit, thus safeguarding against loss of capital. When capital is low, central banks should be able to retain their profits to help strengthen their capital position, and when capital is insufficient, there should be a clear route to restoring capital.

The presence of such a framework allows central banks to retain more of its profits and access external resources when capital is low, and to function as an income generating asset for the government when capital is high, therefore ensuring both an appropriate use of public funds and the presence of a credible and financially independent central bank that stands ready to act when needed.

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ANNEX - Comparison of the profit distribution, revaluation and recapitalisation arrangements for a cross-section of central banks.

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Albania	25% of central bank profit is retained as reserves until reserves equate to 500% of its paid-up capital.		Losses resulting from revaluation are offset by the Valuation Reserve Account and are not included in the calculation of annual net profits.	The Minister of Finance will transfer to the central bank negotiable market-rate interest-bearing government securities at the amount required to remedy a capital deficiency.	https://www.bankofalbani.a.org/rc/doc/Law_No_8269_dated_23_12_1997_On_Bank_of_Albania_204_26019.pdf
Argentina	When the central bank's reserves are 50% of its capital, then profits are retained as reserves. Once the limit is reached, profits are transferred to the government.	Losses are met from the central bank's capital. In following years earnings are retained to restore the level of reserves and capital.	Gains and losses on gold and foreign currencies are recorded as gains and losses of the government.		http://www.bcra.gob.ar/Institucional/BCRALaw.asp
Armenia	20% of profit is retained as reserves, until reserves total 25% of broad money. The remainder is distributed to the government.		The calculation of distributable profit does not include positive differences generated from the revaluation of gold and foreign currency.	In the event of a capital shortfall, the government grants non-interest-bearing government promissory notes as a contribution to the central bank's capital.	https://www.cba.am/Stora/ge/EN/laws/cba_law.pdf
Australia	The Treasurer, in consultation with the Reserve Bank Board, determines the amount of profit required to be retained for contingencies and to be held as reserves. The remainder is paid to the Commonwealth.		Unrealised gains are deducted from net profits.		https://www.legislation.gov.au/Details/C2020C00322

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Austria	90% of profit is transferred to the government. Of the remaining retained earnings, the government may receive a dividend up to 10% of the capital, if decided by a General Meeting.				https://www.oenb.at/dam/jcr:145ade8d-3de9-443a-b03a-081d4eb40a86/federal_act_1984_june_2018.pdf
Azerbaijan	Profits are retained as reserves. Once reserves reach a sufficient amount, the remainder of the profit is distributed to the government. Then the remainder is used to redeem any government securities issued to the Bank of Albania for recapitalisation. Lastly, the remainder is then distributed to the government.	Losses are covered by reserves.	Losses resulting from the revaluation of assets and liabilities in foreign currency and gold are covered by reserves.	Capital shortfalls are covered by interest-bearing securities issued by the state.	https://aba.az/wp-content/uploads/2016/03/The_Law_of_the_Republic_of_Azerbaijan_on_the_Central_Bank_of_the_Republic_of_Azerbaijan_1.pdf?msclkid=72705b52c0a411ecae5ffe9928db2446
Bangladesh	The surplus is to be paid to the Government.			While there is not an explicit recapitalisation arrangement, capital may be increased subject to Government approval.	https://www.bb.org.bd/aboutus/regulationguideline/lawsnacts.php

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Belgium	<p>6% of profits are allocated to shareholders as a dividend. The amount to be retained is to be proposed by the Board of Directors. Then a minimum of 50% of the remaining profit is paid to shareholders as a second dividend. The balance is then transferred to the State.</p> <p>Belgium's central bank's shares are half held by the State and half held by private shareholders. They are traded on an exchange.</p>	Any shortfall can be covered by reserves.			https://www.nbb.be/doc/ts/enterprise/juridisch/e/organic_act.pdf
Belize	20% of profit is retained as reserves. Provided that reserves equal or exceed the central bank's paid-up capital, then the amount of profit retained drops to 10%.	Losses are covered by reserves. In the event that reserves are insufficient to cover a loss, then an amount equivalent to the deficiency is transferred from the government to the central bank.	Profits and losses from the revaluation of gold, foreign exchange and other assets are excluded from the calculation of annual profits and losses. Such unrealised profits and losses are covered by the Revaluation Account.	Subject to approval, the central bank's capital can be increased.	https://www.centralbank.org.bz/docs/default-source/2.1-central-bank-act/central-bank-of-belize-act-revised-edition-2011.pdf?sfvrsn=85678e35_4
Bolivia	25% of profits are retained as reserves. The remainder can be used to increase the central bank's capital.	Losses are covered by reserves.		While there is not an explicit recapitalisation arrangement, the central bank's capital may be increased from the State.	https://www.global-regulation.com/translation/bolivia/3101298/law-of-the-central-bank-of-bolivia.html

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Botswana	Net profits are transferred to the Government after, among others, the following have been provided for: expenses, bad debts, asset depreciation, employee pensions and benefits.		The central bank is required to distinguish in their accounts the profits and losses arising from normal operations and those arising from exchange fluctuations.	When the central bank is in negative equity, the Government transfers to the central bank's ownership non-negotiable non-interest-bearing Government securities at the amount necessary for preserving capital from any impairment.	https://www.bankofbotswana.bw/sites/default/files/Bank-of-Botswana-Act.pdf
Canada	<p>If the central bank's reserves are less than the paid-up capital, one third of the surplus is retained and the remainder is paid to the Receiver General (government).</p> <p>If reserves are not less than paid-up capital, one fifth of the surplus is retained until the reserves reach an amount five times the paid-up capital. The remainder is paid to the Receiver General.</p> <p>If reserves are not less than five times the paid-up capital, then the entire surplus is paid to the Receiver General.</p>		Unrealised losses are covered by the special reserve fund.		https://laws-lois.justice.gc.ca/PDF/B-2.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Chile	10% of surpluses are retained as reserves (if the Board so decides). The remainder is transferred to the fiscal revenue (government).			The central bank, by decision of the majority of the Board Members, can request that the Minister of Finance increase the central bank's capital.	https://www.bcentral.cl/documentos/33528/42244/bcc_h_archivo_098716_en.pdf/acf5f567-c7da-172b-445b-ce7a4f217a97?t=1576760254749
Colombia	Net profits are transferred to the Government. Net profits are not transferred if losses have not been totally covered by reserves.	Losses are met from the central bank's reserves, if there is an inadequate amount, then losses are met by the Government.			https://www.banrep.gov.co/sites/default/files/reglamentacion/archivos/law_31_1992.pdf
Costa Rica	50% of net profits are retained as reserves. 25% is allocated to the Minted Currency Amortization Account. The remainder is for the amortisation of assets and reserves.				http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=40928
Cyprus	20% of net profits are retained as reserves. If reserves fall below the capital, then 50% of profits may be retained as reserves. The remainder is transferred to the government.		The General Reserve Fund may be used to write-off accumulated losses.	An increase in the central bank's capital via a payment from the State may be made following agreement between the central bank and Council of Ministers.	https://www.centralbank.cy/images/media/pdf/Unofficial-Consolidation-CBC-Laws-%202002-2017.pdf
Czech Republic	Profits are firstly used to replenish reserves, and then transferred to the state budget.				https://www.cnb.cz/export/sites/cnb/en/legislation/galleries/acts/act_on_cnb.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Denmark	The Exchequer receives Kr. 1m from profits. If the remainder does not exceed Kr. 4m., then 50% of the remainder is paid to the Exchequer and 50% is retained. If the remainder exceeds Kr. 4m, then Kr. 2m is paid to the Exchequer and the remainder is retained.	Losses are met by the General Capital Fund. All payments to the Exchequer are recovered until the loss to the General Capital Fund is recovered.			https://www.nationalbank.dk/en/about_danmarks_nationalbank/Legal_basis/Documents/The%20National%20bank%20of%20Denmark%20Act.pdf
ECB	An amount not exceeding 20% is retained as reserves if the reserves equal 100% of capital. Remaining net profit is distributed to ECB shareholders.	Losses are offset by reserves. If reserves are insufficient, then following a decision by the Governing council, the European System of Central Bank's (ESCB) monetary income for the year can be used to offset the shortfall.			https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12016E/PRO/04
Egypt	Net profits are transferred to the Public Treasury.			While there is not an explicit recapitalisation arrangement, the central bank's capital may be increased from the Public Treasury with agreement from the Minister of Finance.	https://www.cbe.org.eg/_layouts/15/download.aspx?SourceUrl=%2Fen%2FAboutCBE%2FBankingLawDL%2FCBEStatuteStatuteoftheCentralBankfirstdraft.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Estonia	At least 25% of profit is used to increase the capital base and at least 25% is retained as reserves. The remainder is transferred to the government.	Losses are covered by reserves. If reserves are insufficient, losses can be covered by the capital.			https://www.riigiteataja.ee/en/eli/529042020003/consolide
Fiji	100% of net profits are retained as reserved when reserves do not exceed 50% of authorised capital. 50% is retained when reserves exceed 50% of authorised capital. 25% is retained when reserves exceed 100% of authorised capital, but not 200%. The remainder is used to redeem securities issued to recapitalise the central bank. Then the remainder is distributed to the government.		Losses resulting from revaluation are offset by the Revaluation Reserve Account. Profits and losses from revaluation are not included in the computation of the central bank's profit or loss.	In the event of a capital shortfall, the Government transfers to the ownership of the central bank non-negotiable non-interest-bearing securities at the necessary amount to preserve the capital from any impairment.	http://www.pacii.org/fj/legis/consol_act_OK/rbofa179/
Finland	50% of profit is retained, 50% is made available to the state.	Losses are covered by reserves. If reserves are insufficient, then the loss is uncovered. Profits in subsequent years are then used to first cover uncovered losses.	Provisions can be made in the annual accounts for smoothing out variations in profit or loss arising from changes in exchange rates or market values of securities.		https://www.suomenpankki.fi/globalassets/en/bank-of-finland/tasks/documents/bank-of-legal-provisions-2017.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
France	The General Council of the central bank proposes the allocation of profits and the amount of the dividend transferred to the State.				https://www.banque-france.fr/sites/default/files/media/2020/04/09/statutes-of-banque-de-france.pdf
Georgia	25% of net income is retained as paid-up capital, until this equals the determined amount of authorised capital. No more than 50% of net income can be retained as reserves without authorisation. The remainder is distributed to the Ministry of Finance.	Losses are covered by reserves.	Losses resulting from revaluation are offset by the Valuation Reserve Account and are not included in the computation of annual net profits.	The Minister of Finance transfers to the central bank negotiable market-rate interest-bearing government securities at the amount required to remedy the capital deficiency.	https://www.wto.org/english/thewto_e/acc_e/geo_e/wtaccgeo27_leg_10.pdf
Germany	20% of net profit (but at least 250m euro) is retained as reserves until reserves reach 2.5bn euro. The remainder is paid to the Government.	Losses are met from the central bank's capital.			https://www.bundesbank.de/resource/blob/618304/6d6986cbc43dff11cf78d56b2c29502b/mL/gesetz-ueber-die-deutsche-bundesbank-data.pdf
Greece	12% of net profit is paid as a dividend to shareholders. Of the remaining surplus, half is retained as reserves and half is paid to the State.		A special account is used to cover differences arising from the revaluation of foreign currency and are not included in their financial results.	No specific provisions. Government approval is required to increase share capital. Every increase in capital is to be fully paid, with the price at which new shares are issued to be approved by government.	https://www.bankofgreece.gr/RelatedDocuments/BoG_Statute_10th_Edition.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Guyana	<p>50% of profit is retained as reserves. The remainder is paid to the government.</p> <p>When reserves are more than one-third of the central bank's authorised capital, then 10% of profit is retained as reserves and the remainder is paid to the government.</p>	<p>Losses are covered by reserves. If reserves are insufficient to cover the loss, an amount equivalent to the deficiency is transferred to the central bank from the government.</p>	<p>Unrealised gains/losses from revaluations are covered by their Revaluation Account and are excluded from the calculation of annual profit/loss.</p>		<p>https://finance.gov.gy/wp-content/uploads/2021/01/bankguyana_e-1.pdf</p>
Hungary	<p>The central bank pays a dividend from the accumulated profit reserve. When the equalisation reserve is negative and this negative balance exceeds the accumulated profit reserve, the central bank transfers funds to the accumulated profit reserve up to the level of the negative balance.</p>	<p>Where the loss incurred exceeds the accumulated profit reserves, the difference is directly reimbursed from the Government's central budget to the accumulated profit reserve.</p>	<p>Gains and losses incurred from the exchange rate are covered by the foreign exchange rate equalisation reserve.</p>		<p>https://www.mnb.hu/letolt/es/mnb-torveny-2022-04-11-en.pdf</p>

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Iceland	Two thirds of the central bank's profits are paid to the State Treasury. When capital/reserves are less than 2.25% of the amount of lending and domestic securities in the credit system, then only one third of profits are required to be paid to the State Treasury.				https://www.cb.is/lisalib/getfile.aspx?itemid=4680
India	Surplus profits are transferred to the Government.				https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RBIAM_230609.pdf
Indonesia	30% of surplus is retained as reserves. The rest is distributed to the government. If reserves and capital is less than 10% of the central bank's monetary liabilities, then all the surplus is retained.			In the event capital becomes less than the paid-up capital (two trillion rupiah), then the Government covers the shortage upon approval by the House of Representatives.	https://www.imolin.org/doc/amlid/Indonesia_Banking%20Law.pdf
Ireland	Up to 20% of surplus profits can be retained.				https://www.irishstatutebook.ie/eli/1943/sro/93/made/en/print

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Israel	If capital is 2.5% or more of total assets, the net profits are transferred to the Government. If capital is between 1% - 2.5% of total assets, then 50% of net profits are transferred to the Government. If capital is 1% or less of total assets, then net profits are retained.	A Surplus Balance is maintained of accumulated profits and losses from previous years.			https://www.boi.org.il/en/NewsAndPublications/LegislationAndRegulations/Pages/Default.aspx
Italy	Up to 40% of net profit can be retained as reserves. Shareholders (private institutions) may receive up to 6% of capital. The remainder is transferred to the State.	If there is a loss, reserves must be reconstituted before there is any further profit distribution.			https://www.bancaditalia.it/chi-siamo/funzioni-governance/disposizioni-general/it/en-statute.pdf?language_id=1

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Japan	5% of a surplus is retained as reserves. Any more requires authorisation by the Minister of Finance. Reserves must only be used to cover losses or pay the dividend. The central bank may pay dividends to contributors out of the surplus provided that the dividend does not exceed 5% of paid-up capital. After the retention as reserves and the dividend payment, the remainder of the surplus is paid to the national treasury.	Losses are covered by reserves.			https://www.japaneselawtranslation.go.jp/en/laws/view/3788/en
Kenya	At least 10% of net profits are retained as reserves. More can be retained if the Board agrees with the Minister. The remainder is paid into the Consolidated Fund (the Government).	Losses are met by the Consolidated Fund.	Profits and losses arising from the revaluation of its assets and liabilities are taken into account in the calculation of the central bank's profits and losses. However, their accounts are required to distinguish between profits and losses arising from normal operations and those arising from exchange fluctuations.	Losses are met by the Government's Consolidated Fund, which while not explicitly a recapitalisation, is in effect state money being transferred to the central bank.	https://centralbank.go.ke/images/docs/The_Central_Bank_of_Kenya_Act_1st_January_2014.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Kosovo	50% of profit is retained as reserves. The remainder is transferred to the government.	Losses are covered by reserves.	Unrealised gains and losses from positions in foreign currencies, gold and other assets are covered by their unrealised revaluation reserve account.	In the event of a deficit in capital, an external auditor assesses the extent of the shortfall in capital. If the Government approves the report, then the Government remedies the shortfall in capital. This is either financed in currency or negotiable debt instruments.	https://bqk-kos.org/repository/docs/korniza_ligjore/english/Ligji%20per%20BQK-ane%20(anglisht).pdf
Latvia	50% of net profit is paid to the state. The remainder is retained as reserves.	Financial losses are to be covered at first by the reserve capital. When there are not sufficient reserves, then losses are covered by profits from subsequent periods.			https://likumi.lv/ta/en/en/id/326575
Lebanon	50% of net profit is held as reserves. 50% is paid to the Treasury. When reserves reach 50% of the central bank's capital, this changes to 20% retention as reserves and 80% distribution to the Treasury.	Losses are covered by reserves. If reserves are insufficient, then losses are covered by a compensatory payment from the Treasury.	A special account covers profit and loss entailed from the fluctuation in the value of gold and currency holdings.		http://www.databank.com.lb/docs/Code%20of%20Money%20and%20Credit.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Lithuania	The profit distribution to the state budget must not exceed 70% of the average net profit of the previous 3 years.	Financial losses are to be covered at first by the capital buffer. When the capital buffer is insufficient, then losses are covered by profits from subsequent periods.			https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/deec9240f0dc11ecbfe9c72e552dd5bd?jfwid=-ddwmerwu3
North Macedonia	70% of profit is retained as reserves until the general reserve reaches the target level. The remainder is distributed to the government. Only 15% of profit is retained if the general reserve reaches the target level.		Unrealised gains/losses from revaluations are covered by their unrealised revaluation reserve accounts and are excluded from the calculation of annual profit/loss.	In the event of a deficit in capital, an external auditor assesses the extent of the shortfall in capital. If the Government approves the report, then the Government remedies the shortfall in capital. This is either financed in currency or negotiable debt securities issued at the prevailing market-based interest rate in Macedonia.	https://finance.gov.mk/wp-content/uploads/2009/05/Law_NBRM_OG158_10_OG123_12_OG43_43.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Malaysia	<p>The central bank can retain any amount of net profit as reserves as the Board deems prudent or necessary. Any net profit not retained as reserves is to be transferred to the Government.</p> <p>When reserves are less than the central bank's capital, then 100% of net profit is retained as reserves. When reserves are not less than the capital of the central bank, but less than twice the capital of the central bank, then 30% of net profits are retained.</p>		Unrealised gains are excluded from the calculation of profit.	While there is not an explicit recapitalisation arrangement, capital may be increased subject to approval by the Minister. Government then subscribes and pays the amount of the increase to the central bank.	https://www.bnm.gov.my/documents/20124///277ebcd5-9c21-209b-3984-170ba28351d6
Mexico	<p>The central bank, as a non-profit institution, distributes its surplus to the Government. Part of its profits are to be retained as reserves.</p> <p>The central bank is to grow the real value of its equity and reserves in accordance with the real growth rate of GDP.</p>		Reserves to cover the revaluation of assets.		https://www.banxico.org.mx/regulations-and-supervision/legal-framework/banco-de-mexico-law/%7B073CCF98-39BE-EC8F-E03E-6D4CFFC9FA1A%7D.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Moldova	100% of profit is retained, when statutory capital is below 4% of total monetary liabilities. 50% of profit is retained when statutory capital is between 4-10% of total monetary liabilities. 0% of profit is retained when statutory capital is above 10% of total monetary liabilities. Remaining profit is distributed to the state profit.	Losses are covered by reserves.	Unrealised gains are deducted from the calculation of distributable profit and are covered by the reserve accounts.	If statutory capital drops to below 4% of total monetary liabilities, then the Government transfers as a capital contribution market-rate interest-bearing state securities in the amount required to replenish the statutory capital back to the capital target of 4% total monetary liabilities.	https://www.bnm.md/files/Law%20on%20National%20Bank%20of%20Moldova%20no%20548_1995.pdf
Montenegro	50% of profit is retained as reserves. No more than 10% of profit may be allocated to special reserves. The remaining profit is distributed to the government.	Losses are covered from general reserves. Losses that cannot be covered by the general reserves are temporarily covered by the initial capital.	Distributable profit excludes unrealised revaluation gains, which are instead covered by the revaluation reserve account.	In the event of a deficit in capital, a report is prepared in consultation with an independent external auditor. If the report is approved by the government, then the central bank requests that the Government cover the deficit. This is either financed in currency or in marketable debt instruments where Montenegro is not the issuer.	https://www.cbcg.me/slike_i_fajlovi/eng/fajlovi/fajlovi_brzi_linkovi/propisi/laws/cbcg-law-7017.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Namibia	If the general reserve account is less than 50% of the central bank's capital, then not less than 25% of net profits are transferred to the State Revenue Fund. If the general reserve account is more than 50% of the central bank's capital, then not less than 30% of net profits are transferred to the State Revenue Fund.		Unrealised gains are covered by the unrealised gains reserve account.	If the Board is of the view that the central bank has negative equity, then the Board proposes to the Minister a transfer of funds to preserve the central bank's capital.	https://www.bon.com.na/CMSTemplates/Bon/Files/bon.com.na/90/902a35f5-924a-4513-ad0d-719aa507dd22.pdf
New Zealand	The central bank recommends to the Minister the amount to be payable to the Crown as a dividend. The Minister then determines the amount to be paid, while having regard to the central bank's recommendation.	Foreign exchange losses (realised or unrealised) are covered by the government.	Foreign exchange losses and losses resulting from the revaluation of financial instruments are excluded from the calculation of expenditure.	The Minister may give directions relating to the minimum level of capital.	https://www.legislation.govt.nz/act/public/2021/0031/latest/LMS286978.html
Nigeria	25% of its surplus is retained as reserves. The remainder is paid to the Federal Government.			While there is not an explicit recapitalisation arrangement, the central bank's capital can be increased by an amount determined by the Board and approved by the President and paid by the Federal Government.	https://www.cbn.gov.ng/ot/publications/bsd/2007/cbnact.pdf

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
Norway	It is unclear what percentage of profits are to be transferred to the government. In their 2020 annual report they reported a profit of NOK 28.8bn and transferred NOK 15.2bn to the government as a dividend, which is approximately 53%.				https://www.norges-bank.no/en/topics/about/Mission-core-responsibilities/Legislation/Central-Bank-Act/
Peru	25% of profit is paid to the Public Treasury. 75% is retained as reserves.	Losses are covered by reserves. If reserves are insufficient, then the Public Treasury issues and delivers a non-negotiable interest-bearing debt security equivalent to the outstanding amount.	Differences arising from valuation readjustments are credited to a special account and are not considered as gains or losses.		https://www.bcrp.gob.pe/en/legal-framework/organic-law.html
Philippines	25% of net profits are retained. Remaining net profits are then in the following order of priority distributed to the Securities Stabilization Fund, followed by securing the coinage, followed by the General Fund of the Government.	Losses are met from the central bank's capital.	Unrealised profits and losses are excluded from the calculation of profits and losses. The Revaluation of International Reserve account is to cover unrealised profits and losses.		https://www.officialgazette.gov.ph/1948/06/15/republic-act-no-265/
Poland	A portion of profit is to be transferred to the State budget. The percentage is not defined in legislation.				https://www.nbp.pl/en/aktyprawne/the_act_on_the_nbp.pdf

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Russia	The procedure for distributing profits is decided by the National Bank Council, which is defined by legislation as a collegiate body of the Bank of Russia comprised of externals, with the exception of the Chair of the Bank of Russia.				https://www.wto.org/english/thewto_e/acc_e/rus_e/wtaccrus58_leg_9.pdf
Singapore	The monetary authority can determine how much net profit is retained as reserves and how much is transferred to the Government. If there is a deficit in reserves and net profit is larger than the deficit, then the amount required to offset the deficit is retained as reserves. If there is a deficit and net profit is less than the deficit, then 100% of net profit is retained.			While there is not an explicit recapitalisation arrangement, capital may be increased subject to approval by the Government.	https://sso.agc.gov.sg/Act/MASA1970?WholeDoc=1
South Africa	10% of the surplus is retained as reserves. 90% is paid to the Government.		The central bank's foreign exchange adjustment account is used to cover any losses resulting from the depreciation of its foreign exchange holdings.		https://www.gov.za/sites/default/files/gcis_document/201503/act-90-1989.pdf

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South Korea	30% of net profit is allocated to the reserves annually. Additional net profit may be retained for specific purposes, with government approval. The remainder is paid to the government.	Losses are offset from reserves, or capital injection from the government. When reserves are insufficient to offset any losses during a fiscal year, the deficiency is made up by the government.			https://www.bok.or.kr/eng/bbs/E0000824/list.do?menuNo=400261
Suriname	25% of profit is retained as reserves. The remainder is paid to the State.	Losses are covered by reserves.	Gains and losses from revaluation differences are covered by the revaluation accounts	Payments from the State can be paid to maintain the central bank's capital at a defined amount.	https://www.cbvs.sr/images/content/pdf/Wetten/Central_Bank_Act_1956_as_amended_in_2010.pdf
Sweden	If the value of the reserve fund has declined to less than SEK 500 million, at least 10% of profit is retained as reserves until it has retained the required amount.				https://www.riksbank.se/en-gb/about-the-riksbank/policy-documents/the-sveriges-riksbank-act/
Switzerland	Net profit, not exceeding 6% of share capital, is paid to shareholders. One third of remaining net profit is distributed to the Confederation and two-thirds to the cantons.				https://www.snb.ch/en/mmr/reference/snb_legal_nb_g_rev/source/snb_legal_nb_g_rev.en.pdf

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Taiwan	50% of net profits are retained as reserves. If reserves exceed the central bank's capital, then 20% of net profits are retained as reserves.		Unrealised gains and losses are excluded from the income statement and are instead covered by their Exchange Reserve Account.		https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=G0410001
Tanzania	25% of net profits are retained as reserves. If the central bank's capital is 10% of its total assets (less gold and foreign currency) then the amount retained drops to 10%. All profits are retained if reserves are below 5% of monetary liabilities. The remainder of net profit is transferred to the Government.		Both realised and unrealised gains and losses are included in the profit calculation, but only the residual of any net realised profits are distributed. Unrealised profits and losses are transferred to their revaluation reserve accounts.	When the central bank's liabilities are more than its assets, to restore the central bank's level of paid-up capital the Minister issues to the central bank interest-bearing securities at the market determined rate.	https://www.bot.go.tz/BO TAct2006.pdf
Thailand	25% of net profits are retained as reserves. There is provision for other reserves to be retained, if approved by the Minister. The remainder is transferred to the state.	Losses are covered by reserves.	Unrealised profits and losses from revaluations are covered by their reserves.	While there is not an explicit recapitalisation arrangement, capital may be increased subject to approval by the Cabinet.	https://www.bot.or.th/English/AboutBOT/LawsAndRegulations/SiteAssets/Law_E01_Bot.pdf

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Turkey	Having allocated net profit to shareholders and staff, the balance is transferred to the Treasury.		Unrealised are not recognised as income. Unrealised losses are deducted from profit.	While there is not an explicit recapitalisation arrangement, capital may be increased subject to approval by the President.	https://www.tcmb.gov.tr/wps/wcm/connect/d6ac47f4-379f-43da-bf2b-7ad855dca0ff/The_Law_of_the_Central_Bank_of_the_Republic_of_Turkiye.pdf?MOD=AJPERES&CACHEID=ROOTWORKS_PACE-d6ac47f4-379f-43da-bf2b-7ad855dca0ff-nWcODLa
UK	When capital is above the capital ceiling, then 100% of net profits are paid as a dividend to the Treasury. When capital is below the capital ceiling, but above the capital target, then 50% of net profits are paid as a dividend. When capital is below the capital target, then 100% of net profits are retained.			When capital is below the capital floor, the central bank receives a capital injection from the Government to return the capital to target.	https://www.bankofengland.co.uk/-/media/boe/files/memoranda-of-understanding/financial-relationship-between-hmt-and-the-boe-memorandum-of-understanding.pdf
Ukraine	Profit is used to build up reserves until they reach 10% of monetary liabilities. The rest is transferred to the State.		Unrealised gains are excluded from the calculation of distributable profit and instead covered by the revaluation reserve.	While there is not an explicit recapitalisation arrangement, the central bank's capital may be increased from the State Budget.	https://bank.gov.ua/en/legislation/Law_NBU

	Central bank distribution arrangements with their government	Arrangements in response to a central bank financial loss	Arrangements for losses arising from revaluations	Arrangements in response to low capital	Source
United Arab Emirates	If reserves are four times the paid-up capital, then net profits are transferred to the Government. If reserves are less than four times the paid-up capital, then the Cabinet issues a resolution specifying the percentage of profits to be retained until reserves reach four times paid-up capital.	Losses are covered by reserves. If reserves are insufficient to cover the central bank's losses, then the deficit is met by the Government.		If there are insufficient reserves to meet the central bank's losses, then the deficit is met by the Government. The central bank's capital may be increased subject to approval by the Cabinet. The increase in capital is then directly from the Government.	https://www.centralbank.ae/sites/default/files/2021-06/2018%20Federal%20Law%20No.%20%2814%20Regarding%20the%20Central%20Bank%20of%20Organization%20of%20Financial%20Institutions%20and%20Activities_0.pdf
United States	<p>The Federal Reserve pays a dividend to its shareholders after all necessary expenses have been paid. The amount of the dividend is in proportion to the total consolidated assets of the shareholder.</p> <p>The remainder of profits after the dividend payment is retained in the surplus fund. The amount of the surplus fund cannot exceed \$6,825,000,000.</p> <p>Once the surplus fund is at this level, the remainder is transferred to the general fund of the Treasury.</p>	<p>When operating expenses exceed net income, a non-interest bearing deferred financial asset is created. This reflects the amount by which the central bank's earnings failed to cover its expenses and therefore the amount of future earnings that the Fed must retain. At the point the Fed incurs a loss it then stops remitting earnings to the Treasury until its profitability returns and it has retained sufficient earnings to cover the loss and pay-off the deferred asset. The Fed then resumes distributing profits to the Treasury.</p>			https://www.federalreserve.gov/aboutthefed/section7.htm

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Uruguay	25% of profit is retained as reserves. The remainder is paid to the Treasury.	Losses are covered by reserves.	Valuation gains and losses are not considered when calculating the distributable amount.	The government recapitalises the central bank in the event its capital falls below a defined amount.	https://www.bcu.gub.uy/Ingles/Documents/Ing_Carta_Organica.pdf
Venezuela	10% of profit is retained as reserves. The remainder is paid to the Treasury.	Losses are covered by reserves. In the event that the reserves are insufficient to cover the loss, the reserves are replenished by the government. This is to be financed by the government issuing national public debt bonds, with the maturity term not exceeding five years.	The calculation of profits to be distributed is based on realised profits.		http://www.bcv.org.ve/system/files/documentos_juridicos/law_of_bcv_-_english_version.pdf