

# Relationship between central banks' activities and their profitability

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## Abstract

Central banks across the world are facing a challenging situation related to their negative profitability. Even if the problem itself should not pose any threat to the viability of these banks, the whole issue related to negative profitability may be politically sensitive. Unlike commercial banks, central banks enjoy a uniqueness related to the link between them and society. This relationship comprises not only benefits to central banks, but also some obligations central banks must render to society. The whole sequence of events to be described in this article and clearly beyond the influence of central banks contributed to a situation where the aforementioned benefits started to decrease, while the scope of obligations began to rise. Such a combination had to affect their profitability, at least temporarily. The aim of this article is to explain the reasons behind the entire sequence of events which contributed to the current circumstances central banks are trying to defy. In order to understand the complexity of the entire story of central banks' profitability, a brief analysis will be done containing both elements of history of central banking and, above all, elements related to the unique (but not homogenous) accounting rules pursued by central banks across the world.

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## **1. Introduction**

More and more central banks have recently recorded negative profitability. If the latter is nothing new in the rather long history of central banking, the current trend of displaying negative financial results is starting to be more and more scrutinised by the media, thus posing serious questions about the status of central banks in today's society from the point of view of their accountability. This scrutiny stems from a combination of factors, namely the inability to preserve low inflation in the early 2020s and its overstretched scope in shaping the macroeconomic policy mix. The criticism of central banks depends to a large extent on the judgement of their performance in the period stretching from the outbreak of the Great Financial Crisis (GFC) in 2008 to the pandemic crisis in 2020 and followed two years later by the belligerent conflicts involving Russia and Ukraine. With a perception of the aforementioned period being the subject of different (often contradictory) opinions, it is the key objective of this article to submit a review of interactions involving central banks' activities and their equity.

A review of the aforementioned interaction requires a division of this analysis into three sections.

In the first section, a brief review of central banking from the point of view of its social status and above all its accountability will be presented. The central bank enjoys a special status, stemming mainly from the so-called social capital, in today's democratic society, which relies on the domestic economy's stability extensively. This special status is the outcome of social agreement as a result of which the institution under review here has been granted an extremely privileged position. Within its special status, the central bank is usually supposed to perform the three following functions: exerting full control over the issue of domestic currency, taking care of financial stability either of the entire financial system or of the banking system only (by being the Lender of the Last Resort – LoLR), and being responsible for conducting monetary policy. However, apart from enjoying the monopoly to issue the domestic currency, the uniqueness of the central bank in the market economy consists also of the duties – it must render to the society.

If the monopoly of a central bank used to engineer profits, meeting its obligations usually generates costs. Incurring these costs requires a convincing justification from the point of view of society's interest and the social capital. Sometimes central bank's losses pave the way to an efficient protection of society's welfare. In the early days, LoLR was the only major factor posing a risk to the profitability of a central bank. However, as a result of changes in the international monetary system (to be assessed in more detail in the second part of this work), the scope of the central bank's obligations increased – thus making it more prone to financial losses. These changes coincided with the erosion of the aforementioned social capital which underpinned the privileged position of the central bank in modern society. The combination of all these factors (along with their complexity) offers very little understanding for the negative profitability of central banks. And hence the need to take a closer look at them.

The second section will be focused on the aforementioned evolution of the international monetary system and the social environment from the point of view of the central bank's accountability. As far as the international monetary system is concerned, the switch from the fixed peg towards a floating regime made many central banks (especially in emerging economies) amass a relatively large amount of foreign reserves. The effects of mark to market valuation effects of the latter has proved to be yet another factor in assessing the central bank's profitability. With the exchange rate being an exogenous factor, its performance alone sufficed in some particular cases for central banks to confront the

threat of negative profitability. The higher the share of the FX reserves in the total assets, the higher the probability of confronting a loss.

A shift towards the floating regime coincided in 1970s with the unprecedented supply shocks, which derailed monetary stability across the world. Efforts aimed either to minimise the damage or to restore once lost stability pointed out at a clear negative relation between the level of inflation and the degree of central bank independence. The drastic fall in inflation (since the mid 1980s) helped to avoid raising doubts about the ever more independent central banks. It was not until the outbreak of the Great Financial Crisis that the central bank's traditional toolkit was seen to be losing its efficiency. As a result, the unconventional monetary policies conceived in Japan almost a decade prior to the outbreak of the GFC started to spread slowly across the board. Its key feature consisted of blurring the frontier between monetary and fiscal policies, as central banks were entering into an ever higher share of government bonds. Preserving interest rates at all-time low levels shielded banks from losses for a long time. Once inflationary pressures gathered pace in the early 2020s, monetary tightening took place, which paved the way for a drastic deterioration of central banks' finances. Heavy volumes of government assets is not the only source of negative profitability. The same is true for remunerating commercial banks' deposits held at the central banks. With these remunerations often being significantly higher than the remunerations these banks pay to their customers, such a constellation poses not only further question about central banks' accountability, but even poses the threat of a social backlash.

The third part will focus on the finances of the central bank. The key terms (like equity, capital, financial result, and the net interest income) will be presented with the help of which the profitability of a central bank can be gauged. As central banks do not have enough power to shield themselves against the losses entirely, they pursue special accounting rules aimed at helping to accommodate these losses in their balance sheets. The appliance of these rules poses further questions, namely focusing on assessing the impact of these losses on central banks' profitability, especially in the medium term. Subsequently, there will be a search for answers to the following questions: is there any limit for these losses? And finally one provocative question cannot be avoided, namely, can a central bank go bankrupt? There is one more issue, which requires yet again a review of relations involving central banks and respective governments, especially from the point of view of profits transferred by central banks to the government, and eventual government assistance for a given central bank. This is central bank recapitalisation. All these questions and issues will be addressed in this section of the paper.

## **2. The review of central banking from the point of view of their social status, and subsequent obligations rendered by them to society**

### **2.1. The social aspect of a central bank**

One of the key features of central banks is the fact that they rely on a sort of social agreement. The backbone of this agreement relies on the privilege of the central bank to issue notes which are widely accepted by society. This privilege has its price as in return for the trust offered it, the central bank is supposed to serve society. In reality this relationship between society and the central bank is far more complex.

Sociological studies on central banking and widely explored by Vallet, Kappes and Rochon (2022) highlight that, as institutions, central banks produce rules that 'coerce' individuals and shape their

lives through their policies. Susan Strange goes as far as to say that she believes that there can be talk of 'structural power' of the economy and society (May 1996). This 'structural power' is at the mercy of central bankers'. Strange posed a question, namely, do central bankers really serve their own people? A positive answer to this question is indispensable if central banks want to enjoy social legitimacy. The latter is essential from the point of view of judging the efficiency of central bank policies. And this judgement may not necessarily be confined to fulfilling the central bank's mandate, which in most cases is confined to low inflation.

The uniqueness of the central bank consists in the fact that its own finances do not play a fundamental role from the point of view of its own existence. The privilege to issue the domestic currency eliminates the risk of the central bank's bankruptcy almost entirely. However, printing domestic currency in excess seems to be in conflict with the central bank's mandate. The latter is of paramount importance and all other variables (including its own profitability) are subordinated to it. That is why the acceptance of the central bank's negative profitability is rather big.

The aforementioned statement is important, as the central bank cannot be run with the primary objective aimed at avoiding losses. Even if central banks are able to exert control on factors paving the way to their losses, the social capital (or a link to it) does not give them enough room for their efforts aimed at either maximizing their profits or cost-minimizing enterprise. Had the former been the case, it would have been contradictory from the point of view of its social mission. In other words, efforts (and the subsequent level of interest rates) to maximise its profit do not always go with its endeavour needed to meet its mandate (Vaez-Zadeh 1991).

However, this social understanding for central banks losses and the subsequently lenient approach to them is subject to the two following conditions. The first one is the ability to meet its own mandate. The second one, is not to break the aforementioned social agreements and subsequently avoid being exposed at the mercy of the taxpayer. Even meeting only one of these conditions seems to be enough to hope for social understanding at the time of recording negative profitability. The situation may become problematic if neither of these two conditions are met. Many central banks either experienced or were close to this latter combination in the early 2020s, thus generating interest (and many times ungrounded criticism) for the way their finances had been run.

The social factor discussed here imposed the mechanism as a result of which the central bank's profitability is a residual of its own policies. In order to understand the aforementioned relation even better, it makes sense to review a brief history of central banks from the point of view of services they must render to society.

## **2.2. The evolution of central banks worldwide**

The presentation of a history of central banks here will hover around the process of these institutions gaining the support of society, and subsequently gaining their privileged status. Buitter (2007) points out that governments through the ages have appropriated real resources through the monopoly of 'coinage'. In a world dominated by fiat money economies, the monopoly on the issue of legal tender is generally assigned to an agency of the state, commonly referred to as the central bank.

There was a long way for the central bank to evolve into its current shape. Today's statehood was conceived following the Westphalian Treaty in 1648. More or less at the same time, the first steps were

undertaken to create a central bank. The first institution to resemble the current central bank was the Wisselbank, created in 1609. It was one of the first efficient attempts to introduce the formula of a 100% reserves bank, as it was vouched by the City of Amsterdam. Even, if this bank was modelled to a certain extent on medieval Italy, its key priority was not the banking system, but instead its task was to preserve the stability of the coinage. This new concept was highly praised by contemporaneous observers, with David Hume claiming in *Political Discourses* (Hume 1752) that it was one which locked up all the money it received and did no lending (Barber 1973). However, Hume's description did not reflect the reality entirely.

Despite this, it did not go down in history as the first true central bank. This was due to many factors. Quinn and Roberds (2023) argue that what made it difficult for the Wisselbank to act as a true central bank was the lack of full control over the payment system in the decentralised Netherlands. At that time, there were as many as 14 government mints and 40 private ones. Maintaining control over such a fragmented mint system proved impossible. Frost, Hyun Shin and Wierts (2020) point out that the bank did not have full guarantees from the state. The bank was only owned by the municipal authorities of Amsterdam, with the result that the guarantees of those authorities did not cover the entire territory of the United Netherlands Provinces. More importantly, the business profile of the bank described here has changed over time.

In the 18<sup>th</sup> century the bank's profile changed somewhat and as a result, it started lending activities. The Wisselbank began lending to the East India Company in the late 18<sup>th</sup> century. The bankruptcy of the latter in 1798 de facto turned out to be a shock too strong for Wisselbank, which ceased operations in 1820, and its role was taken over by De Nederlandsche Bank, founded six years earlier (1814).

The next two attempts to create central banks were far more successful, because they enjoyed the support of the entire state (and not the city – no matter how prosperous it was). However the support of the state did exert influence on 18<sup>th</sup> century central banking. As James (2021) explains, the turn of the 17<sup>th</sup> and 18<sup>th</sup> century saw the emergence of state debt. According to James, on the one hand, debt proved to be the cornerstone of both civil society and the concept of responsibility, and on the other hand it caused stress and despair, especially at an individual level. And it was only the government that could offer an efficient connection between these two poles apart. That is why both the Riksbank and the Bank of England initially resembled today's debt agencies. The emergence of these two institutions started to point at the ever rising link involving the state and its citizens.

It was not until the emergence of the Bank Charter Act 1844 (known also as the Peel Banking Act) back in 1844, when the Bank of England took a giant step towards being a modern central bank. Following this act, a separation of the banking activity of the bank from its issuance responsibilities and related to the control of money took place (Barret Whale 1944). As a result, the smaller banks' right to issue banknotes was substantially restricted in order to grant the Bank of England the sole legal right to determine the number of banknotes in circulation. The process of granting a monopoly to central banks was a rather gradual one, with some central banks (in Austria, Denmark and Norway) obtaining it even before the Bank of England. Still it was not until 1926 when the last major central bank (Banca d' Italia) finally protected its monopoly (Söderberg 2018).

But it was still a long way from granting a monopoly to central banks to the emergence of fiat money, which made central banks entirely responsible for the control of the money supply. More than a century was still needed to detach issued notes from the commodity, initially silver, platinum and

gold, and later on gold exclusively. With a rather short interval caused mainly by belligerent conflicts, it was not until exactly one century after the introduction of the Peel Banking Act that monetary authorities were granted more freedom in pursuing monetary policy. The system conceived in Bretton Woods in 1944 was a sort of compromise between preserving the value of money and granting a modest degree of monetary autonomy. In spite of the early successes of the Bretton Woods System, it did not even last three decades. Its debacle paved the way for the final emergence of fiat money in the whole meaning of the word.

### **2.3. Trust and its gradual erosion**

The advent of fiat money made the link between central banks and society even more important. According to Duarte (2022), central banks contribute to social capital, by offering trust, stability, predictability, confidence and credibility. The concept of social capital itself goes back to the times of Aristoteles. Makhlouf (2022) perceives this notion as “the social connections, attitudes and norms that contribute to societal wellbeing by promoting coordination and collaboration between people and groups in society”.

Citizens praise the commitment of central banks to these values, as they constitute the key element of the implicit social contract between society and central banks. The functioning of the economy, and particularly that of the financial system, relies on trust and confidence and central banks have a unique role in this.

Out of all components of the social capital, James puts enormous importance on the notion of trust. According to him, trust in price signals, which is the specific responsibility of central banks, is a vital component of the way in which we interact. Rapidly changing prices, either inflation or deflation, undermine the basis of trust (James 2022).

However, this trust is in decline. Jamilov (2022) believes that in the last thirty years the aforementioned trust started to erode, especially in the US. The same tune can be heard in the research conducted by James, who claims there is an overwhelming wave of distrust in the western (industrialized) societies. One of the reasons behind this trend was a significant slowdown in economic growth, and above all, the ever less equitable distribution of the economic welfare.

The aforementioned erosion of trust can be also attributed to the transformation the central banks have undergone in the last thirty years. In the 1990s their mandate started to be confined entirely to price stability. Both financial supervision and management of the public debt was moved away to other institutions. This proved to be a dear mistake, as newly created supervision agencies did not have enough experience to cope with the challenges of ever more global finances. Furthermore, central banks started to advocate the process of globalisation, which should not be surprising. After all, the Great Moderation, which contributed amongst other to a drastic fall in inflation, was the derivative of global trends taking place in the world economy.

The LoLR is another area of central banks' activities which needs to be presented in a more detailed manner. This kind of activity consisted in providing credit to their counterparties (within the two-tier banking system) in the case of financial tensions and liquidity squeezes (Laeven, Bindseil 2017). Humphrey (1989) pointed out that the Bank of England in the third part of 19<sup>th</sup> century was the lender of last resort per excellence. This was the period which saw a gradual implementation of the Bagehot

principle. Fulfilling the role of the LoLR was always expensive for central banks, as it incurred large expenses. That is why Paul Tucker believes that no matter how well central banks are protected, the LoLR are exposed to the threat of losses as a result of their role as a LoLR (BIS 2014). Nevertheless, this cost was – almost for ages – perceived by society as necessary. The start of the GFC changed all that.

The already mentioned ongoing processes of globalisation gathered pace at the turn of 20<sup>th</sup> and 21<sup>st</sup> centuries. As a result, their effect went clearly beyond the Great Moderation and subsequently changed the above-mentioned perception of cost incurred by central banks in their role of the LoLR. The outburst of the GFC let society understand that the erosion of domestic frontiers is not only associated with benefits but with costs as well. The first to spot and define them was Mervyn King, with his famous remarks that banks during their lifespan are global, but at the time of their death they become domestic (as they became subject of state intervention financed by a taxpayer). As Buiter (2014) noted, governments were not opposing central bank's efforts aimed at rescuing these institutions, as central banks' activities were actually perceived as off-balance-sheet quasi-fiscal financing mode. Bringing interest rates to an unprecedentedly low level (quite often below 0%) did not help in halting the deterioration of central banks' perception worldwide.

One of the first warnings for central banks that the social capital is under threat was the emergence of decentralised cryptocurrencies. The creation of bitcoin in 2009 almost coincided with the interest rates reaching 0% and the subsequent launch of unconventional monetary policies. The latter consisted in purchasing an unprecedented amount of government assets, thus blurring the frontier between the monetary and fiscal policies. This entire sequence of events coincided with a further slowdown in economic growth and a fall in living standards unprecedented in the time of peace.

It should not be surprising that in 2011 the world's largest central bank, the Federal Reserve, became the key target of left-wing populist movements (i.e. Occupy Wall Street), which were protesting against economic inequality and the excessive influence of financial capital in politics. All of a sudden, central banks were in a defensive. Not only were they denied the credit for low inflation, but they were blamed for the crisis almost entirely. And their reaction to counter this crisis hardly contributed to an improvement in their already damaged perception. That is why these new policies must be presented in a more detailed manner.

## **2.4. The Brave New World for central banks and its challenges**

The GFC made central banks change their operational reference point from short-term interest rates to the monetary base. Subsequently, large liquidity surpluses in central banks' balance sheets (with the latter reaching a significant share of the country's GDP or as in the case of Switzerland and Japan even surpassing it) enabled central banks to keep interest rates close to zero (or even below zero) for a considerable time. The criticism of these policies was high. Even central banks themselves admitted that it was a mistake. The Riksbank wrote in its February 2020 Monetary Policy Report that low interest rates bear significant side-effects. According to this report, low interest rates can create incentives for excessive risk-taking. Assets may become overvalued, risk may be incorrectly priced and the indebtedness of various agents may increase in an unsustainable manner. The functioning of financial markets can also be affected in an undesirable way. The Riksbank, however emphasized that these side effect were manageable.

Other voices (including the Riksdagen report; Flug, Honohan 2021) – which embodies the people's voice) were more critical. It puts a big emphasis on the impact on inequality generated by excessively low interest rates. According to this report, low interest rates are clearly associated with high asset prices and it is evident that these prices have increased the concentration of wealth. However the same report claims that expansionary policy reduced income inequality through its effect on labour income distribution, while – as it was already mentioned – it increases wealth inequality through its effect on asset valuations. If the parliamentary report's negative assessment was rather mooted, the academical world was rather unanimous in its decisive criticism. Jonung and Andersson (2020) do not hesitate to conclude that at the time of their assessment in early 2020, the costs of negative interest rates to society most likely exceeded the wider benefits.

The outbreak of Covid in 2020 did little to improve the perception of central banks, and likewise the rather delayed reaction to inflationary pressures in the early 2020s. And a combination of raising interest rates with only a very gradual reversal of balance sheets (as a result of ceasing the reinvestment of the earlier purchased assets) started to generate new challenges from the point of view of the perception of central banks. If during the negative interest rate period central banks were charging their counterparties for depositing their funds, now a reversal occurred. As a result, central banks are remunerating their clients, namely commercial banks. While the latter receive at least a deposit rate from a central bank (and in the case of NBP it has been even the reference rate), their own offer to their own customers is far less attractive, causing outrage among some observers (De Grauwe, Ji 2023).

Under the aforementioned circumstances, the critique of central banks gathered pace even more. Already back in 2014, Buitter claimed explicitly that central banks started to abuse their power. According to him, central banks in most of the advanced economies have become too powerful, mainly as a result of systemic political failures in Western Europe and North America. In particular, they have accrued a host of deeply political responsibilities and powers. According to Buitter, they have neither the legitimacy nor the capability or skills to discharge all these responsibilities effectively. It is hard to conceive harsher criticism.

Summarising, central bank's uniqueness consists of a special accord with society. As a result of this agreement, the central bank is granted a special privilege (coinage privilege), and in return, it must render a number of services to society. Subsequently, its financial profitability is a residual of this agreement. The processes which occurred in the last three decades affected the perception of the central bank in the eyes of society. If in the early 1990s there was tacit social permission to grant every possible power which would enable them to reach low inflation on a sustainable basis, thirty years later the situation seems to have changed. Back in the early 1990s, the so-called social capital was an asset upon which central banks could act decisively in order to accomplish their own mandate. However, as a result of changes described in this section, the social capital is no longer central bank's asset. It is rather its liability. This transition is the key reason which helps to understand why – from the point of view of this chapter – central banks became unable to meet all the expectations and subsequently became a subject of fierce criticism.

However the aforementioned criticism seems to be harsh and not always fully justified. That is why the next chapter will present their evolution of central banking from the point of view of processes taking places in the entire international monetary system. This review will help to cast a different light on the legacy of central banking in the last thirty years – thus helping to generate more understanding for their current negative profitability.



### **3. A review of additional factors generating central bank losses: from the exchange rate towards the interest rate**

#### **3.1. A shift from the fixed exchange rate regime towards the full floating regime**

As it was clearly stipulated in the first part, historically the first position to incur serious costs (and subsequently losses) for central banks was the one related to the function of the lender of the last resort. This was especially the case of highly developed countries.

Nevertheless, in the 20<sup>th</sup> century there were hardly any significant cases in the most industrialised economies, where central banks had to resort to this kind of assistance on a massive scale. The same century, however, saw the start of complex processes in the international monetary system, which started to affect central banks' profitability. The most important one – as it was already observed in the Section 2 – was a departure from a currency whose value was based upon commodities towards fiat money. This transition was accompanied by another one, as a result of which the internal balance overthrew the paradigm of an external balance. As a result of it, the exchange rate ceased to be independently variable as its performance started to reflect movements in the new variable, namely the interest rate. However, the shift from the exchange rate paradigm towards the interest rate paradigm was lengthy, and there will be no overstatement in claiming that the 20<sup>th</sup> century in the history of the international monetary system was dominated by efforts aimed at controlling exchange rates.

With the notable exception of the Bundesbank's case in the late 1970s, the issue of central banks' profitability was not extensively covered prior to the end of the 20<sup>th</sup> century. But the central bank sensitivity to the fall in foreign reference currency (or a rise in value of domestic currency) goes back to the interwar period. The most renowned case of a central bank which suffered heavy losses as a result of changes in the value of exchanges rates was the Dutch central bank – De Nederlandsche Bank (DNB) in 1931. As a result of the sterling fall in value following the suspensions of the gold bullion convertibility by the UK, the DNB lost about 30 million guilders, about the size of its entire capital reserve (Colvin, Fliers 2019).

The negative experience stemming from sharp movements in the exchange rates during the interwar period was one of the reasons which paved the way for the creation of the Bretton Woods system. But the latter was neither entirely efficient nor durable and its debacle in the early 1970s paved the way for the flotation of major exchange rates. The demise of the Bretton Woods saw a sharp fall in the value of the US dollar (USD). With the dollar being the key reserve currency, its depreciation generated heavy losses for all these central banks, which kept their reserves in USD, while their currencies experience sharp appreciation against the American counterpart.

The link between the exchange rate involving the key world currencies and the domestic one was observed above all in the case of emerging economies. There were a number of passthroughs, of which changes in the exchange rates were translated into the profitability of central banks, out of which the most important were:

- efforts aimed at protecting the competitiveness of their exchange rates (in order to reduce the risk of capital outflows stemming from a deterioration in the balance of payments' current account),
- sterilisation of capital flows,
- the currency mismatch in central banks' assets and liabilities.

In some extreme cases, a long period of losses paved the way for the negative equity. In the literature, there are at least three cases of central banks (from emerging economies) displaying negative equity. Perhaps the most intriguing is the case of the Central Bank of Chile, as it points to the importance of the sterilisation of capital flows. On its website it is written explicitly, that the equity of the Central Bank of Chile (Banco Central de Chile 2024) has presented negative values since 1997, since the profitability of the bank's assets (mainly international reserves), has been lower than the interest payment on the different instruments issued by the bank with an aim to sterilize the monetary effects of foreign currency purchases.

The same bank puts a strong emphasis on the bank's equity and the impact of changes in the exchange rate, since the assets of the international reserves are kept in foreign currency and the liabilities, for the most part, are denominated in the national currency. That is why a fall in the value of the domestic currency engineers a higher valuation of assets, resulting in a profit that improves the central bank's equity. On the same token, an appreciation of the exchange rate paves the way towards the opposite effect.

The logic above helps to explain other similar cases, including the Bank of Israel and the Czech National Bank (CNB) (CNB 2010). The latter case deserves, however, additional attention. With the CNB being a part of the European System of Central Banks (following the entry of the Czech Republic into the EU in May 2004), the ECB opted to scrutinise the CNB's long streak with negative equity. In its Convergence Report for 2010, the ECB pointed out that negative capital "may adversely affect" the central bank's ability to perform its tasks. The CNB vehemently opposed the ECB view, claiming that the CNB accumulated loss would be gradually eliminated using future profits. Furthermore, the CNB pointed out that the accumulated losses have never had an adverse effect on the CNB's monetary policy and have not curtailed its ability to perform any ESCB tasks (including low inflation).

The ECB criticism must be judged as an ungrounded one. Surprisingly enough, inflation was never a relevant issue for the CNB. On the contrary, it was deflationary pressure which was a reason for concern. In the early 2010s interest rates in the Czech Republic were below the level of the rates set by the ECB. But it was not until November 2013 when the CNB decided to resort to the exchange rate adjustment, and subsequently on 7 November 2013, CNB opted to implement an exchange rate commitment, as a result of which the floor, of CZK 27 to the euro was adopted at the Bank Board's monetary policy meeting. After its announcement, the koruna weakened above the required floor with the aid of foreign exchange interventions by the CNB. This step was essential in helping CNB to generate the largest profit (in absolute terms) in its entire history (CNB 2013). However following the suspension in April 2017 of the policies initiated in November 2013, the entire gains made in the period 2013–2016 were erased in that particular year (CNB 2017).

On the same token, the Swiss National Bank (SNB) experienced a loss of CHF 23.25 billion in 2015 as a result of its decision undertaken on 15 January 2015 to let the Swiss franc to discontinue its exchange rate ceiling (introduced in September 2011), and let the franc float freely (which implied an appreciation of approximately 20% of the franc against the euro).

In spite of the spectacular impact of the aforementioned exchange rate movements on the central banks profitability, the turn of the 20<sup>th</sup> and 21<sup>st</sup> centuries saw the exchange rate giving way to the interest rate, as far as the key (independent) variable in both its mandate and operational policies are concerned. With the ever rising daily average FX turnover (from around 206 billion in 1986 to more than 7.5 trillion in 2022), the majority of central bank FX interventions were condemned to be futile. There will be no exaggeration that it was partly a coerced shift.

The shift from the exchange rate (external price of money) towards the interest rate (internal price) affected the way the entire international monetary system works. One of the triggers behind these changes was a sharp increase in capital mobility. As a result, for many economies, it simply became impossible to stabilise their exchange rate (let alone keep them at a fixed level). Many of them faced the dilemma known in the literature as the impossible trinity. Out of the three tops of this trinity, namely capital mobility, the independence of monetary policies and the efforts to keep exchange rates stable, monetary authorities opted to drop the third top. With an already discussed surge in the volume of the average daily turnover, monetary authorities actually had no choice. Furthermore giving up the first two tops (and above all monetary independence) would not be attractive enough for monetary authorities.

Initially this shift heralded a period of high efficiency of central banks' policies. However in early 21<sup>st</sup> century, in the wake of a number of circumstances (including demography as well), interest rates ceased to be an efficient tool, thus forcing central banks to move towards more and more unconventional policies. The shift toward new unconventional policies could not leave central banks profitability unaffected. That is why this transition must be presented in a more detailed manner.

### **3.2. Other changes in the international monetary system and their indirect impact on central banks' profitability**

Under circumstances described in the previous section, world central banking experienced an already mentioned shift from the exchange rate towards the interest rate. Subsequently, central banks started to enjoy (albeit at a varying degree) more freedom to conduct autonomous monetary policies. However, from the point of view of central banks, a time lag of approximately three decades was needed to see this shift having dire consequences for the profitability of the central banks. In the meantime, other processes started to drag central banks' financial soundness, out of which the followings ones require to be precisely stipulated:

Firstly, a spectacular fall in inflation – as a result of the Great Moderation amongst others – made some banks face the threat of deflation (Bindseil, Manzanares, Webster 2004) – which out of definition exerts downward pressure on central banks' profitability. By the same token, Ize (2005) pointed out that a fall in both inflation rates and interest rates were the key reason behind the falling profitability of several central banks.

Secondly, falling inflation along with the progressive fintech revolution saw in many countries between the late 1970s and early 1990s a drastic decrease in the relationship of banknotes in circulation to GDP (Jobst, Stix 2017), which subsequently started to weaken the effect of seigniorage on central bank profitability. However, it must be noted that very low inflation (and not inflation falling to the desirable target) helped reverse the fall in the aforementioned ratios, with Switzerland and Japan being good examples. The differences between a scenario of falling inflation and a scenario of sustainable low inflation owes to the fact that falling inflation used to be coupled with efforts aimed at gaining credibility by selected central banks. Cukierman (2006) points out that these effort were coupled with higher interest rates which central banks had to pay for their liabilities in order to get enough deposits from the banking sector, and subsequently control the liquidity in the system.

Thirdly, the outbreak of financial crisis in 2008 and a pandemic crisis twelve years later, made many central banks across the globe launch unconventional monetary policies. The latter is a complex term and incorporates different policies, ranging from the purchase of different assets, negative interest rates, funding for lending operations and forward guidance. Out of all these policies and from the point of view of social capital addressed in the previous chapter, negative interest rates seemed to be the most relevant policies. But from the point of view of economic impact, it is the massive purchase of government assets, which requires further reference.

As a result of these purchases, the shape of the entire economic policy mix seemed to have changed forever. With central banks purchasing large amounts of public debt (in the extreme case of Japan, every second bond issued by the Ministry of Finance is in the possession of the Bank of Japan), the impact of their decisions had gone well beyond the area of monetary policies.

### **3.3. Central banks moving beyond their mandate**

Even before the outbreak of the GFC, central banks' instrumental independence allowed central banks (at least in some cases) to make decisions that had fiscal implications and thus contributed to the demolition of democratic accountability. However, the area where central banks were exerting their influence on fiscal policies was mainly confined to their role of the LoLR. The forced purchases of nonperforming loans or any other bailout efforts aimed at preventing panic in the market were classical examples of such interferences into fiscal policy.

In the early phase of the GFC in 2007 and 2008, there was further continuity of these policies, as both the Bank of England and the Federal Reserve – prior to their involvement in the purchase of assets – have been engaged in the rescue action of domestic financial institutions (Northern Rock and Bear Stearns respectively), a rather limited area of interweaving of monetary policies with fiscal ones was about to change.

The escalation of the GFC and the outburst of the pandemic crisis twelve years later saw a sharp deterioration of fiscal stance across the globe. The US public debt in the period under review (2007–2021) almost doubled – from around 65% of GDP to approximately 130% of GDP. Central banks could not remain indifferent to this state of affairs. They have been involved in the process of purchase of state debt papers on a massive scale). In the UK, the situation got even worse, as the public debt rose from the level below 40% GDP in 2007 to almost 100% of GDP in the early 2020s. Only in the euro area (mainly because of the almost ultra conservative German policies in the 2010s), did the size of public debt see an increase from levels below 70% of GDP to slightly below 100% of GDP.

If the decision undertaken by selected central banks to purchase government bonds was initially dictated by monetary reasons (or to be more precise the failure of monetary policies in the wake of the liquidity trap), in the medium term it ended with far reaching consequences for fiscal policies.

As a result, central bank's influence in shaping the economic policy mix has gone well beyond its prerogatives – namely setting the level of interest rates and being the LoLR. Furthermore, central banks' decisions regarding reinvestment (not to mention the eventual redemption of the possessed debt) may grant them even more influence in shaping the macroeconomic policy mix. There is little hope for the fiscal soundness of the key world economies, as the probability of a significant reduction of their public debts in the foreseeable future is very low. Either the eruption of conflicts or an increase

in the probability of belligerent confrontation put the priority on an increase in fiscal expenditure – thus posing further constraints for authorities to keep their finances under control.

Subsequently, the conversion of selected central banks into massive holders of the public debt has started to affect these central banks' profitability in a stable manner, thus making them more prone to financial losses than ever. Furthermore, the massive purchase of state debt assets has converted these central banks de facto into a decisive factor as far as fiscal policy is concerned. It is enough to say that the issue of total redemption of the previously purchased debt has never been addressed in a detailed manner.

With central banks being the key actors in shaping fiscal stance, it should not be surprising that their own financial soundness became an issue of paramount importance. After all, this deterioration must be perceived as a residual effect of the tightening of monetary policy pursued by central banks in their efforts to keep inflation under control in the medium term (following a sharp increase in the inflation rate at the turn of 2021 and 2022). However, with the central bank moving ever more from its original mandate, more and more questions appear regarding the legitimacy of its action.

Furthermore, in line with what Cukierman wrote, at least until the mid-1980s (or even later), the majority of central banks were dominated by the government and were even perceived as a division of the treasuries or ministries of finance. Quite often, central banks in the past had to serve conflicting interests, ranging from stimulating economic activity and exports and ending with financial stability. The failure of the aforementioned formula of central banking which used to prevail until the late 1980s (and often resulted in failures to preserve low inflation in a sustainable manner) triggered, as it was already noted, a transition towards the full independence of these institutions.

The side effect of this transition was an issue related to social capital. In the former constellation of supremacy of the government over the central bank, the subsequent large versatility of objectives made the story of both profitability and capital an almost redundant issue. After all, in a world where the relationship between governments and central banks was dominated by the former, both the finances and profitability of the latter could hardly generate any interest. It was only at the turn of the centuries when a sort of a reversal took place. Initially, the shift in central bank's independence helped to consolidate their anti-inflationary credentials. However, with the shift from conventional to unconventional monetary policies and subsequent massive purchase of the public debt later on, central banks started to have more and more to say regarding fiscal policy. As a result of this reversal, interest in the key central banks' profitability started to be generated. And the losses generated in 2022 only helped this process gain momentum.

This scrutiny of central banks' finances led to the emergence of the following questions: what will happen to the profits generated by the central bank? Should central banks' profits always be transferred to the government? And if yes, how could these banks take care of their own soundness? But obviously, the most interesting issue was related to central banks' losses in the wake of central banks' accountability (the story of the eventual recapitalisation of the central bank by the state).

Furthermore, all the aforementioned processes raised the story of the trade-off between the newly regained independence and democratic accountability. All of a sudden the finances of these nonelected institutions (operating upon social consensus as result of which these institutions were given the right to issue domestic currency) started to matter more than ever. A nonelected body, fully independent from the government, was in command of power enabling it to redistribute state finances. As a result, additional questions started to emerge. Is there any democratically elected institution

entitled to monitor their finances? And above all, when should their finances be a reason for concern and subsequently for state scrutiny?

In order to answer these questions, a closer look must be made into the finances of the central banks. This look will be offered in the next and the final part of this article.

## 4. Profitability and the equity of the central bank

### 4.1. Profitability of the central bank

The issue of profitability of the central bank is closely related to its uniqueness. This link resembles the two-tier system.

On the one hand the central bank's ability to be in command of issuing the sole tender, namely currency in circulation, does not prevent the central bank from being the subject of economic laws, like any other institution. Obviously its monopoly to print money may tempt it to cover its own losses but, as it will be explained later in the text, abusing the offer of a society privilege is not an attractive option for any central bank. That is why a central bank can generate a gain and a loss, but very seldom can it reach a breakeven point. Profitability (a loss) leads to higher (lower) equity.

On the other hand, a cumulative streak of losses can pave the way for negative equity, without causing any threat of a bankruptcy. Furthermore, as will be shown later in this part, negative equity (at least in the short run) does not affect a central bank's ability to fulfil its mandate.

In order to understand the link between the uniqueness of the central bank and its profitability better, it makes sense to take a closer look at its financial statement first, as it will help us to understand better terms like equity, capital and the profits/losses account. An effort will be made aimed at detaching the most important factors affecting the profitability of a given central bank. That is why a brief presentation of the key accountancy notions is needed.

### 4.2. The central bank's balance sheet as a cornerstone of its financial statement

The balance sheet is the key element of each financial statement (apart from the cumulative profit/loss account and additional information). That is why in order to understand the financial statement there is a need to take a closer look at the balance sheet.

The simplified central bank balance sheet can be illustrated with this graph:

Assets	Liabilities
FXR	Cash (C)
Central bank's loans (L)	Banks' reserves (R)
Securities purchased (S)	Other liabilities (OL)
	Equity (E)

Note: on the assets side, there should be a position known under the name, "other asses". But because of its usually neglectable size, it will be omitted in this analysis.

All the above-mentioned assets should be matched by liabilities plus the broad definition of equity.

As far as the assets are concerned, the FXR stands for foreign exchange reserves, L stands for lending offered by the central bank to the banking system and S stands for securities in domestic currency purchased by the central bank. In the case of liabilities, our focus of attention will be on banknotes and coins (namely cash C), reserves placed by the banking system in the central bank (R) and the remaining or other liabilities (OL). E stands for equity and is the most important component of the balance sheet from the point of view of the central bank's profitability. That is why, before moving further with a description of financial statement, the notion of equity must be presented in a more detailed manner.

### 4.3. Equity

Equity must be perceived as the residual difference between assets and liabilities of a central bank. If the assets surpass the liabilities, the equity is positive, and the other way round: positive net liabilities engineer a negative equity. In order to discern the difference between liabilities and equity, it is worth looking at the central bank through the (recipients) ownership of its liabilities. In other words, it is all about finding the answer to the two following questions:

- what owes a given central bank, and who is in possession of these liabilities,
- whom a given central bank owes given liabilities.

If a central bank owes given liabilities to any agent outside the bank, it is a genuine liability. And if the liabilities are owned by the owner of a given institution, then it is equity.

Equity is a complex notion, because there is no universal definition of it. Many banks tend to have their own definition of equity – often reflecting their own preferences. There is a tendency to use interchangeably equity and capital – which, as it will be shown later on, is wrong. Because of the complexity of equity, it is even more difficult to find a link between it and the profitability of the central bank. Even if this is the case of many central banks (the CNB for instance), it is incorrect to assume that accumulated profit/losses are equity's backbone. Nevertheless, there is a positive correlation between the central bank's profitability and its equity.

And now for the sake of precision, it makes sense to leave the aforementioned link aside and subsequently to point out differences between the central bank's capital and its equity. According to Archer and Moser-Boehm (2013), the former refers to the money committed unconditionally by the owner of the central bank or subsequently by way of a new injection of funds. Stella (1997) defines the capital as the amount directly invested by shareholders plus accumulated retained earnings minus losses. In other words, the position in the balance sheet under the name "capital" usually reflects capital foundation. In the majority of cases, it is a tiny amount of funds. In the case of the oldest central bank, the Swedish Riksbank, its capital until the end of 2022 amounted to a tiny SEK 1 billion (approximately USD 100 million). In the case of the second oldest central bank, the Bank of England, its capital is even smaller and amounts to GBP 15 million and its level goes back to 1817 – and its amount has not been adjusted ever since. The SNB share amounts to CHF 25 million. In Japan it amounts to JPY 100 million. These are extreme cases. The Bundesbank's capital amounts to EUR 2.5 billion euro, and in the case of the largest central bank, the Federal Reserve, its capital amounts to less than USD 36 billion.

That is why in line with what Archer and Moser-Boehm pointed out, capital is only one component of equity. Apart from capital, equity is composed of:

- reserves (built through earnings that are not distributed to shareholders as dividends),
- retained earnings (i.e. profits pending distribution or transfer to reserves),
- revaluation accounts,
- general provisions.

However the aforementioned definition is not a universal definition, and subsequently central banks tend to define equity according to their own definitions. The SNB's definition is a definition which most resembles Archer and Moser-Boehm's definition. According to the SNB, its equity capital is the sum of the following components:

- share capital,
- provisions for currency reserves,
- distribution reserves,<sup>1</sup>
- annual result.

The Riksbank perceives equity capital in a different manner. According to the oldest central banks on earth, equity is composed of capital and reserves only. This implies that provisions, revaluation account and annual profit are part of liabilities and remain outside of equity. Even more interesting is the case of the Czech National Bank (CNB 2022), which takes into its own equity: share capital and funds, the revaluation reserve, accounting loss/profit from the previous years and the current profit/loss. NBP includes into its equity: the statutory fund, reserve fund, the FX risk provision, the gold revaluation account, currency and securities revaluation gains, an uncovered loss of previous years and a portion of profit for the current year retained at NBP (i.e. 5%), which is allocated to increase the reserve fund (NBP 2022).

#### 4.4. Financial result (profit/loss)

After this presentation, a further shift toward an explanation of the financial statement can be made by approaching the financial result. In order to understand the idea behind the financial result, all these assets and liabilities should be divided into two groups, with liquidity as the division's criterion:

- the most liquid items, namely currency either domestic or foreign ones,
- the less liquid items, whose value can be denominated with the help of price denominated in a currency (the domestic one).

In order to proceed further with the idea behind a financial statement, a brief definition of money is needed.

Money helps to denominate prices, but money itself has its price; the internal one (namely interest rate) and the external one (an exchange rate). In other words, the most liquid assets are subject to changes in both the internal and external price of money.

As far as the second group of items are concerned (items like securities, commodities and real estate amongst others), all these items, and whose liquidity is lower compared to a fully liquid currency,

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<sup>1</sup> Which according to the definition is a form of profit/loss carried forward and serves as a fluctuation reserve to enable the legally required medium-term smoothing of the annual distributions. The portion of the annual result remaining after the appropriation of profit is allocated to the distribution reserve, or the shortfall for the appropriation of profit is drawn from it (SNB Annual Report for 2023).



are subject to changes in their prices. In other words, if the price of an ounce of gold denominated in domestic currency rises/falls (with the exchange rate remaining stable) throughout a given year, it will immediately translate into a higher/lower central bank financial result (profit or loss) or equity, depending on the applied accounting rules.

In other words, all the assets and liabilities can be affected by two or three of the three above described variables, namely the exchange rate, the interest rate and the changes in prices of the less liquid assets and liabilities. If the assets are affected by all three variables, the liabilities are usually affected mainly by the interest rate and the change in prices.

The financial result sums all the changes in the valuation of assets and liabilities as a result of changes in the exchange rate, interest rate and the price of less liquid components of the central bank's balance sheet.

As was already said, the profit and loss (financial result) account is not universally homogenous, but it usually contains the following:<sup>2</sup>

- net interest income (NII),
- net result from financial operations (mainly from FX operations),
- fees, commissions and other income,
- other costs (i.e. operating expenses).

Out of these four positions, the most important are usually the first two. That is why for the purpose of this publication, the sum of these two publications will be denominated as net income (NI). They are the key derivatives to what happens to the financial result. The scale of the impact of these two positions hinges on the pecking order of the assets of a given central bank. If the assets are dominated by the FX reserves, it will be net results from financial operations that are the key factors in shaping the financial result. However, with more and more banks being in command of different kinds of securities, it is the net interest income, which is becoming a decisive factor in affecting the central bank's profitability.

As the NI is nowadays becoming the most important generator of the central bank's profitability, it makes sense to take a closer look at them, starting with the presentation of a given central balance sheet and those of its components which contribute to its profitability. The NI can be derived easily from the balance sheet by summing its assets and subtracting its liabilities:

$$NI = FXR(ER)\%F + L\%R + S\%S - R\%R - OL\%R \quad (1)$$

where  $\%F$  is the return on foreign reserves (including interest rate) in which FX reserves are denominated,  $\%R$  is the interest rate set by the central bank, and  $\%S$  are the coupon a central bank receives from its purchase assets. ER stands for exchange rate.

This formula requires further scrutiny. Otherwise it may create a false impression, that the financial result takes neither equity nor seigniorage (definition) into consideration.

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<sup>2</sup> For instance in the Eurosystem, the so-called net result from monetary income pooling is added.

#### 4.5. Profitability of the central bank through the lenses of net income

In order to detect the seigniorage and equity, formula (1) must be redrawn. If formula (1) was derived from the NI, the starting point of the formula presented below would be the balance sheet once again. The equation in reference can be derived by cumulating all the assets on the left hand side of the equation and all the liabilities on the right hand side of the equation in line with a similar analysis conducted by the Banco de Mexico (2019):

$$\text{FXR(ER)} + L + S = C + R + \text{OL} + E \quad (2)$$

Now it is time to combine formula (1) with formula (2). However, prior to this combination, two issues must be borne in mind.

Firstly, that if all the assets are either affected by ER and %, on the liabilities side, both cash and equity are exempted from the changes in both interest rates and exchange rates (both are unremunerated). Nevertheless, seigniorage – as it was already said – is an implicit part of net income.

As already stated, the NI consists mainly of profits stemming from changes in ER (exchange rate) and % (interest rate) on the assets side and changes in interest rates on the liability side.

Secondly, in order to make formula (1) a reference point for further analysis, there is a need to introduce an assumption aimed at getting rid of the difference between the domestic and foreign interest rates.

$$\text{NI} = \text{FXR(ER)}\%^F + L\%^R + S\%^S - R\%^R - \text{OL}\%^R$$

As a result we assume, that there is %<sup>A</sup>, that:

$$(\text{FXR(ER)}\%^F + L\%^R + S\%^S) / \text{Assets} = \%^A \quad (3)$$

where %<sup>A</sup> is weighted remuneration of all the assets.

Thus we have:

$$\text{FXR(ER)}\%^A + L\%^A + S\%^A = \%^A[\text{FXR(ER)} + L + S] \quad (4)$$

and net interest income equals as follows:

$$\text{NI} = [\text{FXR(ER)} + L + S]\%^A - R\%^R - \text{OL}\%^R \quad (5)$$

Since  $\text{FXR(ER)} + L + S = C + R + \text{OL} + E$ , or in other words, the central bank's assets equal the liabilities plus equity, we can rewrite the above formula (5) as follows:

$$NI = (C + R + OL + E)\%^A - R\%^R - OL\%^R \quad (6)$$

$$NI = C\%^A + E\%^A + R(\%^A - \%^R) + OL(\%^A - \%^R) \quad (7)$$

$$NI = C\%^A + E\%^A + (R + OL)(\%^A - \%^R) \quad (8)$$

where:

$C\%^A$  is seigniorage, i.e. income on issued cash (unremunerated liabilities),

$E\%^A$  is income on equity (which is also unremunerated),

$(R + OL)(\%^A - \%^R)$  is income on those assets which are financed by remunerated liabilities (R + OL).

This part of NI depends on the margin between the weighted remuneration of assets ( $\%^A$ ) and central bank interest rates ( $\%^R$ ).

So, assuming that  $\%^A$  is positive, NI would be negative and thus consequently so equity (E), when the margin between remunerated assets ( $\%^A$ ) and remunerated liabilities ( $\%^R$ ) is negative and so high that it would surpass the income on seigniorage and equity. Moreover, when the equity is negative, the income on equity would be also negative.

#### 4.6. The importance of seigniorage in the NI

The above-mentioned formulas also explain why many central banks omit such an important source of earning as seigniorage at the time of pointing out the origins of their financial result. In other words, seigniorage is an implicit part of net interest income. As Schobert (2001) explains, seigniorage should be perceived as central banks' savings. Had it not been because of possessing the right to issue money, the central bank would have to issue its interest bearing liabilities aimed at financing its own assets. This is one more reason which makes the need to refer to seigniorage in a more detailed manner.

Seigniorage, even if not affected by interest rates, plays an important role from the point of view of the NI. The aforementioned analysis also points out the importance of social capital. Seigniorage, as it was pointed out in the first part, is the direct consequence of the social capital which was given to central banks. As a result of this constellation, one question emerges. Does seigniorage pose an incentive to abuse it?

As will be shown later on, it is not in the interest of the central bank to abuse its privilege of issuing money (which in a matter of fact generates the seigniorage). Furthermore, in the environment of the low inflation culture, resorting to seigniorage was never perceived as a feasible option. With the revenues derived from seigniorage remaining rather a theoretical possibility, and in the wake of mounting loss generating tendencies, the importance of the central bank's equity and capital has become critical. The central banks' capital was never large enough to ensure full protection against losses. That is why seigniorage from the point of view of improving the central bank's finances has gained in relevance.

According to Buiters (2008), as long as the central bank is not affected by liabilities denominated in foreign currency or index-linked liabilities, it can recapitalise itself by simply increasing its own monetary financing (namely seigniorage). However, this kind of strategy may end in higher inflation

and a subsequent loss of credibility. It all depends on the starting point (as far as the inflation level is concerned) of the recapitalization. If these efforts coincide with low inflation, there is some scope for them to be successful.

In his research, Buitier (2008) mentioned the so called the Long Run Seigniorage Laffer Curve (Easterly, Mauro, Schmid-Hebel (1992), and Korosteleva (2007)), which consists of finding a maximum point at which seigniorage is optimised at a certain level of inflation (or money growth). Expectations concerning the future level of inflation and their impact on the above mentioned curve play an important role here.

With the help of his research, Buitier tried to prove that higher inflation increases (lowers) long run inflation tax revenue, provided the elasticity of base money demand with the respect to the rate of inflation is less (greater) than one (unity in absolute terms). In other words, as Buitier stated, there are limits (set by the aforementioned curve) to real resources a given central bank can appropriate from increasing the issuance of its own nominal base money. If these scenarios materialise, there is usually little option left, but to resort to the government assistance. This issue (recapitalisation by the government) will be discussed later in this chapter.

#### **4.7. Mismatches and subsequent volatility in equity**

With seigniorage apart, both the financial result and equity of a central bank are prone to large changes, stemming mainly from the valuation of assets and liabilities with the help of both the internal and external price of money. Sharp fluctuations in the level of interest rates, and above all exchange rates, paves the way for large mismatches, which are specific for central banking, and which would have never occurred in the case of a commercial bank.

For a central bank, keeping a foreign currency open position is an intrinsic feature of its activities. It is clearly visible in the case of these central banks (above all in emerging economies), which are in command of large foreign reserves, where the share of these reserves makes up almost 100% of all the assets possessed by the given central bank. Out of principle, such a high exposure to the exchange rate risk cannot be matched in any way by the liabilities kept in foreign currency held (if at all) by the given central bank. In other words, a given bank cannot close its open exposure in foreign currency. And subsequently, the net result from financial operations is exposed to the mercy of foreign exchange markets.

Another source of mismatches is the interest rate risk, described in detail by Wessels and Broeders (2022). This risk gained in importance as a result of the shift from ER towards IR, presented in the previous chapter. Even if this source of mismatch is not as significant as in the case of ER, it matters a lot for one fundamental reason. The sum of money lent by a central bank nowadays hardly (if at all) equals the amount of money deposited by banks (and governments) at the central bank, thus exposing the central bank to the risk referred to here.

Prior to the outbreak of the GFC, the corridor regime used to prevail with its almost intrinsic liquidity deficit. The latter almost out of principle generated profits for central banks stemming from the positive difference between the lending and the deposit rates. The advent of unconventional policies (and the subsequent exit from a corridor-like formula of operation policies) in the early 21<sup>st</sup> century changed the above-mentioned perception. A massive purchase of different kinds of interest bearing assets took place as a result of the so-called quantitative easing (QE), thus helping to transform

a duration gap from a negative to a positive one. After all, a significant share of banks' funds stemming from QE ended up on central banks' deposits. Once the NIRP came to an end, central banks had to remunerate these deposits, thus making them very sensitive to every change in interest rates. And with the reserve requirement either abolished (for instance in Sweden) or kept at a very low level, there is almost no way out for central banks to avoid paying this remuneration (De Grauwe 2023).

And the launch of QE coincided with other processes taking place in central banking which ultimately added a new dimension of mismatches stemming from the interest rate risk. A drastic fall in inflation in the first two decades of the 21<sup>st</sup> century made central banks purchase more risky assets (including nongovernment securities and shares), thus making them prone to credit risk. And on the liabilities side, a shift towards a cashless society in selected countries generated a structural shift from banknotes in circulation towards other liabilities (namely remunerated reserves), thus making central banks' liabilities even more prone to changes in the level of interest rates.

Summarising, the above-mentioned mismatches are an intrinsic feature of central banks' activities. They can be perceived as a side effect of the central banks' policies aimed at fulfilling their mandate. Accounting rules help to cope with these challenges stemming from these mismatches. That is why they need to be reviewed briefly. Thus, we witness a mismatch not only in currency (foreign currency assets versus domestic liabilities, in the case of central banks mainly from emerging countries), but also in interest rate (long-term fixed interest rate assets versus short-term floating rate liabilities, in the case of central banks mainly from developed countries).

#### **4.8. Accounting rules as a tool helping to deal with mismatches**

Central bank have two ways of reporting their profits and losses, which enjoy a great popularity among them.

##### **Mark-to-market valuation resulting in unrealized gains/losses**

The first to be discussed here is the asset market value. Under this formula, the value of assets is determined by the current market prices (Kjellberg, Ahl 2022). If the market value of an acquired assets is above (below) its purchase price, it paves the way for unrealised gain (loss).

For the sake of clarity, it makes sense to clarify the difference between the realised gains/losses from the unrealised gains/losses. The latter are gains/losses arising from currency or price revaluation, resulting from the difference between the average exchange rate or the market value, respectively, and the average cost of acquisition; while the former (realised gains/losses) are gains/losses arising from operations, resulting from the currency or price revaluation difference between the transaction price and the average cost of acquisition. Perhaps the most famous bank to stick to the above-described principle is the SNB.

##### **Acquisition cost**

Another method to report the value of the purchased assets consists in relying not on market price, but on acquisition price instead. For a long time many central banks (including the Bundesbank) resorted

to the acquisition price of gold (Stella 1997). This method gives a little clue about the possible value of the assets, should the need arise to sell them before their maturity (Kjellberg, Ahl 2022). Nowadays, the example is debt securities purchased by central banks within QE operations. Those securities are mainly valued at acquisition cost. The acquisition cost principle is followed by the Fed, with its gold stock being a good example. It is all about the so-called gold certificate accounts, which are defined as the receipts issued to the Reserve Banks by the Treasury against its gold holdings. In return, the Reserve Banks issue an equal value of credits to the general account of the Treasury, computed at the statutory price of USD 42.22 per troy ounce (Fed 2024). However as time progresses, other central banks (i.e. the Bundesbank) have started to value their stocks of gold with the help of the mark-to-market valuation rule.

Apart from the two above-described accounting rules most often used by central banks, there are also some less common strategies. The European System of Central Banks pursues yet another guideline – which can be perceived as a combination of the two aforementioned rules. If the market value of a given asset falls below its acquisition price, it paves the way for a loss, which indeed affects the net income. However, a reversed combination (where the given market price surpasses the nominal value) does not generate reported profits for a given year. It is recorded on the so-called revaluation account.

As a result of the above-mentioned rules, there is talk of an asymmetric approach as far as the evaluation of a financial result is concerned. The financial result is far more sensitive to any kind of losses (regardless of being realised or unrealised), while in the case of revaluation gains, the financial result is only affected following their full realisation.

As the Riksbank (2022) material explains, the aim of discerning unrealised gain from a realised one is that the central banks should not transfer their unrealised gain to the central authorities. Stella refers to so-called hidden reserves or losses whenever the changes in the value of assets and liabilities are not recognized.

The issue of valuation is important because of one more reason as the entire balance sheet is hardly the subject of one valuation only. If assets are valued by their fair value, the liabilities (namely banknotes and deposits) are set at fixed value (nominal value). There have been some voices in favour of unifying valuation standards and value on both sides of the balance sheet according to their market value. So far these voices have been unable to prevail because of one simple reason: assessing the value of liabilities according to their market value exposes them to a certain threat which may pave the way for a misperception of a given central bank's soundness. An example may prove useful in understanding the whole story. A given central bank issues bonds which make its liabilities increase by the value of the issued bonds. Shortly afterwards, the institution in question experiences a deterioration of its standing. However, instead of increasing, its liabilities experience a fall in value, which stems from a lower value of a previously issued bond. And in order to settle all the accounts, a fall in the value of the above-mentioned bonds creates an incentive to raise equity. In other words, an increase in equity equals a fall in the value of the bond. But this state of affairs creates a deceptive perception of the bank's soundness which is not justified by its fundamentals. Furthermore, it makes the balance sheet subject to even more abrupt adjustments.

The most common way to deal with mismatches is to act with an intermediation of different revaluation accounts. The ECB defines this kind of account in the following way: "Balance sheet accounts for registration of the difference in the value of an asset or liability between the adjusted cost of its acquisition and its valuation at an end-of-period market price, when the latter is higher than

the former in the case of assets, and when the latter is lower than the former in the case of liabilities. They include differences in both price quotation and/or market exchange rates.” (ECB 2024).

As referred to in this part of the text, a given central bank may record revaluation of balance sheet items, through profit and losses, through the equity and by not revaluing at all. In the case of profit and losses, this kind of approach has been pursued by the SNB. If the revaluation goes to equity, it is accomplished with an intermediation of revaluation accounts. A good example can be the Eurosystem, where there is an already mentioned position on its liabilities, known under the name revaluation accounts. The third option is the case where no revaluation is undertaken and the assets are prices valued at acquisition costs. In other words, the book value remains unchanged, with the Fed being the best example of these policies.

Summarising, central banks are in command of tools which help them to confront large mismatches. There is widespread support for using these measures, especially at the time when the central bank fulfils its mandate.

#### **4.9. Limitations of accounting rules pursued by central banks**

Accountancy rules applied by central banks may be yet another piece of evidence of the uniqueness of these institutions. However, if the aforementioned rules possess power to mitigate central banks' losses, why does the profitability of central bank matter? Furthermore, there is another question dealing with the limits for negative profitability, beyond which the need for government assistance emerges. The answer to these questions must be preceded by an even more provocative question, namely, are these rules efficient enough to eliminate the risk of bankruptcy entirely?

Starting with the last question, it must be emphasized that even assessing the probability of such a bankruptcy is often perceived as a provocative one. After all, the uniqueness of the central banks consists of the fact that it cannot go bankrupt. As Cukierman (2006) points out, central banks are set up to accomplish aggregate policy objectives, and it does not focus on profit maximisation. This statement, however, does not mean that a central bank is immune to dangers related to lack of liquidity and solvency. Its resilience to bankruptcy stems from the fact that it relies on sort of a social consensus which enables a central bank to resort to fiduciary money. As a result, a central bank can print enough money which should eliminate efficiently a scenario of bankruptcy entirely.

Nevertheless, the issue of central bank insolvency is widely discussed in the literature. Reis (2015) focuses on three types of insolvencies – intertemporal insolvency, rule insolvency and period insolvency. The first two kinds of solvency depend on analysing dividend rules and sources of risk to net income; assessing the last kind of insolvency demands overcoming the challenging task related to gauging the present value of seigniorage. Furthermore, Reis considers a central bank as insolvent when it attempts to resort to a Ponzi scheme on its reserves; banks no longer desire to hold them as they become worthless, and the price level reaches infinity. However, Reis does not offer any historical case studies of any of these insolvencies, which implies that it is impossible to convert these interesting theoretical considerations into reality.

Buiter (2008) goes even further, citing the example of two broken central banks, namely Zimbabwe and Tajikistan (2008), however neither of these banks faced a genuine bankruptcy procedure in the genuine meaning of this term. Still, these two cases need some more reference as Buiter is not the only one to refer to them (Di Genova 2021).

The two above-mentioned central banks were unable to fulfil part of their duties, either stemming from corruption or high inflation. In the case of Tajikistan, there were charges related to corruption and conflicts of interest. The President of Tajikistan had to intervene in 2007 and subsequently dismiss the Bank's Governor and all his deputies (Buiter 2008). Furthermore, the Tajik authorities were ordered by the IMF to repay the five reimbursements which were granted upon false data – as the central bank claimed to have USD 500 million reserves, but in reality it was in command of only USD 115 million. Last but not least, the central bank was involved in offering support to the local cotton industry (Di Genova 2021). Only expectations of a multilateral bail-out prevented the National Bank of Tajikistan from defaulting. It is difficult to elaborate further on the events concerning this bank as the last Annual Report on its website goes back to 2006.

The problem related to the central bank of Zimbabwe originated to higher inflation. Buiter offers a description of events up to 2008, while De Genova goes further and focuses on events which occurred up to 2010. In the case of both banks, the value of liabilities surpassed the value of their assets – thus paving the way for an urgent recapitalisation.

Another interesting case is the Bank of Lebanon. In late 2021, press reports disclosed that the reserves of the central bank of this country net of the commercial banks' claims on Bank of Lebanon (BDL) and gold were negative, at USD -4.7 billion in December 2015 (Nakhoul 2021). More was to come four years later, as the BDL was involved in a notorious financial engineering operation which essentially transferred the Lebanese banks' foreign exchange reserves to the BDL. These reserves were involved in servicing the Lebanese government's foreign debt and financing some of the trade deficit (Honohan 2023). In return, the banks received paper assets which were widely perceived as profitable. This process lasted until the embezzlement by the BDL Governor, Riad Salameh, was uncovered. The foreign exchange gap in the BDL assets was estimated to be at around USD 72 billion.

Similar cases can be found elsewhere, with Nigeria and Ukraine as the most notable examples. However, all the aforementioned examples have something in common: embezzlement stemming from either weak democratic principles or belligerent conflicts. That is why it can be assumed that in order to eliminate the probability of a central bank's bankruptcy, the analysis must be confined to a mature democracy along with a time of peace.

#### **4.10. Recapitalisation of a central bank**

The elimination of bankruptcy risk does not make other issues related to negative profitability disappear. Hence it is time to assess the second question out of the three questions mentioned above, namely why the profitability of a central bank matters. After all, central banks' losses can be perceived as a direct consequence of them fulfilling their mandates. Still, central banks are determined to avoid these losses in the medium run for one single reason. As was already said, resorting to seigniorage in the long run may turn counterproductive as it will end most probably with higher inflation. The other option which helps central banks avoid bankruptcy is government recapitalisation. But its price is often excessively high as it poses a risk to the central bank's independence from the government.

There are further arguments which help to understand why profitability matters to central banks. Among these arguments, the most important ones seem to be:



The link between equity and the central bank's ability to fulfil its mandate. Does negative equity jeopardise this ability?

The services the central bank should render to society. Does the central bank owe society more than merely fulfilling its mandate?

Nordstrom and Vredin (2022) believe that incurring losses does not prevent a central bank from fulfilling its mandate. The case of the CNB rejecting the ECB's claims that negative capital "may adversely affect" the central bank's ability to perform its tasks in 2010 (described in the previous chapter) tends to confirm this thesis. However, enjoying a sound financial position puts the central bank in a better position to carry out its tasks. Both authors perceive central banks' profits not only as a means to cover the costs it generates, but as a means with the help of which it creates a buffer for losses in the forthcoming future. Being in command of such a buffer implies a safeguarding net from the point of view of preserving its own independence. With a few exceptions, most of the central banks are possessed by the government. A prolonged period of negative profitability may raise the issue of the recapitalisation of the central bank by its government – an issue which makes possible the move to the second out of the three questions raised at the beginning of the section 4.9 of this text.

Recapitalisation of a central bank, as it was raised in the first chapter, is a controversial issue. Some experts (Cukierman 2006) believe that the government should capitalise central banks when the losses of the latter stemmed from the decisions undertaken by the former. A good example can be exchange rate arrangements, which often used to be decided by the government but were implemented and managed by the central bank. But this rule may not apply to unconventional policies, which were triggered, not out of concern for the state of public finances, but exclusively due to monetary reasons (stemming from the effect of the liquidity trap).

That is why there is an issue of stipulating the soundness of a given central bank. It is all about clarifying the circumstances under which the central bank can retain its own profits with the aim of improving its own soundness. The circumstances hover around the sort of criteria (or thresholds) discussed below. The inability to meet these criteria gives the central bank the right to retain its own profits.

The aforementioned criteria are far from being homogenous. Quite often they are of a theoretical nature and their content is sometimes confined to open questions. Should its capital or equity be adjusted to any macroeconomic variables, for instance the nominal GDP? But should the GDP be a reference point when it comes to assessing the capacity of the central bank to act as the LoLR (Wessels, Broeders 2022)? In this particular case, the total assets of the entire banking sector seems to be better (especially in the case of there are large deviations between the two indicators). These are not merely theoretical considerations. Some central banks resort somewhat to capital adequacy. For instance in Japan, the ratio of the capital base containing the capital account and provisions to the annual average amount of banknotes issued, multiplied by 100, is perceived as the capital adequacy ratio. Its reference values should oscillate approximately around 10% within the range of about two percentage points above or below that level, at the ends of the first half of the fiscal year and of the full fiscal year (Bank of Japan 2022).

Some central banks pay attention to provisions instead of focusing on the aforementioned criteria (or thresholds). Different central banks have different rules regarding their provisions. NBP can retain part of them, allocating it to FX provisions. In the case of the SNB, provisions function as a general reserve and a buffer against all forms of risk of losses (Q&A SNB). This is especially true on FX currency

reserves, as they quite often form more than 90% of all the SNB assets. Their size depends on economic development in this country. For a long period, the provisions grew at a rate equal to the average growth in the previous five years. As the SNB started to accumulate its foreign reserves, the annual allocation started in 2009 to be determined on the basis of double the average nominal GDP growth rate over the previous five years. This requirement was supplemented in 2016 with the specification of a minimum annual allocation of 8% of the provisions for currency reserves. In 2020 the threshold was raised further, towards to 10%. A further 6% goes to the SNB shareholder, and the rest goes to the public sector (SNB 2024).

The first above-mentioned option (which can be described as making reserves for a rainy days) was recently applied by some key central banks. The German Bundesbank, for instance, opted to preserve its entire gain for 2020 and 2021, as it did not distribute any profits for the years 2020 or 2021. Instead, according of its Annual Report for 2021, provisions were topped up by EUR 2.4 billion in 2020 and EUR 1.3 billion in 2021, reducing profits accordingly. But there is not any reference point for all central banks (or even a group of central banks). Their approach to the rules regarding capital, its distribution and recapitalisation depends entirely on the law and agreements in each individual state.

As far as the Fed is concerned, The Federal Reserve Act clearly stipulated that the Reserve Banks remit excess earnings to the US Treasury after covering operating costs, payments of dividends, and any amount necessary to maintain a surplus. During a period when earnings are not large enough to cover the aforementioned costs, a deferred asset is applied. It is defined as the amount of net earnings the Reserve Banks will have to realize prior to the restart of the remittances to the US Treasury (Fed 2023). During 2022, the Reserve Banks transferred USD 76.0 billion from weekly earnings to the US Treasury, and, in September 2022, most Reserve Banks suspended weekly remittances to the Treasury and started accumulating a deferred asset, which amounted to USD 18.8 billion by the end of the year. However, the Fed emphasized clearly on its website that a deferred asset has no implications for the Federal Reserve's conduct of monetary policy or its ability to meet its financial obligations.

The above-mentioned examples describe the case of central banks retaining their profits for a rainy day. When amassed funds for a rainy day are not large enough, then there is no other option than to resort to recapitalisation by the government. However, the best way to refer to recapitalisation of a central bank is to illustrate the most recent experience. The latter is even more valuable as it concerns the oldest central bank on earth, the Swedish Riksbank.

#### **4.11. The case of the Swedish Riksbank**

As will be shown in this section, the case of the Riksbank is a special one, and it is worth analysing it briefly because of two key reasons:

- it will help to review how the central bank finances work,
- the need to point out its uniqueness worldwide.

According to Riksbank, its sound finances help to preserve financial independence. Its assets are separated from the Swedish state's assets. Financial independence should ensure a situation where the central bank manages its assets in such a way that it will enable the Riksbank to generate enough profits to cover all its expenses (related to the functioning of this bank). The Riksbank Act puts it clearly by stating that, "financial independence can be achieved by the Riksbank independently financing its

own operating costs in the long term through the return generated by the management of the assets.” (Thedeen 2024). The feasibility of this condition depends of the size of the equity. A given central bank enjoys a self-financing status, when its NI covers all the operating costs.<sup>3</sup> It makes sense to review the already presented equation again:

$$NII = C\%^A + E\%^A + (R + OL)(\%^A - \%^R)$$

Like every other central bank which got involved in purchasing different securities between 2008 and 2022, the Riksbank saw its assets rising. The latter was mirrored by a hefty increase in remunerated reserves (a result of an increase of the Riksbank’s reference rate from 0% in May 2022 to 4% in September 2023). The return of interest rates to positive levels meant that the coupons of previously purchased securities were lower than the interest on remunerated reserves. That is why the latter part of the equation, namely  $(R + OL)(\%^A - \%^R)$  is negative. For all the other central banks, the first part of the equation, namely  $(C\%^A)$  used to generate hefty profits throughout the 2010s. Interest rates close to 0% (or even negative) helped to engineer a hefty demand for cash. It was not until mid-2022, when the demand of cash was slightly reversed as a result of interest rate hikes.

But the aforementioned trend was not the case for Sweden. In Sweden the demand for cash in the 2010s collapsed, falling by almost 50% (from levels of around SEK 110 billion in late 2009 to levels close to less than SEK 60 in 2017 and hovering around this levels ever since). To make thing worse, there is little hope for this trend to be reversed. In other words, the Riksbank was left out of interest rate free financing which would enable it to minimise losses (or generate profits). Hence, the need for recapitalisation from the government. The latter was enabled as a result of the new Riksbank Act, which entered into force in 2023. It introduced a new framework for equity, as a result of which there is a defined target level for equity set at SEK 60 billion. This level should be considered the upper limit for equity.<sup>4</sup> Its basic level amounts to SEK 40 billion (2/3 of the target level), and the minimum level is set at SEK 20 billion (1/3 of the target level) (Thedeen 2024). All these thresholds should be adjusted for inflation. The framework operates in the following fashion: if the target level is surpassed, the Riksbank’s profit should be distributed to the government. As long as equity is greater than SEK 20 billion but lower than the target level SEK 60 billion, both adjusted for inflation, the Riksbank is normally assumed to transfer any profits to equity adjusted for inflation. Finally, a fall of inflation below SEK 20 billion activates the government’s response, namely its recapitalisation (Thedeen 2024). This recapitalisation must be preceded by the petition to the Swedish Parliament to restore equity (Riksbank 2004).

In 2022, the Riksbank made a loss of SEK 81 billion, which should translate into a fall in equity (which amounted to levels close to SEK 63 billion) to the level of around minus SEK 18 billion. That is why 2024 is the year when the Riksbank’s recapitalisation is expected to take place. However, there are reasons to believe that the Riksbank case stems for the peculiarity of the Swedish banking system, which generated an unprecedented fall in the demand for cash. Apart from neighbouring Norway,

<sup>3</sup> Eric Thedein in his speech raised one more important issue, by pointing out that the net interest income (which is a part of the assessed in this text net income) should also cover any financial provisions or reversals made by the Riksbank. Furthermore, the Riksbank needs to make a certain profit to ensure that its equity increases in real terms (that is in line with inflation) and making the Riksbank capable of building up a capital buffer that can cover risks of various kinds.

<sup>4</sup> <https://www.riksbank.se/en-gb/markets/riksbanks-balance-sheet/the-framework-for-the-riksbanks-equity-in-the-new-sveriges-riksbank-act/>.

it is difficult to find a similar case worldwide. Furthermore, the matureness of Sweden's democracy helps to eliminate the risk of this assistance posing any threat to the Riksbank's independence. Subsequently it cannot be considered a reference point for other central banks worldwide.

## **5. Conclusions**

Nowadays, central banks' privileged position stems from the social capital which these banks were granted by society. In return for accepting banknotes issued by the central banks, societies worldwide expect from these banks something in return. Their expectations are apparently not confined to seeing central banks meeting their own mandates. The question, if central banks should render something more than low inflation, namely their own profits, in order to alleviate democratically elected governments in their struggle to keep public finances under control, is an issue of a long debate. The most disputed issue is not when central banks should transfer their profits, but when these profits should be retained entirely by central banks in order to improve their own soundness.

The aforementioned issues gain in importance in the wake of the central banks' long transition, namely from a state-owned institution to a fully independent body, whose accountability in a modern democracy can often be disputed. As long as low inflation was taken for granted, central banks were out of public scrutiny. Problems started to mount once the GFC erupted. Having been confronted with the first serious run on banks not seen in more than a century, central banks opted to intervene rapidly to save the financial system. The outbreak of the GFC coincided with the Great Moderation's impact on inflation gaining momentum. As a result, inflation – the key target of the majority of central banks – ceased to be a great problem. All of a sudden, the world economy started to be haunted in early 2010s by deflation. To make matters worse, under a newly emerged economic environment, the traditional toolkit of central banks aimed at controlling inflation ceased to work, thus forcing central banks to experiment with unconventional policies.

The most spectacular example of unconventional policies was the purchase of different assets, where the share of government bonds proved to be of paramount importance. Subsequently, central banks entered into possession of significant amounts of public debt, thus converting them into important fiscal players. The most extreme case of this shift is the Bank of Japan, which is in command of half of all the bonds issued by the Japanese authorities. From the point of view of the democratic order and social capital, this turned into a novelty with far reaching consequences. With central banks (whose credentials suffered as a result of the GFC and their subsequent response to it) responsible, by definition, for monetary policies and now getting more and more influence over shaping fiscal policies, question marks started to arise about the democratic credentials behind the economic policy mix. After all, the economic policy mix should be shaped above all by institutions enjoying a social mandate and not the institutions whose accountability was often questioned.

Against this background, central banks started to succumb to social pressure. All of a sudden, negative profitability started to attract much of the public's interest. Being already under deep scrutiny over the handling of the two crises and the inability to prevent an inflationary spike in the early 2020s, the losses recorded in 2022 only increased the negative sentiment towards the central banks. However, this criticism was quite often too harsh and hardly justified, thus increasing stigmatisation of many central banks further. Only some of the central banks opted to launch a defence of their own case.

In this paper, the focus of attention was above all on the processes that engineered the circumstances and which paved the way for negative profitability of central banks. The majority of these processes were beyond the control of the central banks. That is why casting the entire blame on them is unfair. Furthermore, as it was explained in the text, the negative profitability was a side effect of central bank policies aimed at protecting the respective economies from two unprecedented crises.

There is no doubt that question marks can be raised concerning the optimality of the policies pursued by the central banks between 2008–2022. Most probably some of the mistakes could and should have been avoided. But against an ever changing and uncertain macroeconomic and geopolitical background, it is almost impossible to avoid the question raised by the former ECB Governor Mario Draghi. He always kept repeating the same question, how the world would have looked like had it not been because of these controversial policies pursued by central banks. Economic textbooks tend to point out that a combination of sharp economic contraction and prolonged deflationary pressure ends with massive unemployment. Even if the average GDP per capita either slowed down considerably or in some cases stagnated, the scenario of massive and prolonged unemployment did not materialise. And central banks, no matter what their critics say, should take some credit for it. Society may still question central banks' achievements and blame central banks for abusing social capital. But justice must be done by recognizing that without the central banks' support, the world economy would have fared much worse.

Negative profitability is a side effect of the above-mentioned policies. These two issues may look not only controversial, but above all confusing and not transparent enough. That is why central banks should undertake more efforts aimed at illustrating and explaining the channel linking their recent policies with the way its equity performs. And with this text, such an effort was undertaken to make the above-mentioned interactions (between negative profitability and central banks policies) more transparent and hopefully easier for an observer to understand.

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## Związek między działalnością banków centralnych a ich rentownością

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### Streszczenie

Banki centralne na całym świecie są w trudnej sytuacji związanej z ich ujemnymi wynikami finansowymi. Nawet jeśli ujemny wynik finansowy sam w sobie powinien stanowić zagrożenia dla istnienia tych banków, to kwestia związana z tym wynikiem staje się newralgiczna z punktu widzenia politycznego i społecznego.

Rzecz w tym, że bank centralny cieszy się szczególnym statusem, wynikającym przede wszystkim z tzw. kapitału społecznego, jakim został obdarzony przez społeczeństwo. Nic dziwnego, że sytuacja finansowa banków centralnych zaczyna wzbudzać coraz większe zainteresowanie w dzisiejszym społeczeństwie – demokratycznym, oczekującym stabilności krajowego pieniądza. Podstawowym elementem tego uprzywilejowania jest renta mennicza, będąca pochodną monopolu banku centralnego na emisję pieniądza.

Obok przywilejów płynących ze wspomnianego kapitału społecznego bank centralny ma także obowiązki wobec społeczeństwa. Określenie ich zakresu jest dużo bardziej złożone. Rzecz w tym, że podstawowym obowiązkiem banku centralnego jest wywiązywanie się z jego mandatu, sprowadzającego się najczęściej do utrzymywania inflacji na niskim poziomie.

Prymat powyższego obowiązku nad wszystkimi pozostałymi zobowiązaniami stawia bank centralny w szczególnym położeniu. Troska o stabilny pieniądz krajowy każe mu się kierować zupełnie innymi zasadami księgowości niż w przypadku banku komercyjnego czy innej instytucji finansowej. To, czy kierowanie się odmiennymi zasadami księgowości (w dużej mierze za sprawą pozycji w pasywach o nazwie „pieniądz w obiegu”) nie zwalnia banku centralnego z innych obowiązków – jak chociażby wspomaganie rządu, wyłonionego w demokratycznych wyborach – pozostaje pytaniem otwartym.

Mandat banku centralnego często dość jasno precyzuje, kiedy i na jakich zasadach powinien wspierać wzrost gospodarczy, natomiast znacznie bardziej złożona jest kwestia transferu zysku banku centralnego do budżetu. Jeszcze bardziej kontrowersyjna wydaje się kwestia ewentualnej kapitalizacji banku centralnego przez rząd (czyli przez podatnika). Czy banki centralne za sprawą swojego uprzywilejowania mogą jeszcze liczyć na dodatkową pomoc rządu w zakresie swojej kapitalizacji? Odpowiedzią banków centralnych na tak sformułowane pytanie jest odwołanie się do problematyki ich kapitału własnego. Czy w ciągle zmieniającym się otoczeniu makroekonomicznym banki centralne mają prawo zachować większą część zysku z myślą o swym dokapitalizowaniu? Wydaje się, że przegląd doświadczeń wybranych banków centralnych zawarty w tym opracowaniu daje jednoznaczną odpowiedź te pytania.

Kolejną kontrowersyjną kwestią jest to, czy banki centralne powinny być rozliczane ze swoich strat. Czy każdą ich stratę można usprawiedliwić zmianami w otoczeniu ekonomicznym, na które nie mają wpływu? Jest to przykład jeszcze jednego pytania otwartego.

Jest niemal niemożliwe ustosunkowanie się do problematyki wyniku finansowego banku centralnego bez odniesienia się do wydarzeń w międzynarodowym systemie walutowym. Przez długi okres po zakończeniu drugiej wojny światowej wiele banków centralnych działało jako swego

rodzaju przedłużenie administracji rządowej. Dopiero gwałtowny wzrost inflacji w latach 1965–1985 nakazał rewizję ówczesnych związków między bankami centralnymi a rządami. Niezależność banku centralnego, występująca dotąd jedynie w wybranych krajach, zaczęła szybko urastać do rangi jednego z najbardziej pożądanym paradygmatów bankowości centralnej.

Dopóki banki centralne były w stanie zagwarantować niską inflację, dopóty pozostawały (a zwłaszcza ich wyniki finansowe) poza zainteresowaniem opinii publicznej. Problemy zaczęły się nawarstwiać po wybuchu Wielkiego Kryzysu Finansowego z 2008 r. Nagle pojawiły się pytania odnośnie do tego, czy mandat banków centralnych nie jest zbyt wąski. Czy rzeczywiście banki centralne dołożyły wszelkich starań, aby nie dopuścić do wybuchu takiego kryzysu? Jeszcze więcej wątpliwości wzbudza odegrana przez banki centralne rola w przezwyciężaniu skutków zarówno Wielkiego Kryzysu Finansowego, jak i kryzysu pandemicznego z lat 2020–2022.

Jedną z głównych reakcji banków centralnych na oba kryzysy było masowe skupowanie między innymi aktywów rządowych. W rezultacie stały się posiadaczami znacznego udziału w krajowym długu publicznym. W przypadku Japonii doszło do tego, że co druga wyemitowana przez rząd obligacja jest własnością tamtejszego banku centralnego. Czy zatem banki centralne – niezależne od wybranych w demokratycznych wyborach rządów i niemające takiego mandatu demokratycznego – nie zaczęły coraz silniej oddziaływać także na politykę fiskalną? Nic dziwnego, że wobec takich pytań oraz ujemnych wyników finansowych banki centralne stają się obiektem zmasowanych ataków ze strony środków masowego przekazu i często samych rządów.

Ze względu na to, że wspomniane zagadnienia są przedmiotem różnych dyskusji i wynikających z nich (często sprzecznych) opinii, głównym celem niniejszego artykułu jest przedstawienie przeglądu interakcji obejmujących działalność banków centralnych i ich kapitał własny. Opisanie tych interakcji powinno pomóc w zrozumieniu przyczyn obecnych problemów banków centralnych.

Nie sposób też nie ustosunkować się do krytyki wobec banków centralnych, która jest zbyt surowa i często abstrahuje od podstaw teorii ekonomii. Oczywiście niektóre działania banków centralnych mogły czy wręcz powinny być inaczej przeprowadzone. Nie można jednak oceniać ich wyłącznie z punktu widzenia wyniku finansowego. Podręczniki ekonomii wskazują, że połączenie gwałtownego skurczenia się gospodarki i przedłużającej się presji deflacyjnej (jak w latach 2008–2022) powinno doprowadzić do silnego wzrostu bezrobocia. Jeśli nawet wzrost średniego PKB na mieszkańca w tym czasie znacznie spowolnił, a niekiedy nawet się zatrzymał, to nie zmaterializował się scenariusz masowego i długotrwałego bezrobocia. A banki centralne, bez względu na to, co mówią ich krytycy, powinny z tego właśnie powodu zostać docenione. Społeczeństwo może nadal kwestionować osiągnięcia banków centralnych i obwiniać je o nadużywanie kapitału społecznego. Nie ulega jednak wątpliwości, że bez ich wsparcia kondycja gospodarki światowej byłaby dużo gorsza niż obecnie.

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**Słowa kluczowe:** bank centralny, bilans, rachunek zysków i strat, kapitał własny, wynik odsetkowy netto