

Understanding central bank balance sheets: Drivers, determinants, and projections of the OeNB's profits and losses



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Abstract

This policy brief examines the evolution of the Oesterreichische Nationalbank's (OeNB) balance sheet and its profit and loss dynamics. Following a decade of unconventional monetary policy, Eurosystem central banks have experienced sustained financial losses in recent years. Using a simulation, we illustrate the OeNB's projected balance sheet and net interest income over a 15-year horizon across 32 possible scenarios. The results highlight that the future usage of central bank money (whether in the form of banknotes or the digital euro) is the most influential factor for profitability in our analysis. We argue that central bank losses and negative capital are not inherently problematic, provided the institution fulfils its price stability mandate and thereby maintains public trust. The analysis concludes that financial strength can support central bank independence, but credibility ultimately hinges on consistent policy performance.

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Introduction

Over the past decade, central banks worldwide have faced considerable challenges. A prolonged period of below-target inflation, followed by the COVID-19 pandemic and an inflation surge, necessitated decisive monetary policy action. As a result, the European Central Bank (ECB) and the Eurosystem first engaged in extensive expansionary monetary policy, before finally raising interest rates in 2022. These developments have led Eurosystem central banks, which have historically been profitable, to incur financial losses since 2023. This has not only sparked academic interest in the financial stability and sustainability of central banks but has also raised public awareness of central bank dividends as a source of government income.

This policy brief is based on Kwapil et al. (2025), in which we simulate the balance sheet of a small- to medium-sized Eurosystem central bank and take the OeNB as a case study. We project the resulting profits and losses over the coming 15 years. Our focus is on monetary policy related net interest income (NII) as an important determinant of central bank profits and losses. NII represents the difference between the income earned from interest-bearing assets and the expenses incurred from interest-bearing liabilities. Moreover, we assume that non-monetary policy income/expenses (e.g., own funds or government deposits) net to zero. This provides a conservative upper (lower) bound for OeNB's loss (profit) projections.

32 projections based on different assumptions

We base our work on the consolidated Eurosystem balance sheet, with the OeNB's balance sheet approximated by its proportional share (2.96 %) after monetary income redistribution. However, not all monetary policy instruments are subject to profit and loss sharing. For example, government bond purchases under monetary policy asset purchase programs were conducted by national central banks using domestic bonds, meaning the associated risks and returns are not shared. As a result, interest income from these portfolios includes an idiosyncratic component tied to each national central bank's government bond risk premium.

Assumptions

Interest expenses are largely determined by the deposit facility rate, which is paid on commercial bank reserves held at the central bank in excess of minimum reserve requirements. Interest income, on the other hand, stems from two main sources: interest paid by commercial banks in refinancing operations, and returns on assets held in the monetary policy portfolios. To estimate profits and losses, we must therefore make assumptions about the evolution of both central bank assets and liabilities, as well as the future path of interest rates.

Regarding liabilities, we analyze future banknote circulation in the Euro Area under four scenarios:

- Historical growth (1999–2025), yielding a growth rate of 6.54% per year.
- Growth matching long-run nominal euro area GDP (3.2% per year).¹
- No growth in banknote circulation.
- A decline of 2.98% per year, reducing the stock of banknotes by 25% in 2033.

Moreover, we assume that the Euro Area's minimum reserve requirement (as a share of specific commercial banks' liabilities) will grow at the long-run nominal GDP rate of 3.2% per year. Excess reserves – determined initially by the run-off of the monetary policy portfolios – will then adjust based on banks' liquidity demand, stabilizing at a percentage of total Euro Area banking assets. We propose four scenarios for this stabilization level: 2%, 2.5%, 3%, and 3.5% of total banking assets. Once reached, excess liquidity will grow at the same 3.2% rate.

Regarding our assumptions about the development of the asset side, we stick to the ECB's decisions taken in 2024, when the Eurosystem completed its review of its operational framework for implementing monetary policy. For further details please refer to Kwapil et al. (2025).

¹ For this long-run nominal GDP growth rate, we use the median expectation of the ECB Survey of Monetary Analysts (SMA), June 2025, about long-run real growth rates (1.2%), plus the ECB's inflation target of 2%.

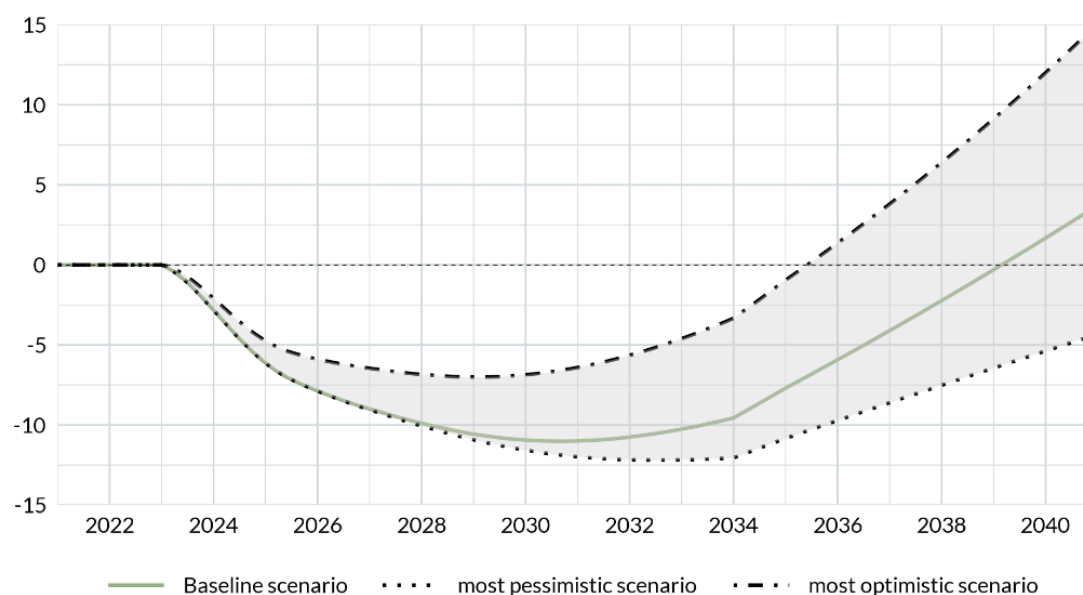
To complete our Eurosystem profit-/loss-projections, we require assumptions about future policy rates (deposit facility and main refinancing operation rates) and the average yield on the monetary policy portfolio. For the key ECB interest rates, we use median SMA expectations from June 2025. Unlike these uniform Euro Area-wide rates, income from legacy portfolio assets depends on yields from national government bonds, which were acquired during low/negative interest rate periods. For confidentiality reasons, we do not use internal OeNB accounting data on the exact securities that are held. Hence, we model two scenarios for legacy assets: 0% and 0.5% average yield. For future structural portfolio purchases, we assume yields will equal the MRO rate plus a 1.76% markup.²

Projection results

Chart 1 illustrates the range of outcomes from 32 assumption combinations. Under the most optimistic scenario, losses accumulate to nearly €7 billion by 2028, after which profits begin to gradually offset them. In the most pessimistic case, losses reach almost €12 billion, with recovery beginning only in 2032. Importantly, these scenarios should not be interpreted as forecasts, but rather tools to assess how key parameters influence Eurosystem central bank profitability.

The wide range of possible loss trajectories in Chart 1 underscores the challenge of projecting central bank financial outcomes. The most critical assumption is future banknote demand: holding other factors constant, the difference between our most optimistic (extrapolating historical growth since 1999) and most pessimistic (negative growth) banknote-scenarios results in a three-year difference in loss duration and at least five and a half years in recovery time. In contrast, variations in excess reserve levels (2% to 3.5% of banking assets) have a minimal impact, shifting recovery timelines by only a few weeks. Higher remuneration of the monetary policy portfolio reduces cumulative losses and shortens recovery periods. However, since these returns are largely locked in from past low-rate purchases, flexibility is limited. If future monetary policy requires large-scale asset purchases in a low-rate environment, central banks may face sustained low returns and losses. In such cases, strong banknote demand could significantly mitigate the impact of depressed asset yields.

Chart 1. Simulated cumulative profits/losses – OeNB scenario analysis (EUR billion)



Note: Latest historical observation: July 31, 2025. Source: ECB SDW (public), author's projections.

² Looking at historical data, we observe that the spread between euro area government bonds (across all maturities) and the interest rate on the main refinancing operations varied substantially. However, on average, it amounted to 1.76 percentage points between 1999 and 2016.

Is negative central bank capital problematic?

Central banks differ fundamentally from commercial banks. Unlike commercial banks, they face no minimum capital requirements, are exempt from Basel prudential rules, and cannot be forced into bankruptcy. Legally, their capital base is unrestricted. Moreover, central banks can create money directly – by crediting commercial bank accounts – rather than relying on external borrowing to cover losses (Bindseil et al., 2004). Karadi et al. (2024) argue, that this means central banks can operate with negative capital while maintaining inflation control. Moreover, Bell et al. (2024) study whether low or negative capital levels are inflationary using data from 47 countries between 1950 and 2023. They find no statistically significant relationship between equity levels and subsequent inflation outcomes.³

The OeNB and Eurosystem are not alone in experiencing recent losses; the U.S. Federal Reserve, Sweden's Riksbank, and Australia's Reserve Bank have faced similar challenges. Central banks employ various strategies to manage losses. The OeNB, for example, records losses as negative liabilities, which are gradually offset by future profits before resuming profit distributions to the government. The Swedish Riskbank, as another example, has a defined minimum capital level. When equity falls short of it, the Swedish government provides a capital injection to bring it back to target. Long and Fisher (2024) survey 70 jurisdictions and find no single best-practice model for handling negative capital or recapitalization.

Several scholars (e.g., Buiter, 2008; Cecchetti & Hilscher, 2024) argue that central banks and fiscal authorities should be viewed as a consolidated government entity. Central bank losses thus impose fiscal costs – either immediately through recapitalization or later via suspended remittances. The U.S. Federal Reserve and the OeNB use retained earnings for gradual, automatic recapitalization, avoiding political involvement. In contrast, direct government recapitalization (as in Sweden) requires parliamentary approval, increasing susceptibility to political influence. The key question, therefore, is whether recapitalization should be immediate or deferred.

A growing body of literature (e.g., Ize, 2005; Adrian et al., 2024) emphasizes that financial strength enhances central bank credibility. Capital acts as an interest-free liability, expanding the base for interest income while reducing reliance on recapitalization. This financial independence minimizes political interference, reinforcing confidence in inflation targeting and currency stability.

We agree that a strong capital base can be stabilizing. However, the optimal recapitalization approach remains debated. One-off government recapitalizations risk political interference (Adrian et al., 2024), whereas "stealth" recapitalization – offsetting losses through retained earnings – follow a transparent, rules-based process, reducing political influence (Bindseil et al., 2004). On the other hand, prolonged negative capital may leave a central bank vulnerable to pressure, whereas immediate recapitalization restores financial independence more swiftly.

Conclusions

Central bank losses or negative capital are not inherently problematic, especially when they arise as a result of the central bank fulfilling its mandate. Unlike commercial banks, central banks can operate effectively with negative capital due to their unique ability to create money. Therefore, conventional indicators of private sector success – such as profitability and capital – are not suitable measures of a central bank's performance and can be misleading.

Profitability is not among central banks' objectives, and the pursuit of price stability and macroeconomic welfare outweighs concerns about short- or medium-term financial performance. However, there are a few lessons to be learned from the current episode of central bank losses in advanced economies:

³ However, there are examples of central banks issuing an exploding volume of reserves that resulted in inflation. Historical examples – such as the role of central bank financing during 19th- and 20th-century wars (Ferguson et al., 2023; Jobst and Kernbauer, 2016), and the experience of Latin American emerging economies in the 1980s and early 1990s (Bell et al., 2024) – demonstrate that if monetary financing is used to accommodate unsustainable fiscal policies, it will ultimately erode price stability.

- Intertemporal smoothing mechanisms like deferred assets and retained earnings help manage central bank losses and reduce political interference, but prolonged capital weakness can still create vulnerabilities to political pressure.
- Demand for banknotes is a key driver of central bank profits. Therefore, future usage of central bank money is a critical variable in long-term financial planning.
- Excess liquidity has a limited impact on central banks' profitability.
- Asset yield assumptions significantly influence the recovery timelines in our projections. When designing a structural monetary policy portfolio in the future, the Eurosystem will need to carefully balance the costs and benefits of high-yielding (long-term) versus low-yielding (short-term) assets, i.e., improving the financial recovery time versus a smaller risk of asset-liability mismatches in the future.
- Finally, monetary unions can offer resilience during episodes of longer sustained central bank losses. As also argued by Cardoso da Costa (2022), shared monetary policy across member states enhances independence and offers protection against idiosyncratic national pressures on central banks.

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