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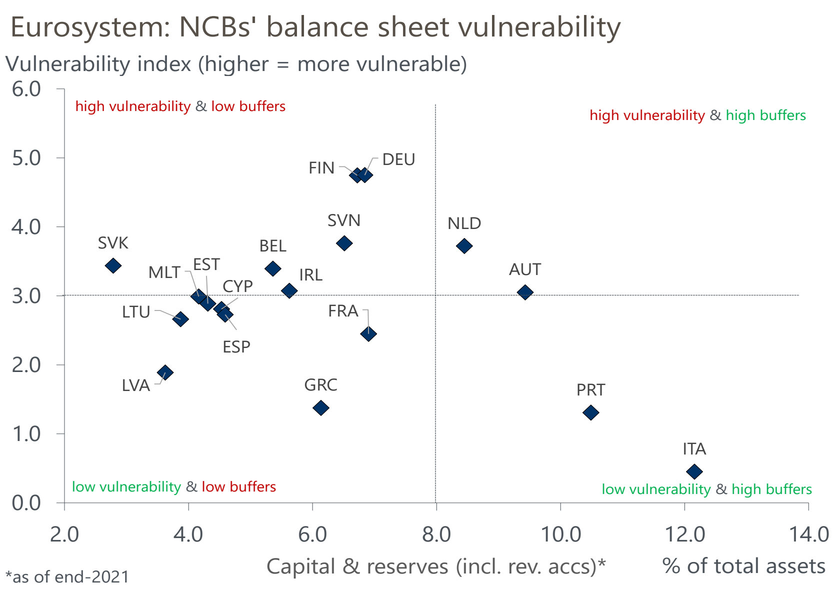
Research Briefing | Eurozone

Central bank losses will have a fiscal, not monetary, impact

- **Eurozone central banks became unprofitable last year, and near-term operational losses are likely to persist as banks exit the accommodative policies of the past decade. But while cash-strapped finance ministries may find it a headache, we don't expect it to hurt the ECB's ability to do its job.**
- **Estimates are highly uncertain but the Eurosystem could accumulate operational losses in the range of €150bn-€200bn (1.1%-1.5% of GDP) over the coming two years. This stems from the duration mismatch on its balance sheet. The return on long-term assets it holds – €4.9tn bond portfolio acquired through a series of QE programmes – is not rising in step with the interest paid on liabilities, primarily commercial banks' deposits held at the central banks, as interest rates rise.**
- **Notably, higher ECB interest rates will hit national central bank (NCB) profits unevenly. "Core" central banks – Bundesbank, National Bank of Belgium, and De Nederlandsche Bank – are more vulnerable to monetary policy tightening as their liabilities are skewed toward now-expensive commercial banks reserves and assets they hold are yielding relatively less. In contrast, the NCBs of Portugal, Greece, and Italy are better placed in the current environment.**
- **That said, the ECB and NCBs have financial buffers worth 0.9% of GDP. Plus, accounting and profit-sharing conventions limit the impact of higher interest rates on NCB profits and balance sheets. And central banks' position in the financial system allows them to operate even when faced with outright losses – but communicating this to limit credibility issues will be a challenge.**
- **We see fiscal, not monetary, policy being impacted most meaningfully as lower or no remittances to respective treasuries curtail their fiscal space in the coming years. It is unlikely, but if outsized losses wipe out the capital, governments may even choose to recapitalise their NCBs. Positively, the countries with more vulnerable NCBs are also in a healthier fiscal position.**
- **In any case, central bank losses should be put in a wider perspective of central bank practice, which evolved over the past two centuries. The task of a central bank is not to turn a profit (even if it often does), but to supply a vital public good in the form of monetary and financial stability.**

Chart 1: "Core" central banks are the most exposed to the higher ECB interest rates



Source: Oxford Economics/NCBs' Annual Reports

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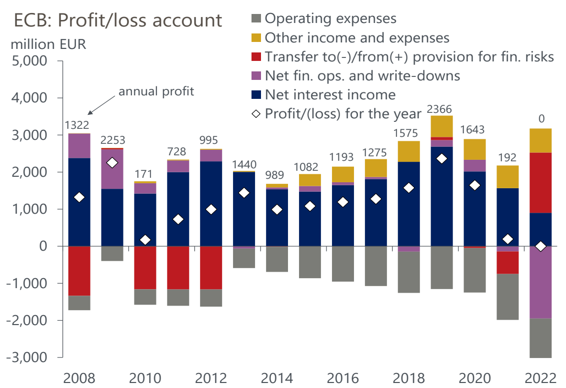
Central bank losses are here to stay

The bottom line for central banks is not profit, but the public good.

Agustin Carstens, BIS

Several major central banks have recently become unprofitable. The Swiss National Bank posted a record loss of $143bn (17.8% of GDP) in 2022. In addition, Fed started incur net losses in September last year and is on track to post an outsized loss for the year as well. And in the eurozone, the Bundesbank and the ECB itself only avoided outright losses by tapping into pre-accumulated provisions to offset operational shortfalls (Chart 2).

Chart 2: In 2022, the ECB posted no profit for the first time since 2007



Source: Oxford Economics/Haver Analytics/ECB

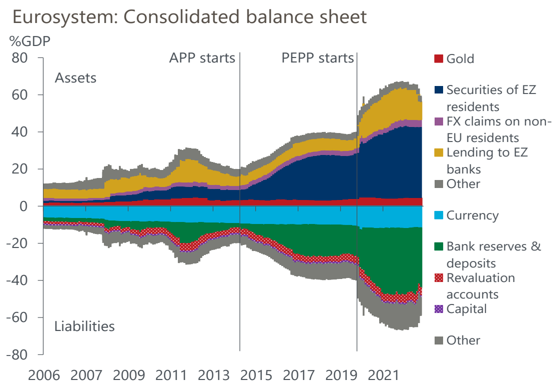
We expect the ECB and national central banks within the Eurosystem such as the Bundesbank to remain operationally lossmaking for the next few years as the monetary policy stimulus of the past decade is unwound. Essentially, the losses are due to the maturity mismatch on central banks' balance sheets and the record pace of monetary policy tightening.

On the asset side, the string of QE programmes (APP, PEPP) as well as liquidity-providing credit operations (LTROs) have bloated the size of the Eurosystem's balance sheet from 20% of GDP at the start of the APP in Q4 2014 to 59% currently (Chart 3). It is crucial to note that all these programmes were being implemented at the time when the ECB's interest rates were stuck at or even below zero and that the average maturity of government debt bought was around seven years, with the vast majority of bonds paying fixed, and often negative, coupons.

In contrast, on the liability side, central banks primarily hold bank reserves and deposits that were created during the QE-related asset purchases and LTRO lending. These are remunerated at the prevailing policy rate.

This was a profitable setup in recent years, when national central banks (NCBs) benefitted from the "super-seigniorage" lifting their net interest margin. This is because these purchases led to additional income for the NCBs not only on the government bonds acquired (such as through the PSPP), but also from the newly created reserves, which commercial banks deposited with the respective NCBs at the negative rates.

Chart 3: QE and lending programmes have bloated the ECB's balance sheet



Source: Oxford Economics/Haver Analytics

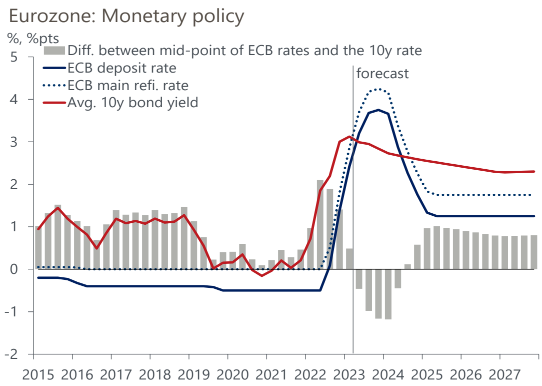
However, after the ongoing record-fast tightening of the monetary policy, what was a net source of income for the Eurosystem before, has now become a significant expenditure item. To illustrate the scale, with roughly €4.1tn in excess liquidity parked in the deposit facility in the Eurosystem currently, the tightening so far (300bps) will turn the €20bn profit on the deposit facility to a €102bn loss in annual terms (0.8% of the eurozone GDP).

At the same time, things on the asset side of the balance sheet things do not move as quickly. The effective yield on the government bond portfolio is rising only gradually as low-yielding bonds mature and are being replaced by higher-yielding ones. Indeed, as long as the yield curve remains inverted NCBs are likely to remain unprofitable as the interest expense on the deposit facility stays larger than interest received on bond holdings.

As we expect the yield curve to remain inverted until Q3 2024 (Chart 4), this means that the Eurosystem may post profits again only in 2025. The exact breakeven point depends primarily on the realized pace of rate cuts (the quicker they come about, the sooner the interest expense on the excess reserves will fall) as well as quantitative tightening (QT) (the faster it proceeds, the lower the volume of reserves and higher yield on long-term bonds, both boosting net interest income).

Our rough estimate points to around €150bn-€200bn (1.1%-1.5% of GDP) cumulative operational central bank profits until Q3 2024, with losses being recouped by mid-2025.

Chart 4: We expect 10-year bond yields to undershoot ECB rates until Q3 2024



Source: Oxford Economics/Haver Analytics

Financial buffers and accounting rules will cushion the hit to NCB's profits

Importantly, there are a number of solutions which weaken the link between the monetary policy, market conditions, and the impact on their balance sheets and P&L.

First, the accounting conventions such as the asymmetric treatment of unrealized gains and losses through the use of so-called revaluation accounts (see the **Appendix** for more details).

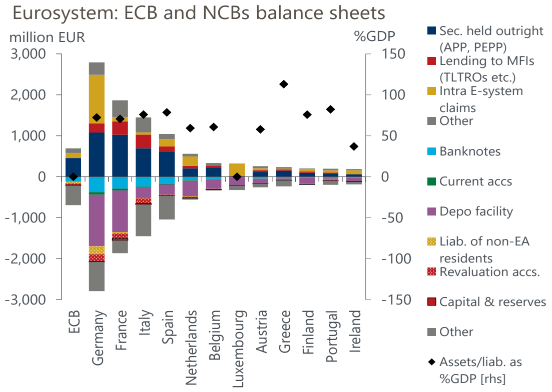
Furthermore, the Eurosystem held-to-maturity (HTM) government bond holdings are not marked-to-market, but instead reported at the so-called amortised cost, defined as purchase price adjusted for the premium/discount of the bond. As a consequence, lower market valuations of APP and PEPP holdings of the Eurosystem are not translating into the P&L.

The other solution is to set aside part of the profit to build a financial cushion which could be tapped in the case of losses. For example, before the ECB profit is distributed to the shareholders (NCBs), up to 20% it is set aside in the so-called General Reserve Fund. In a similar vein, NCBs have their own profit distribution schemes which usually include some form of risk provisioning. The presence of available buffers means that their losses will not immediately eat into the capital of the ECB and the NCBs (€124bn, or 1% of eurozone's GDP, at the end of January 2023).

NCBs will be hit unevenly by the ongoing monetary policy tightening

But using the aggregated Eurosystem data gets us only this far. At this point, it is useful to acknowledge the fact that the ECB owns only 6.7% of the total Eurosystem assets, with the remainder held by the NCBs (Chart 7).

Chart 5: ECB's asset holdings account for just 6.7% of total Eurosystem assets



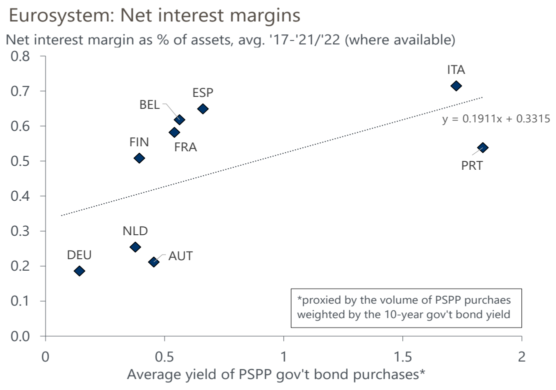
Source: Oxford Economics/Haver Analytics

Notably, as the composition of the relative holdings of assets and liabilities differs across the Eurosystem, the impact of the higher ECB interest rates on the NCBs' bottom lines will be uneven.

In order to better capture the relative stance of various NCBs, we have compiled an index which captures the risks that the available buffers, including the capital, might prove insufficient to cushion the hit from the higher ECB interest rates (for the details on its construction, see the **Appendix**). The results point to a core-periphery divergence, with core NCBs (Germany, Netherlands, and Finland) being more vulnerable to the ongoing monetary policy tightening compared to the southern periphery peers (primarily Greece, Portugal, and Italy).

One of the key reasons is the fact that the former countries' central banks have bought higher-yielding government bonds under the APP and PEPP. This has boosted their net interest margins in the recent years (Chart 6) and will help cushion the blow from the higher deposit.

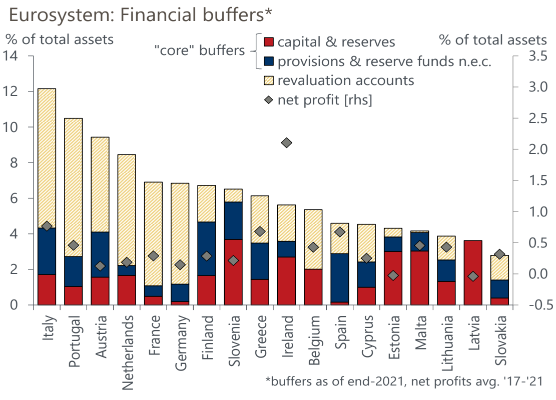
Chart 6: Yields on PSPP purchases were much higher in the eurozone periphery



Source: Oxford Economics/Haver Analytics

In addition, the Southern countries' NCBs have larger financial buffers, such as reserves and provisions (what we call "core" buffers) in place (Chart 7), meaning that they could withstand higher losses on their portfolios before the capital is threatened. But as mentioned, the size of these cushions differs between NCBs. The increase in provisions by some Southern NCBs (such as Spain) is particularly eye-catching but not that surprising given higher profits reported over the past couple of years (Chart 7). But even after central banks become profitable again, they may opt to rebuild buffers rather than add to the government coffers. This means governments might need to wait for payments from central banks to resume until 2026 or even later.

Chart 7: NCBs have accumulated marked risks provisions, but their size varies across the bloc



Source: Oxford Economics/Haver Analytics

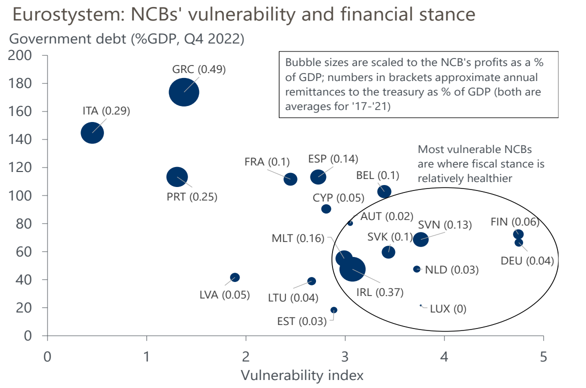
Central bank losses will have fiscal, not monetary, consequences

But even if the capital is wiped out (which we think is not off the table for the least-capitalised NCBs such as the Slovak central bank or where the deterioration in the capital position has been the sharpest, such as in Finland), the central bank can still operate, as it can issue liabilities that need to be accepted for payment by the counterparties. This means that the central bank cannot go insolvent in the conventional sense and can operate even with negative capital, as the historical experience with Australian, Czech, and Chilean central banks demonstrates (see here and here).

What makes the situation more complex in the case of the Eurosystem is the fact that the NCBs are not standard central banks, as they cannot issue euros if not permitted by the ECB. But the ECB is unlikely to withhold support to a distressed NCB, as it would put its credibility, and, for that matter, the credibility of the whole euro area, at stake.

The latter speaks to the first-order implications of the sustained central bank losses, which are fiscal in nature. Granted, NCB profits – of which not all accrue to the government – were historically a marginal source of government revenues, as they on average equalled around 0.15% of GDP between 2017-2021. Given the favourable fiscal outlook, we do not think this will constitute a major issue. That said, for some countries, especially Southern, the remittances constituted a non-negligible share of government revenues especially in the aftermath of the large-scale asset purchases. On average between 2017 and 2021, it equalled around 0.5% of GDP in Greece and around 0.3% in Italy and Portugal (with Germany, at 0.04% of GDP at the other end of the spectrum). Indeed, countries with more vulnerable NCBs are also in a healthier fiscal position (Chart 8).

Chart 8: Most vulnerable NCBs are where fiscal space is relatively bigger



Source: Oxford Economics/Haver Analytics/NCBs' Annual Reports

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But the mounting losses will, *ceteris paribus*, put pressure on the ECB to speed up QT similar to what happened with the modifications to the conditions on the outstanding TLTRO loans. In addition, changes to the ways in which excess reserves are remunerated (so-called tiering) might be implemented. But that might be challenging to orchestrate given that lower reserves remuneration will weaken the position of commercial banks, a thing that policymakers will likely try to avoid given the emerging vulnerabilities in banking sector.

In any case, central bank losses should be put in a wider perspective of central bank practice, which evolved over the past century and a half. The task of a central bank is not to turn a profit (even if it often does), but to supply a vital public good in the form of monetary and financial stability.

Indeed, the bond-buying programmes (QE) were aimed at lowering long-term interest rates and stimulate investment in order to bring inflation closer to the target. In the process, they have also lowered government borrowing costs. These benefits should be considered while interpreting the current developments of the NCBs' profits and loss accounts.

Is the financial standing of the central bank thus completely irrelevant to its operations? Not quite. If losses are material and sustained, there's a risk that its credibility will suffer. This risk is exacerbated if the central bank does not clearly communicate the reasons behind the losses, and, if worst comes to worst, recapitalisation (or a feasible plan to rebuild the capital buffer by the bank itself) is not enacted swiftly and unconditionally. This stresses the need for effective cooperation both between the Eurosystem central banks, but also between the NCBs and their respective governments.

Appendix

NCBs' profit and loss determination

To simplify things, the profit/loss of a given NCB is driven by three main components:

1) net interest income (NII), which is the difference between income earned on the interest-yielding assets and interest expense on the liabilities used to finance them

2) pooling of monetary income, which is an adjustment to the profits driven by the risk-sharing arrangements between the NCBs

3) income from the shares in the ECB, as in normal times the majority of the ECB profit is paid to the NCBs in line with the capital key

The interpretation of the first component is straightforward: NCBs where tightening of monetary policy will curb NII to a stronger degree will be hit more.

What complicates the picture is the perplexed and rather opaque setup of risk-sharing arrangements in place. In short, the net interest income on some securities holdings (CSPP, ABSPP) and lending programmes (TLTROs) is risk-shared, meaning that individual NCB net interest incomes on these holdings are aggregated up and then distributed to all NCBs in line with their capital keys (hence the "pooling"). This effectively weakens the impact of "NII channel" described above. For example, if a particular NCB would hold a disproportionately large share of negative-yielding TLTROs, that would be counterbalanced by the proportional boost to its net income from monetary pooling and vice-versa.

But some holdings – most notably the public sector bonds acquired under PEPP and PSPP – are exempted from this risk-sharing arrangement. In practice, this boosts the monetary income that the NCBs need to add to the common pool (which increases in line with the main refinancing rate) due to their bond holdings irrespective of whether they are yielding more. Taken together, this means that the most vulnerable are the NCBs where the liability financing structure is skewed toward excess reserves (which means that interest expense on liabilities will rise fast), the holdings on the non-risk-shared securities (around 80% of bonds held under PSPP and PEPP) are relatively higher (say, relative to liquidity providing operations) and their yields are lower.

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Vulnerability index construction

Vulnerability index was constructed as a weighted average of four normalised sub-indices. They included (1) the approximate average yield of the government bond portfolio held (the higher, the less vulnerable a bank is), proportion of the deposit facility as the total of all liabilities (the higher the more vulnerable), holdings of TLTROs relative to the capital key (the higher the less vulnerable given changes to their remuneration and fast pace of the expected repayments) and change in the financial buffers between end-2021 (as reported in the NCBs' annual financial statements) and the latest available measure (according to the so-called "aggregated" balance sheet reporting as of March 2023). The table below summarises the results.

Table 1: Vulnerability index

Country	Vulnerability index (simple avg. of sub-indices re-scaled to 0-5)	Average yield (normalised; negative = more vulnerable)	Proportion of deposit facility holdings (normalised; negative = more vulnerable)	LTRO holdings rel. to capital key (normalised; negative = more vulnerable)	Change in the value of fin. buffers end-2021 and Feb 2023 (normalised; negative = more vulnerable)
Germany	4.8	-1.2	-0.1	-2.2	-0.6
Finland	4.7	-0.8	-1.2	-0.2	-2.0
Slovenia	3.8	-0.4	0.8	-0.1	-2.1
Luxembourg	3.8	-1.4	-1.0	0.1	0.4
Netherlands	3.7	-0.8	-1.2	-0.2	0.4
Slovakia	3.4	-0.6	1.1	-0.2	-1.6
Belgium	3.4	-0.5	-1.2	0.2	0.5
Ireland	3.1	-0.3	-0.2	-0.5	0.6
Austria	3.1	-0.7	0.0	0.3	0.0
Malta	3.0	0.0	-0.7	0.0	0.5
Estonia	2.9	0.3	-0.3	-0.1	0.2
Cyprus	2.8	1.0	-1.4	0.1	0.6
Spain	2.7	-0.3	1.0	-0.9	0.7
Lithuania	2.7	-0.1	0.2	-0.1	0.6
France	2.4	-0.6	-0.7	1.0	1.3
Latvia	1.9	1.2	1.2	-0.1	0.1
Greece	1.4	2.0	1.4	0.0	0.2
Portugal	1.3	1.7	1.2	-0.3	1.1
Italy	0.5	1.5	1.3	3.3	-0.5

Source: Oxford Economics

Buffers and financial provisions

Revaluation accounts

For a number of assets (such as gold and FX holdings), the treatment of unrealised gains and losses is asymmetric, in that the former are not recognized as profits, but lead to an upward adjustment in the so-called revaluation accounts and vice-versa. But if the unrealised losses exceed in value the revaluation account, the difference is recognised as a loss in P&L. In other words, revaluation accounts serve as a buffer which is a first line of defence in the case of falling asset valuations, especially of gold holdings and assets denominated in other currencies.

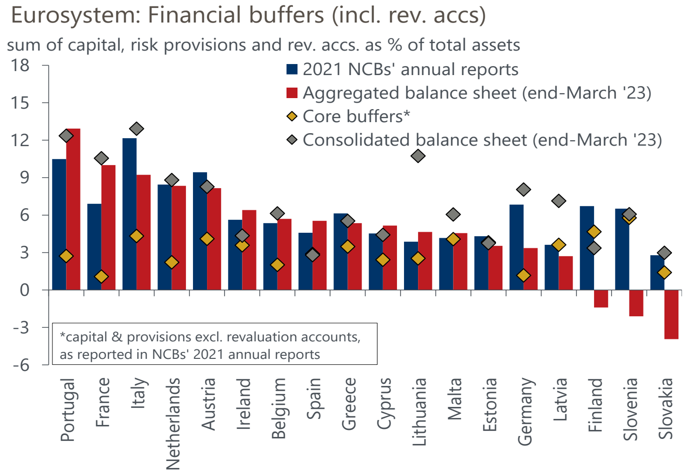
Financial buffers

Analysis of financial buffers of the NCBs is challenging, not least given that the definition of what counts as a buffer is by no means clear-cut. For sure, paid-up capital and all sorts of risk provisions that can be written off in case of the negative financial results (what we call "core" buffers) should count as ones.

Revaluation accounts are trickier to interpret given that they are set up for individual assets on the NCBs' balance sheets and in principle are cushioning only against a fall of value of these assets. So while they do serve as a cushion against sudden deterioration of the subset of assets held by the NCBs, they in principle cannot be used to offset the losses induced by negative interest incomes.

The difficulty in measuring the real size of the financial buffers is exemplified by the comparison of their values reported by the alternative accounting frameworks (so-called aggregated versus consolidated balance sheet data) in early-2023 (Chart 9). Indeed, for some countries the discrepancy between broadly defined buffers (such as inclusive of revaluation accounts) is as big as 8% of total assets, with the aggregated (statistical) measure of buffers even pointing to negative values already. Even if given the mentioned caveats we should not overemphasise the informational value of any individual indicator, the sharp deterioration in the measure for some NCBs (Finland, Slovenia, and Slovakia) likely points to a potential outsized impact of the ongoing monetary policy tightening on their capital positions to date.

Chart 9: Alternative measures of financial buffers for the NCBs have diverged in a number of cases



Source: Oxford Economics/Haver Analytics