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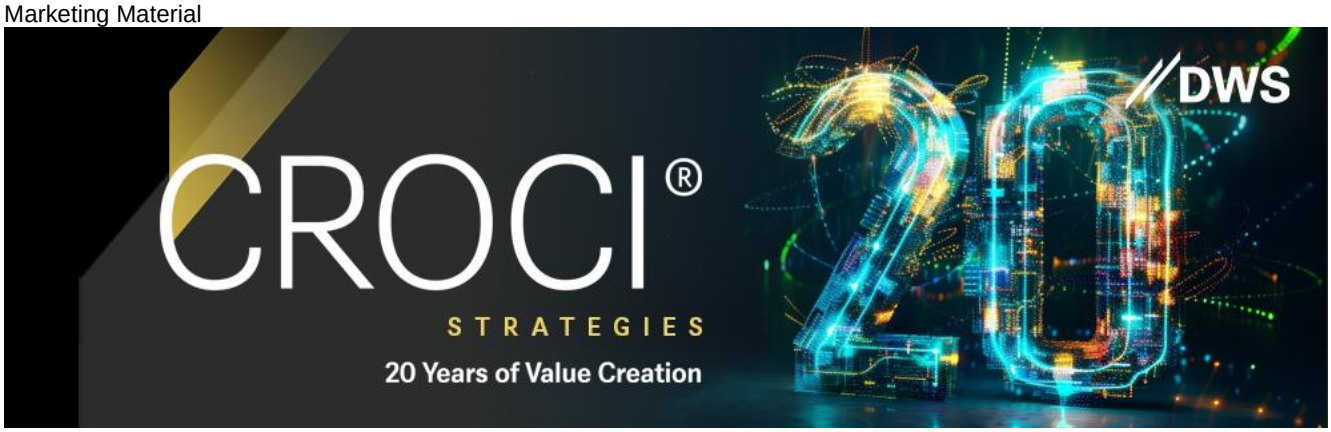

Introducing Banks into CROCI strategies

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Four selected CROCI strategies are now able to invest in banks for the first time. In this report we describe:

- Why banks are being introduced now
- How the profitability and valuation of banks have evolved over the shorter- and longer-term
- What the process for including banks will be
- The impact of adding banks to CROCI portfolios, from the point of view of performance, sector allocation and other portfolio characteristics

Even as the Global Financial Crisis (GFC) was still unfolding, the CROCI team put out its first preliminary thoughts on the valuation approach for banks[1]. The paper concluded that the long-term return required by equity investors in banks was significantly higher than for non-financial shares due to the leverage and associated financial risk.

May 2025 marks seven years since the CROCI team officially launched its coverage of banks. The paper[2] which accompanied the launch discussed how banks always tended to trade at a lower earnings multiple than the broader market. But this apparent cheapness is not necessarily indicative of value.

We include here a brief overview on CROCI's approach to valuing banks. We provide references below to the two previous papers on the sector which give a more in-depth understanding of the CROCI approach to valuing banks.

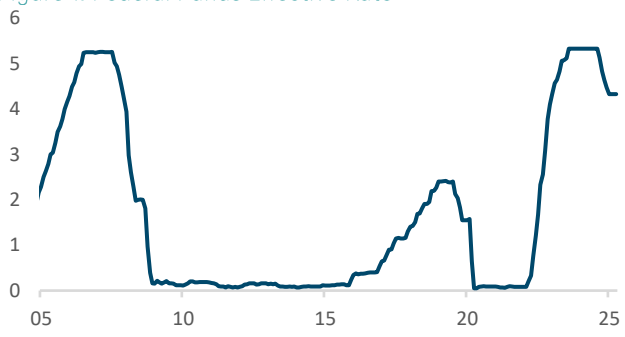
Why now? Normalisation of banks' operating environment

Certain sectors and industries have not lent themselves to a rigorous economic analysis of their fundamentals because of their uncertain operating environment. For a long time, banking was one such sector, for reasons ranging from the great financial crisis to Covid. It is only now that we have finally started to observe a normalization in the operating environment.

Monetary policy and interest rates

In the aftermath of the financial crisis, central banks around the world resorted to an ultra-loose monetary policy characterised by low interest rates and quantitative easing. This was particularly extreme in Europe where the policy rate turned negative. The European Central Bank wasn't really a negative rates pioneer; that distinction goes to the Bank of Japan. However, the sudden decline in rates dramatically impacted the profitability of banks. Interest rates remained near zero for more than a decade until the Fed started raising rates in 2019. Just as the cycle turned, Covid struck, and the Fed once again had to lower rates back to zero.

Figure 1: Federal Funds Effective Rate



Source: FDIC, United States. Data as on 13 May 2025.

Europe witnessed its own euro crisis in 2012, which further prolonged the ultra-loose monetary policy environment in the euro region. Some banks in southern Europe went bankrupt or were restructured as they faced severe asset quality problems. Europe and the European banking sector have

[1] Banker's draft - CROCI Talk (October 2007)

[2] CROCI Focus: Banks (May 2018)

come a long way since then and the sector has more or less normalised.

It was only in the post-pandemic world that interest rates started to normalize. By now, the present situation can finally be thought of as 'normal,' or at least near enough: from a monetary policy standpoint at least, banks today face a 'normal' operating environment. Since bank profitability is strongly linked to the overall level of interest rates, bank profitability has also recovered in recent years.

Bank regulations: approaching the Basel III endgame

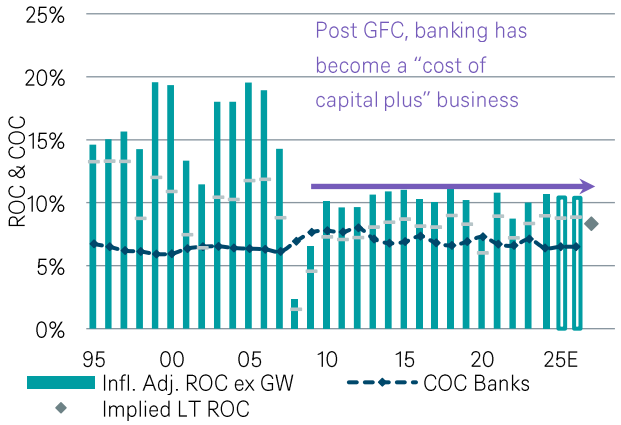
Following the 2008 crisis, regulators the world over recognized the deficiency in the Basel II set of regulations. That realisation ushered in the era of Basel III rules which remained in development for a long time. Different countries modified Basel III to suit their own unique banking systems. By last year, however, Basel III regulations had stabilised in most regulatory jurisdictions. The "Basel III endgame" rules are yet to be implemented, but their impact is likely to be limited since banks are largely compliant with the expected increase in capital requirements. Further, as the name suggests, these rules mark the end of this phase of the regulatory cycle which started following the crisis of 2008.

A normalisation of regulations removes a lot of uncertainty from the sector.

Normalising profitability and valuation in the sector

It has been nearly sixteen years since the Global Financial Crisis (GFC) rocked the banking industry and changed the economic characteristics of the business. Distinct differences can be observed in the return on capital (ROC) for banks in the periods before and after the financial crisis. Between 2000 to 2008, our global banks aggregate generated an average ROC of 18.5%. This halved to 9.4% between 2010 and 2019, before recovering to 10.8% after the pandemic (2022-25e).

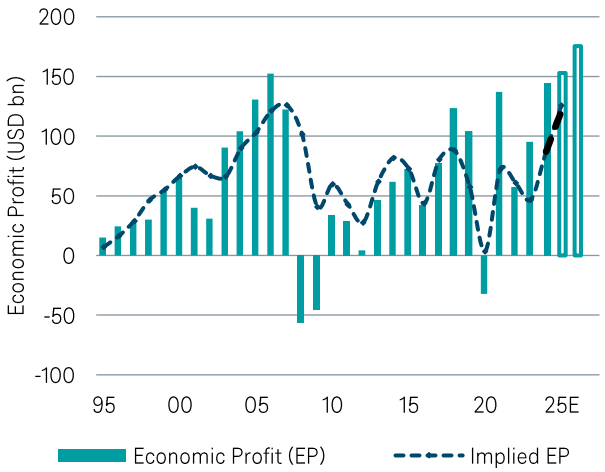
Figure 2: Global banks' return on capital & cost of capital



Source: DWS, CROCI. Data as available on 13 May 2025. The financial sector excludes Insurance but includes Banks and Diversified Financials.

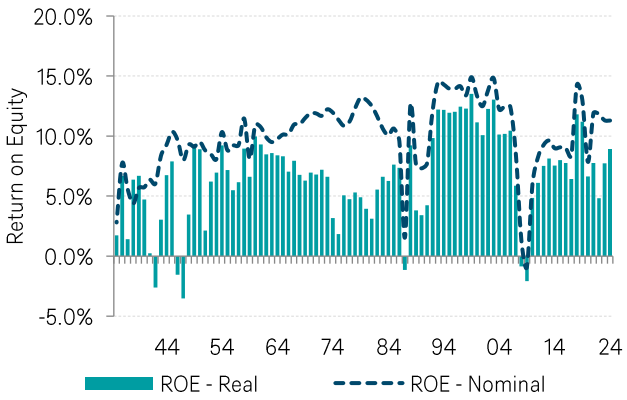
Even as the spread between the ROC and cost of capital (COC) has narrowed, global banks' 2025e economic profits are expected to return to their level from just before the global financial crisis, after almost two decades. This revival in economic profits can be explained almost entirely by the higher capital requirement globally for banks.

Figure 3: Global Banks Economic Profit (EP) and Implied EP



Source: DWS, CROCI. Data as on 13 May 2025. Aggregate values for Banks under CROCI Coverage. Economic Profit is calculated as (ROC – COC) * Adj. Tier 1 Capital and Implied EP is measured as (EV – Adj. Tier 1 Capital) * COC. No assurance can be given that any forecast, target or opinion will materialize.

Figure 4: Inflation-Adjusted ROE and Nominal ROE of the US commercial banks



Source: FDIC, United States. Data as on 13 May 2025.

Long-term investors ought to expect a premium from investing in banks

By analysing the ROE of banks and using the equivalence principle that in an efficient market the long-term return should equate to the cost of capital (as well as investors' required return on investment), we calculate that the cost of capital has averaged around 7.5% over the long term after adjusting for inflation.

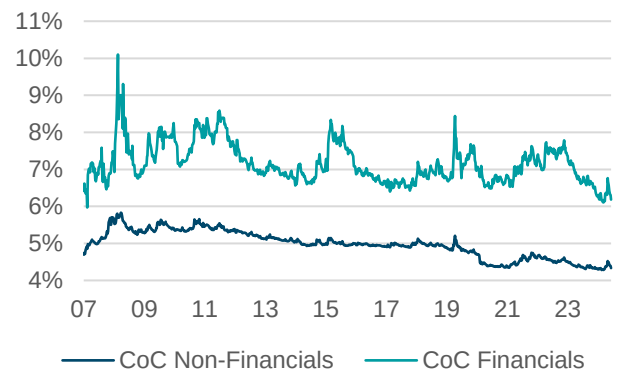
The ROE of US banks has averaged 6.4% since 1934. However, the returns in the early part of this series were affected by the turbulence generated by the Great Depression and then the Second World War. Excluding this period and adjusting for the lower risk profile of banks currently suggests a long-term expected return of 7.5%[3].

[3] No assurance can be given that any forecast, target or opinion will materialise.

Bank's P/Es need to be adjusted for their higher risk premium

The discount rate for banks deserves particular attention. Banks have always tended to trade at a lower earnings multiple than the broader market. But this apparent cheapness is not necessarily indicative of value, in our opinion. Banks are much more leveraged than non-financial[4] companies, whose equity capital typically ranges between 0x and 2x levered. Banks can lever their capital significantly more than non-financial companies. This extra financial risk requires an additional premium over non-financial equities. We calculate banks' long-term cost of capital to be 7.5% (versus 5.4% for non-financial companies), making the risk premium around 210bps on average. This higher premium must be factored into banks' valuation in order to render them comparable.

Figure 5: Cost of capital of banks vs non-financials



Source: DWS, CROCI. Data as on 13 May 2025.

Economic value of global banks vis-à-vis non-financials

Figure 6 shows that core tier 1 capital (i.e. the equity portion) averaged less than 6% of risk-weighted assets (RWA) before the financial crisis, implying risk assets were levered more than 16 times over core capital. Between 2010 and 2019 (pre-pandemic), the average Common Equity Tier 1 (CET1) ratio for our global aggregate rose to 10.8% and further to 12.6% post-pandemic.

When assets were over sixteen times equity–a common ratio in this industry pre-financial crisis–mistakes that involved only a small portion of assets could destroy a major portion of equity. However, what has changed over the years is the near doubling of the Core Tier 1 ratio. This essentially means that, while the business remains vulnerable to interest rate cycles, banks in general are better equipped to absorb losses when economic cycles turn against them.

Moreover, the spread between ROC and the cost of the capital has improved post-pandemic, despite being significantly lower than the levels seen pre-financial crisis. Nevertheless, the market continues to price global banks cautiously. Even after adjusting the economic valuation of global banks for a higher cost of capital, at an aggregate level the banking sector is trading at a discount of nearly forty per cent to the non-financial part of the market. Also, even as returns and CET1 ratios have improved significantly, the price-to-book for global banks on average in the years following the pandemic remains identical to the levels seen during the previous decade.

Figure 6: Valuation of banks compared to non-financials

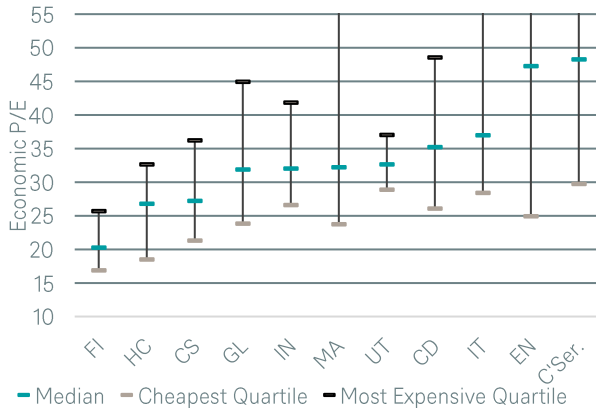
		Pre GFC (00-07)	Post GFC (10-19)	Post pandemic (22-25e)
Price to book	Non-Financials	1.7x	1.8x	2.4x
	Global Banks	2.7x	1.4x	1.4x
Return on Capital spread over Cost of Capital	Non-Financials	2.5%	1.7%	2.9%
	Global Banks	12.2%	2.3%	4.0%
Economic PE	Non-Financials	22.1x	26.7x	32.7x
	Global Banks	19.5x	20.4x	20.0x
Core Tier 1	Global Banks	5.9%	10.8%	12.6%

Source: DWS, CROCI. Data as available on 13 May 2025. The values indicate aggregate annual readings for the time period mentioned. Economic PE for the Global Banks is adjusted for cost of capital PE.

[4] Throughout this paper, we use "non-financial" to refer to companies covered by CROCI under the general model for non-bank companies. This includes certain companies now classified by GICS as Financials (such as payment processors, data providers and stock exchanges).

The gap between median valuation of Global Banks to that of non-financials is also evident in the exhibit below.

Figure 7: Median valuation across sectors (2025e)



Source: DWS, CROCI. Median of companies in CROCI's global coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize. FI stands for Financials, HC for Healthcare, CS for Consumer Staples, GL for Global Non-Financial, IN for Industrials, MA for Materials, UT for Utilities, CD for Consumer Discretionary, IT for Information Technology, EN for Energy, C'Ser. for Communication Services. The financial sector excludes Insurance but includes Banks and Diversified Financials. Economic PE for the Financials is adjusted to take into account the COC differential.

Regional valuation: Europe looks the most attractive

At the regional level, the US banks remain the most expensive amongst the three developed market regions, with a 2025e Adj. PE of 23.7x, above their five-year average. At the other end, there was a clear repricing of Japanese banks during 2024 due to change of the BOJ's interest rate stance. On average, the share price of the three Japanese banks in our coverage rose by over 55% during 2024. This pushed their adjusted P/B to 1.0x compared to 0.6x average during the prior five years. European banks in aggregate generate close to the highest return-on-capital (11.4%), offer the highest dividend yield (5.2%), and have among the best capitalization ratios (14.3%). Further, their non-performing loans are down, and net-interest margin and loan-to-deposit ratios have improved over the past few years.

Despite these favorable metrics, the market continues to price European banks with skepticism. The cost of capital-adjusted PE for European banks in aggregate is 16.1x, below the level for the US or Japan. Many European banks have already started their buyback programs, paving the way for further RoC expansion. That said, there is significant dispersion within Europe, which makes bottom-up stock-picking important.

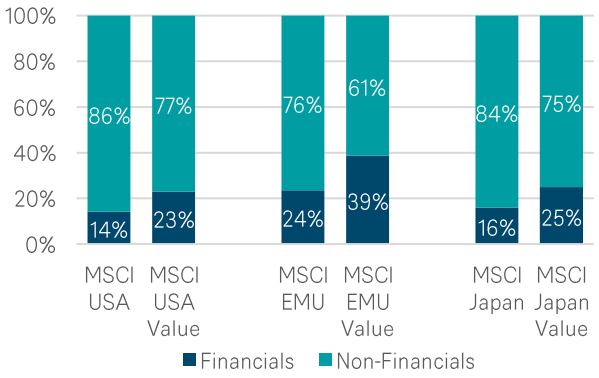
Figure 8: Regional Banks Valuation

	US		Europe		Japan	
	2025E	5Y Avg	2025E	5Y Avg	2025E	5Y Avg
EV/Adj. Tier 1 Cap.	1.9x	1.7x	1.2x	0.8x	1.0x	0.6x
Inf. Adj. ROC	11.6%	10.6%	11.4%	9.9%	7.6%	6.0%
Adj. PE ratio	16.2x	15.0x	11.0x	8.8x	13.5x	10.8x
COC Adj. PE ratio	23.7x	22.3x	16.1x	13.9x	19.7x	16.6x
Dividend Yield	2.3%	2.7%	5.2%	6.6%	3.6%	4.6%
Core Tier 1 Ratio	12.6%	11.3%	14.3%	13.6%	14.3%	13.1%

Source: DWS, CROCI. Aggregate values for Banks under CROCI Coverage. Historical average represents median values from 2020 to 2024. Data as on 13 May 2025. No assurance can be given that any forecast, target or opinion will materialize.

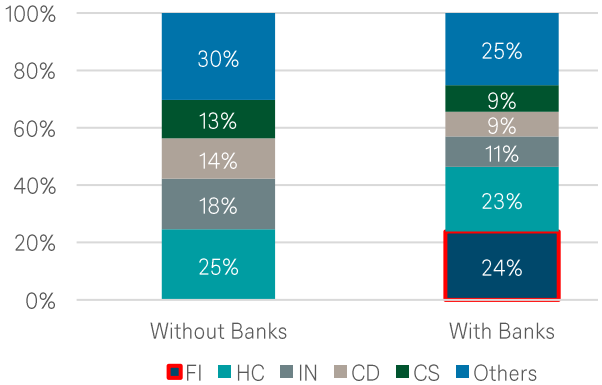
There is more detail on the regional and country valuation in the **CROCI Outlook 2025**, section 2.3.

Figure 9: Weight of financials in commonly used value benchmarks



Source: DWS, CROCI, MSCI data as on 30 April 2025.

Figure 10: Cheapest quintile in the DM including and excluding Banks



Source: DWS, CROCI. The chart shows composition of the cheapest quintile selected from CROCI's Developed Market coverage. The stock ranking is determined by their 2025e Economic P/E (Adjusted P/E in the case of Banks). FI includes Banks exclusively. Others include MA, IT, C'Ser, EN, UT and financial companies excluding Banks. Data as on 13 May 2025.

The modified CROCI strategies

How banks are added to the CROCI strategies

We have mentioned above that banks cannot be valued using our normal industrial model, as they do not have assets and cash flows in the way that industrial companies do, and that we need to adjust their valuations for the difference in cost of capital (risk premium) compared to non-financials companies. So to include banks in CROCI portfolios, a few extra elements need to be considered to help combine the outputs of the two types of model.

First, we impose an upper limit to the total weight of banks in each of the strategies, which is determined using a combination of the weight of banks in the relevant value benchmark and the total number of banks in the CROCI coverage universe for the region in question. That limit can vary depending on how the benchmark weight and banks under coverage changes over time.

Figure 11: CROCI Euro inc. Financials portfolio construction

(1) Only companies in CROCI coverage are considered but excluding the companies from the Real estate sector.
(2) Effective 1st Jan. 2022, the Strategy incorporated environmental, social and governance (ESG) characteristics based on DWS Basic Exclusions, a DWS proprietary ESG assessment methodology, provided by DWS ESG Engine
(3) Exclude bottom 25 percentile companies by market cap
(4) A 5-stock selection buffer is applied to reduce turnover (an existing constituent is only removed once its rank exceeds 35), and banks are ranked based on COC-adjusted valuation

Source: DWS, CROCI. Data as on 13 May 2025.

This upper limit is the maximum weight, but the actual weight of banks in any given rebalancing depends on the valuation of the banking stocks relative to the non-financial stocks at the time of the rebalancing. In addition, non-banking financials such as payment processors, data providers, stock exchanges or asset managers whose business models do fit into the industrial model can flow into the portfolio separately from the banking pocket (and the number of such companies in the portfolio is not capped since their valuations are more directly comparable to industrial companies). There will still be no inclusion of either insurance companies or real estate companies in any strategy.

Please note that any regional caps in CROCI World are only imposed at the highest level of the portfolio, not at the sector level. So it is possible for European banks to be overweight relative to their US peers, or vice versa.

The impact of adding banks to CROCI strategies

The period over which we have analysed the inclusion of banks in the CROCI strategies was dependent on there being a sufficiently large coverage of banks in each year. Thus it can start in late 2017 for the US and Europe, and the following year for Japan.

There are currently 22 banks under coverage in the US which includes not just the largest by market capitalisation but also regional banks, as well as banks specialising in credit cards, broking and custody. Similarly, our European coverage includes the leading banks of all major economies of the region. Our current coverage has 15 banks, which we aim to increase to 18 by mid-June (the Eurozone accounts for 7-10 of these). In Japan, the top three banks dominate the industry in terms of market capitalisation and our coverage includes all three. There is currently a good breadth and depth of coverage, but we aim to expand it further.[5]

Our simulations over these active historical periods suggest that there would have been an improvement in performance with banks included for all four strategies under consideration. Take CROCI Euro for example. In the past three years the existing strategy (excluding financials) has underperformed the MSCI EMU Value benchmark.

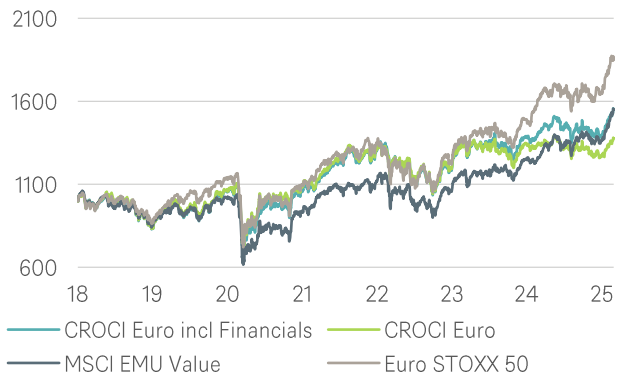
5 No assurance can be given that investment objectives will be achieved.

Figure 12: CROCI Euro performance table (% total return)

Year	CROCI Euro incl Financials	CROCI Euro	MSCI EMU Value	Euro STOXX 50
2018	-15.3	-14.9	-14.4	-12.0
2019	24.1	24.2	18.2	28.2
2020	0.2	2.4	-8.2	-3.2
2021	23.6	21.0	20.2	23.3
2022	-9.3	-9.0	-5.6	-9.5
2023	17.2	12.7	18.4	22.2
2024	0.9	-5.3	9.2	11.0
2025*	11.2	8.3	13.6	11.8

Source: DWS, CROCI. Data as on 13 May 2025. *data updated until 28Feb25. Past performance does not predict future returns

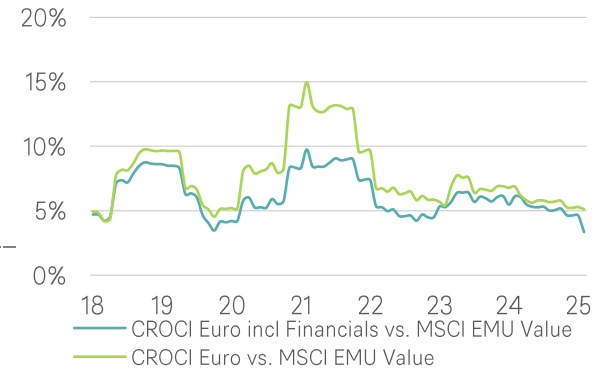
Figure 13: CROCI Euro vs CROCI Euro incl. Financials



Source: DWS, CROCI. Data as on 13 May 2025.. Past performance does not predict future returns

These improved returns however cannot be expected in all market cycles – the last few years clearly included a more favourable period for banks with interest rates returning to a more normal environment from the years of QE and zero rates (and correspondingly net interest margins rising). To be crystal clear, we do not add banks at this point because we expect long-term returns of the CROCI strategies to improve materially; we add them because there is no longer a strong reason to exclude them and because volatility of active returns is likely to reduce, given the high weight of banks in the Value benchmark indices: the inclusion of banks would have noticeably reduced the tracking error of the CROCI Euro strategy compared to the value benchmark (Figure 14). The tracking error for the current strategy peaked in 2021 and 2022 at over 14%, but with the inclusion of banks in the portfolio the tracking error would not have exceed 10% since 2017. The latest number for the simulation would have been several percentage points lower than the live strategy's.

Figure 14: Tracking error of CROCI Euro vs MSCI EMU Value with and without financials

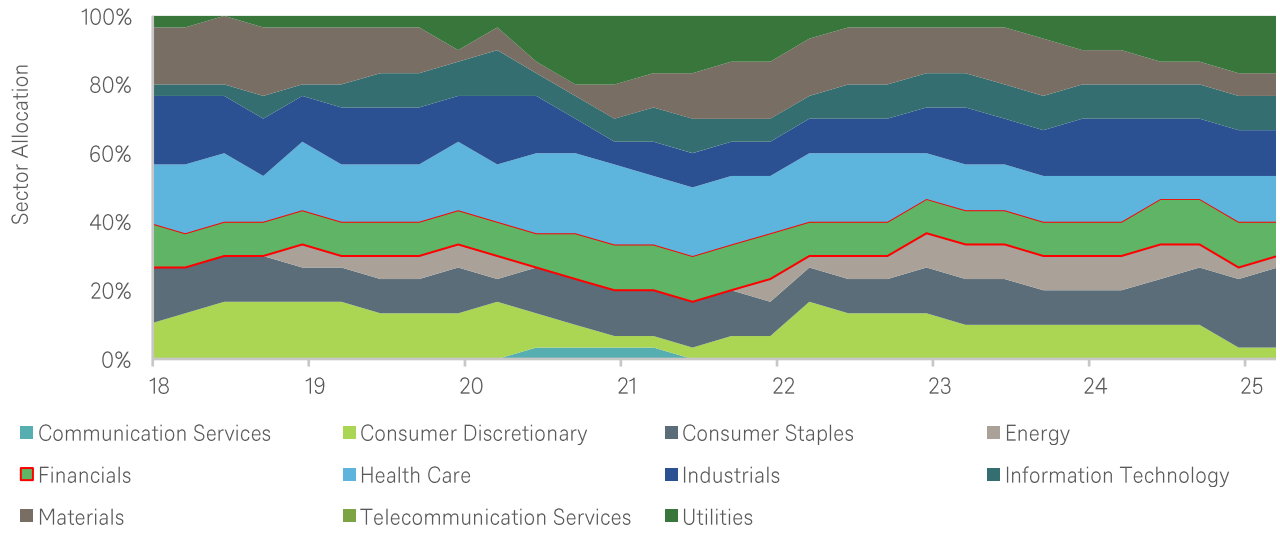


Source: DWS, CROCI. Data as on 13 May 2025. Past performance does not predict future returns.

There is a similar picture for CROCI US and CROCI Japan, both of which would have seen substantial improvements in their relative performance in most years since our data on financials has been good enough to test, as well as measurable declines in their tracking error. This is not to suggest that adding banks would always have been positive for performance, of course. When they were under-capitalised and the capital rules were still evolving, their performance was much weaker. This was one of the reasons we were not comfortable including them earlier.

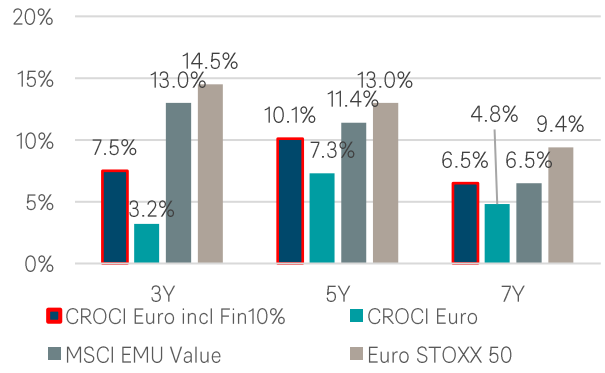
Banks would have made up a relatively consistent proportion of the sectoral exposure, but there are times when the financials would have been slightly underweight compared to the value benchmark in the Eurozone (MSCI EMU Value) given the strong overweight there relative to broader markets. Figure 15 below shows their weight in the context of the wider strategy.

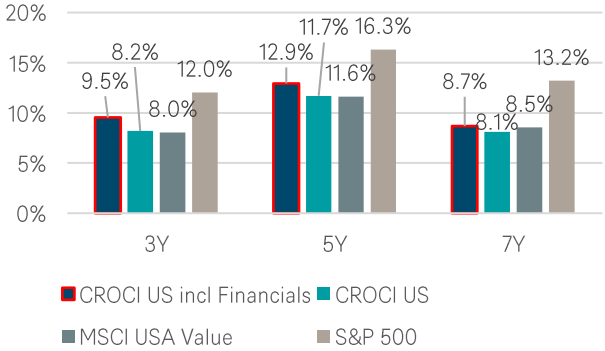
Figure 15: Simulated sector allocation for CROCI Euro, with financials highlighted

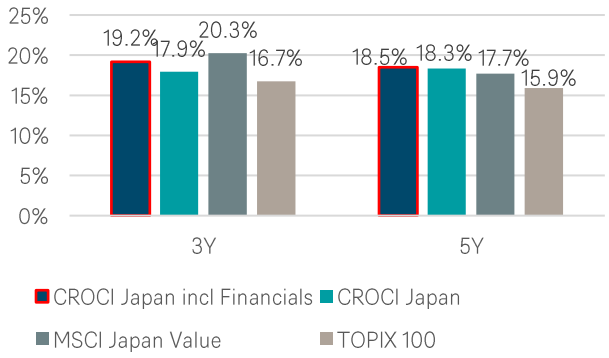


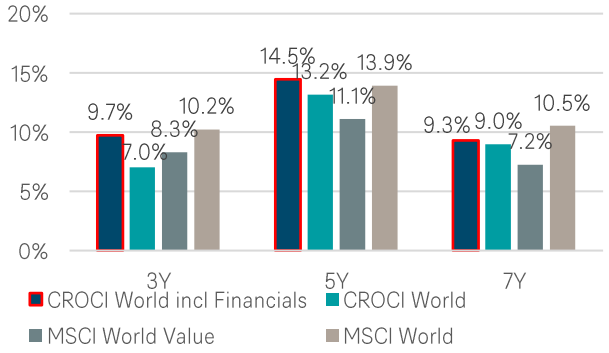
Source: DWS, CROCI. Data as on 13 May 2025. The simulated section allocations are shown for illustrative purposes only. There are no actual performance results reflected.

Figure 16: Cumulative performance for the strategies









Source: DWS, CROCI. Rolling performance is up to 28th February 2025. Charts show like-for-like simulated performance of CROCI strategies with and without Financials. Data as on 13 May 2025. Past performance does not predict future returns.

Fig. 17: CROCI US performance with & without financials

Year	CROCI US incl Financials	CROCI US	MSCI USA Value	S&P 500
2018	-13.4	-11.2	-8.0	-4.9
2019	34.1	32.7	24.6	30.7
2020	-5.4	-4.7	0.0	17.8
2021	25.7	24.7	26.3	28.2
2022	-3.7	-4.7	-7.0	-18.5
2023	15.5	13.1	8.4	25.7
2024	15.6	14.5	13.6	24.5
2025 (to 28Feb25)	1.3	0.5	5.4	1.4

Source: DWS, CROCI. Data as on 13 May 2025. Tables show like-for-like simulated performance of CROCI strategies with and without Financials. Past performance does not predict future returns.

Fig. 18: CROCI Japan performance with & without financials

Year	CROCI Japan incl Financials	CROCI Japan	MSCI Japan Value	TPX 100
2018 (from 30Sep18)	20.8	22.6	18.7	21.1
2019	21.6	25.5	14.3	19.5
2020	3.4	7.0	-4.3	8.9
2021	16.3	15.2	18.1	15.6
2022	4.4	1.1	8.6	-3.2
2023	37.9	40.6	31.5	30.3
2024	22.4	16.7	25.7	24.0
2025 (to 28Feb25)	-3.0	-1.0	-1.2	-4.3

Source: DWS, CROCI. Data as on 13 May 2025. Tables show like-for-like simulated performance of CROCI strategies with and without Financials. Past performance does not predict future returns.

Fig. 19: CROCI World performance with & without financials

Year	CROCI World incl Financials	CROCI World	MSCI World Value	MSCI World
2018	-14.1	-11.5	-10.8	-8.7
2019	28.7	27.8	21.7	27.7
2020	3.9	8.3	-1.2	15.9
2021	23.2	21.6	21.9	21.8
2022	-3.2	-3.2	-6.5	-18.1
2023	15.5	14.9	11.5	23.8
2024	14.1	8.1	11.5	18.7
2025 (to 28Feb25)	4.4	2.5	6.1	2.8

Source: DWS, CROCI. Data as on 13 May 2025. Tables show like-for-like simulated performance of CROCI strategies with and without Financials. Past performance does not predict future returns.

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