Marketing Material

Make Value Great Again

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The first shots have been fired in President Trump's threatened trade war. Combined with his other stated economic policies including tax cuts, inflation looks likely to rise. A recent Boston Fed report argued that the full suite of tariffs if implemented would push inflation up by as much as 0.8%. Inflation was in any case far from tamed in the US, and now is also back on the rise in Europe. On central bank policy, however, there is more of a clear divergence on either side of the Atlantic. In Europe, concerns about growth and the potential impact of tariffs have already led to rate cuts, despite inflation risks, whereas the Fed is holding steady despite Trump's loudly stated wishes to the contrary. In both cases, it seems clear that rates are unlikely to return to the ultra-low levels of the recent past.

From a fundamental viewpoint, it might surprise readers that we find no real divergence in the median valuation of US and European markets. In fact, they have moved in lockstep more or less since the financial crisis. This is in part thanks to looking at median levels, but also because CROCI's due diligence process removes the distorting effect of Europe's bias to high capital intensity.

On profitability, however, the divergence is even more pronounced: median return on capital in the US is roughly double the level in Europe. Japan looks slightly cheaper than both, and with lower profitability than Europe. However, it is good to note that margins and earnings are all on an upwards trajectory globally, driven by the US in large part. But Europe and Japan also have improving margins and profitability in 2025.

What about bubbles in the market? On our numbers, there are none to speak of, certainly not of the sort seen around the turn of the century. Even looking at the tech sector, there is no real discernible bubble, and the cheapest quartile looks genuinely attractive. Markets themselves certainly look very expensive compared to the long term, with global equities trading on an economic PE of around 33x. Before the period of ultra-loose monetary policy, markets traded closer to 20x than 30x. The market-implied equity risk premium is at an all-time low of 4.3%, pushed down by the huge surge of liquidity from its long-term average of between 5.2%-5.4%. Ultimately this will prove unsustainable in our opinion, especially against the uncertainty of a world-wide trade war. Mean reversion need not take place all at once as it did during the financial crisis, but it will likely mean lower equity returns for the coming years.

The normalisation of interest rates and inflation has coincided with a very weak period for value, which is perhaps counterintuitive for followers of the style. We have included an extensive section explaining why such an environment combined with a mean reversion of the cost of capital is strong signal to ensure diversification of style factors to include value exposure, especially given the high volatility in factor leadership even over the past three years. History shows that when value as a style comes back it tends to generate a large slug of its performance at the beginning. We also note that there is still a widespread in market valuations allowing judicious stock picking to careful investors.

From a sector perspective there is a deep dive into technology and the US mega-caps, a contrasting study of energy against utilities, a discussion on autos and an update on banks. Lastly, we include a section to showcase CROCI's versatility, demonstrating its ability to build quality and growth portfolios to help investors with factor diversification, with reference to two specific strategies outside our traditional core value space.

Important Information

This paper is intended for Professional Investors only, who understand the strategies and views introduced in this paper and can form an independent view of them. CROCI represents one of many possible ways to analyse and value stocks. Potential investors must form their own view of the CROCI methodology and evaluate whether CROCI and investments associated with CROCI are appropriate for them.

Please see Glossary A for a brief introduction to CROCI and for definitions of key terms used throughout this piece and for risk considerations. Please see Glossary B for the definition of Real Value.

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Simulated returns have many inherent limitations. No representation is made that actual returns will be similar to those shown. There are frequently significant material differences between simulated and actual returns. Simulated returns are developed with the benefit of hindsight and often do not take into account actual financial, economic, transaction or market risk. Simulated returns are therefore not necessarily a reliable guide to actual returns.

In the data and charts presented throughout this document, "E" refers to financial years that are not yet reported. Forecasts of accounting data for these years are based on market's consensus estimates as reported by Bloomberg Finance L.P. CROCI metrics for the forecast years are calculated by applying the CROCI model to these consensus estimates. The CROCI team does not make any forecasts or projections of accounting data. Data for historical years are derived from company reports and other publicly available sources.

This document contains forward looking statements. Forward looking statements include, but are not limited to assumptions, estimates, projections, opinions, models and hypothetical performance analysis. The forward looking statements expressed constitute the author's judgment as of the date of this material. Forward looking statements involve significant elements of subjective judgments and analyses and changes thereto and/or consideration of different or additional factors could have a material impact on the results indicated. Therefore, actual results may vary, perhaps materially, from the results contained herein. No representation or warranty is made by DWS as to the reasonableness or completeness of such forward looking statements or to any other financial information contained herein.

PAST PERFORMANCE DOES NOT PREDICT FUTURE RETURNS.

17 February 2025

Summary View

Navigating the key topics across this paper

1.1 The top-down versus the bottom-up (p 9)

The top-down view from the IMF paints a picture of steady growth in 2025 and 2026, although lower than historical average (2000-19) and divergent. Further, it points out "medium-term risks to the baseline are tilted to the downside." Given this top-down backdrop, in this section we examine the bottom-up story based on the CROCI numbers.

To begin with, aggregate valuation (Economic PE) appears to be in line with recent history but are a bit stretched when compared to the pre-pandemic averages. The aggregate numbers have never been as distorted by the large-caps. Hence, we also look at the median values within the CROCI coverage universe. While based on aggregate valuation, US appears significantly expensive compared to Europe, based on the median valuation, it is hard to distinguish between the two regions. Looking at the median revenue growth profile, both nominal and real, where it becomes clear that all of the growth seen between 2022-24e was driven by inflation (real growth was negative). Going forward, estimates suggest we are likely to see positive real revenues growth.

Moving beyond revenues, our analysis shows that global median cash return have reduced (from their 2021 peak) driven by contraction in productivity, while margins expanded. Median global cash return may have retreated from their peak but still remain above the cost of capital, which has itself fallen close to record lows.

During the volatile years since the start of the pandemic, the discount rate has been the primary driver of equity markets. Since 2012, its trend level has been on the decline thanks to the ultra-loose interest rate policies that have been in place along with quantitative easing. But the cost of capital hit its lowest level in our available history after the pandemic started to subside in 2021.

1.2 Relevance of the CROCI methodology (p 16)

Within the context of a convergence towards a universal accounting standard, we examine the correlation between accounting and economic value. We also carry out an exercise of picking value stocks based on economic value versus the same on accounting value to assess the overlap of the two baskets.

2.1 Energy vs Utilities (p 19)

The transition away from fossil fuels to renewables should have an impact on the Energy and the Utilities companies. While this is a long-term theme, we are already seeing an impact on the capital allocation policies of the two sectors, which are diverging and impacting the economic value within the two sectors.

2.2 Technology and the Magnificent Seven (p 21)

In 2024e, the MAG7 companies have spent a third of all the R&D spendings by our US coverage universe. Rather than forecasting the incremental revenues from the investments in the AI, we invert the question and assess the value of the growth component being priced by the market in MAG7 and beyond.

2.3 Global Banks (p 23)

In 2025e, Global banks are estimated to close in on the pre-GFC highs in terms of economic profits. However, overall valuation draws a picture of modest exuberance. Notably, there is a region where compelling economic value is beginning to emerge.

2.4 Consumer Discretionary: Automobiles (p 25)

Almost one in two units of net capital in the global automobile sector is deployed by a European auto manufacturer. Similarly, every second individual employed in the sector is likely to be working for a European company. The trouble is that these numbers tell us more about the past than the future.

3.1 Value through the CROCI prism (p 28)

Despite recent underwhelming performance, Value has had a history of outperforming Growth especially in periods of normal rates and inflation. In this section, we examine the influence of macro-economic indicators like these to examine the performance of Value against other factors across different regimes. Even though overall market valuations are high (albeit not in bubble territory), there is still interesting value to be found in the cheapest stocks on a relative basis.

3.2 A cleaner take on Quality & Growth using CROCI (p 37)

Moving beyond traditional factor definitions, we provide a perspective on how the CROCI approach would deal with the factor of Growth. It is tempting to jump to the conclusion that GARP (growth at a reasonable price) is the obvious meeting point, given CROCI's heritage in and expertise for valuation and value investing. However, such a perception risks repeating some of the mistakes of Growth factor investing, resulting in confusion between Growth and Value. Instead, we use the level playing field created by CROCI company data to seek companies with a proven track record and clear prospects for growth along several dimensions (including cash flow and assets as well as top line). This extends our previous work of having introduced the CROCI Innovation Leaders Strategy, our take on Quality investing: a true Blue Chip strategy for the 21st century.

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Figure 1: Global Equities P&L and Valuation

	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Economic P / E (x)	29.5	28.8	27.5	30.8	42.6	32.9	28.2	31.3	34.9	33.0	29.1
Accounting P / E (x)	18.8	18.4	17.5	19.1	24.8	20.1	16.9	18.6	21.5	20.7	18.7
Yield (%)	2.6	2.6	2.5	2.3	2.1	2.0	2.2	2.1	1.8	1.7	1.8
P / BV (x)	2.6	2.7	2.9	2.9	3.1	3.7	3.3	3.4	3.9	3.6	3.2
EV / Sales (%)	169.1	179.2	179.9	191.8	224.1	231.9	196.9	210.8	248.1	249.6	233.1
EV / Adj. EBDIT (x)	9.7	10.1	10.1	10.5	12.3	11.6	10.2	10.8	12.2	11.8	10.7
EV / Adj. EBIT (x)	14.8	14.8	14.7	16.2	20.3	16.9	14.3	15.5	17.4	16.6	14.9
EV / Free Cash Flow (x)	26.2	27.2	27.0	27.8	28.1	29.2	28.7	27.4	29.4	26.0	22.4
EV / Capital Employed (x)	1.7	1.8	1.9	1.8	2.0	2.3	2.1	2.2	2.5	2.5	2.4
Avg. Market Cap. (bn)	26,486	30,613	33,415	34,482	38,418	49,461	45,281	48,061	58,423	61,033	61,033
Enterprise Value (bn)	31,728	36,436	39,823	42,359	46,552	57,354	53,153	56,111	66,504	68,077	66,496
Key Ratios	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024E**	**2025E**	**2026E**
Revenue Growth	-0.6	8.4	8.9	-0.2	-5.9	19.0	9.2	-1.4	0.7	1.7	4.6
Revenue Growth (Median, local ccy)	1.7	6.5	5.3	2.3	-2.7	13.1	11.4	2.5	2.0	3.7	4.4
Adj. Net Profit Pre-Min. Growth	-6.7	18.5	14.2	-5.8	-13.9	58.2	8.7	-3.5	5.0	8.6	10.6
Adj. EBDIT Mgn	17.4	17.8	17.8	18.3	18.2	20.0	19.4	19.4	20.3	21.2	21.9
Adj. EBIT Mgn	11.4	12.1	12.2	11.8	11.0	13.7	13.7	13.6	14.2	15.0	15.7
Adj. Net Prof. Pre-Min. Mgn	7.8	8.5	9.0	8.5	7.7	10.3	10.2	10.0	10.4	11.2	11.8
Tax Rate	31%	30%	28%	28%	32%	26%	27%	27%	25%	24%	23%
Depreciation / Sales	6.5	6.1	5.8	7.0	8.2	6.5	5.9	6.2	6.2	6.2	6.2
Capex / Sales	8.0	7.8	7.7	8.7	9.0	8.4	8.2	8.9	9.0	8.9	8.6
Free Cash-Flow / Sales (Post-Tax)	6.5	6.6	6.7	6.9	8.0	7.9	6.9	7.7	8.4	9.6	10.4
Dividends / Sales	3.9	4.0	4.3	4.3	4.0	4.1	3.9	4.0	4.0	3.7	3.7
Interest Cover (x)	9.7	10.6	10.9	8.8	7.3	11.0	12.3	11.2	10.6	11.7	13.6
Net Debt (-) Cash (+) / Equity	-46.1	-44.5	-48.6	-59.3	-58.8	-53.7	-54.3	-54.1	-49.6	-36.1	-23.3
Return on Stated Equity	12.6	13.7	14.3	13.2	9.7	17.3	17.4	16.2	16.7	17.3	17.1
Return on Cap. Employed (Post-Tax)	8.6	9.3	10.0	9.1	7.6	10.8	11.5	10.9	11.2	11.8	12.6
P&L (USD bn)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024E**	**2025E**	**2026E**
Turnover	18,759	20,327	22,133	22,080	20,771	24,728	26,997	26,616	26,806	27,270	28,533
Adjusted EBDIT	3,261	3,623	3,930	4,045	3,780	4,936	5,225	5,174	5,436	5,781	6,240
Depreciation	1,222	1,235	1,281	1,541	1,701	1,607	1,586	1,648	1,654	1,683	1,766
Net Interest Result	**-221**	**-233**	**-247**	**-299**	**-315**	**-308**	**-302**	**-324**	**-359**	**-350**	**-329**
Pre-Tax Profit	1,643	1,958	2,137	1,933	1,380	2,841	3,038	2,880	3,165	3,615	4,027
Income Tax	514	593	594	545	445	728	817	776	792	850	932
Adj. Net Profit Pre-Min.	1,465	1,736	1,982	1,867	1,607	2,542	2,763	2,665	2,799	3,041	3,364
Cash Flow (USD bn)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024E**	**2025E**	**2026E**
EBIT before stock options	2,089	2,454	2,724	2,569	2,158	3,447	3,787	3,675	3,966	4,331	4,721
Depreciation	1,222	1,235	1,281	1,541	1,701	1,607	1,586	1,648	1,654	1,683	1,766
NWC and Provisions	-31	-267	-244	-121	61	-277	-534	-209	-77	-2	-24
...Operating Cash Flow	3,280	3,422	3,760	3,989	3,920	4,777	4,839	5,114	5,543	6,012	6,464
Proceeds from Share Issues	-96	-115	-357	-302	-139	-513	-702	-744	-468	-3	0
Dividends Paid	-737	-804	-952	-941	-838	-1,012	-1,065	-1,070	-1,080	-1,018	-1,059
Capex	-1,508	-1,579	-1,705	-1,919	-1,864	-2,068	-2,216	-2,361	-2,402	-2,424	-2,443
Net Other Investments	-579	-474	-594	-1,524	-521	-420	-316	-219	-349	3	2
Change in Net Debt (-) Cash (+)	-275	-428	-561	-1,493	-236	79	-268	-256	335	1,430	1,746
Balance Sheet (USD bn)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024E**	**2025E**	**2026E**
Net Working Capital	359	439	444	406	112	171	389	294	323	311	313
Net Financial Debt (-) Cash (+)	-4,956	-5,384	-5,989	-7,485	-7,736	-7,657	-7,925	-8,190	-7,855	-6,425	-4,679
Gross Tangible Fixed Assets	19,974	21,641	22,000	24,492	25,921	26,165	26,278	27,348	27,986	29,246	30,535
Net Tangible Fixed Assets	9,500	10,194	10,344	11,658	12,100	12,231	12,420	13,036	13,507	14,209	14,872
Other LT Assets	1,492	1,669	1,760	1,849	2,035	2,233	2,315	2,501	2,464	2,482	2,514
Stated Shareholder's Equity	10,151	11,420	11,622	11,901	12,385	13,470	13,797	14,331	15,061	17,010	19,297
Minorities	594	683	689	716	772	788	801	817	781	786	795

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025. "E" after a year indicates that the numbers are based on consensus forecasts. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

A. Current consensus revenue growth estimates (median, local currency), 2025 starts on an optimistic note compared to actual sales growth for last couple of years.

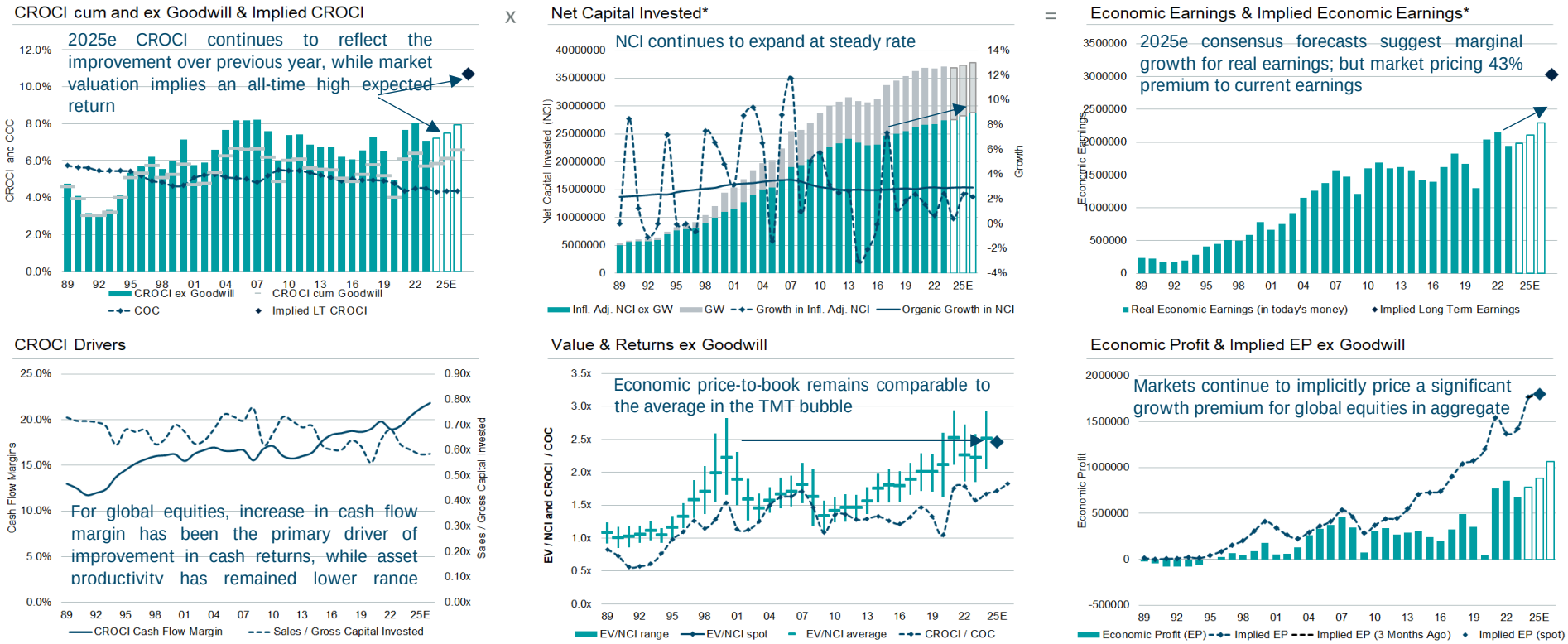
B. Also, on the most earnings parameters (EBDIT, Net Income, Free Cash flow, etc.) 2025 is expected to be one of the best years in the past decade.

C. As a result, valuations (both Economic PE and Accounting PE) appear to be in line with recent history. However, valuations are a bit stretched when compared to the pre-covid averages.

D. At aggregate level, corporate balance sheets are not significantly leveraged. Despite higher interest rates, interest coverage ratio appears favorable.

E. Capital expenditures and Dividend are expected to be consistent with 2024e.

Figure 2: Global Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	20048	24707	23020	20342	23104	25299	26399	29420	32408	33339	33605	38497	42012	43616	47834	58759	54566	57607	68030	69666	68163
Market Cap (USD bn)	16524	20564	17647	14910	17747	19451	20165	23250	26006	26661	26486	30613	33415	34482	38418	49461	45281	48061	58423	61033	61033
EV/NCI Ex. GW	1.70x	1.81x	1.63x	1.34x	1.42x	1.46x	1.46x	1.56x	1.75x	1.80x	1.79x	1.89x	2.00x	2.01x	2.11x	2.52x	2.26x	2.22x	2.52x	2.46x	2.31x
Economic PE	20.8x	22.1x	21.4x	22.5x	19.2x	19.7x	21.3x	23.2x	26.0x	29.1x	29.5x	28.8x	27.5x	30.8x	42.6x	32.9x	28.2x	31.3x	34.9x	33.0x	29.1x
Accounting PE	15.5x	16.5x	15.7x	15.7x	13.2x	13.1x	13.8x	15.6x	17.2x	19.2x	18.8x	18.4x	17.5x	19.1x	24.8x	20.1x	16.9x	18.6x	21.5x	20.7x	18.7x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	8.2%	8.2%	7.6%	6.0%	7.4%	7.4%	6.9%	6.7%	6.7%	6.2%	6.1%	6.6%	7.3%	6.5%	5.0%	7.7%	8.0%	7.1%	7.2%	7.5%	7.9%
Implied CROCI	8.5%	8.7%	8.4%	7.3%	7.7%	8.0%	7.8%	8.1%	8.9%	8.8%	9.0%	9.4%	9.9%	9.8%	10.0%	11.0%	10.2%	10.0%	10.8%	10.7%	10.0%
Implied Economic Earnings/ Economic Earnings	104%	106%	111%	123%	105%	107%	114%	121%	132%	143%	148%	143%	136%	151%	202%	143%	127%	141%	150%	143%	126%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025. "E" after a year indicates that the numbers are based on consensus forecasts. *Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Section 1:

A Bottom-Up View of Global Equities

1.1 The top-down versus the bottom-up

2024 – This rhyme is different?

"History doesn't repeat itself, but it does rhyme." – Mark Twain.

In last year's outlook, we began this section with the unusual dichotomy of higher interest rates and a still sanguine equity market. This tension persisted throughout most of 2024, notwithstanding actions taken by the major central banks. Of course, it wasn't a steady state without any turbulence. Heightened market volatility in early August, for example. was driven by the Bank of Japan taking the market by surprise. However, barring such periodic bouts of volatility, higher rates and tight risk premia continue to exist side by side.

While the global cost of debt has remained above its long-term median since 2011, the global implied cost of capital remains significantly below its own median. *CROCI defines the cost of capital as the discount rate which, at the market level, equalises expected future cash flows and the market value of assets, or enterprise value*. By definition, this number is the real return expected by equity investors in aggregate as well as being a hurdle rate for value creation.

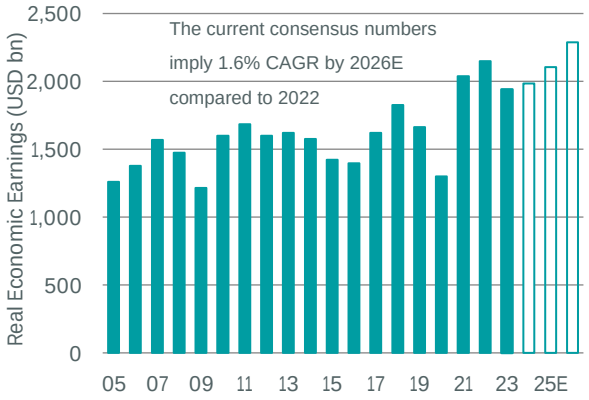
Historically, rising cost of debt has tended to coincide with a higher global cost of capital. But this time around the two are still divergent. This poses the question of whether the current "rhyme" is different? Before addressing this question, we look at the top-down view and set it against the backdrop of the bottom-up trends shown by the CROCI numbers.

According to the IMF Outlook (January 2025) the "*global economy is holding steady, although the degree of grip varies widely across countries. Medium-term risks to the baseline are tilted to the downside, while the near-term outlook is characterized by divergent risks.*" Against this unorthodox background, characterised by divergent growth and risks across economies, we examine the bottom-up picture by looking at: 1) the evolving trends of the aggregate numbers of the nearly 900 companies covered by CROCI and 2) what is implied by the current valuation of global equities.

The top down seen through CROCI's bottom-up numbers

The 2024e economic PE expanded from 31.0x (in the 2024 outlook) to 34.9x over the course of the past year, a rise of about 13%. Meanwhile, the aggregate year-on-year real economic earnings rose by a more modest 2%. Over the same period, 2025e economic PE rose by c.20% to 33.0x, with real economic earnings estimate ticking up 6% compared to 2024e. 2025e looks set to match the 2022 peak in aggregate real economic earnings and then show a positive growth momentum in 2026e (Figure 3).

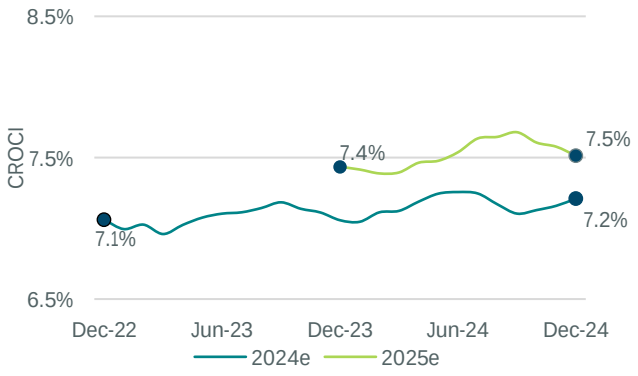
Figure 3: Real Economic Earnings (USD bn)



Source: DWS, CROCI. Aggregate data of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. The real economic earnings in this exhibit are in today's money. No assurance can be given that any forecast, target or opinion will materialize.

When it comes to growth expectations, it is important to understand where the starting point is. For 2024e, the forecast CROCI cash return (based on consensus estimates) started at 7.1%–in line with the median annual CROCI between 2011-23 and has remained at the same level. The expectations for 2025e began at a slightly higher level and have so far seen modest positive revisions. At the aggregate level, return expectations appear to remain steady and in line with the long-term trend.

Figure 4: CROCI – estimates remain steady



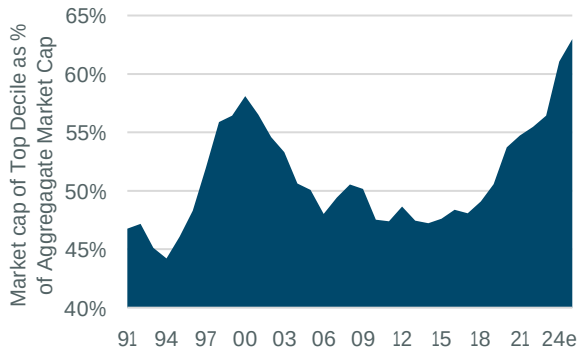
Source: DWS, CROCI. Aggregate data of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Winner takes all

The strong outperformance of mega-caps, especially in the US, has been one of the most dominant equity phenomena

over the past couple of years. The following chart shows the share of the top decile (by market cap) of CROCI's coverage universe at its three-decade peak (higher than during the TMT bubble).

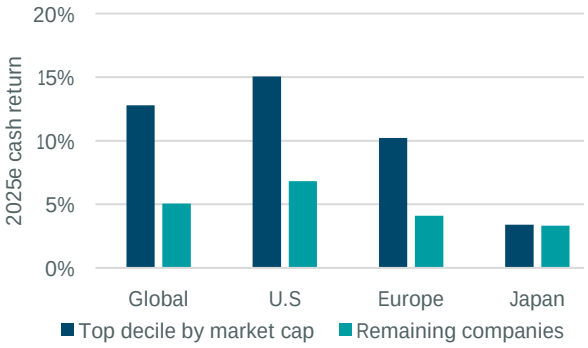
Figure 5: Large caps punching above their weight



Source: DWS, CROCI. Aggregate data of companies in CROCI's global non-financial coverage. The top decile is arrived at using the market cap of the entire CROCI non-financial coverage universe. Data as available on 03 January 2025.

There is a similar story for the cash returns. Global aggregate cash returns are 7.6%, but for the top decile the same number is close to 12%, while that of the remaining coverage universe is 5.5%.

Figure 6: Large-caps heads and shoulders above in cash returns (except Japan)

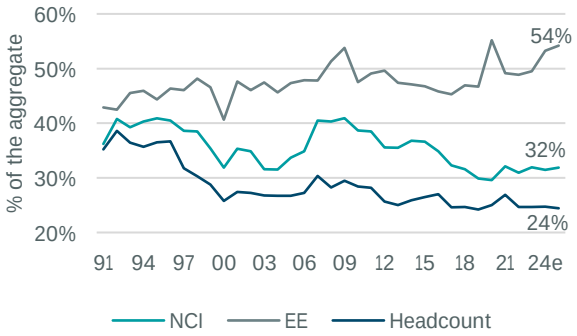


Source: DWS, CROCI. Aggregate data of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Across geographies, the difference in profitability is stark except in Japan, where the overall cash returns are both the lowest amongst major regions and are also more uniformly distributed across the entire coverage universe.

The following chart brings out the main characteristics of the higher cash returns generated by the large-cap companies. About three decades back, large caps accounted for two-fifths of the total global net capital invested. At the same time, large caps accounted for more than two-fifths of the aggregate economic earnings. This share of total net capital invested declined rather quickly to about a third by 2000, when large-caps' share of total economic earnings also reduced to about two-fifths. However, the big difference now is that, while large caps' share of the total net capital invested is about a third, their share of total economic earnings is more than half. It's true that the large cap names are a lot less labour-intensive than they were in the 1990s. Since that time, equity markets have bid up businesses which require incrementally less capital investment and smaller workforces to generate higher economic earnings.

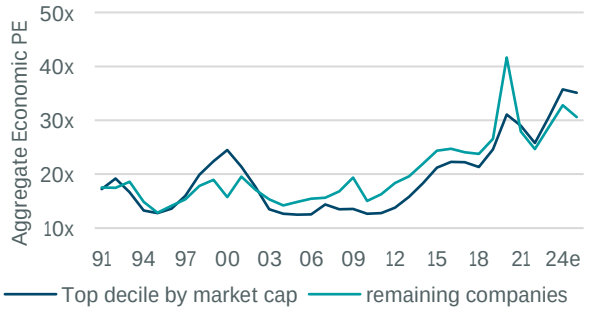
Figure 7: Breaking down the characteristics of the large-caps



Source: DWS, CROCI. Aggregate data of companies in CROCI's global coverage. Data as available on 03 January 2025. The top decile is arrived at using the market cap of the entire CROCI non-financial coverage universe. NCI means Net Capital Invested for CROCI calculation; EE means Economic Earnings.

A valuation premium has emerged for large caps on the back of their strong performance over the past couple of years. The top decile by market cap is now about a sixth more expensive, even as the absolute valuation of the top decile as well as that of the rump companies is at its highest levels since at least 1990.

Figure 8: Bipolarity in valuation beginning to emerge



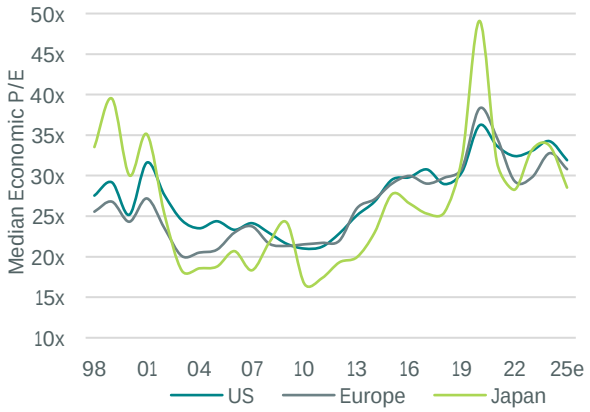
Source: DWS, CROCI. Aggregate data of companies in CROCI's global coverage. Data as available on 03 January 2025. The top decile is arrived at using the market cap of the entire CROCI non-financial coverage universe.

Lest we miss the trees for the forest...

Bottom-up value investors should perhaps take more of an interest in median valuation than aggregate equity market valuation, given that as stock pickers they are more likely to be investing in one or more businesses at attractive prices, rather than buying the entire market.

Figure 9 shows the median valuation by region, where it is hard to distinguish between the US and Europe, despite received wisdom that the former is more expensive than the latter. The late Charlie Munger said of value investing "Fish where the fish are". Based on median economic PE, investors are likely to find attractively priced businesses on both sides of the Atlantic. That said, it's worth noting the very substantial difference in profitability which underpins the valuation of both, with the US on aggregate 2025e returns of 10.9% compared to Europe's 5.1%.

Figure 9: Median valuation across regions



Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

The picture is of course rather different when looking at aggregate valuations. The impact of the US mega caps whose valuations have soared in the past couple of years is far clearer. The US equity market in aggregate has an economic PE of 35.5x compared to Europe's 30.6x. This is perhaps the picture that investors expect to see, but from our point of view the median valuation gives a clearer insight into the potential attractiveness of stocks within each region.

We highlighted in last year's CROCI Outlook that Japan was trading at a premium to the US as well as Europe. Japan's median 2025e economic PE is now trading at a discount to both developed market regions.

Japan hit the news in 2024 when the Bank of Japan's actions took the market by surprise, resulting in significant appreciation in the yen[1]. Japan's equity prices also saw a material correction as a consequence. Both the yen and Japanese equity prices subsequently stabilised but this incident underlines the significance of the yen for Japanese equity markets.

Amongst the three regions, Japanese companies generate the most revenues from overseas, which explains their vulnerability to sharp movements in the JPY.

Figure 10: Domestic vs exports share in total revenues

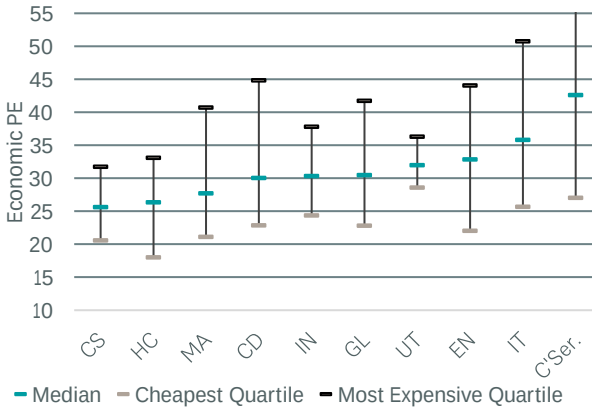
Regional Aggregate	2023 revenue by geographic region				
	Japan	US	Europe	Asia ex Japan	Others
Japan	44%	23%	9%	15%	9%
US	1%	69%	11%	7%	12%
Europe	1%	23%	51%	13%	12%

Source: DWS and CROCI estimate. The table shows 2023 revenue share by regions for non-financial companies within the CROCI coverage. The values are based on aggregate reading across regions. Data as available on 31 December 2024.

Figure 11 shows the median economic PE across sectors. Similar to last year, Consumer Staples and Health Care still have their median economic PE at a discount to that of the global coverage universe. On the other hand, Energy has become slightly more expensive at the median level thanks to lower oil prices. However, the cheapest quartile within the Energy sector continues to remain amongst the cheapest (almost second only to the Health Care).

On the other hand, the lowest quartile of the Utilities sector is the most expensive of all sectors. We cover both sectors in further detail in **section 2.1**

Figure 11: Median valuation across sectors (2025e)

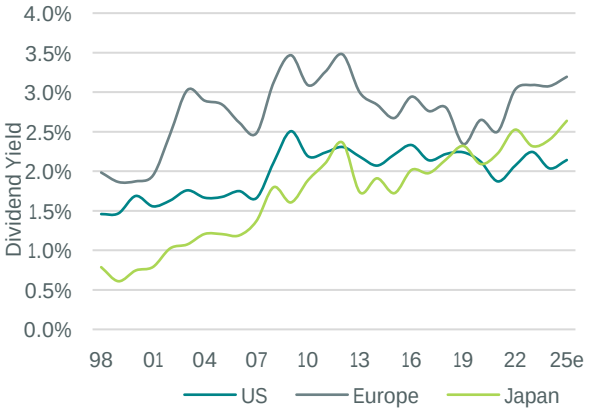


Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize. CS stands for Consumer Staples, HC for Healthcare, MA for Materials, CD for Consumer Discretionary, IN for Industrials, GL for Global, UT for Utilities, EN for Energy, IT for Information Technology, C'Ser. for Communication Services.

[1] The JPY saw an appreciation of more than an eighth percentage points against the USD from July-2024 until mid Sep-2024. Subsequently, the JPY retraced and now is cheaper than the level seen at the beginning of 2024 against the USD.

On median dividend yields, Europe stands out as the strongest region, while the US offers the lowest yield amongst the three regions (although this metric does not take into account any stock buybacks).

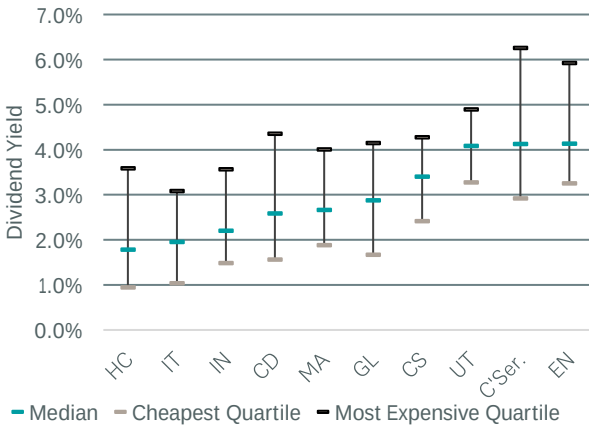
Figure 12: Median dividend yield across regions



Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Looking at the same data by sector shows that Utilities, Energy and Communication Services offer the highest median dividend yield. By contrast, Health Care offers the lowest yield, while also featuring amongst the cheapest sectors by Economic PE.

Figure 13: Median dividend yield across sectors (2025e)



Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Back to basics

Having looked at the median valuation, we look at one of the primary drivers of economic earnings, namely revenues. After the 2022 peak, median revenue growth saw a significant deceleration in the subsequent two years across all regions. While the slower revenues in 2023 can be attributed to the high base effect, last year also saw further slowdowns. Consensus estimates suggest a pickup in revenue growth for the current and coming year. Notably, there was no growth in real terms in 2023 and 2024e, but real growth is forecast to turn positive in 2025e and 2026e.

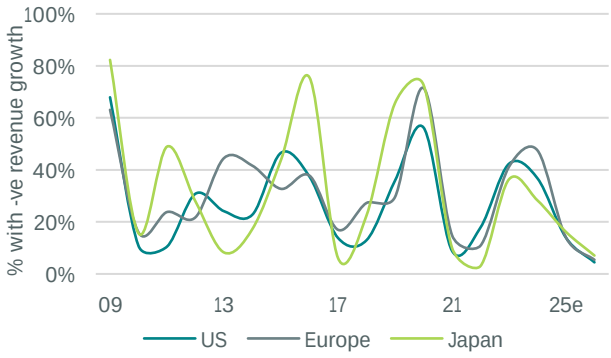
Figure 14: Nominal revenue growth by region (Median)

	2022	2023	2024e	2025e	2026e
US	8.1%	2.5%	2.4%	3.9%	4.9%
Europe	14.6%	2.2%	0.5%	3.1%	4.3%
Japan	16.4%	3.8%	2.8%	3.3%	3.7%
Global	11.4%	2.5%	2.0%	3.7%	4.4%
Global (real)	6.0%	-1.1%	-0.4%	1.8%	2.2%

Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

We also examine the percentage of companies with negative year-on-year revenue growth. Europe stands out here, with more than two-fifths of the European companies under CROCI coverage having delivered negative year-on-year growth last year. The comparable number is more than a third for the US and about a fifth for Japan. The optimism of the consensus numbers can be seen to percolate almost uniformly across regions will less than tenth of the regional coverage universe expected to post negative growth in 2026e.

Figure 15: Negative revenues growth across region



Source: DWS, CROCI. The chart shows the proportion of companies in CROCI's global non-financial coverage with negative top-line growth. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

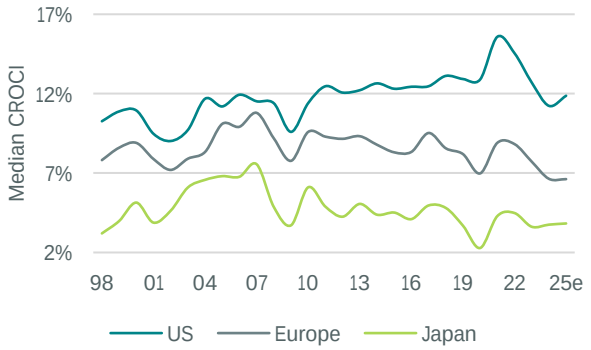
As fundamental investors, we ultimately want to understand the conversion rate of revenue growth into economic earnings. To this end, we have analysed the trend seen in cash returns across the different regions.

That '80s show? – not entirely

In our 2022 Outlook, we had a chapter titled "Postcard from the 1980s" exclusively focusing on the impact of inflation on

cash returns. Using the data of the companies with reported numbers going back to 1980, this chapter highlighted that high inflation ate into cash returns, largely because of declining asset productivity. Fast forward to 2025 and there is a rather similar squeeze in cash returns. Of course there are plenty of differences between the two periods. But the similarities are interesting.

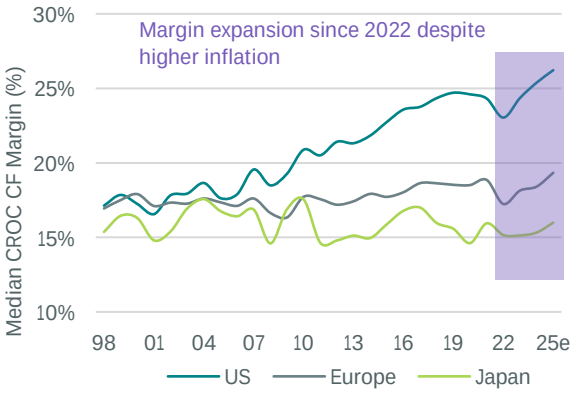
Figure 16: Median CROCI across regions



Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

The drivers of the contraction in cash margins are largely similar. The cash flow margins have seen meaningful expansion across regions defying the rise in inflation of the past few years. This trend is consistent with what we saw during the early years of 1980, when the margins were seen to rise despite a prolonged phase of high and consistent inflation during the preceding decade. The trends in Figure 17 would imply that high inflation does not really tend to impair the ability of companies to pass on higher operating costs.

Figure 17: Median cash flow margin across regions



Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

On the other hand, asset productivity (defined as sales/gross capital invested) has been compressed across the board. Persistent high inflation slowly but surely feeds into the capital employed, which only shows up fully when assets are shown at replacement value in real terms.

Figure 18: Median asset productivity across regions

Source: DWS, CROCI. Median of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

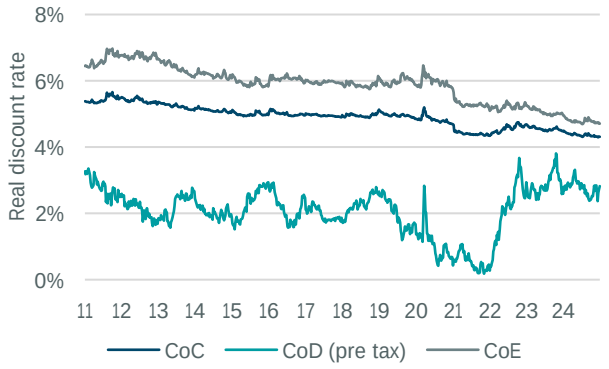
The most important difference is that unlike in the 1980s, the current phase of high inflation has not toppled the economy into recession. As a result, median global cash returns may have retreated from their peak but still remains above the cost of capital, which has itself fallen to around record lows.

Implied cost of capital – this rhyme is different?

Returning to the dichotomy of higher interest rates and the sanguine equity markets with which the section opened: in Figure 19, we plot all the key variables which feed into the global cost of capital. After a decade of compression to near zero levels, the cost of debt started to rise sharply at the end of 2021. As can be seen in the chart, 2023 and 2024 have been rather volatile for the global cost of debt. Despite the volatility, it remains firmly above the levels seen before the end of 2021. The cost of equity, however, has been rather unfazed by these rising interest rates. It remains close to record lows and so does the cost of capital.

Looking at long-term trend since 2011, the median reading for cost of capital is 5.1%, whereas for cost of debt it is 2.2%. Currently, the cost of debt is higher than its long-term median reading and yet the cost of capital remains significantly below its long-term median. Low financial leverage in developed market corporates means the global cost of capital is much more dependent on the cost of equity than long-term interest rates.

Figure 19: Influence of cost of Equity/Debt on the overall cost of Capital



Source: DWS, CROCI. Aggregate of companies in CROCI's global non-financial coverage. Data as available on 30 December 2024. CoD is measured as a pre-tax cost of Debt for BBB rated companies by Moody's and is adjusted for long-term inflation.

This is because CROCI's cost of capital is a market-implied *ex ante* measure in line with the overall capital structure of global equities. To give a sense of the long-term trend of the capital structure of global equities, below we show the global financial leverage, i.e. net financial liabilities (including those brought back onto the balance sheet by CROCI company analysis) as a percentage of market capitalisation over time. Given the sharp acceleration in market capitalisation, this ratio is close to its lowest levels since we started tracking it, currently standing at around 18%.

Figure 20: Capital structure of the non-financial coverage universe

Source: DWS, CROCI. Aggregate of companies in CROCI's global non-financial coverage. Gearing refers to the ratio of net financial liabilities to market cap. Data as available on 30 December 2024.

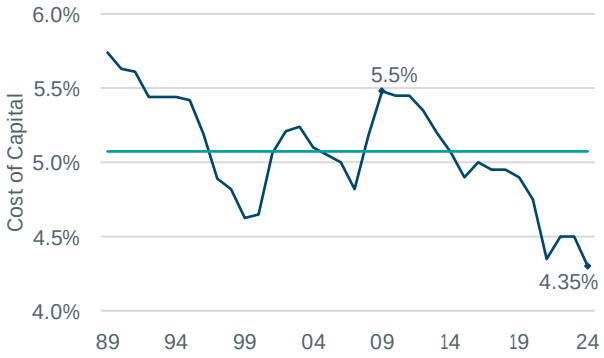
Lollapalooza effect & cost of capital

Charlie Munger, a pioneer of behavioural finance, coined the term "Lollapalooza effect" to refer to the tendency of emotions and cognitive biases to reinforce each other and drive herd mentality.

When it comes to the cost of capital, such biases have a significant role to play. As we saw in Figure 19, despite the rise in cost of debt, the cost of capital has barely changed. This implies that the equity risk premium remains tight.

The cost of capital is influenced by behavioural aspects, or what Mr. Munger would refer to as the emotional and cognitive biases of market participants at large. Such a low cost of capital suggests that the market is pricing continued softening of inflation along with a soft landing of the global economy–in short, not much change to the status quo ante.

Figure 21: Implied Real Cost of capital for Global Equities



Source: DWS, CROCI. Aggregate of companies in CROCI's global non-financial coverage. Data as available on 03 January 2025.

Thus, the current implied cost of capital at 4.35% remains low relative to its long-term range. The academic literature, based on more than a century of data, suggests that over the very long term there is very strong mean reversion tendency for the market-implied cost of capital to between 5.2% and 5.4% in real terms.

It is clear from Figure 21 that the period of high liquidity following the financial crisis continuously lowered the cost of capital culminating in the pandemic easing, leaving it at today's low levels. Mean reversion would therefore imply low potential returns from equity markets in the coming years. We can map out the effects of any change in cost of capital to the overall valuation (Figure 22), but it is far harder to explain what might prompt any mean reversion, or whether it will be slow and earnings-led (i.e. a prolonged period of muted total returns lagging earnings growth, restoring valuations) or a faster price-led move (as seen after the TMT bubble or the financial crisis). So long as market participants remain confident about the trajectory of inflation deceleration and economic growth in general, the cost of capital may continue to remain close to its three-decade lows. In general, an increase in uncertainty and greater risk aversion could have a significant impact on the overall valuation of global equities, given the current starting point of high valuation / low cost of capital.

Figure 22: Sensitivity of global equity values to the changes in cost of capital (COC)

COC	EV/NCI	EV move	MV move
5.25%	1.13	-38.0%	-43.3%
5.00%	1.26	-30.6%	-34.8%
4.75%	1.43	-21.2%	-24.2%
4.50%	1.65	-9.1%	-10.3%
4.35%	**1.82**	**0.0%**	**0.0%**
4.20%	2.02	10.9%	12.4%
4.10%	2.17	19.4%	22.1%
4.00%	2.35	29.0%	33.1%

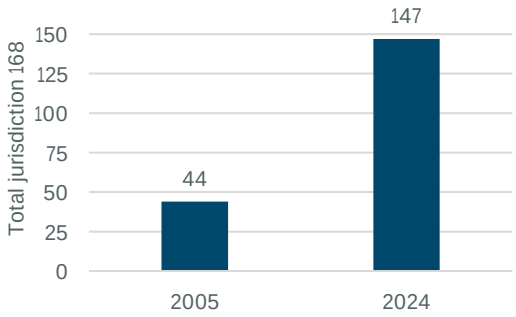
Source: DWS, CROCI. Sensitivity is calculated using agglomerated data of companies in CROCI's coverage globally. EV is Enterprise Value; MV is Market Value. The EV/NCI values refer to the 2025E cum Goodwill NCI. Data as available on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

1.2 Relevance of the CROCI methodology

Amidst congruence in the accounting standards

The International Accounting Standards Board (IASB) was founded in 2001 and that was when convergence towards a set of globally accepted uniform accounting principles began in earnest. As efforts to reshape global financial reporting were more widely embraced, a growing number of countries adopted IFRS following its endorsement by the European Commission.

Figure 23: Countries requiring reporting as per IFRS



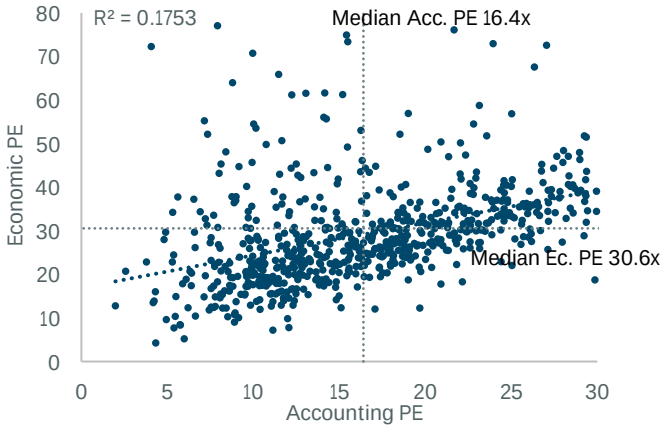
Source: IFRS.

The situation today is that, moving from at least one accounting standard per country, most countries can use IFRS for listed companies, with resistance only in a few countries, such as the US where just foreign companies may use IFRS, and Japan where the standards are permitted but not required. The CROCI philosophy was founded in 1996 when accounting rules globally were rather fragmented. One of the primary goals at that time was to standardize accounting practices and bridge the discrepancies caused by varying accounting principles on different industries. From this standpoint the CROCI process has benefited from the rising congruence of global accounting standards. However, is it realistic to assume that accounting numbers now represent economic realities of a business?

Of correlation and causality

In the following chart we have plotted economic value versus accounting value. There should clearly be a connection between the two, as both are derived from the same underlying company accounts, and both compare a version of an asset multiple with a version of return on capital. That said, the correlation (R-squared) is only 0.18. In other words, accounting PE explains only a fifth of the variability in economic PE. Economic PE is also significantly higher than the accounting PE on average. Economic PE has values in excess of 40x to capture accounting PE of up to 30x.

Figure 24: Economic PE vs Accounting PE



Source: DWS CROCI, valuation multiples reflect the 2025e valuation of the CROCI global non-financial coverage. The outliers in terms of the top deciles have been excluded. Data as of January 03, 2025. No assurance can be given that any forecast, target or opinion will materialize.

Journey from Accounting PE to Economic PE

Even if all global accounting standards were to collapse into one universal GAAP, there are still various economic characteristics that would prevent the sensible comparison of PE ratios across geographies and sectors. To begin with, inflation is a latent yet important economic factor for any investor which no set of public accounting standards captures widely. It can inherently alter accounting numbers like revenue growth and the margin profile across countries, not to mention the comparability of return on capital over time. It is imperative to remove this distortion to reported numbers, which are normally reported in historic cost terms. Second, normal accounting depreciation of assets on the balance sheet can often bear little resemblance the way they are consumed in economic reality. The solution for value investors is either to use a model based on gross assets or to create a more realistic measure of economic depreciation. In either case, the calculation of a meaningful and comparable economic asset life is essential. Third, any universal GAAP would likely continue to treat most intangible expenditure as an operating expense, implying that it only contributes to sales in the year when the expense takes place. But for an investor interested in economic value, most research & development and brand expenditure (R&D) has a longer life than that. In such cases, the brands or research ought to be treated as fixed assets. Hence, the CROCI model systematically and consistently capitalises expenditure on the development of such assets, allowing invaluable comparisons for fundamental equity investors. Fourth, conventional accounting PE only looks at equity capital. A company's asset

base, which generates the cash flows, is funded by other sources of capital, most obviously by debt. Debt by its very nature is generally cheaper than equity as well as being tax deductible. Companies with higher leverage can often look deceptively cheap on conventional PE metrics. The CROCI approach to calculating a company's enterprise value is to treat as a liability anything that is likely to be a future drain on cash flows in order to be more conservative. The CROCI process aims to address these and other economic characteristics to arrive at the more economically meaningful economic PE. All the CROCI adjustments have been explained in detail in our 2024 report titled Twenty Years of CROCI Investment Strategies (link).

Impact of the CROCI process on the accounting numbers

Understandably, each of the major CROCI adjustments have a varied impact on different sectors. For example, companies within Utilities and Energy are more capital intensive, and their assets have a longer economic life. As a result, these two sectors are more acutely affected by inflation. On the other hand, Healthcare and IT tend to invest heavily in R&D, so that will typically have a greater impact than inflation. More than half of the economic gross capital invested in HC can be attributed to R&D investments. Lastly, adjustments to net working capital contribute almost a fifth of the economic Gross Capital Invested within the CD sector.

Figure 25: Comparison of Accounting & Economic Capital

	CD	EN	HC	IT	UT	Global
Gross Fixed Assets	59	79	33	59	74	65
Inflation Adj.	10	19	6	7	**23**	14
R&D	13	0	**54**	23	0	12
NWC & Other Adj.	18	2	7	11	3	9
Gross Capital	100	100	100	100	100	100

Source: DWS, CROCI. Aggregate data for Sectors for 2025e, rebased to Gross capital as 100. CD – Consumer Discretionary; EN – Energy; HC – Healthcare; IT – Information Technology; UT – Utilities. Data as of November 30, 2024. No assurance can be given that any forecast, target or opinion will materialize.

In addition, Figure 26 puts the financial leverage adjustment into perspective.

Figure 26: Comparison of Market Cap. to Enterprise Value

	CD	EN	HC	IT	UT	Global
Market Cap.	84	85	91	99	50	88
Net Debt	13	17	7	(1)	**45**	10
Other EV Adj.	3	(2)	2	2	5	2
EV	100	100	100	100	100	100

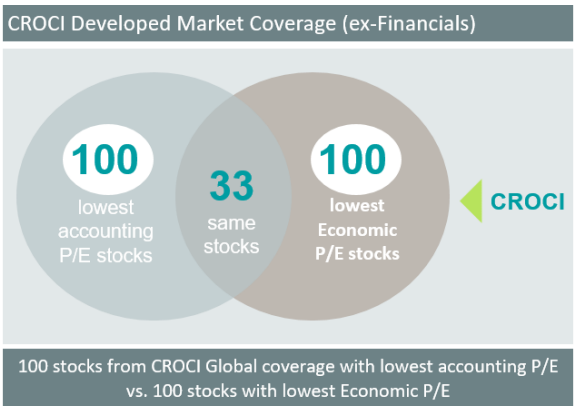
Source: DWS, CROCI. Aggregate data for Sectors for 2025e, rebased to Enterprise Value as 100. Data as of November 30, 2024

The comparability of the profitability of a company's total assets (rather than those that are funded only by equity) can only really make sense in the context of the enterprise value. Even at the global aggregate level, net debt can be seen as contributing only a tenth of the EV, but there are sectors such as Utilities which are generally highly levered. These highly levered businesses can often look deceptively cheap on conventional PE metrics.

Two out of three businesses appear deceptively cheap

When we compare two portfolios of the 100 cheapest companies from our developed market coverage universe, one based on conventional PE and the other on economic PE, we find as many as two-thirds of the two portfolios are different.

Figure 27: Overlap between Accounting and Economic Value



Source: DWS, CROCI, forty cheapest companies from the CROCI Developed Market coverage universe, based on accounting and economic PE. Data as of January 03, 2025. No assurance can be given that any forecast, target or opinion will materialize.

Connecting Figure 27 with Figure 25, accounting value severely underestimates the potential of R&D with only six of the 100 cheapest stocks from Health Care, compared to nearly 30 when we use Economic PE. By contrast, sectors such as Consumer Discretionary, Energy and Utilities see a significantly larger representation in accounting value (46 stocks out of the 100 cheapest) compared to economic value (22 stocks). Thus, even though there has been a definite convergence towards a single accounting standard, the correlation between value according to accounting metrics and according to economic metrics remains weak. Moreover, picking value stocks based on economic metrics can be seen to have low overlap with the same exercise based on the accounting value. The reported accounting numbers still require significant due diligence to bring them into line with economic reality.

Section 2:

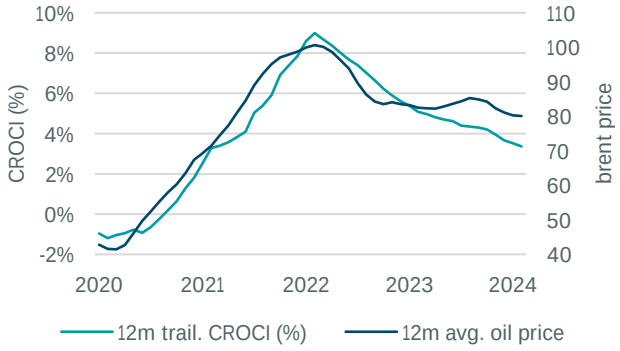
Sector Insights

2.1 Energy vs Utilities

When the price has greater influence on returns

The Energy sector has experienced some of the most negative revisions in underlying cash returns amongst all sectors in 2024, largely thanks to the cooling off in oil prices over the course of the year. Energy producers have been considered by many to be price makers, but sectoral returns of the listed producers are always a function of the trend in underlying energy prices to a large extent.

Figure 28: Energy sector CROCI and brent price



Source: CROCI data of Energy aggregations from developed markets in CROCI's coverage universe. CROCI calculated on rolling 12 month rolling basis. Data as on 31 December 2024.; Bloomberg data for Brent oil prices.

That the sector's cash returns are driven by the price of its products might seem intuitive to investors. But the past cycle was different because of the higher level of correlation since the pandemic. In the past, high energy prices resulted in higher capex (the correlation between oil price and capex was around 0.95 between 1989 and 2018). This meant that cash returns on capital invested decoupled from the underlying trend in energy prices as asset productivity was diluted. In the cycle before this one, for example, oil prices peaked in 2013, but peak returns were around 7 years earlier as capital invested had roughly doubled over that period.

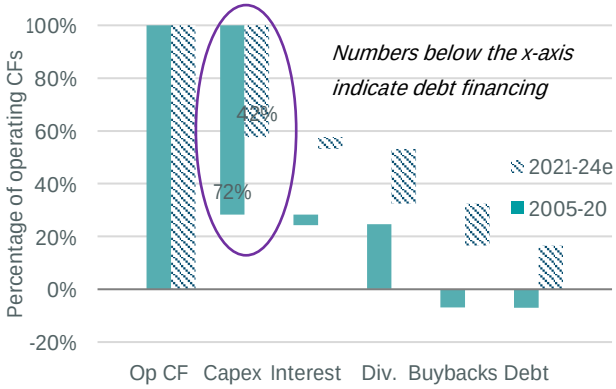
Power-saving mode on

Despite buoyant oil and gas prices over the last couple of years (average oil price was in excess of USD80/bbl) there has been unusually strong capex discipline, with no substantial asset expansion in either 2023 or 2024. Consensus data based on company guidance implies that 2025 is unlikely to be substantially different. The lack of capex intensity in the post-pandemic phase has allowed cash returns to move closely in line with energy prices, rather than be driven down by excessive capital expenditure. In the absence of any meaningful capex uptick, the sector's cash returns are likely to continue to be driven by energy prices. A muted capex cycle has fueled a healthy capital redistribution policy in the near term, which has rendered the sector attractive from an investor-returns standpoint.

Capital redistribution over capital investment

The chart below shows a comparison of capital allocation trends over the past three years with longer term history (2005-20). Around three-quarters of operating cash flow generated between 2005-20 was used for capex. Moreover, all the buybacks throughout the period were financed through the issuance of new debt.

Figure 29: EN - allocation of Operating Cash Flow (CF)



Source: CROCI data of Energy aggregations from developed markets in CROCI's coverage universe. Data as on 31 Oct 2024. Div. represents dividend paid;

The bulk of the capex was front loaded over the fifteen-year period (Figure 29). The median energy price was USD79 between 2005 and 2015, rather than a median price of USD55 between 2016 and 2020. Nevertheless, the aggregate picture of the entire period shows the sector was in a debt spiral of sorts, especially as energy prices began to cool off.

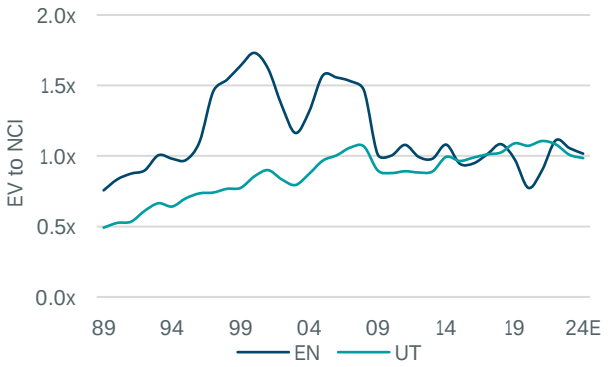
So far, the contrast in the current decade could not have been starker. Despite a solid recovery in the median energy price (USD80 over the past three years), capex-to-operating cash flow stood at around 40%. Such low capex intensity has resulted in cash returns not suffering from traditional dilution because of declining asset productivity. So now the question is whether higher free cash flow generation should result in economic price-to-book multiple expansion.

Cyclical being priced as a defensive

CROCI's economic price-to-book is in effect a Tobin's Q, comparing the market value of a company's assets with their economic replacement value. For cyclical sectors, a prolonged period of value destruction tends to follow an expansionary phase (such as in 1996 or 2013 for Energy)—and

this tends to push Tobin's Q below 1. Despite expansion in the cash returns during the post-pandemic phase, the economic price-to-book has been rather steady at around 1x. It is interesting that a cyclical business such as Energy is currently being priced in line with a defensive industry such as Utilities. Electrification is a long-term story: replacing technologies or processes that use fossil fuels, like internal combustion engines and gas boilers, with electrically powered equivalents, such as electric vehicles or heat pumps. Will Utilities find themselves beneficiaries of the supply & demand displacement in traditional energy sources such as oil & gas?

Figure 30: **Tobin's Q: Energy** and Utilities neck and neck

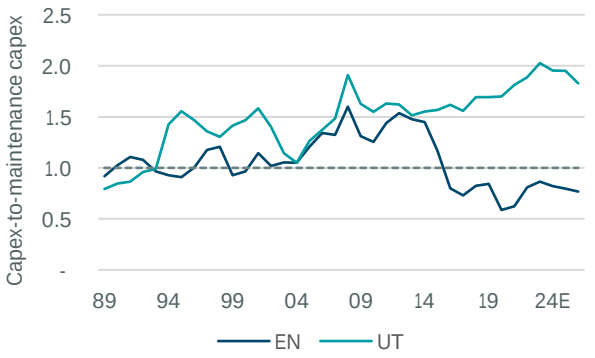


Source: CROCI data of Energy & Utilities aggregations from developed markets in CROCI's coverage universe. Data as on 03 January 2025.

Utilities sector on an investment overdrive

The electrification trend seems well reflected in the aggregate Utilities investments. Figure 31 shows how the sector capex has been at almost double their maintenance capex. Meanwhile, the Energy sector continues to track below maintenance capex.

Figure 31: Capex over maintenance capex



Source: CROCI data of Energy & Utilities aggregations from developed markets in CROCI's coverage universe. Data as on 31 Oct 2024.

It's possible to argue that this hyper capex cycle may in due course lead to an expansion in the underlying cash returns. But so far the Utilities sector has started to appear expensive relative to the global median economic PE (Figure 11: Median valuation across sectors (2025e)).

What value is left to investors?

There is compression in the underlying cash return for both sectors—only the drivers differ. Energy has been led by softening crude oil prices, whereas for Utilities it was higher capex intensity. These sectors are not quite such happy hunting grounds for value investors as they were in the recent past, but amongst the cheapest stocks globally, attractive stocks from both sectors can still be found. In the following chart, we plot all the Energy and Utilities companies with economic PEs below their sectoral median. Globally, the cheapest quartile is around 25x and hence stocks below that threshold are likely to start appealing to value investors

Figure 32: Energy+Utility stocks, Ec. PE <sectoral median

Source: CROCI data of Energy & Utilities aggregations from developed markets in CROCI's coverage universe. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Regional split for Utility stocks valuation

There is no major regional divergence within the Energy sector, whereas there is more of a regional split emerging for Utilities. Only European Utility stocks have an Economic PE of under 25x. The median European stock is a tenth cheaper than the US, whilst also offering a higher dividend yield.

Utility stocks may be the prime beneficiaries of the demand/supply displacement within the Energy sector in the long term; but in the medium term the Energy sector has more chance of offering value, in the form of capital discipline translating into higher payout, with the additional optionality of benefiting from any higher crude oil prices. Meanwhile, Utilities cash returns are likely to remain under pressure on the back of the heavy capex cycle, especially in the US as the infrastructure funding programme is cut.

2.2 Technology and the Magnificent Seven

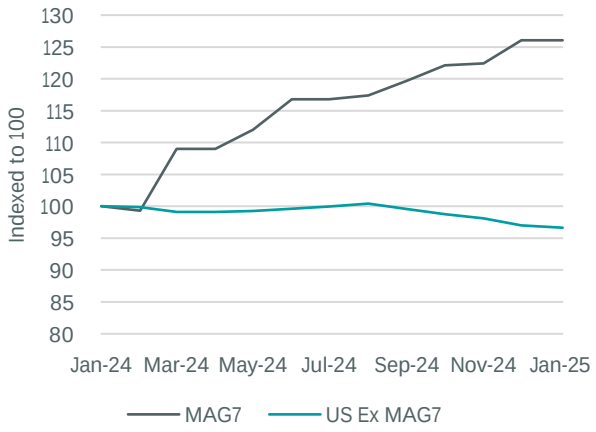
All good things must come to an end?

Two characteristics of the IT sector currently stand out. First, the space is generally considered to be expensive (perhaps not without reason–see Figure 9). Second, the sector is thought of as the flagbearer of market concentration (as discussed in Figure 5). The Magnificent Seven[2] account for nearly a third of our developed market coverage universe (excluding Financials) in terms of market cap. Given all seven businesses hail from the US, these seven companies account for two-fifths of the total market cap of our US industrial coverage universe. We examine whether this is merely a reflection of the divergence in economic earnings.

2025 economic earnings evolution:

Both 2024e and 2025e consensus earnings have seen material upgrades over the course of the 2024. 2025e economic earnings estimates for MAG7 have surged 25% year to date, while CROCI's US coverage ex-MAG7 saw a 3% contraction.

Figure 33: 2025e Eco. earnings evolution over 2024



Source: DWS, CROCI. Data as available on 03 January 2025. Aggregate data of MAG7 or Magnificent Seven includes seven largest companies by market capitalisation in the US – Apple, Microsoft, Alphabet, Amazon, Nvidia, Meta Platforms and Tesla. US ex MAG7 represents US non-financial CROCI coverage universe excluding MAG7.

MAG7's outperformance last year, despite the improved earnings expectations, leaves its aggregate valuation at a substantial premium: 40.5x on 2025e economic PE terms, compared to 33x for CROCI US ex-MAG7. The question is to what extent the growth premium for the MAG7 justified.

A trillion dollar here and a trillion there...

It is no secret that the MAG7 companies have been on an investment overdrive on all things Artificial Intelligence (AI). There has been an expectation that these seven companies can bring AI to bear across a range of solutions including, but not limited to, cloud computing, eCommerce, digital advertising and smart mobility. In the process, the seven companies have nearly doubled their aggregate net capital invested (inflation adjusted value at USD 1.6tn for 2024e, refer to Figure 113). In fact, in 2024e, these seven companies have been responsible for a third of all R&D expenditure in our US coverage universe.

Figure 34: R&D spending and NCI – US Coverage

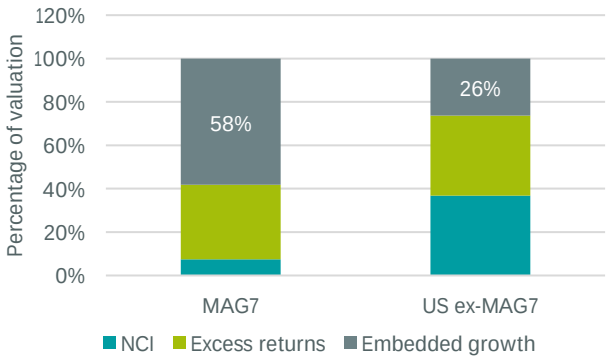
Source: DWS, CROCI. Data as available on 31 December 2024. Aggregate data of MAG7 or Magnificent Seven includes seven largest companies by market capitalisation in the US. Total US coverage universe excludes Financials and Real Estate.

What growth is implied by the market

Rather than forecasting potential incremental revenues from these investments in AI infrastructure, we can instead back out the value of the MAG7 growth component priced by the market. More than half of MAG7's current valuation is attributable to implied future growth, whereas only a fifth of the current valuation of our non-financial US coverage is based on growth expectations. In short, ballooning growth expectations have been the key driver behind the MAG7's sustained outperformance and market premium.

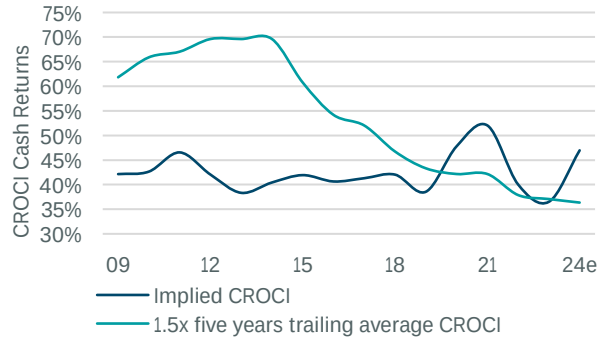
[2] Magnificent Seven (MAG7) and Technology are used almost synonymously but it has to be understood that only three of the MAG7 are from the IT sector. Having said that, the driver of the core businesses and their supply chain will likely find most overlap with the IT sector and hence for the purpose of this section, we will continue to imply that the seven companies as part of the IT sector.

Figure 35: Decomposition of 2025e valuation



Source: DWS, CROCI. Data as available on 03 January 2025. Aggregate data of MAG7 or Magnificent Seven includes seven largest companies by market capitalisation in the US. US ex MAG7 represents US non-financial CROCI coverage universe excluding MAG7. No assurance can be given that any forecast, target or opinion will materialize.

Figure 36: Market implied well above 1.5x five years average CROCI



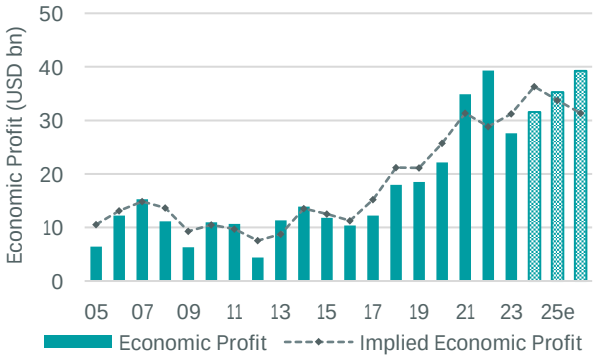
Source: DWS, CROCI. Data as available on 19 November 2024. Implied CROCI is equal to EV/NCI times cost of capital.

Nevertheless, one apparent indication of exuberance can be seen in the market implied cash return, which is significantly ahead of what MAG7 have delivered over the past five years. When this occurred back in 2021, it resulted in toning down of multiples in 2022.

Looking beyond MAG7 within the IT sector

While MAG7 continued to steal the limelight in the final months of 2024, the broader IT sector in developed markets has also been an important beneficiary of growing themes such as cloud computing, smart mobility, generative AI, the internet of things and 5G, keeping the CROCI cash return high and contributing to stable growth prospects. For value-investors, a CROCI strategy driven by fundamental value investing does offer an attractive value proposition – a basket of overlooked stocks from the IT sector which offer genuinely attractive economic value.

Figure 37: Economic Profit & Implied EP – Cheapest Quartile (in DM IT Sector)



Source: DWS, CROCI. Data as available on 03 January 2025. Aggregate data of the cheapest quartile (based on 2025e economic PE) of the CROCI's Developed Market IT sector. No assurance can be given that any forecast, target or opinion will materialize.

This basket trades at 22.2x its 2025e Economic PE, nearly half the IT sector multiple of 42.1x within the developed markets, while generating cash returns of 16.7%, slightly below the sector returns of 21.3%, explained by higher capital investments on high-growth themes. Current market valuations imply close to zero expected future growth. Consequently, the basket offers an attractive FCF yield of 5.9%, considerably higher than the 2.8% offered by the broader sector.

Figure 38: **Putting DM IT sector's cheapest quartile into perspective**

	EV/NCI	CROCI cash return	Ec. PE	FCF Yield	Div. Yield
Cheapest quartile in DM IT	3.7x	16.7%	22.2x	5.9%	1.7%
Overall CROCI coverage (DM non-financials)	2.7x	7.9%	34.2x	3.4%	1.6%
DM IT sector	9.0x	21.3%	42.1x	2.8%	0.7%
MAG7	9.9x	24.4%	40.5x	2.2%	0.3%

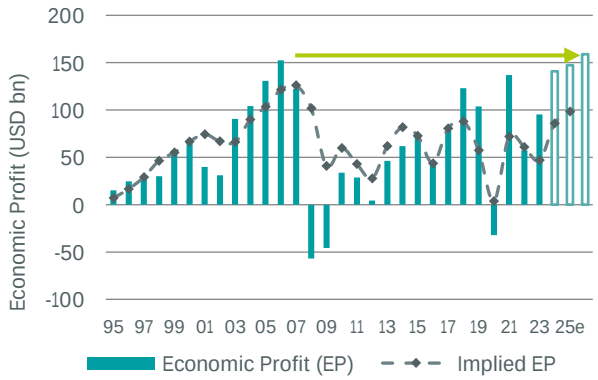
Source: DWS, CROCI. Data as available on 03 January 2025. Cheapest quartile represents data of the cheapest quartile (based on 2025E economic PE) of the CROCI's Developed Market IT sector. No assurance can be given that any forecast, target or opinion will materialize.

2.3 Global Banks

Bottom-up regional valuations tell a tale

The election of a new president in the United States brought a variety of macro discussions on deregulation, tax cuts, Fed rate cuts and related matters back into the spotlight. Even though investors need to be aware of their impact on banks' operating environment, it is too early to take a definitive view on these topics in our opinion. Instead, we focus on bottom-up fundamental data before coming to any firm conclusions. The cost-of-capital adjusted PE of global banks is at 19.8x, slightly higher than the average of 19.4x since 2020. A slightly higher EV/Adjusted Tier 1 Capital (Adj. P/B) is more than offset by nearly 60bps increase in the adjusted return on capital (Adj. RoC), coming from higher pre-provision profits and controlled provisions for loan losses. Based on 2025e consensus estimates, global banks are expected to nearly match their economic profits from just before the global financial crisis, after almost two decades.

Figure 39: Global Banks Economic Profit (EP) and Implied EP



Source: DWS, CROCI. Data as on 03 January 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.

Global numbers mask a highly diverse banking landscape

At the regional level, the US banks remain the most expensive amongst the three developed market regions, with a 2025e Adj. PE of 23.2x, not far from its 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 three Japanese banks in our coverage rose by over 55% during 2024. This pushed the adj. P/B to 1.0x compared to 0.6x average during the prior five years.

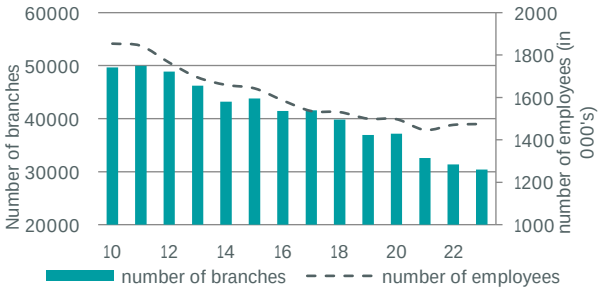
Figure 40: Regional Banks Valuation

	US		Europe		Japan	
	2025E	5Y Avg	2025E	5Y Avg	2025E	5Y Avg
EV/Adj. Tier 1 Cap.	1.8x	1.7x	1.0x	0.8x	1.1x	0.6x
Inf. Adj. ROC	11.3%	10.6%	11.2%	9.9%	7.1%	6.0%
Adj. PE ratio	15.8x	15.4x	8.9x	8.8x	14.9x	10.8x
COC Adj. PE ratio	23.2x	23.0x	**13.1x**	13.9x	21.9x	16.6x
Dividend Yield	2.4%	2.7%	6.5%	6.6%	3.5%	4.6%
Core Tier 1 Ratio	12.8%	11.3%	14.6%	13.9%	14.8%	13.1%

Source: DWS, CROCI. Aggregate values for Banks under CROCI Coverage. Historical average represents median values from 2020 to 2024. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

At the aggregate level between the three regions, European banks generate close to highest return-on-capital (11.2%), offer highest dividend yield (6.5%), and have among the best capitalization ratios (14.6%). Further, their non-performing loans are down, and net-interest margin and loan-to-deposit ratios have improved over the past few years. Figure 41 shows a consistent decline in the number of branches and number of employees within European banks since 2010, reflecting a structural change in the underlying cost base.

Figure 41: European Banks Aggregate



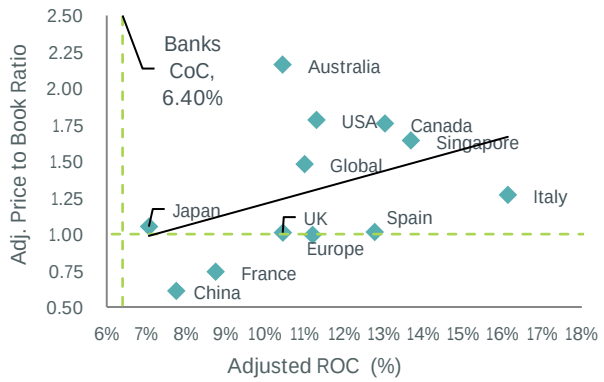
Source: DWS, CROCI. Aggregate values for European Banks under CROCI coverage. Number of branches are shown for only those companies where it is available for all years since 2010 to make it comparable.

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 13.1x , nearly half 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.

Putting regional valuations in context of their ROCs

Broadening out the discussion to aggregate country levels (including companies outside the three regions we have discussed). In Figure 42, we show the wide dispersion in valuation, with a scatter plot of adjusted P/B against adjusted return on capital.

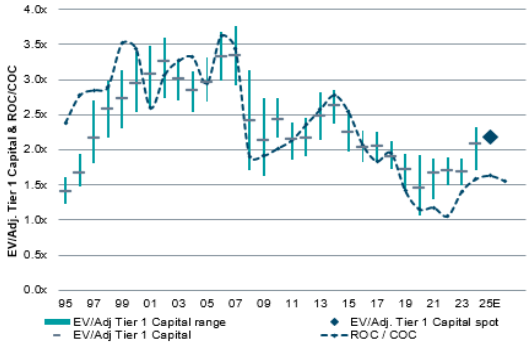
Figure 42: **Bank's ROC and P/B by Country** Aggregate



Source: DWS, CROCI. Aggregate values for Banks under CROCI Coverage. No assurance can be given that any forecast, target or opinion will materialize.

In addition to the cheap European countries, Chinese banks fall far below the trendline. They have remained cheap for a long period of time, likely reflecting the risk of state interference or potential future losses due to weak underlying economic growth.

Figure 43: **Australian banks'** value & return chart



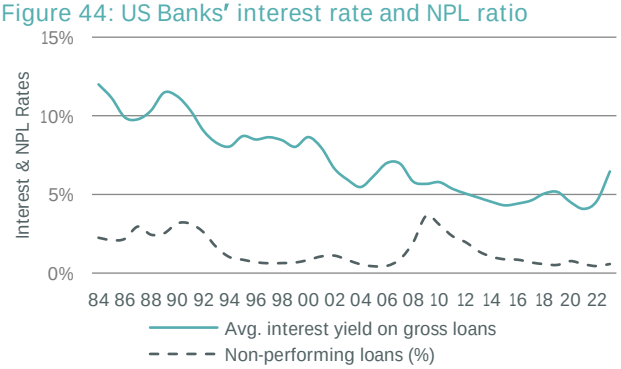
Source: DWS, CROCI. Aggregate values for Australian Banks under CROCI Coverage. Data as on 17-Dec-2024. No assurance can be given that any forecast, target or opinion will materialize.

At the other end of the spectrum, Australian banks are the most expensive group in our coverage, currently trading at CoC Adjusted PE of 32.0x. While returns have been stable around 10%, the adjusted P/B is above its five years high at 2.2x. They are heavily exposed to domestic home loans. At its November meeting, the Reserve Bank of Australia persisted with its elevated policy rate of 4.35%. A protracted high-rate environment could pressure borrowers, against a rising unemployment rate (albeit from a low level).

Loans continue to "perform" despite higher rates

Logically, rising interest rates should make the servicing of existing and new loans more difficult. Nevertheless, the non-performing loan cycle remains largely subdued. In the following chart, we look at the NPL ratio within the US banks going back to the 1980s. Higher interest rates during past two years have not so far caused any significant damage due to higher credit losses, underlining the strength of the US economy.

Figure 44: US Banks' interest rate and NPL ratio



Source: FDIC, CROCI DWS. FDIC data on US Commercial Banks from 1984 to 2023.

However, if a weakening of the US economy were to result in higher provisioning, then US Banks begin to appear significantly more expensive relative to their 5-year average.

Figure 45: US Banks sensitivity to loan losses

2025E (USD bn)	2025 current estimates	50% increase in Provisions	100% increase in Provisions
Gross loans	6,877	6,877	6,877
Provision for Loan loss	75	112	150
Prov. as % of Gross loan	1.1%	1.6%	2.2%
Enterprise Value	2,618	2,618	2,618
Adjusted Tier 1 Capital	1,401	1,371	1,342
Adj. Earnings (post tax)	158	129	99
EV/Adj. Tier 1 Capital	1.87	1.91	1.95
Inf. Adj. ROC (%)	11.3%	9.4%	7.4%
Adj. PE ratio	16.5	20.3	26.4
COC Adj. PE ratio	24.7	30.4	39.5

Source: DWS, CROCI. Aggregate values for Banks under CROCI Coverage. Historical average represents median values from 2000 to 2024. Data as on 30th November 2024. No assurance can be given that any forecast, target or opinion will materialize.

Even though the sector is close to pre-GFC highs in terms of economic profits, overall valuation draws a picture of modest exuberance. While Japanese banks trade at a significant premium to their 5 year average, the US trades largely in line. On the other hand, European banks stand out as they appear under-owned and hence offer the most compelling value.

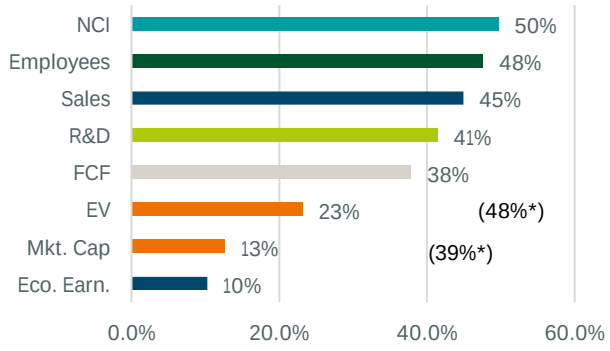
2.4 Consumer Discretionary: Automobiles

The stark divergence of the European Automobiles:

Bottom-up investors tend to spend a significant amount of time analysing how industries are structured. The chart below shows the global relevance of European automobiles. Almost one in two units of net capital in the global automobile sector is deployed by a European auto manufacturer. Similarly, every second individual employed in the sector is likely to be working for a European company. Two-fifths of global sales, free cash flow and R&D also come from the European sector. The relevance and even leadership of the European autos sector comes out very clearly from all these statistics.

The trouble is that these numbers tell us more about the past than the future. And when more forward-looking numbers are considered–such as enterprise value, market cap and economic earnings generation–European leadership in the automobiles sector is much less clear. So are things as bad as these market valuations suggest for the region or is there still value left for fundamental investors?

Figure 46: European autos as % of DM auto coverage



Source: DWS, CROCI. Aggregate values for 16 automobiles in CROCI Developed Markets Coverage for FY 2024. *Values in brackets show data excluding one MAG7 company. Data as on 18 December 2024

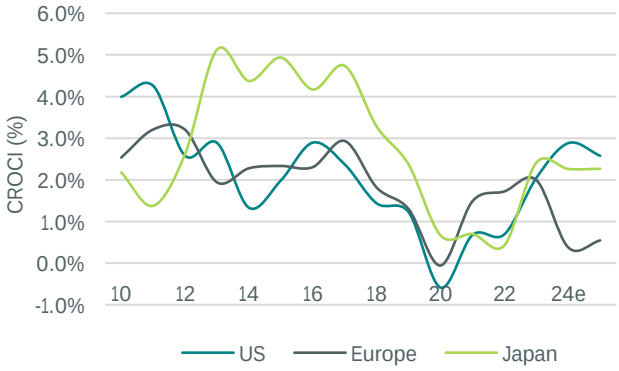
Addressing the behemoth bias

It would be reasonable to question the efficacy of the above exhibit if we were to remove one US based MAG7 from the DM Auto universe. Removing the one mega-cap only materially alters the EV and the market cap numbers (as shown in the numbers in brackets). Nevertheless, for the remaining part of this section, we will exclude this company from the US aggregate, so that the analysis is not polluted by one large company.

Economic returns divergence apparent

Considering Developed Market autos over the past few years, the pre-pandemic cash return profile for European companies was better than for the US, but not quite as good as Japan. The pandemic saw cash return compression across all three regions: the US and Europe dipped into negative territory, while Japan managed to remain (just) positive. The clear decoupling of European autos from the other regions took place after the pandemic. Whilst all three regions currently generate sub-cost of capital returns (with the global cost of capital at 4.3%), European returns are close to 0.5%. The problem is not one of margins, which have remained resilient for European automobiles, but rather one of asset productivity.

Figure 47: Aggregate regional autos CROCI

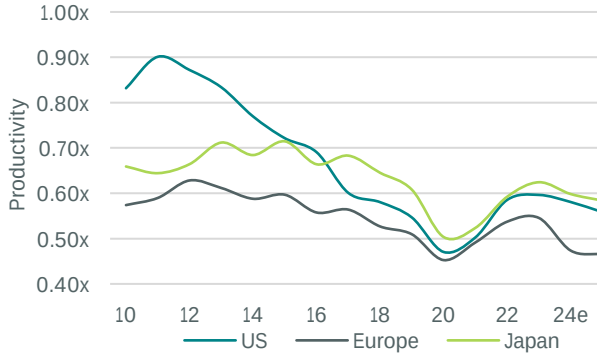


Source: DWS, CROCI. Aggregate values for 15 automobiles in CROCI Developed Market coverage universe. US excludes one MAG7 company to make the trend comparable. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Productivity close to the pandemic lows

In the years running up to the pandemic, we saw that European autos' asset productivity was close to 0.6x, not far from US levels. The whole global industry was hit by the pandemic-led collapse in demand – but none as severely as Europe. Then the post-pandemic recovery was significantly steeper in the US and Japan. To put things into perspective, between 2017 and 2024, for 100 units of marginal gross capital investments across the three regions, Europe had merely 27 units of marginal sales to show versus almost 50 for US and Japan. European autos' incremental investments over the past few years have evidently been much less productive than for the rest of the world. This may also suggest relative market share loss of the European Automobiles compared to Japan and the US.

Figure 48: Aggregate regional autos productivity (Sales to GCI)

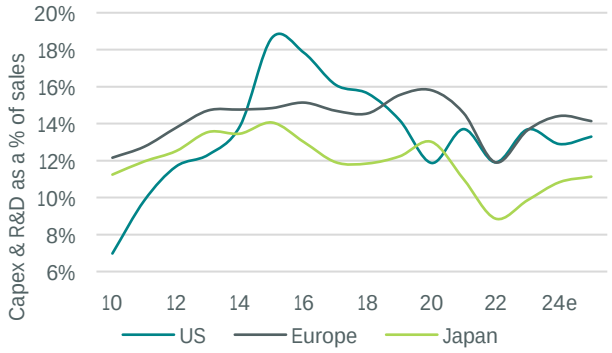


Source: DWS, CROCI. Aggregate values for 15 automobiles in CROCI Developed Market coverage universe. US excludes one MAG7 company to make the trend comparable. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Investment efficiency being put to test

Low productivity or conversion of capital employed into sales is a matter of concern, but even more so if you hold the industry leadership in terms of incremental investments. To ensure competitiveness over the years, European companies have consistently outpaced their counterparts with a strong average re-investment rate of over 14% in capital expenditure and R&D expense as a percentage of sales since 2010. As a result, about 30 per cent of global automotive patents originated from European countries, the most of any region[3]. Yet the European auto sector is struggling to match global competitors in the EV market, particularly in battery cell design, power electronics and battery range.

Figure 49: Investments (Capex + R&D) as % of Sales



Source: DWS, CROCI. Aggregate values for 15 automobiles in CROCI Developed Market coverage universe. US excludes one MAG7 company to make the trend comparable. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

Macro asymmetries recently in focus

During the second half of last year, a report by Mario Draghi[4] attracted the attention of policymakers, including the European Parliament[5]. It pointed out that the EU car industry is suffering from higher production costs (overall vehicle productions costs are approximately 30% higher in the EU than in China), supply chain dependencies, and declining brand value. By contrast to the EU, the US had reacted with large stimulus (Inflation Reduction Act) combined with trade barriers to respond to an increased global supply of Chinese EVs.

How much of the economic gloom is priced in?

European autos certainly appear cheap on economic price-to-book metrics, but there needs to be an improvement in cash flow generation before any value can realistically be unlocked. Moreover, the dividend yield may appear optically high but needs to be seen in the context of sharp compression in the overall profitability. Short of a technological breakthrough by one of the European automobile manufacturers, the onus is on European policymakers to create a more level playing field for the region, especially from the standpoint of inherently uncompetitive production and climate costs.

As a result, this space is likely to remain a top-down driven sales recovery story. Meanwhile, restructuring in terms of lower labour costs and/or automation and new model launches are likely to be the major bottom-up driver of improvement in the cash returns.

Figure 50: Regional Automobile Valuation

	US		Europe		Japan	
	2025E	15Y Avg	2025E	15Y Avg	2025E	15Y Avg
EV to NCI	0.8x	0.9x	0.6x	0.8x	0.7x	0.7x
CROCI	2.6%	2.0%	0.5%	2.0%	2.3%	2.4%
EC. PE	29.8x	37.2x	109.8x	37.5x	31.7x	28.2x
Div. Yield	3.0%	2.9%	4.5%	3.6%	3.2%	2.8%
FCF Yield	7.1%	0.2%	5.4%	-1.8%	4.5%	2.1%
Gearing	2.3x	1.6x	2.0x	1.8x	0.6x	0.6x

Source: DWS, CROCI. Aggregate values for 15 automobiles in CROCI Developed Market coverage universe. US excludes one MAG7 company to make the trend comparable. Data as on 03 January 2025. No assurance can be given that any forecast, target or opinion will materialize.

[3] A road map for Europe's automotive industry - McKinsey & Company (August 2023)
[4] The future of European competitiveness - Mario Draghi (September 2024)
[5] The crisis facing the EU's automotive industry – European Parliament (October 2024).

Section 3:

Investment Insights

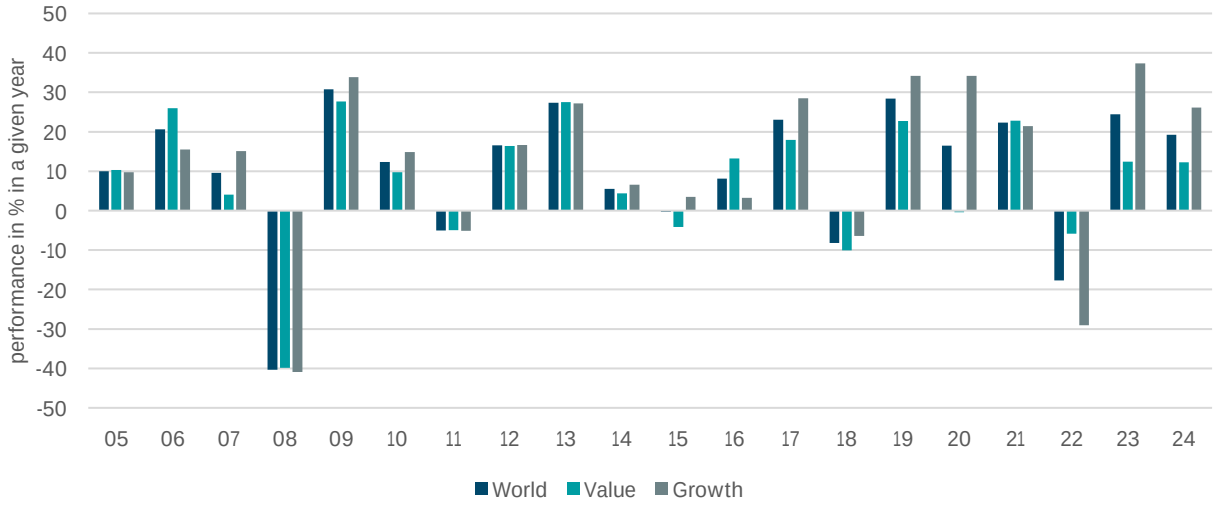
3.1 Value through the CROCI prism

Value investing never really dies!

The behavior of financial markets over the years since the covid-19 pandemic–or perhaps even further back to the financial crisis–has prompted many investors to ask whether value will ever be relevant again. More recently, the excitement around generative AI and the US mega-caps that make up the Magnificent Seven has been given another leg up, thanks to the historic re-election of Donald Trump.

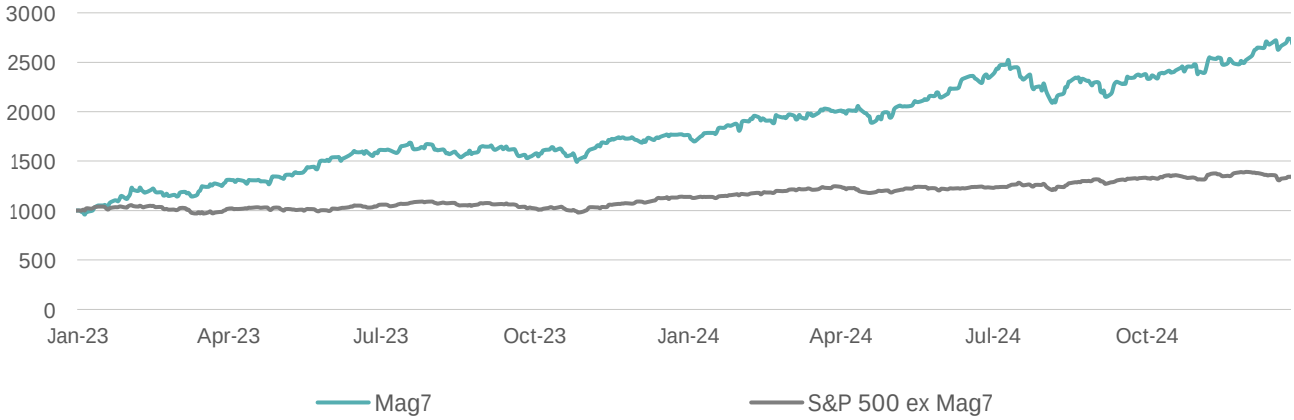
Certain commentators have recently started to use the term "euphoria" about equities; if markets are really driven by animal spirits at the moment, then there is no better time for investors to remind themselves about what fundamental value really means.

Figure 51: Annual performance of factors (Global, 2005-24)



Source: DWS, CROCI, MSCI. Performance reflects gross returns in USD. Data as available on 31 December 2024. Past performance does not predict future returns.

Figure 52: Performance of US mega caps compared to the rest of the US market 2023-2024



Source: DWS CROCI, Bloomberg Finance LP. Performance reflects gross returns in USD. Data as available on 31 December 2024. Past performance does not predict future returns.

Markets are neither completely efficient nor are they totally irrational. Given that they most probably lie somewhere in between, value investing will always be relevant because the discrepancy between the market price of an asset and some fundamental measure of what that asset is worth must always be of interest to investors. In the end, value investing is the philosophy of buying companies below some demonstrable fair value and so for genuine investors can never really be dead. Of course, a philosophy based on valuation can appear to be out of fashion when the economic environment becomes abnormal. But in such times, it is worth remembering Warren Buffet's famous maxim that only when the tide goes out do you discover who's been swimming naked. Or in other words, memories may be short, but history always remains a sound guide in the end; this time around is never really different.

Figure 53: Valuation and Operating Characteristics across Equity Styles

	Ec. PE	CROCI			Sales growth			Real earnings growth		
	25e	25e	5Y	10Y	25e	5Y	10Y	25e	5Y	10Y
Value (Ec. PE)	18x	9.3%	10.6%	10.3%	2.9%	7.5%	5.8%	4.6%	8.3%	7.5%
Value (Ec. P/B)	43x	1.4%	1.7%	2.1%	1.8%	3.9%	2.2%	-3.8%	-25.0%	-17.4%
Value (FCFy)	20x	7.3%	8.1%	8.3%	2.1%	3.9%	3.1%	4.2%	-4.6%	-1.1%
Value (Dy)	28x	3.5%	4.4%	4.5%	2.2%	4.0%	2.4%	1.3%	-6.1%	-3.9%
Growth (HiP/B)	36x	26.4%	26.7%	26.0%	6.4%	8.6%	7.9%	6.6%	6.3%	7.2%

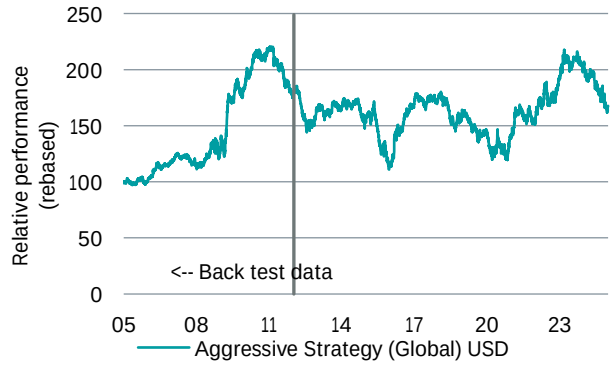
Source: DWS, CROCI. The table brings out the characteristics of five distinct baskets identified by cheapest quintile based on Economic PE and Economic P/B, highest yielding quintile based on FCF and Dividend, most expensive quintile based on Economic P/B of the CROCI non-financial Global coverage universe. Data as of January 03, 2025. The 5Y and 10Y averages are backward looking. No assurance can be given that any forecast, target or opinion will materialize. Past performance does not predict future returns.

Types of value investing?

We have given a general definition of value investing above, namely buying companies below some measurable fair value. But the question of what constitutes fair value is an interesting one.

Perhaps the most widely considered approaches compare prices to earnings (PE) and to book value (P/BV).

Figure 54: Global Aggressive Value portfolio



Source: DWS, CROCI. Aggressive value is made up of the 30 companies with lowest Ec. P/BV globally. The relative performance is against MSCI AC World Index. The returns are daily total gross returns in USD. Past performance does not predict future returns.

The latter is what we have always thought of as "aggressive value", as the profitability of a company is ignored and instead the approach focuses simply on the assets of a company. This was the traditional metric used to partition the market into disjoint "value" and "growth" segments, by taking the top half and bottom half by price-to-book (although section 3.2 discusses the significant concerns we have with this antiquated definition of "growth"). CROCI has its own version of this metric, called Economic Price-to-Book Value (Ec P/BV or EV/NCI), which we have analysed extensively by defining a portfolio of the cheapest companies globally on the metric. The table above shows that, while its P/BV may be attractive, not much else is. Low return on capital, low sales growth and negative real earnings growth are quite normal.

This strategy often performs at the sort of inflection points when the market is not confident it understands what the future holds for returns and profitability. It is also in fact the value approach that has performed most strongly in the past couple of years, even though it underperformed the broader market. One likely explanation for this recent performance is the prolonged transition period in which the markets find themselves, with factor leadership oscillating between momentum and growth on the one hand and value on the other. The approach saw similar outperformance around the financial crisis and during the pandemic. But over the longer term, this strategy tends to be far weaker than other value approaches.

Figure 55: Performance of Ec. PE vs Ec. P/B

Source: DWS, CROCI. Economic PE is the performance of the bottom decile of this factor in local currency. Economic P/B or EV/NCI is the performance of the bottom decile by this factor in local currency. Data as of 31 Dec 2024. Past performance does not predict future returns.

There are also forms of quality value, such as our most favored economic PE metric, which typically gives exposure to strong cash returns and low financial leverage. As well as giving exposure to a portfolio with the most attractive operational characteristics, it is also the metric which has outperformed the most consistently over the long term. It is therefore the most all-weather of our valuation metrics and our most frequently used. The table above shows the high return on capital and respectable sales and earnings growth for the low Economic PE basket.

The table below shows how strategies run using Economic PE both regionally and globally have managed to perform in most economic environments, except for periods when equity market performance has largely been driven by the momentum factor. The past two years (led both by a very narrow market and by momentum) were unsurprisingly difficult for strategies strongly focused on value.

Figure 56: Annualised returns for selected CROCI strategies over various periods

	Pre-Crisis Market	*Financial Crisis*	*Rising Liquidity*	*Growth/ Momentum*	*Post-pandemic years*	*Entire time period*
	2004-2007	**2008-2009**	**2010-2017**	**2018-2021**	**2022-2024**	**2004-2024**
CROCI US	14.64%	-6.02%	12.82%	11.63%	8.90%	10.43%
Rel. to S&P 500	6.09%	5.34%	-0.37%	-5.38%	0.49%	0.70%
Rel. to MSCI USA Value	5.09%	7.50%	0.98%	1.91%	4.30%	3.15%
CROCI US Dividends	15.21%	0.92%	16.35%	13.00%	7.19%	12.61%
Rel. to S&P 500	6.66%	12.28%	3.16%	-4.00%	-1.23%	2.88%
Rel. to MSCI USA HDY	7.41%	9.50%	2.61%	3.71%	3.43%	4.60%
CROCI Euro	19.70%	-12.06%	10.43%	6.47%	-1.04%	7.28%
Rel. to Stoxx 50	4.55%	2.84%	5.23%	-1.25%	-8.12%	1.65%
Rel. to MSCI EMU Value	1.80%	4.75%	5.52%	3.67%	-7.92%	2.48%
CROCI Japan	13.26%	-17.95%	12.29%	7.93%	17.20%	9.01%
Rel. to TOPIX 100	3.32%	3.80%	2.23%	1.38%	1.15%	2.34%
Rel. to MSCI Japan Value	-0.40%	-1.55%	3.00%	5.53%	-4.30%	1.38%
CROCI World	21.63%	-0.83%	10.44%	10.97%	6.06%	10.80%
Rel. to MSCI World	8.40%	11.37%	0.60%	-2.28%	-0.26%	2.53%
Rel. to MSCI World Value	7.81%	12.25%	1.71%	4.01%	0.94%	4.28%
CROCI Global Dividends	20.33%	-1.97%	11.17%	4.87%	4.75%	9.35%
Rel. to MSCI World	7.10%	10.22%	1.32%	-8.38%	-1.57%	1.07%
Rel. to MSCI World HDY	5.36%	11.10%	2.57%	-2.28%	0.84%	2.82%
CROCI Sectors Plus*	23.39%	-3.95%	12.54%	13.68%	4.21%	11.10%
Rel. to MSCI World*	8.96%	8.24%	2.70%	0.43%	-2.11%	2.97%
Rel. to MSCI World Value	9.86%	9.13%	3.82%	6.72%	-0.91%	5.07%

Source: DWS CROCI, Bloomberg Finance LP; Data as of 31 December 2024. The returns for CROCI World, CROCI Global Dividends and Global Sector Plus strategies are in USD terms. For other strategies, returns are in respective region's local currency. The Live Date for each of the strategies: CROCI US, CROCI Euro, CROCI Japan - 02 February 2004; CROCI World - 29 November 2010; CROCI US Dividends - 13 March 2012; CROCI Global Dividends - 15 March 2012; CROCI Sectors Plus - 18 November 2015. *From 31 March 2005 for CROCI Sectors Plus;
Past performance does not predict future returns. Performance before the live date of strategies is simulated. The simulations apply an investment strategy retrospectively to data that was in part reconstructed and not necessarily available at the time. As a consequence, there may be instances when realised returns would have shown variation from those simulated and the latter may have had the advantage of hindsight. HDY stands for High Dividend Yield.

Another quality value metric is free cash flow yield, which is able to capture shorter term improvements in profitability. Like the Economic PE metric, this is ultimately an approximation of discounted cash flow valuation. The comparison table in Figure 53 shows that there is similar quality exposure. One important difference is that the most recent years capex will be captured rather than the total accrued asset base.

Lastly, there is dividend yield. This is often treated as a distinct style factor and very rarely behaves entirely differently to value (such as during 2023 when it materially underperformed). But it is ultimately buying companies that look attractive relative to their dividend payments. CROCI's approach to dividend strategies is to ensure that there is good reliability of dividend payments. To achieve this, the companies with the worst profitability, the highest financial leverage and highest price volatility are removed from the available selection pool before selecting a portfolio ultimately using Economic PE. These strategies end up being combinations of quality, value and yield and can therefore demonstrate robust performance in different market environments so long as they have some fundamental drivers.

These different approaches to value can perform at different times but are nevertheless all facets of the same broad philosophy. But we note that of all these four types of value, the highest outperformer across all different business cycles is Economic PE.

Lastly in Figure 53 we have included a dirty growth portfolio based on the companies with the highest economic P/BV. They clearly do have high growth and also high returns on capital, but their valuation is by construction very demanding. This reflects fairly well the sort of company that has been in the driving seat for equity markets in the past couple of years.

Behaviour of value as a factor

US equities have provided the focus for equity investors over the past few years. By some definitions euphoria has taken hold. As of the end of November last year, the proportion of investors saying stocks will rise in the next 12 months was 56.4% according to the Conference Board CCI survey (at the end of November 2024), an all-time high since the survey began in the 1990s. Indeed, the result is that many investors feel trapped in a global equity market dominated by the US. The statistics are well known: the US makes up 74% of the MSCI World, and of that 24% comprises the largest 7 US mega-caps which have dominated performance of equity markets since the AI excitement first took off in 2023. In 2024, more than half of the performance of the MSCI World came from the largest 7 mega-caps in the US.

This phenomenon has led to very high concentration in global equity markets. The arrival of the second Trump administration, however, seems likely to disrupt global trade further by erecting barriers such as tariffs, alongside the restrictive immigration policies. These policies seem likely to prove inflationary, and at the time of writing 10-year Treasury yields have been on a steady ascent. These outcomes are likely to foster an economic environment which supports both quality and value performance.

It is also worth noting that after Trump's last election victory there was a strong rally connected to his expected policies (in that case a reflationary trade) which gave way to more fundamental factor leadership (quality value outperformed materially for example) shortly after his inauguration.

The principal consequence of these observations is that now is a time where broad factor diversification is needed, especially in an environment where many investors are overweight growth. It seems apparent that the market has engaged in a slow but certain economic regime transition. In previous transitions, much of the outperformance in the new factor came at the beginning of the transition, as we show later (Figure 74 and following). For that reason, circumspect investors should have diversified factor exposure—and that will require increased exposure to value and quality.

Figure 57: Concentration level in the US since 1926

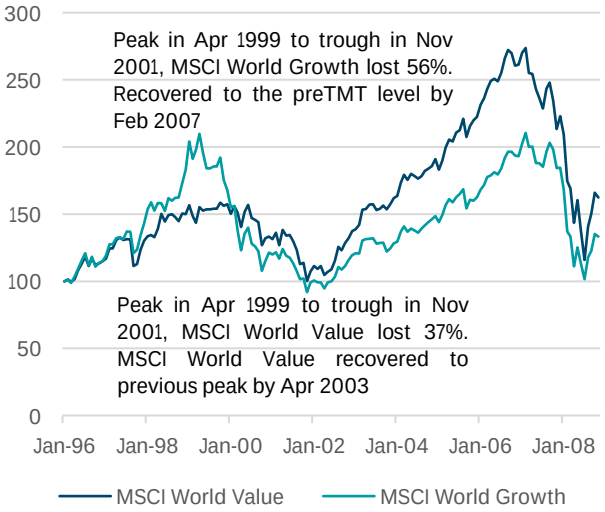
Source: DWS, CROCI, Kenneth R. French. The top decile refers to the top decile by market cap.

The current level of concentration is unprecedented in US markets. Even during the oil and telecoms boom in the early 20th century, the concentration did not quite match the current high. Based on other data series, the period of the railroad companies in the 19th century did not reach today's peaks either. In fact, one of the previous highest peaks was in the early 1960s when there was a very different sort of Magnificent Seven in AT&T, General Motors, IBM, Standard Oil, General Electric, duPont and US Steel.

Market concentration rose again during the TMT bubble and, just like the recent concentration spike, this proved very

advantageous for the growth factor as the concentration reached its peak. But as the concentration came down with the bursting of the bubble, value took over very quickly and growth underperformed.

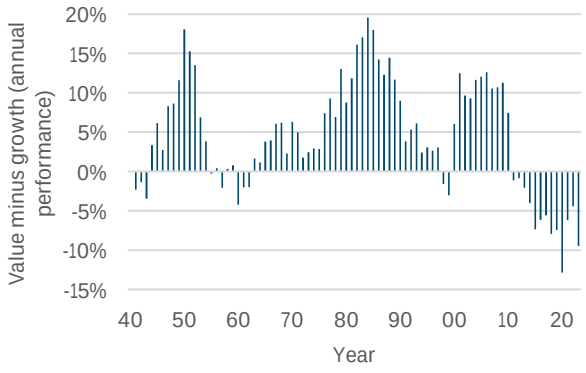
Figure 58: MSCI World Value vs Growth through TMT



Source: DWS, CROCI, MSCI, period covered is from 31-Jan-96 to 30-Nov-08 (monthly series). Past performance does not predict future returns.

In fact, value has been the far more consistent factor in terms of outperformance over the past century. Measured simply, value has outperformed growth in the majority of years since the late 1930s (the start of the Fama-French factor series). Cycles between factor leadership have on average tended to last roughly a decade or sometimes somewhat more. There are only three particularly notable periods when growth led the market. The most recent one started after the beginning of the low interest rate regime around the time of the European sovereign debt crisis, a few years after the financial crisis. Figure 59 is striking in showing how this past period of growth leadership has actually been an outlier.

Figure 59: Value vs Growth (1940 to 2024)

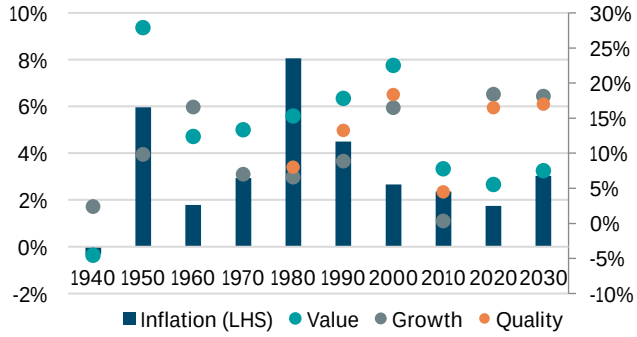


Source: DWS, CROCI. Fama French Three Factor Asset Pricing Method. Value is the bottom decline and growth is the top decile in price to book ratios, of US stocks.

The influence of the economic background on value

There is one key question for fundamental investors who have seen value being out of fashion as a market style for the past decade or so. What were the conditions needed for value to perform in the past? Or perhaps because there have been more instances of value outperforming than of growth based on Figure 59, the converse is more important: namely, what has been special about the periods when growth has managed to outperform?

Figure 60: Factors vs inflation (1931 to 2024)

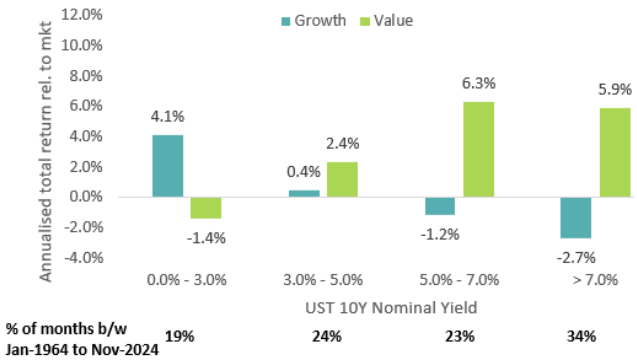


Source: DWS, CROCI. Source: DWS, Federal Reserve Economic Data, Fama French Three Factor Asset Pricing Method. Value is the bottom decile and growth is the top decile in price to book ratios, of US stocks. Quality is the top decile in terms of ROE. Period on the x axis refers to the preceding decade. 1940 refers to 1931 to 1940 and so on. Years covered 1931 to 2024.

The most important economic drivers to examine are interest rates and inflation rates. We examined the impact of inflation in last year's Outlook and found that inflation has been an important driver. In any decade where inflation levels were "normal" or higher on average–that is to say, 2% or more–value outperformed growth. There were just three decades where that was not the case (inflation remained below 2%).

When we broaden the analysis to include interest rates, we find a similar picture over the long term. When nominal interest rates have been below 3%, growth has tended to perform. But in all other situations, value has led the market.

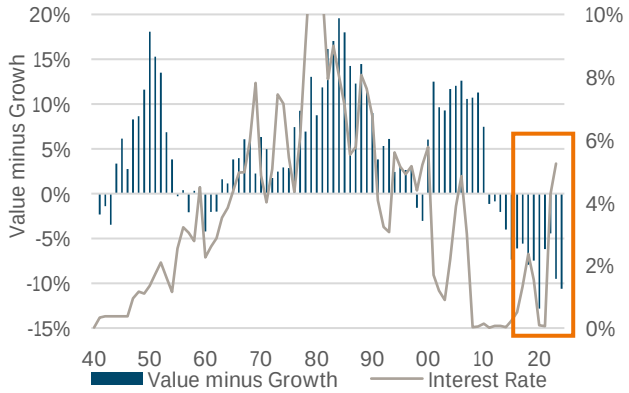
Figure 61: Factors vs nominal 10Y T-Bond (1963-2024)



Source: DWS, CROCI. Federal Reserve Economic Data, Fama French Three Factor Asset Pricing Method. Value is the bottom decile and growth is the top decile in price to book ratios, of US stocks.

It is also clear looking at US Treasury yields against the value-growth performance profile that the market is in a transition period. Zero interest rate policies will not be back any time soon. The interest yield jump that started in 2022 and continued over the past two years is consistent with an eventual return in performance to the value factor. Yields across all tenors are now somewhat in excess of 4%, with the 10 year higher than 4.6% at the time of writing.

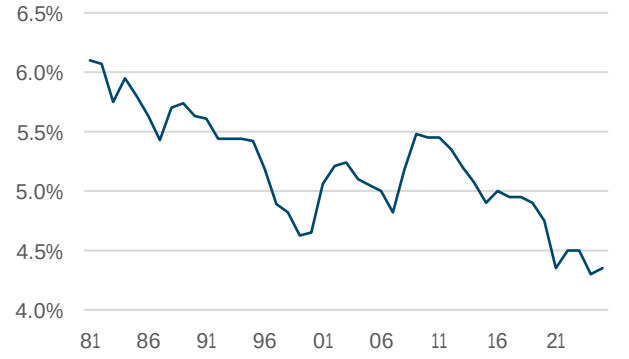
Figure 62: Factors vs nominal 3m T-Bill (1940-2024)



Source: DWS, CROCI, Federal Reserve Economic Data, Fama French Three Factor Asset Pricing Method. Value is the bottom decile and growth is the top decile in price to book ratios, of US stocks.

It is certainly true that overall market valuations are very high in aggregate. The US market trades on an economic PE of nearly 36x, compared to its average of under 25x in the period after the TMT bubble until around 2018. The cost of capital has fallen to all-time lows for as long as we have been able to calculate it back to 1980.

Figure 63: Cost of Capital (1981-2024)



Source: DWS, CROCI. Aggregate of companies in CROCI's global non-financial coverage universe.

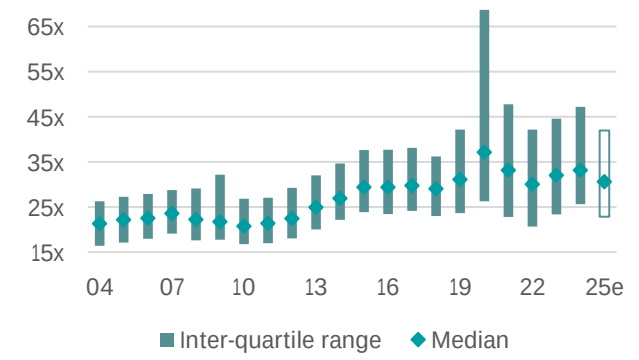
Measured on a weekly basis over the past two decades, we can see that the last strong mean reversion was during the financial crisis when the global number spiked very quickly past the long run level to around 5.8%. But once the concerted effort by central banks was in place to stimulate via monetary policy, there was slide in the cost of capital towards historical lows. This decline in global cost of capital coincides with the ultra-loose unorthodox monetary policy, and took a second leg down during the pandemic when there was another burst of quantitative easing.

Figure 64: Weekly cost of capital (2003-2024)

Source: DWS, CROCI. Aggregate of companies in CROCI's global non-financial coverage universe. CROCI defines the cost of capital as the discount rate which, at the market level, equalises expected future cash flows and the market value of assets, or enterprise value.

Interest rates have now returned to more normal levels now, as is very clear from Figure 62, but the low cost of capital has not yet reacted to this sharp shift in economic backdrop. The refinancing of loans at higher interest rates will certainly be a driver, but the majority will come from changes in the cost of equity. This is the reason equity markets remain around one-third more expensive than they were in the decade before the financial crisis. Even though overall market valuations are high, there is still interesting value to be found in the cheapest stocks on a relative basis. The inter-quartile range for global valuation is very wide compared to history in part thanks to increased market concentration, and the cheapest quartile on current 2025 numbers is at its lowest level since 2014, apart from around the market correction in 2022.

Figure 65: Inter-quartile range of global valuation

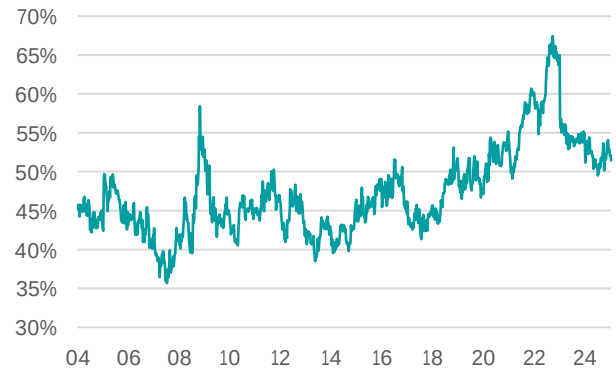


Source: DWS, CROCI. The exhibit shows the range between first quartile and the third quartile and the median Economic PE values of the CROCI global non-financial coverage universe.

Another factor that has historically been a necessary but not sufficient condition for strong outperformance by the value factor has been attractive valuation in the cheapest part of the market relative to the market's median valuation. Since 2003

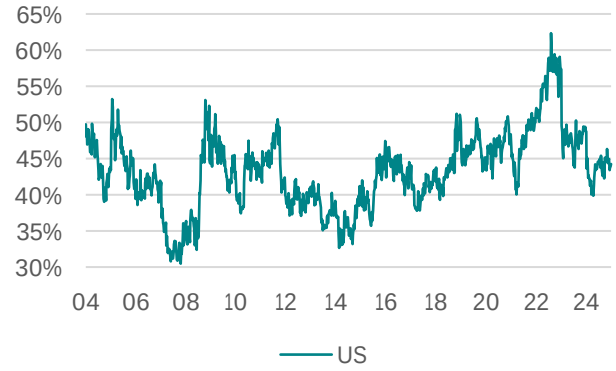
we have regularly monitored the dispersion between the cheapest decile in the market and the market median–in other words, the potential upside if the cheapest ten per cent stocks should mean revert at once. At the global level, the number is at around 52%, compared to a long-term level in the low 40s. A high number relative to history should also support the likelihood of a paradigm shift. The widest dispersion regionally is to be found in Japan, with US and Europe only a little behind.

Figure 66: Dispersion of economic valuation (Global)



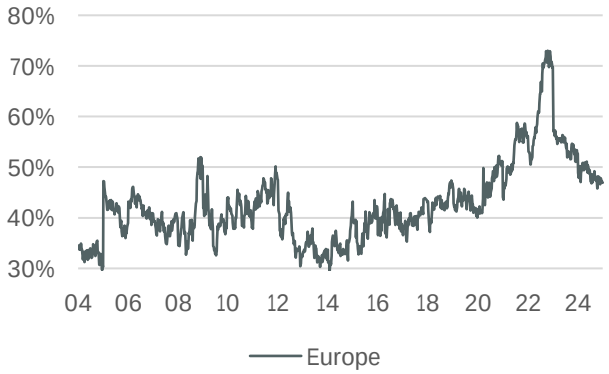
Source: DWS and CROCI. Charts show the percentage difference between the median valuation for the region and cheapest fifth percentile based on CROCI Economic PE, subject to CROCI's coverage universe in the region.

Figure 67: Dispersion of economic valuation (US)



Source: DWS and CROCI. Charts show the percentage difference between the median valuation for the region and cheapest fifth percentile based on CROCI Economic PE, subject to CROCI's coverage universe in the region.

Figure 68: Dispersion of economic valuation (Europe)



Source: DWS and CROCI. Charts show the percentage difference between the median valuation for the region and cheapest fifth percentile based on CROCI Economic PE, subject to CROCI's coverage universe in the region.

Figure 69: Dispersion of economic valuation (Japan)

Source: DWS and CROCI. Charts show the percentage difference between the median valuation for the region and cheapest fifth percentile based on CROCI Economic PE, subject to CROCI's coverage universe in the region.

It's also interesting to observe that global equities are not remotely close to the bubble territory that they reached during the TMT bubble at the end of the last century. We describe companies as being in bubble territory if the market is pricing more than 1.5x a company's medium-term profitability. We have kept this approach consistent for more than two decades.

Today we find that the proportion of global companies in bubble territory is almost exactly in line with the twenty-year average. The peak bubble levels were around the time of December 1999 at the time of the TMT bubble and then again in 2021 towards the end of the pandemic crisis. This underlines what we mentioned in the previous paragraph, namely that the market as a whole may be expensive but there are not especially concentrated extremes of valuation in specific market areas. Even the IT sector's bubble companies are nowhere near as numerous as they were in 1999.

Figure 70: Global Equity Market Bubble Analysis

Source: DWS, CROCI, Numbers represent the proportion of coverage in bubble territory (determined as EV/NCI of 1.5x 5yr average CROCI).

Figure 71: Global IT Sector Bubble Analysis

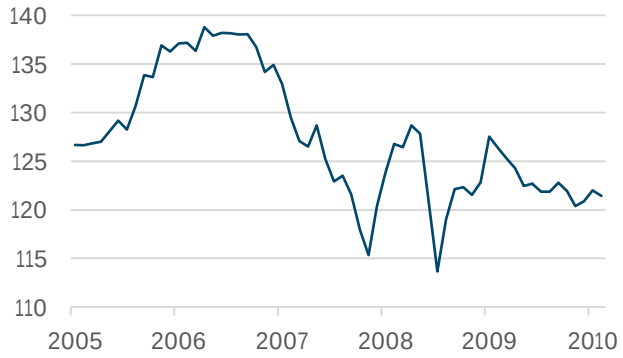
Source: DWS, CROCI, Numbers represent the proportion of coverage in bubble territory (determined as EV/NCI of 1.5x 5yr average CROCI).

Transitions in factor leadership require early diversification

A crucial requirement for the outperformance of value has always been a market that is focused on fundamentals, and we have explained above why the current economic backdrop is very supportive of such a situation. It is clear that, in periods when the market has focused on fundamentals, quality value strategies have performed very strongly. They have also managed to outperform at times when conventional value (without the quality exposure) has underperformed. Figure 56 shows the performance of the CROCI strategies selected according to economic valuation during different time periods. There was very strong performance before the ultra-low interest rate period began, and even for a period afterwards before the combination of zero interest rates of quantitative easing reached its peak in around 2018.

It is perhaps not surprising, though, that transitions from one factor paradigm to another have sometimes taken time, given that the market can often be slow to give up on a style that has provided outperformance for a decade or more. That was certainly the case in the move away from value after the financial crisis.

Figure 72: Perf. of Value relative to Growth (GFC)



Source: DWS, CROCI, MSCI, period covered is from 31-Jan-05 to 28-Feb-2010 (monthly series). Past performance does not predict future returns.

But add a second component to that, namely the sudden excitement over AI in the market (see Figure 52 to see the narrowness in performance in the AI-related stocks at the very time that the economic backdrop was changing), and the factor leadership volatility is exacerbated further. Of course, the transition can be much quicker when there is clear evidence of a bubble popping. That is shown by the transition that took place during the TMT bubble. But as we have shown above, there is no real evidence yet to suggest that markets are in the kind of sector or thematic bubble that took place in the late 1990s. The current market seems much more like there is a wide overvaluation thanks to an extremely low equity risk premium with a just few stocks trading at super-premiums to the market itself.

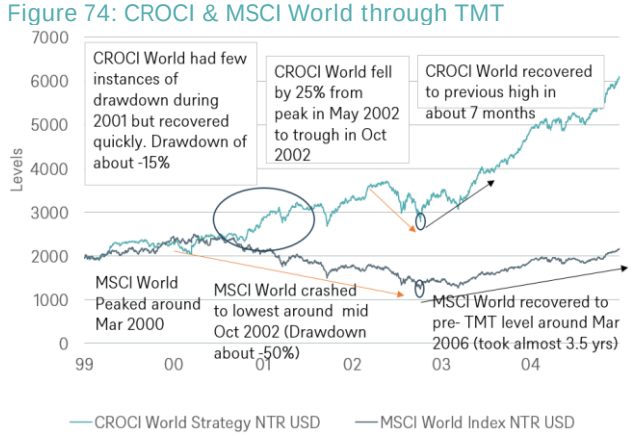
Figure 73: Perf. of Value relative to Growth (TMT)

Source: DWS, CROCI, MSCI, period covered is from 31-Dec-95 to 30-Nov-03 (monthly series). Past performance does not predict future returns.

The rapid outperformance of quality value strategies at the time of a confirmed change in factor leadership is one thing that these two otherwise different periods have in common. The relative performance of the strategy was very strong as soon as the value factor took over leadership. The year immediately following the recovery of value was very strong in both cases. One well-known piece of advice from Warren Buffett to investors was to be greedy when others are fearful, which is why some of the most interesting opportunities

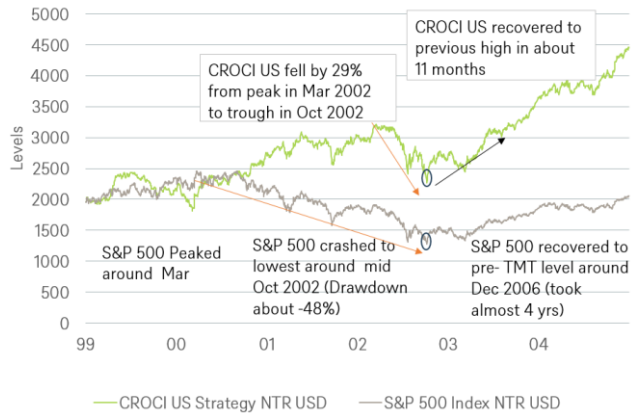
occur when the market is alarmed. It also explains why investors need to be exposed to value throughout the economic cycle. Often the best period of performance takes place immediately after the market has reached its bottom.

Figure 74: CROCI & MSCI World through TMT



Source: DWS, CROCI, MSCI, period covered is from 01-Mar-00 to 31-Dec-04 (daily series). Past performance does not predict future returns.

Figure 75: CROCI & S&P 500 through TMT

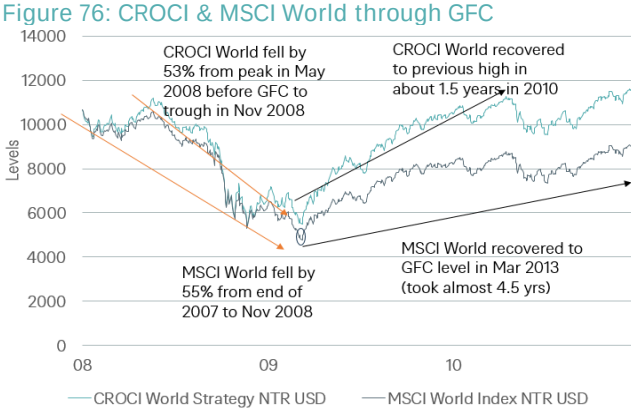


Source: DWS, CROCI, period covered is from 01-Mar-00 to 31-Dec-04 (daily series). Past performance does not predict future returns.

In the case of the TMT bubble where the factor transition took place before the market low, there was a brief period of underperformance before the trough, after which their outperformance continued during the bounce back period of the market. The outperformance based on the simulated data would have been in excess of 40% for both CROCI US and CROCI World in the year 2000[6].

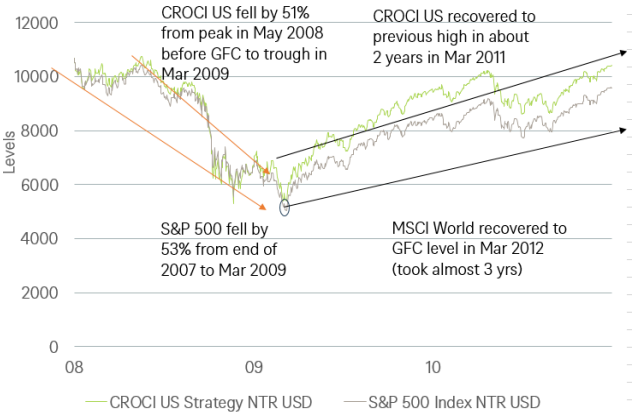
The trough in the market during the great financial crisis coincided with the factor leadership change. But in the same way as happened around the TMT bubble the outperformance happened very quickly after the transition. CROCI World rose by 55.5% in 2009 compared to the MSCI World's 30.0%; CROCI US rose by 39.9% versus S&P 500's 25.6%.

Figure 76: CROCI & MSCI World through GFC



Source: DWS, CROCI, MSCI, period covered is from 31-Dec-07 to 31-Dec-10 (daily series). Past performance does not predict future returns.

Figure 77: CROCI US & S&P 500 through GFC



Source: DWS, CROCI, period covered is from 31-Dec-07 to 31-Dec-10 (daily series). Past performance does not predict future returns.

Perhaps the largest risk to the performance of value in 2025 might be the continued strength of generative AI. This might particularly be true if markets become confused or uncertain, as the US performs a volte-face on its long-standing economic policies and investors see the US megacaps as some kind of haven. But in opposition to that, the largest risk to AI is the fact that it hasn't really delivered any major applications to justify the trillion dollar capex that has been spent by the AI enabler companies. Unless there is a clear use case with a clear payoff profile at a comparable level, there is possibly a risk that investors grow nervous of the continued high valuations. The other point to note is some of the current market's similarity to the TMT bubble. In that earlier period of change, it was often the case that pioneer companies were not always the ones that drove longer term performance.

[6] The model portfolio and percentage allocations are shown for illustrative purposes only. There are no actual performance results reflected.

3.2 Widening the investment lens: a cleaner take on Quality and Growth using CROCI

Value is, and remains, our heritage

For over 20 years, CROCI has concentrated on creating value-focused investment strategies, using our clean and comparable company data to construct concentrated baskets of the cheapest stocks globally and in each major region. While there have been some variants (such as our sector rotation approach and the dividend strategies seeking to give investors exposure to income while reducing the risk of being exposed to dividend cuts), the strategies shown in Figure 56 have still been seeking Value (with a Quality tilt), using CROCI's economic valuation approach to take a holistic view of companies' financial structure, assets and cash flows (described in section 1.2). In many ways, CROCI's approach to equity investing over these past two decades could be described as "Graham and Dodd with clean data": rooted in the principles of "Security Analysis" (1934) and "The Intelligent Investor" (1949), applied in a systematic manner. The clean data seeks to overcome the inconsistencies of accounting standards, the shortfalls of accounting data from an economic investment point of view, and applied using a thorough, well-rehearsed process to nearly 900 companies globally, providing a fertile ground for systematically constructing high conviction portfolios.

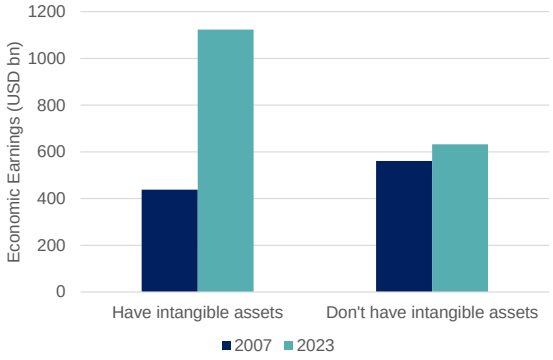
...but CROCI is more than Value!

CROCI as a concept and investment approach, however, is really about more than Value: at its heart is the idea that we offer a full and thorough due diligence of global coverage. A universe of nearly 900 stocks represents a much larger number than traditional stock pickers cover and a much more careful analysis of individual stocks than quant approaches afford, and this allows us to build systematic high-conviction strategies that can represent many different investment theses and styles. In no way does this mean that we turn our back on Value – ultimately, we believe that patient long-term investors are served well by Value approaches through the market cycle, but we do recognise that investment styles can go out of (and back into!) fashion for many years at a time (section 3.1 discusses the long-term benefits of Value investing, but also the historical context for periods of Value performance). Just as we are convinced that our economic perspective on corporate value creation (taking a cashflow-based approach, working out the cash return that a company generates for those who provide it with capital) has improved Value investing, we firmly believe that we can also improve on other investment styles (particularly Quality and Growth) with our unparalleled wealth of data and knowledge about our global coverage universe. In short, CROCI's key expertise lies in this deep understanding of global listed large cap equities and in the wealth of associated comparable data. This lends itself to high-conviction concentrated portfolios capable of reflecting any investment style based on company fundamentals.

Our take on Quality: the CROCI Innovation Leaders Strategy

A first step in this direction was our launch of the CROCI Innovation Leaders Strategy (formerly known as CROCI Intellectual Capital) in 2019: this uses one of CROCI's key strengths (the capitalisation of intangibles such as R&D and brands in companies where these form material economic assets) for a thematic investment strategy with a focus on Quality. By investing in companies with intangible assets, we restrict the investment universe to roughly half the overall companies in our coverage, excluding some industries almost entirely (Utilities, most of Energy, Miners, Professional Services, Discretionary Retail and others) but capturing more than just a single narrow theme (such as AI, biotechnology, luxury brands, or access to EM consumer): instead, we combine these into a meta-theme, based on a very simple observation: in our coverage universe, companies with intangible assets have nearly tripled their economic earnings since the great financial crisis (GFC), while companies without intangible assets have barely achieved any earnings growth (see Figure 78). This dramatically illustrates that competitive advantage (or "having a moat" in Warren Buffet's words) no longer derives from having a huge physical capital base which is difficult to replicate quickly (as tended to be the case decades ago): in today's economy, competitive advantage typically derives from brands and R&D – in short: from innovation.

Figure 78: Earnings growth has come from companies with intangible assets

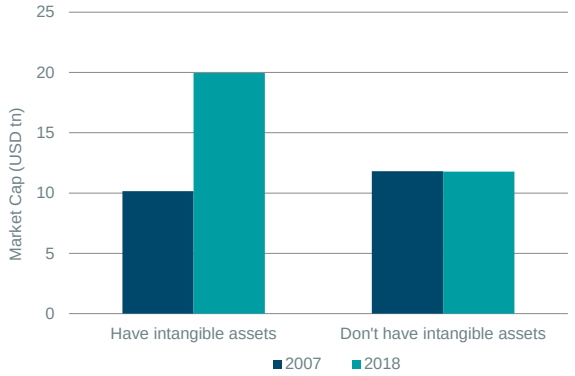


Source: DWS, CROCI, data as available on 12 September 2024.

This is equally reflected in the relative share price performance of these two groups, with market cap having

doubled for the 'innovators' (where at least part of their capital base resides in intangible assets), but having gone sideways since the GFC for those companies relying solely on physical capital (Figure 79):

Figure 79: Share price performance has followed earnings growth



Source: DWS, CROCI, data as available on 12 September 2024.

Why is CROCI relevant here? As explained in section 1.2, identifying R&D and brands which do constitute meaningful economic assets, bringing them back onto the balance sheet by consistently capitalising these in the relevant[7] industries, and making the data comparable by carefully analysing the economic life of such assets has been at the core of the CROCI company analysis approach for thirty years. This places CROCI in a unique position to identify not only companies with intangible assets, but also to measure whether such innovation has actually led to cash returns for investors: ultimately, the profitability (measured by CROCI cash return) is the true measure of whether a company really has derived a competitive advantage from its innovation, and its balance sheet strength (measured by total financial leverage according to CROCI, i.e. taking into account all off-balance sheet components which we re-integrate into the enterprise value) determines a company's ability to keep innovating and investing in its intangible capital. Thus, these are the two metrics which we use to narrow down the universe of companies with intangible assets when we seek true "Innovation Leaders". The final portfolio also reflects the earnings power of these companies, providing an extra Quality component and marrying the approach with CROCI's Value legacy: while valuation is not an exclusion criterion in the CROCI Innovation Leaders Strategy, it does impact the portfolio weights, anchoring the position size in each company to its fundamentals rather than chasing possibly exaggerated market valuations.

What are the results of this approach? Before we consider the performance, it is worth analysing the exposures, both in terms of sectors and in terms of fundamental characteristics. As Figure 80 illustrates, the universe of companies with intangible capital demonstrates far superior profitability (measured by CROCI cash return) and lower financial leverage than companies which rely solely on physical economic assets–and this is even before we apply the corresponding filters (which sharpen the quality profile further) in the construction of the CROCI Innovation Leaders portfolio. While these features may not come as a surprise, given the previous discussion of the drivers of competitive advantage, we also observe that companies with intangible assets have managed to grow their sales and assets at higher rates than "purely physical" companies over a 5Y cycle. No wonder then that these companies with intangible assets trade on higher valuations (although the gap is far smaller on our Economic PE measure than on accounting metrics – thanks to the recognition of their superior cash generation and the capitalisation of intangible assets by the CROCI process). However, once we move to the final CROCI Innovation Leaders portfolio of 100 innovators from global developed and emerging markets (weighted by a CROCI measure of economic earnings), its valuation is lower by around 20% than the Economic PE for the overall selection universe.

Figure 80: Operational and Valuation characteristics

2025e	Company universe with IC	Company universe without IC (ex Fin.)	Global CROCI coverage (ex Fin.)	CROCI Innov. Leaders
Valuation				
Accounting PE	33.7x	19.5x	32.8x	27.8x
Economic PE	43.4x	37.6x	43.1x	34.5x
Adj. CROCI P/B	10.3x	1.8x	8.5x	8.5x
1Y Growth				
Sales Growth	12.1%	1.0%	9.8%	10.7%
Real Econ. Earnings	16.6%	-3.7%	15.4%	13.1%
Profitability and Cash Flow				
CROCI cash return	23.6%	4.7%	19.8%	24.6%
FCF / Sales (Post-Tax)	21.5%	5.9%	18.6%	24.7%
Leverage				
Net Fin. Liab. / M. Cap	0.1%	21.1%	0.9%	-0.5%

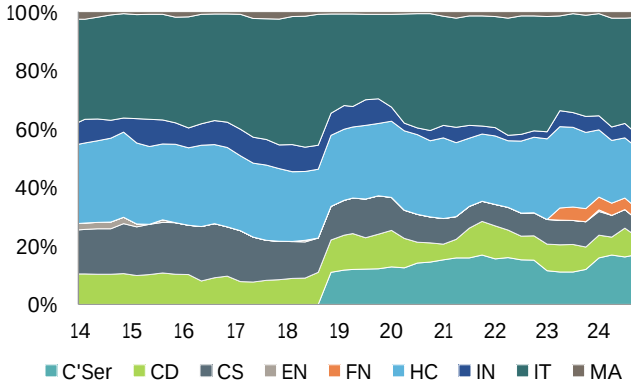
Source: DWS and CROCI. The table shows selected operational and valuation characteristics of companies with and without Intellectual Capital. Values are weighted average (using the strategy weights of CROCI Innovation Leaders and market cap weighting for the three investment universes). Data as available on 7 February 2025. The growth numbers reflect FY1 growth.

Moreover, the CROCI Innovation Leaders approach gives investors exposure to a more diversified Quality portfolio than

[7] Not all R&D expense or advertising and brand building is capitalised by CROCI – only in those industries and companies where these are deemed to constitute real economic assets – i.e. where they have an economic life of longer than one year and do not just impact current year sales.

just investing in Technology companies (or an even narrower theme such as AI): while the portfolio is dominated by IT and Health Care, there are large exposures to Consumer Staples, parts of Industrials, Communication Services and Consumer Discretionary, and even selected companies from sectors traditionally associated with physical, not intangible capital (such as Chemicals companies and Oil Drillers, representing the Materials and Energy sectors, respectively). Overall, this results in a well-diversified portfolio giving access to true Innovation Leaders in any industry (see Figure 85):

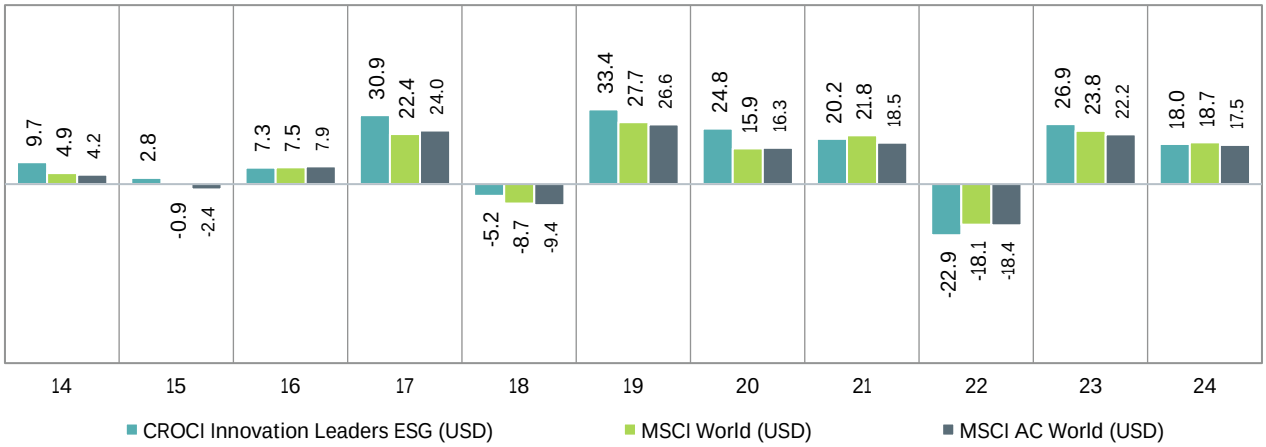
Figure 81: Sector allocation of CROCI Innovation Leaders



Source: DWS, CROCI, data as available on 31 December 2024. Portfolio allocations prior to 15 April 2019 are simulated. The Communication Services sector was created in the GICS classification change in 2018. Financials exposure relates to payment providers which were classified as part of the Technology sector prior to 2023. The full form of each of the acronyms of the sectors have been discussed in section 1.1 of this report, except FN which stands for Financials.

So, has it worked? In the nearly six years since we launched this strategy, it certainly has: with gross total USD return of 12.8% for the period 15th Apr. 2019 – 31st Dec. 2024, the strategy has outperformed the MSCI World by 1.2% p.a. and the MSCI ACWI by 2.2% p.a. (note that the selection universe for CROCI Innovation Leaders includes EM companies). Moreover, the longer-term track record including the simulated history speaks for itself: 2022 (with its strong Tech underperformance) was the only year with material underperformance in the past 10 years.

Figure 82: Performance of CROCI Innovation Leaders Strategy (Annual returns in %)



Source: DWS, CROCI, data as available on 31 December 2024. The CROCI Innovation Leaders Strategy has been run on a live basis since 15th Apr. 2019. Performance data before this date is simulated and was calculated by means of retroactive application of the Strategy model. Past performance, whether live or simulated, is not a reliable indicator of future results. All returns include reinvested dividends (net of withholding tax) but do not include fees that might be charged on an investment product. It is not possible to invest directly in a strategy. The performance shown here is for model portfolios. The performance of any actual investment products may differ significantly. The CROCI team does not provide investment advice, stock recommendations or act in any other fiduciary capacity.

In summary, CROCI Innovation Leaders provides a blue-chip strategy for the 21st century: while it also holds some (but not all) of the MAG7 names, it provides a more rounded exposure to innovators – and some diversification in case AI becomes a more commoditized business than markets currently anticipate. In fact, as discussed in section 2.2, we have seen

clear signs of market anxiety about the rapid increase in capex by the MAG7, and one might even provocatively ask whether they are about to repeat some of the historical mistakes of Big Oil discussed in section 2.1 (such as diluting their own profitability through overinvestment). In such a scenario, the CROCI Innovation Leaders strategy would ultimately drop these names (and in fact, it has already done so for some of the MAG7) thanks to its quality filters. On the flipside, the strategy provides exposure to some of the blue-chip Staples, Health Care and Fintech names which might yet turn out to be more magnificent than the MAG7 in the long run.

In defence (!) of Growth investing – when done right

The next step in the CROCI story is the launch of our first growth-focused investment strategy. Cynical readers may question the timing of this (given the large outperformance of Growth vs Value in recent years – as discussed in section 3.1), but we have long been interested in this topic: the CROCI Outlook 2013 introduced a "Sustainable Growth" screen, for example. More to the point, we have not launched a growth-focused strategy up until now because institutional investors have never quite accepted Growth as a legitimate investment factor in its own right (as demonstrated by the dearth of growth-factor ETFs). In part, this may be a consequence of Fama-French rejecting Growth: while they expanded their original 3-factor model of "Value" (represented by Book/Price in their thinking), "Size" (Small Cap) and "Beta" over time to include two more factors (Quality, measured by them as high vs low operating profitability, and an Investment factor, measured by conservative vs. aggressive investment), Growth never made the cut. Worse, their framework was (mis)interpreted later on as having implicitly defined Growth to be the opposite of Value (i.e. as high Price/Book companies) – and this tarnished the name of Growth as a legitimate factor (when thought of as the short side of the very factor, namely long/short Value, which Fama-French did recognise as a bona fide alpha generator over the long term, compensating investors for the risk taken by investing in low Price/Book companies). Arguably, this has resulted in decades of confusion about how to think of Growth 'properly' as a factor: we still see this legacy in the common dichotomy between Growth and Value indices as defined by many benchmark providers: even those who have moved away from defining Growth companies as "high Price/Book" and instead directly consider metrics such as sales growth or cash flow growth still muddy the waters by defining Value and Growth indices as a pair (which are supposed to divide up and jointly cover the entire market cap-based parent index)[8]. This has the somewhat perverse effect of polluting both the standard Value and Growth indices: a company can end up in the Value index not because it is cheap (on accounting metrics) but simply because its growth metrics are very underwhelming; conversely a company may end up in the Growth index not because it is growing, but simply because it is very expensive. Worst of all, it suppresses exposure to what are arguably the most interesting companies: those with a good growth profile but an attractive valuation[9] (such companies tend to end up in both Value and Growth indices, but with lower weight than they might deserve). Ultimately, this is driven by the insistence that Value and Growth are polar opposites and that 50 dollars investment in Value and 50 dollars investment in Growth must equal 100 dollars in the market cap weighted parent index – no wonder that Growth factor investing has a bad name!

Beyond "Growth at a reasonable price": Growth, but not at all costs

We have thought long and hard in the last two years about what CROCI can bring to the table when it comes to Growth investing. It is tempting to jump to the conclusion that GARP (growth at a reasonable price) is the obvious meeting point, given CROCI's heritage in and expertise for valuation and value investing. However, we believe this in part repeats the mistakes of Growth factor investing as defined above and results in a muddle between Growth and Value. As we have argued in section 3.1, Value remains a convincing option for patient long-term equity investors who do not wish to be caught in a bubble (and stand to benefit when share prices go through a weaker period and bargains are available). However, as section 3.1 also shows, there are clearly market environments (including much of the last few years) where true Growth investing has its place – and just like CROCI's Value strategies avoid style drift and seek to ensure exposure to "true Value" at all times, our starting point for a Growth strategy was that it should consistently give investors exposure to a high-conviction portfolio of "true Growth" companies.

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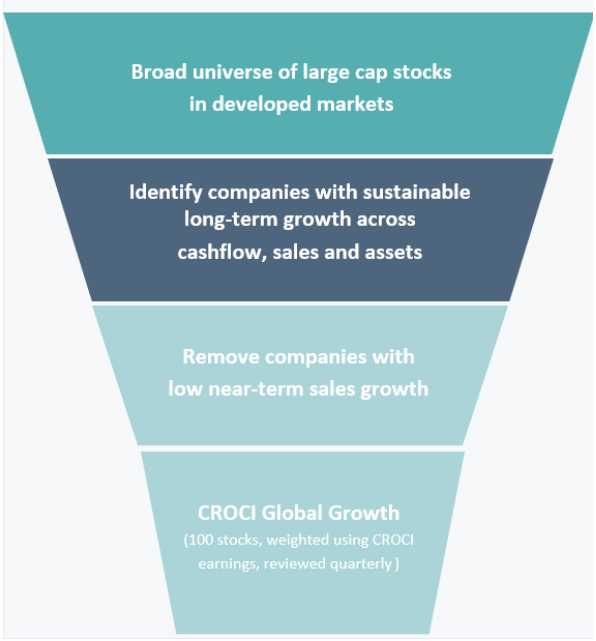
[8] See for example MSCI's Value-Growth index methodology which places each company on a "Value-Growth spectrum" based on its distance from being "purely Value" and "purely Growth" and correspondingly distributes its market cap to the Value and Growth indices.

[9] Once again, we can count Warren Buffet on our side of this argument: "Typically, [value] connotes the purchase of stocks having attributes such as a low ratio of price to book value, a low price-earnings ratio, or a high dividend yield. Unfortunately, such characteristics, even if they appear in combination, are far from determinative as to whether an investor is indeed buying something for what it is worth and is therefore truly operating on the principle of obtaining value in his investments. Correspondingly, opposite characteristics - a high ratio of price to book value, a high price-earnings ratio, and a low dividend yield - are in no way inconsistent with a 'value' purchase." "Growth benefits investors only when the business in point can invest at incremental returns that are enticing - in other words, only when each dollar used to finance the growth creates over a dollar of long-term market value." Warren Buffet's Letter to Shareholders (1992)

From this premise, CROCI's knowledge of and comprehensive data about 900 companies globally can really make difference in Growth investing in three aspects: First, taking a holistic view of Growth, considering more dimensions than just sales growth (including cash flow growth and asset growth which are far harder to compare across sectors and regions using accounting data) – ensuring that we select "growth but not at all costs", i.e. companies growing without unduly diluting their profitability. Second, using the clean and comparable data for such a large investment universe to seek the fastest growing companies in any industry, without any favourite industries or themes that a traditional stock picker would likely focus on, and with the ability to find growth stocks in more surprising areas (including in more capital-intensive "Old Economy" type stocks in certain stages of the cycle). Third, using CROCI's long and comparable data series to take a comprehensive look through the cycle for each company, searching for companies that have a proven track record of growth and do not show signs of significant deceleration in growth.

Figure 83: CROCI Global Growth Strategy



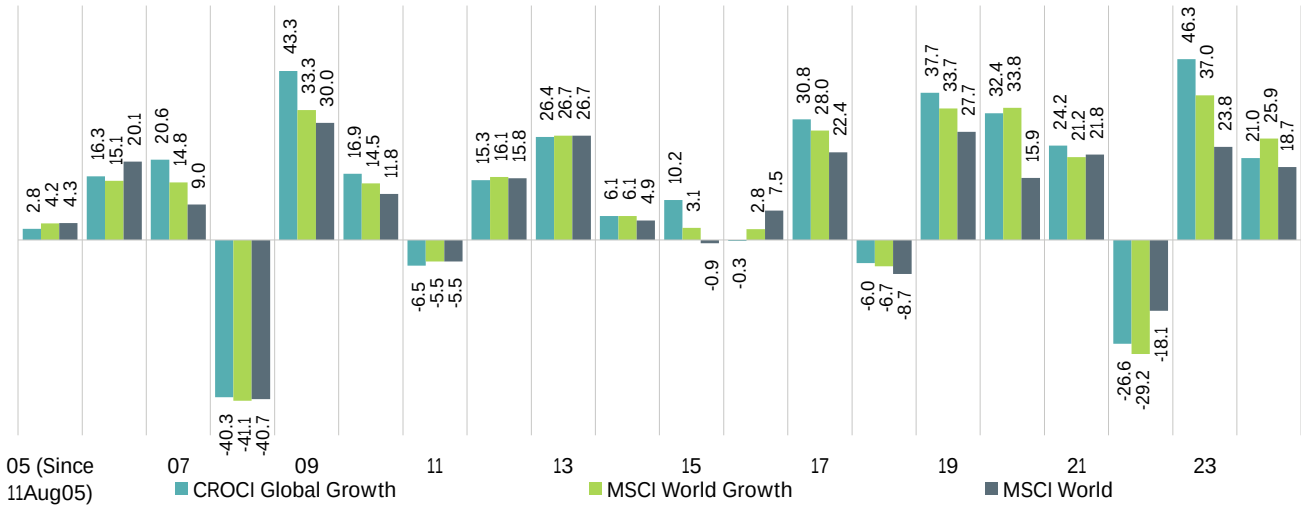
Source: DWS, CROCI. The CROCI team does not provide investment advice, stock recommendations or act in any other fiduciary capacity. No assurance can be given that any forecast, target or opinion will materialize.

These are the ingredients we use for constructing a global growth portfolio: revenue growth, CROCI cash flow growth, and CROCI asset (NCI) growth over a five-year period (involving the last three years with stated financial accounts and the next two as-yet incomplete financial years), excluding from this long list the companies whose near-term sales growth puts them at the bottom of the table, and weighting the final portfolio of 100 global companies by a CROCI measure of earnings to anchor portfolio sizes in earnings power and to avoid chasing after possibly exuberant market valuations (without giving up on such companies entirely if their growth profile justifies their inclusion in the portfolio).

The CROCI Global Growth Strategy: companies with a proven track record and continuing prospects for growth

We defined this CROCI Global Growth Strategy over a year ago; while it is not yet available in a public investment wrapper, we are working on bringing it to the market in 2025. Our simulation going back to mid-2005 shows 11.5% gross total USD return p.a., outperforming MSCI World Growth by 1.7% p.a. and MSCI World by 3.5% p.a.:

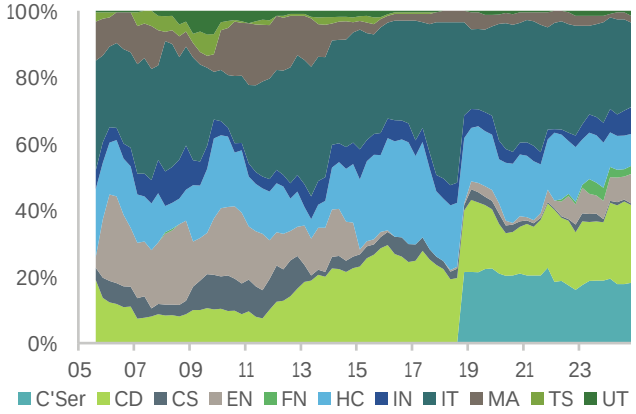
Figure 84: Simulated gross total returns of the CROCI Global Growth Strategy (Annual returns in %)



Source: DWS, CROCI, data as available on 31 December 2024. The CROCI Global Growth Strategy is not live; all performance data is simulated and was calculated by means of retroactive application of the Strategy model. Past performance, whether live or simulated, is not a reliable indicator of future results. All returns include reinvested dividends (net of withholding tax) but do not include fees that might be charged on an investment product. It is not possible to invest directly in a strategy. The performance shown here is for model portfolios. The performance of any actual investment products may differ significantly. No assurance can be given that any forecast, target or opinion will materialize

The sector composition of this strategy is bit more balanced than our thematic quality CROCI Innovation Leaders Strategy discussed above: CROCI Global Growth is less dominated by Technology and Health Care, with larger exposures to Discretionary, and historically even Energy and Materials.

Figure 85: Sector allocation of CROCI Global Growth Strategy



Source: DWS, CROCI, data as available on 31 December 2024. All portfolio allocations are simulated. The Communication Services sector was created in the GICS classification change in 2018. Financials exposure relates to payment providers which were classified as part of the Technology sector prior to 2023. No assurance can be given that any forecast, target or opinion will materialize. The full form of each of the acronyms of the sectors have been discussed in section 1.1 of this report, except FN which stands for Financials and TS which stands for Telecommunication.

On the other hand, the CROCI Global Growth strategy currently has bigger exposure to the MAG7 than the CROCI Innovation Leaders strategy discussed before (five of the seven stocks are currently in Global Growth with the maximum permissible weight of 7.5%). This is in part a function of the factor that the CROCI Innovation Leaders Strategy has a bit more of a Blue Chip / Large Cap bias than CROCI Global Growth (where 71 of the 100 companies in the current simulated portfolio are held with the minimal weight of 0.5% each).

Figure 86: Operational and Valuation characteristics

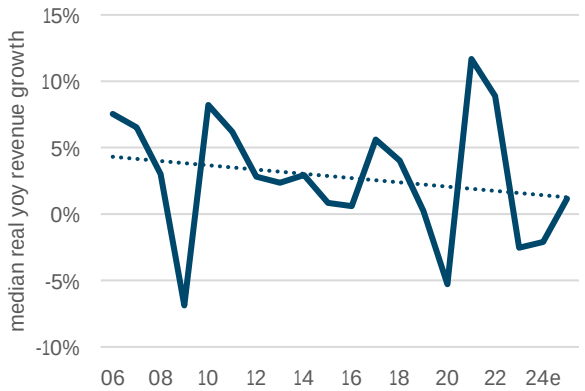
2025e	MSCI World (ex Fin.)	MSCI World Growth (ex Fin.)	CROCI Innov. Leaders	CROCI Global Growth
Valuation				
Accounting PE	34.5x	36.5x	27.8x	34.2x
Economic PE	45.3x	46.9x	34.5x	41.7x
Adj. CROCI P/B	9.8x	12.7x	8.5x	8.7x
1Y Growth				
Sales Growth	10.5%	13.3%	10.7%	15.5%
Real Econ. Earnings	18.2%	21.0%	13.1%	26.0%
Profitability and Cash Flow				
CROCI cash return	21.7%	27.1%	24.6%	20.8%
FCF / Sales (Post-Tax)	19.4%	21.6%	24.7%	17.6%
Leverage				
Net Fin. Liab. / M. Cap	1.3%	0.1%	-0.5%	0.5%

Source: DWS and CROCI. The table shows selected operational and valuation characteristics of the CROCI Global Growth Strategy and its benchmark indices, apart from CROCI Innovation Leaders Strategy. Values are weighted average (using the strategy weights of CROCI Global Growth, Innov. Leaders and market cap weighting for the two benchmark universes). Data as available on 31 December 2024.

This is also reflected in the operational characteristics of the Global Growth Strategy: valuations are richer than for Innovation Leaders (albeit still below MSCI World Growth and MSCI World). On the growth metrics (both revenue growth and economic earnings growth), our Growth Strategy comes out well ahead of both benchmarks (Figure 86).

Finally, readers might ask "why now" – why consider a growth strategy now when we just spent all of section 3.1 arguing why it is important to consider Value, both in the current economic context and from a long-term historical perspective. The answer is that the long outperformance of Growth since the GFC has coincided not only with macro factors that have largely dissipated by now (zero interest rates, QE and high liquidity flooding financial markets), but also with one fundamental driver which still seems unbroken: the sheer scarcity of companies managing to grow their revenues in real terms. Figure 87 shows that median real revenue growth has been negative in 2023 and 2024, and despite a bounce-back in 2025e according to consensus, the long-term trend since the GFC has been down (other than the years of catch-up growth after the GFC and the pandemic). Moreover, the proportion of companies with negative real revenue growth also hit highs in 2023 and 2024, as Figure 15 showed. This hints at a basic paradox at heart of the performance of Growth: the fewer companies genuinely manage to achieve growth., the more markets seem to be willing to pay valuation premia for such companies, bidding their shares up further and leading to their outperformance.

Figure 87: Median real yoy revenue growth of developed-market companies (CROCI universe ex Fin.)



Source: DWS, CROCI, data as available on 3 February 2025. The chart shows the median real (inflation-adjusted) year-on-year revenue growth of developed market companies (ex Fin.) in CROCI coverage. No assurance can be given that any forecast, target or opinion will materialize.

So are Quality and Growth the limits of CROCI's ambition to widen its investment lens? Not at all: we have been studying closely the performance, behaviour, allocation, fundamental characteristics and correlations of around 25 factors (mostly based on fundamental company data) for several years. In the design of bespoke investment strategies (particularly in an institutional context), our vision is to be a highly flexible provider of concentrated, high-conviction strategies expressing different market views or styles in systematic strategies. Our rich data set (with hundreds of data points for each of the 900 companies we cover) allows us a unique 360-degree view of corporate balance sheets, value chains and drivers of profitability and valuation. One application of this would be a set of model portfolios organised around a core investment objective (e.g. global developed market equity exposure with no more than 50 stocks, up to 6% active risk, and specified concentration limits), while offering a choice along different dimensions (whether it be certain economic scenarios expressed in different screening rules for portfolio construction, a different balance of stock selection vs bottom-up sector allocation, or a desired level of dividend distributions). CROCI data provides huge flexibility for the construction of high-conviction portfolios (where a high degree of confidence in the underlying fundamental data is required), and we are excited to build out these applications further in future: watch this space!

The future: the CROCI factors library as a foundation for bespoke design of institutional investment strategies

Section 4:

Market Valuation

4.1 Regional & Sector Valuations

Figure 88: Regional Valuations

		2024E	2025E	2026E
USA	Sales Growth	3.5%	4.4%	5.9%
	CROCI	10.4%	10.9%	11.7%
	EV/FCF	31.4	28.5	24.3
	Economic PE	37.2	35.5	30.9
	Accounting PE	25.3	24.5	21.9
Europe	Sales Growth	-2.5%	3.1%	3.1%
	CROCI	5.0%	5.1%	5.4%
	EV/FCF	26.7	21.9	19.5
	Economic PE	33.5	30.6	27.3
	Accounting PE	17.5	15.7	14.4
Japan	Sales Growth	2.0%	2.0%	2.9%
	CROCI	3.1%	3.3%	3.4%
	EV/FCF	32.8	26.0	23.7
	Economic PE	36.8	33.0	30.6
	Accounting PE	15.8	14.7	13.7
Emerging Markets	Sales Growth	2.0%	1.4%	4.8%
	CROCI	5.2%	5.4%	5.6%
	EV/FCF	21.7	18.3	15.2
	Economic PE	23.9	21.8	19.7
	Accounting PE	13.7	12.9	11.8

Source: DWS CROCI. Data as on 03 January 2025. Regional Aggregates excluding Financial Companies

Figure 89: Global Sector Valuation 2025E

		EV/NCI	CROCI	Ec PE
Communication Services (8.1% weight in MSCI World)	Current	**2.10x**	6.5%	32.1x
	5Y	1.89x	5.4%	38.7x
	10Y	1.89x	5.5%	38.0x
	20Y	1.69x	5.5%	38.0x
Consumer Discretionary (11.1%)	Current	**2.14x**	5.1%	42.2x
	5Y	1.96x	4.5%	47.6x
	10Y	1.73x	5.1%	41.6x
	20Y	1.54x	5.2%	41.3x
Consumer Staples (6.1%)	Current	**3.28x**	11.1%	29.7x
	5Y	3.81x	12.2%	26.8x
	10Y	3.72x	12.0%	27.2x
	20Y	3.29x	11.6%	28.2x
Energy (3.7%)	Current	**0.86x**	3.0%	29.1x
	5Y	0.94x	3.9%	22.3x
	10Y	0.94x	2.9%	29.7x
	19Y	0.99x	4.6%	18.6x
Financials* (16.0%)	Current	**1.48x**	11.0%	13.5x (19.8x)
	5Y	1.28x	9.5%	15.5x (23.6x)
	10Y	1.34x	9.9%	15.0x (21.9x)
	20Y	1.56x	10.4%	14.3x (20.1x)
Health Care (10.4%)	Current	**3.62x**	15.9%	22.7x
	5Y	4.03x	15.4%	23.5x
	10Y	3.77x	14.8%	24.4x
	20Y	3.30x	14.8%	24.4x
Industrials (10.6%)	Current	**2.30x**	7.3%	31.7x
	5Y	2.16x	7.2%	32.1x
	10Y	2.03x	6.9%	33.5x
	20Y	1.88x	7.1%	32.2x
Information Technology (26.2%)	Current	**6.98x**	17.9%	39.0x
	5Y	5.45x	16.1%	43.4x
	10Y	4.37x	15.1%	46.3x
	20Y	2.98x	14.4%	48.6x
Materials (3.2%)	Current	**1.30x**	4.6%	28.5x
	5Y	1.44x	4.4%	29.4x
	10Y	1.39x	4.4%	29.7x
	20Y	1.35x	5.1%	25.3x
Utilities (2.5%)	Current	**0.94x**	3.0%	31.7x
	5Y	1.01x	2.9%	32.2x
	10Y	0.97x	3.1%	30.2x
	20Y	0.96x	3.4%	27.8x
COC	4.35%		Banks COE	6.40%

Glossary:
EV/NCI: An economically adjusted measure of the price-to-book. Similar to Tobin's Q, this is a ratio of market value of assets to replacement value of assets. An EV/NCI greater than 1 implies that the market expects value creation (in equilibrium, EV/NCI = CROCI/COC). *Financials: The Financial sector excludes Insurance but includes Banks and Diversified Financials (excluding Chinese banks). Note that the PE of Financials is not comparable to Industrials as we estimate that they have a different Cost of Equity due to the higher leverage. Numbers in brackets are risk adjusted Economic PE.
Source: DWS CROCI, MSCI. Data as on 03 January 2025. MSCI index weights do not add upto to 100% because 1) rounding-off and 2) Real Estate is not covered.

Figure 90: Regional Sector Valuation 2025E

		US	Europe	Japan	A-Pac	GEMs	Value
Communication Services	EV/NCI	2.90	1.12	1.07	1.42	1.36	US
	CROCI	10.1%	1.7%	0.7%	4.4%	4.5%	
	Ec PE	28.7	64.0	145.1	32.4	29.9	
Consumer Discretionary	EV/NCI	4.01	1.19	0.93	1.10	0.88	GEMs
	CROCI	8.5%	2.6%	2.9%	6.6%	6.4%	
	Ec PE	47.2	45.6	31.6	16.6	13.8	
Consumer Staples	EV/NCI	3.92	2.87	1.72	2.46	2.91	GEMs
	CROCI	11.8%	11.5%	5.6%	8.2%	12.1%	
	Ec PE	33.1	25.0	30.8	30.1	24.1	
Energy‡	EV/NCI	1.16	0.62	0.59	0.65	0.66	GEMs
	CROCI	3.6%	1.8%	1.3%	3.2%	3.5%	
	Ec PE	32.1	34.5	44.8	20.2	18.9	
Financials	P/B	1.78	0.99	1.05	1.95	NA	Europe
	Inf. Adj. ROC	12.0%	11.3%	7.1%	11.9%	NA	
	PE	15.8	8.9	14.9	16.6	NA	
	PE (risk adj)†	23.2	13.1	21.9	24.4	NA	
Health Care	EV/NCI	4.40	2.78	2.15	3.65	1.43	GEMs
	CROCI	18.1%	14.2%	10.3%	11.8%	7.9%	
	Ec PE	24.3	19.6	20.9	31.1	18.2	
Industrials	EV/NCI	3.47	2.44	1.29	0.89	0.86	GEMs
	CROCI	10.3%	7.9%	4.1%	4.1%	4.2%	
	Ec PE	33.8	30.8	31.6	22.0	20.7	
Information Technology	EV/NCI	10.36	5.08	1.66	2.06	2.04	GEMs
	CROCI	24.4%	13.2%	5.0%	9.5%	9.5%	
	Ec PE	42.5	38.4	33.1	21.8	21.6	
Materials	EV/NCI	2.12	1.11	0.69	1.04	0.98	A-Pac
	CROCI	6.5%	3.2%	2.5%	5.0%	4.5%	
	Ec PE	32.6	34.3	27.5	20.7	21.6	
Utilities	EV/NCI	1.05	0.93	0.53	0.73	0.68	A-Pac
	CROCI	3.3%	3.1%	0.8%	3.0%	2.7%	
	Ec PE	32.0	30.3	69.7	24.4	25.1	

Source: DWS CROCI. Data as on 03 January 2025.
† Reflects PE adjusted for relative differential in cost of capital.
‡ Japan Energy Sector consists of one company

Figure 91: Benchmark Indices Valuation

	Acct. PE	Ec. PE	Div. Yield	FCF Yield	EV/NCI	CROCI	CROCI	CROCI	NCI Growth	Earnings Growth	Market Cap/EV
	2025E	2025E	2025E	2025E	2025E	2025E	5YA	Implied		2015-2025E	2025E
Benchmarks											
DJ Global Titans	25.7	34.5	1.1%	3.4%	5.3	15.3%	14.2%	22.9%	63.7%	140.3%	97.9%
S&P 500	24.7	35.4	1.2%	3.5%	3.9	11.1%	10.7%	17.1%	45.3%	75.1%	90.9%
NASDAQ-100 Index	30.0	39.2	0.6%	3.0%	6.9	17.7%	17.4%	30.2%	173.8%	169.3%	97.9%
DJ Industrial Average	28.5	39.7	0.9%	3.3%	6.2	15.7%	13.8%	27.1%	58.3%	97.8%	96.9%
TOPIX 100	15.1	31.6	2.2%	4.1%	1.2	3.8%	3.2%	5.2%	53.2%	38.8%	88.8%
STOXX 600	15.9	30.1	3.0%	4.5%	1.6	5.3%	5.7%	6.9%	18.2%	15.8%	76.6%
Euro STOXX	16.3	34.1	2.8%	4.2%	1.4	4.2%	4.5%	6.2%	24.8%	12.4%	72.5%
Germany DAX	15.4	37.5	2.4%	4.1%	1.2	3.2%	3.4%	5.2%	27.5%	-9.9%	62.2%
France CAC 40	17.4	29.3	2.7%	4.6%	1.9	6.5%	6.7%	8.3%	29.1%	58.4%	83.6%
FTSE 100	12.7	26.8	3.7%	5.4%	1.5	5.4%	6.1%	6.4%	1.0%	16.5%	76.5%
Switzerland SMI	16.8	22.1	3.1%	5.4%	2.8	12.8%	13.3%	12.3%	11.0%	32.1%	90.1%
China & Hong Kong	12.1	20.6	4.5%	6.0%	1.0	4.8%	4.3%	4.3%	24.4%	111.4%	89.6%
CROCI Global	20.7	33.0	1.7%	3.8%	2.5	7.5%	7.0%	10.7%	22.9%	48.1%	87.6%
CROCI Developed Markets	21.7	34.2	1.6%	3.7%	2.7	7.9%	7.5%	11.7%	24.0%	47.3%	87.6%
CROCI Emerging Markets	12.9	21.8	3.4%	5.5%	1.2	5.4%	4.5%	5.1%	16.0%	56.1%	89.8%

Source: DWS CROCI: represents a bottom-up aggregation of the CROCI coverage of the stated benchmark. The numbers reflect CROCI coverage within each of the Indices (excluding financials). Data as on 03 January 2025.

4.2 Regional & Industry Group Valuations

The 2025e global median valuation expanded by 14% to 30.6x over the course of 2024. Over the same period, median global CROCI compressed from 8.2% to 7.7%. Pharma continues to feature amongst the cheapest three sectors for the third year in a row. Pharma is also the cheapest industry group across all major DM regions, despite significant variations in the underlying cash return profile across the three regions. Four of the five cheapest industry groups (at the global level) have double digit CROCI.

At the other end of the spectrum, Telecommunication Services is the most expensive industry group, at the global level and also amongst the three most expensive for each of the regions.

Figure 92: Global median equity valuations by industry group (GICS Level 2)

	Economic PE				CROCI			
	2023	2024E	2025E	2026E	2023	2024E	2025E	2026E
Global	**32.3**	**33.3**	**30.6**	**27.8**	**7.7%**	**7.5%**	**7.7%**	**8.0%**
Pharma Biotech & Life Sci.	23.3	22.7	19.2	17.3	14.9%	15.1%	15.7%	15.4%
Food Beverage & Tobacco	29.7	26.4	24.3	22.2	13.1%	12.5%	12.8%	13.0%
Media & Entertainment	26.8	25.8	27.5	23.1	16.5%	20.8%	21.5%	22.6%
Consumer Services	31.5	30.6	28.2	26.9	13.0%	12.6%	12.3%	12.8%
Consumer Durables & Apparel	32.3	32.6	26.7	23.0	5.7%	5.5%	6.6%	7.1%
Health Care Equip. & Services	36.6	37.5	30.2	26.7	13.9%	13.7%	14.4%	15.5%
Capital Goods	29.4	31.5	28.7	26.1	9.5%	10.4%	10.6%	11.2%
Food & Staples Retailing	31.9	33.0	30.8	30.3	7.1%	5.3%	4.8%	5.0%
Transportation	32.3	33.3	31.4	28.9	4.7%	4.4%	4.1%	4.0%
Household & Personal Products	33.6	32.8	31.3	26.4	10.3%	10.7%	11.0%	11.8%
Utilities	31.8	31.6	32.0	31.4	3.1%	3.2%	3.1%	3.1%
Materials	34.7	37.4	28.8	25.2	4.8%	4.2%	4.5%	5.1%
Retailing	32.5	37.1	34.4	31.5	10.9%	10.8%	10.9%	10.8%
Automobiles & Components	28.6	33.6	28.1	28.0	3.3%	2.5%	2.7%	2.8%
Energy	23.6	31.3	34.0	29.0	4.9%	3.8%	3.5%	3.7%
Semis & Semi Equipment	28.4	37.8	33.9	22.5	15.9%	16.1%	17.0%	20.3%
Tech. Hardware & Equipment	33.2	36.7	35.1	29.1	6.5%	7.5%	9.5%	11.1%
Com. & Professional Services	36.8	41.8	37.8	34.0	22.1%	18.6%	19.7%	22.6%
Software & Services	42.5	44.5	38.0	34.8	26.0%	25.6%	28.2%	29.6%
Telecommunication Services	83.9	101.4	76.2	62.3	1.5%	1.1%	1.1%	1.0%

Source: DWS, CROCI. The table shows the median numbers by sector within CROCI developed market coverage universe. Data as available on 03 January 2025.

On median valuation, the US is only marginally more expensive than Europe, and about a tenth more expensive than Japan. At the same time, the median US CROCI is almost twice that of Europe and more than three times Japan.

Consistent with what we saw in section 2, identifying value within Energy and Utilities is becoming more difficult, with their median valuation higher than regional median values. Notably, Automobiles and Components as an industry group finds a spot amongst the cheapest five across US and Japan but amongst the three most expensive within the European region.

Figure 93: US equity median valuations by industry group (GICS Level 2)

	Economic PE				CROCI			
	2023	2024E	2025E	2026E	2023	2024E	2025E	2026E
US	**33.0**	**34.2**	**31.7**	**28.0**	**12.7%**	**11.2%**	**11.9%**	**12.8%**
Pharma., Biotech. & Life Sci.	34.4	29.3	24.2	21.2	19.1%	18.9%	19.6%	19.7%
Food Beverage & Tobacco	29.9	27.6	24.7	23.3	18.6%	16.7%	17.4%	17.6%
Automobiles & Components	38.8	39.5	27.3	23.5	3.3%	2.7%	3.2%	3.1%
Media & Entertainment	26.7	25.6	27.4	22.7	15.6%	18.2%	19.9%	21.3%
Health Care Equip. & Services	33.4	32.8	27.7	24.6	17.2%	17.2%	17.6%	18.3%
Consumer Services	35.5	30.6	28.2	26.9	12.7%	11.0%	10.7%	11.4%
Materials	33.4	36.9	28.6	25.2	7.7%	6.4%	7.5%	8.0%
Consumer Durables & Apparel	35.3	36.0	29.1	23.8	6.7%	7.1%	7.6%	8.8%
Capital Goods	29.2	32.7	30.6	28.1	20.8%	19.9%	20.2%	21.6%
Transportation	35.9	36.7	30.6	27.6	6.5%	6.6%	6.9%	7.1%
Food & Staples Retailing	33.2	32.0	30.7	31.2	7.7%	6.2%	6.1%	6.1%
Utilities	34.1	33.3	32.2	31.3	3.0%	3.2%	3.3%	3.3%
Energy	27.7	30.3	32.5	27.2	5.3%	4.3%	4.1%	4.6%
Retailing	29.7	35.3	33.4	30.5	12.1%	11.1%	11.1%	12.3%
Household & Personal Products	32.9	36.8	33.7	30.0	13.5%	13.8%	13.9%	14.7%
Semis & Semi Equipment	29.0	49.3	37.6	25.2	20.2%	16.6%	19.4%	21.8%
Tech. Hardware & Equipment	32.4	42.7	39.2	31.0	11.7%	11.4%	13.4%	14.6%
Com. & Professional Services	37.4	42.8	39.3	34.6	24.1%	24.8%	27.1%	29.0%
Software & Services	45.4	48.9	42.8	38.6	26.9%	26.8%	28.8%	30.8%
Telecommunication Services	53.2	84.3	64.0	64.4	1.5%	1.0%	1.3%	1.2%

Source: DWS, CROCI. The table shows the median numbers by sector within CROCI developed market coverage universe. Data as available on 03 January 2025.

Figure 94: European equity valuations by industry group (GICS Level 2)

	Economic PE				CROCI			
	2023	2024E	2025E	2026E	2023	2024E	2025E	2026E
Europe	**30.8**	**33.5**	**30.8**	**28.6**	**7.7%**	**6.6%**	**6.6%**	**7.4%**
Pharma., Biotech. & Life Sci.	21.3	20.9	17.6	15.9	12.1%	11.4%	12.5%	13.5%
Food Beverage & Tobacco	29.8	26.6	24.7	22.7	13.2%	12.5%	12.8%	13.0%
Household & Personal Products	25.9	26.6	25.8	23.2	15.1%	14.9%	15.4%	16.2%
Consumer Services	25.3	29.4	27.0	24.8	22.3%	21.4%	23.7%	23.6%
Tech. Hardware & Equipment	24.1	28.1	27.1	24.0	5.2%	5.9%	5.7%	7.0%
Capital Goods	29.4	31.5	28.7	26.3	9.5%	8.7%	10.6%	10.7%
Consumer Durables & Apparel	32.1	33.5	29.1	23.5	7.2%	5.1%	6.6%	8.0%
Health Care Equip. & Services	40.1	38.4	29.8	26.7	10.4%	10.4%	11.0%	11.7%
Media & Entertainment	32.8	34.4	30.8	29.7	12.9%	20.8%	22.0%	22.4%
Com. & Professional Services	36.5	40.1	31.2	28.9	19.7%	18.6%	19.2%	19.0%
Utilities	27.3	28.8	31.2	31.5	4.3%	3.4%	3.1%	3.1%
Transportation	20.1	25.9	33.1	31.0	7.2%	5.5%	4.0%	4.0%
Materials	41.9	50.8	33.9	31.0	3.0%	2.8%	3.1%	3.4%
Semis & Semi Equipment	17.1	31.9	34.5	22.8	16.4%	7.3%	5.4%	7.9%
Retailing	45.8	44.0	35.9	31.7	3.0%	5.0%	5.7%	6.9%
Energy	19.1	32.9	37.9	43.9	4.3%	2.5%	1.9%	2.1%
Software & Services	39.6	44.5	39.9	34.5	27.8%	26.3%	26.4%	27.3%
Automobiles & Components	63.8	81.4	84.1	56.0	1.8%	0.6%	0.7%	1.2%
Telecommunication Services	nm	nm	nm	nm	1.2%	0.2%	0.0%	0.6%
Food & Staples Retailing	39.2	nm	nm	nm	1.9%	-0.2%	-0.3%	0.1%

Source: DWS, CROCI. The table shows the median numbers by sector within CROCI developed market coverage universe. Data as available on 03 January 2025.

Figure 95: Japanese equity valuations by industry group (GICS Level 2)

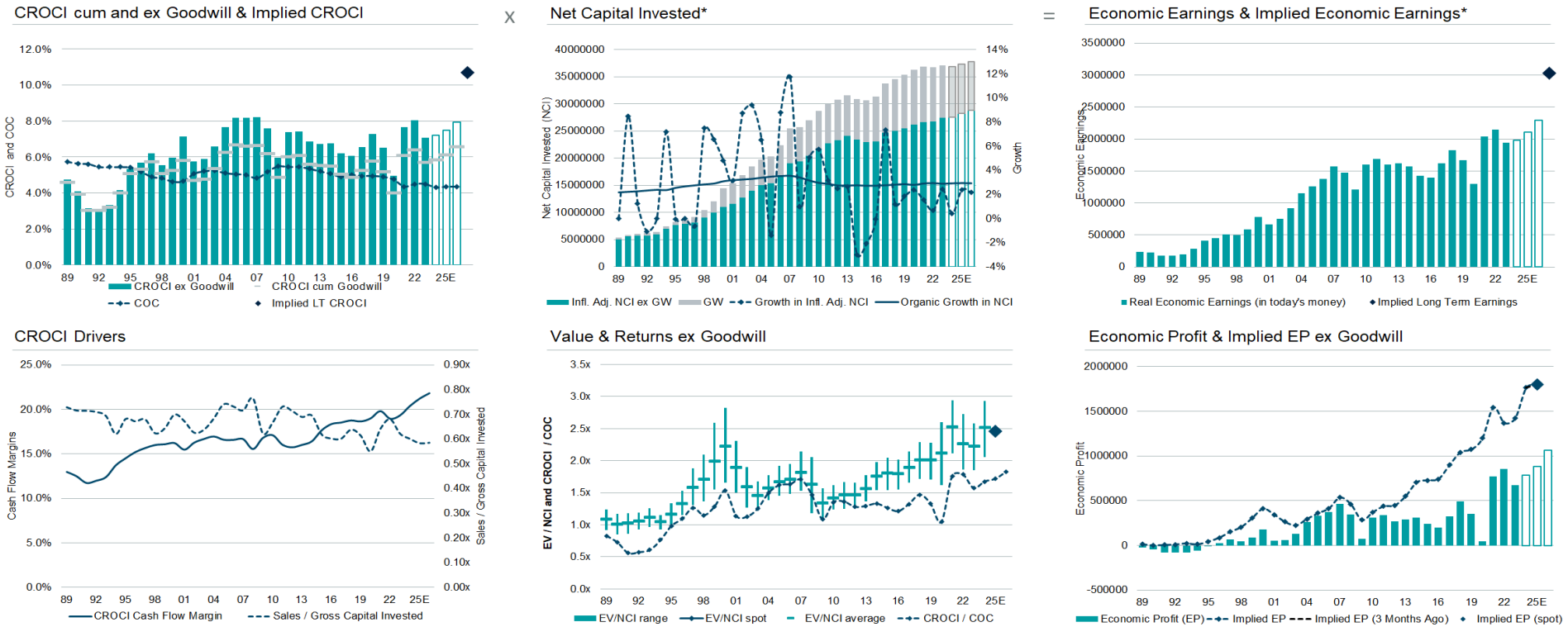
	Economic PE				CROCI			
	2023	2024E	2025E	2026E	2023	2024E	2025E	2026E
Japan	**33.4**	**34.8**	**29.0**	**28.0**	**3.6%**	**3.8%**	**3.8%**	**4.1%**
Pharma., Biotech. & Life Sci.	17.2	18.5	17.5	16.9	9.5%	9.6%	9.3%	9.5%
Consumer Durables & Apparel	29.6	27.5	30.8	27.3	2.5%	2.3%	2.8%	2.9%
Capital Goods	19.3	32.4	31.3	28.5	3.8%	4.4%	4.8%	4.8%
Media & Entertainment	22.9	26.6	31.7	27.5	30.8%	24.1%	29.4%	30.2%
Automobiles & Components	45.2	24.0	31.8	27.1	3.1%	2.6%	2.4%	2.2%
Utilities	161.6	28.4	33.8	32.8	2.3%	1.7%	1.7%	1.5%
Software & Services	21.2	34.8	34.8	27.2	3.3%	5.7%	6.8%	6.9%
Transportation	43.7	28.3	34.8	33.4	2.9%	2.3%	2.1%	2.0%
Household & Personal Products	45.1	80.9	40.4	36.3	2.5%	4.1%	4.3%	4.7%
Materials	23.6	61.8	49.1	26.2	1.2%	1.0%	1.7%	1.7%
Food Beverage & Tobacco	31.7	30.9	53.5	47.1	4.6%	4.8%	5.2%	5.7%
Tech. Hardware & Equipment	23.1	50.6	58.4	39.4	1.5%	1.5%	2.6%	2.7%
Semis & Semi Equipment	13.7	33.3	61.5	21.7	13.7%	20.3%	19.7%	20.6%
Telecommunication Services	nm	nm	nm	nm	0.6%	0.4%	0.5%	0.5%

Source: DWS, CROCI. The table shows the median numbers by sector within CROCI developed market coverage universe. Data as available on 03 January 2025.

Section 5:

CROCI charts

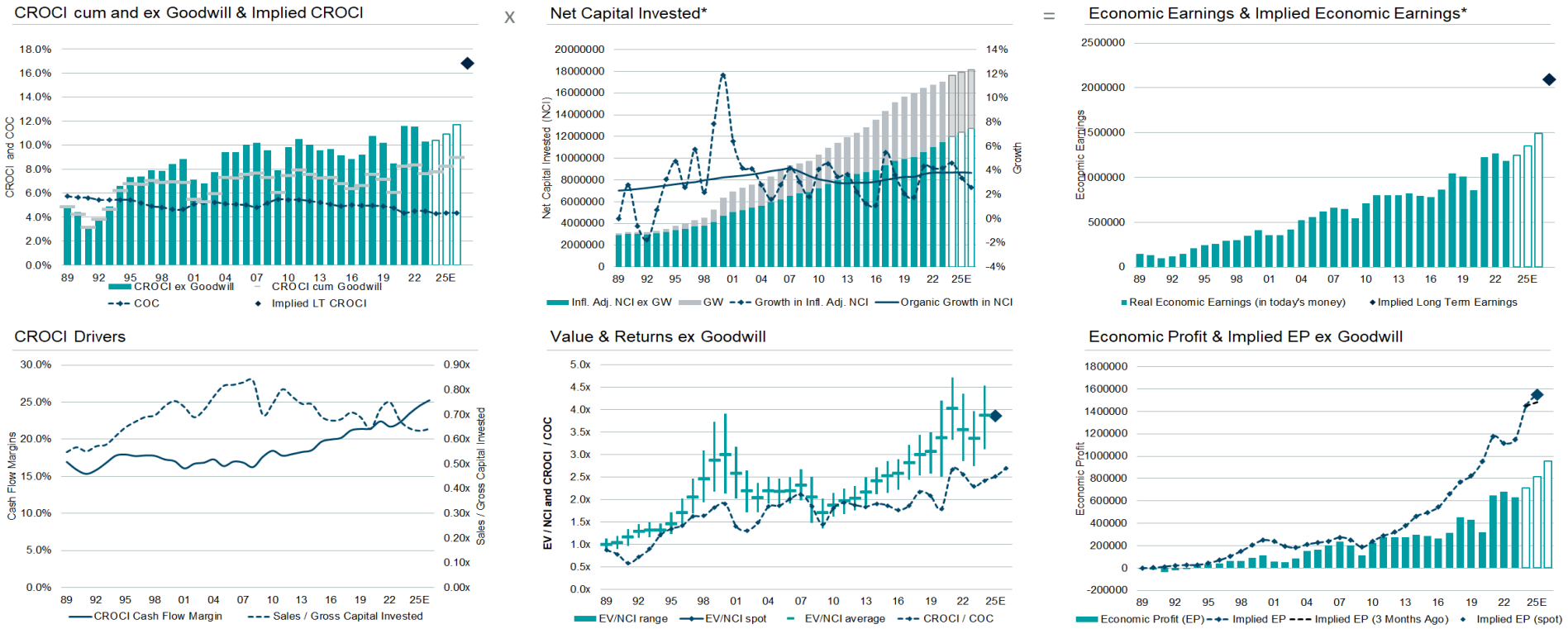
Figure 96: Global Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	20048	24707	23020	20342	23104	25299	26399	29420	32408	33339	33605	38497	42012	43616	47834	58759	54566	57607	68030	69666	68163
Market Cap (USD bn)	16524	20564	17647	14910	17747	19451	20165	23250	26006	26661	26486	30613	33415	34482	38418	49461	45281	48061	58423	61033	61033
EV/NCI Ex. GW	1.70x	1.81x	1.63x	1.34x	1.42x	1.46x	1.46x	1.56x	1.75x	1.80x	1.79x	1.89x	2.00x	2.01x	2.11x	2.52x	2.26x	2.22x	2.52x	2.46x	2.31x
Economic PE	20.8x	22.1x	21.4x	22.5x	19.2x	19.7x	21.3x	23.2x	26.0x	29.1x	29.5x	28.8x	27.5x	30.8x	42.6x	32.9x	28.2x	31.3x	34.9x	33.0x	29.1x
Accounting PE	15.5x	16.5x	15.7x	15.7x	13.2x	13.1x	13.8x	15.6x	17.2x	19.2x	18.8x	18.4x	17.5x	19.1x	24.8x	20.1x	16.9x	18.6x	21.5x	20.7x	18.7x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	8.2%	8.2%	7.6%	6.0%	7.4%	7.4%	6.9%	6.7%	6.7%	6.2%	6.1%	6.6%	7.3%	6.5%	5.0%	7.7%	8.0%	7.1%	7.2%	7.5%	7.9%
Implied CROCI	8.5%	8.7%	8.4%	7.3%	7.7%	8.0%	7.8%	8.1%	8.9%	8.8%	9.0%	9.4%	9.9%	9.8%	10.0%	11.0%	10.2%	10.0%	10.8%	10.7%	10.0%
Implied Economic Earnings/ Economic Earnings	104%	106%	111%	123%	105%	107%	114%	121%	132%	143%	148%	143%	136%	151%	202%	143%	127%	141%	150%	143%	126%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Figure 97: US Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	8892	10079	9532	8258	9556	10805	11846	13528	15652	16865	17829	20734	23358	25016	28594	36007	34480	36424	45520	48071	46960
Market Cap (USD bn)	7690	8800	7781	6521	7903	8898	9816	11512	13409	14252	14776	17084	19146	20487	23877	31325	29667	31374	40337	43549	43550
EV/NCI Ex. GW	2.19x	2.31x	2.05x	1.70x	1.86x	1.97x	2.02x	2.16x	2.41x	2.52x	2.58x	2.81x	2.99x	3.06x	3.37x	4.02x	3.55x	3.36x	3.87x	3.87x	3.61x
Economic PE	21.8x	22.6x	21.5x	21.6x	18.9x	18.7x	20.2x	22.6x	25.0x	27.6x	29.3x	30.5x	27.8x	30.1x	39.7x	34.7x	30.8x	32.6x	37.2x	35.5x	30.9x
Accounting PE	16.8x	17.2x	15.7x	16.2x	14.0x	13.3x	14.3x	16.4x	17.9x	19.6x	20.2x	20.7x	19.1x	20.6x	26.8x	23.9x	20.4x	21.6x	25.3x	24.5x	21.9x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	10.0%	10.2%	9.5%	7.9%	9.8%	10.5%	10.0%	9.6%	9.6%	9.1%	8.8%	9.2%	10.7%	10.2%	8.5%	11.6%	11.5%	10.3%	10.4%	10.9%	11.7%
Implied CROCI	11.0%	11.1%	10.6%	9.3%	10.2%	10.7%	10.8%	11.2%	12.2%	12.3%	12.9%	13.9%	14.8%	15.0%	16.0%	17.5%	16.0%	15.1%	16.7%	16.8%	15.7%
Implied Economic Earnings/ Economic Earnings	109%	109%	111%	118%	103%	102%	108%	118%	127%	135%	146%	151%	138%	147%	189%	151%	139%	147%	160%	154%	134%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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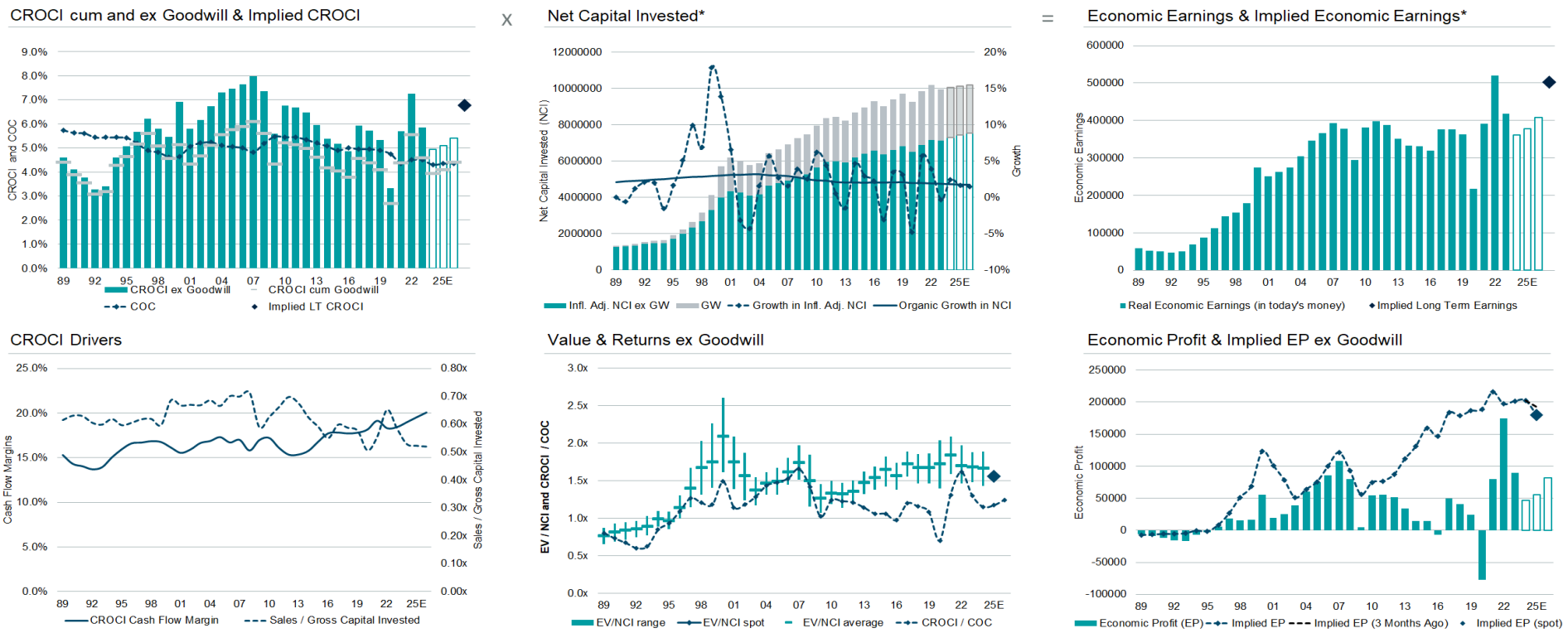
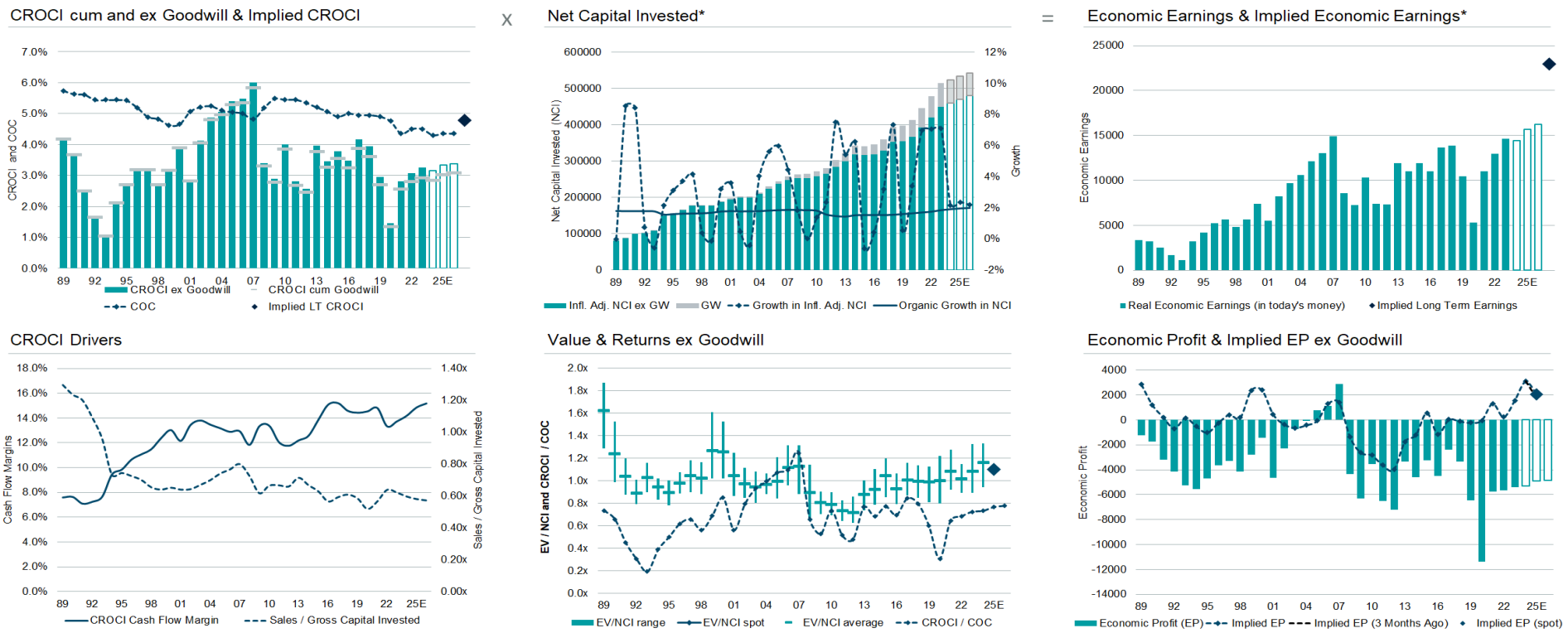
Figure 98: Europe Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (EUR bn)	5267	5949	5451	4856	5523	5870	6177	6691	7418	8315	8190	8843	9004	9463	9474	10888	10701	11107	11848	11565	11377
Market Cap (EUR bn)	4020	4627	3762	3129	3797	4024	4237	4821	5384	6115	5803	6428	6521	6752	6663	8127	7982	8381	9062	8852	8852
EV/NCI Ex. GW	1.61x	1.74x	1.49x	1.27x	1.33x	1.32x	1.36x	1.47x	1.53x	1.64x	1.56x	1.72x	1.67x	1.67x	1.72x	1.84x	1.69x	1.68x	1.66x	1.56x	1.48x
Economic PE	21.1x	21.8x	20.3x	22.6x	19.7x	19.7x	21.0x	24.8x	28.5x	31.7x	32.0x	29.1x	29.2x	31.4x	51.7x	32.2x	23.3x	28.6x	33.5x	30.6x	27.3x
Accounting PE	14.4x	14.8x	13.2x	14.0x	12.2x	11.7x	12.7x	15.8x	17.9x	20.1x	18.7x	17.3x	16.9x	17.8x	26.6x	17.1x	12.3x	15.0x	17.5x	15.7x	14.4x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	7.6%	8.0%	7.4%	5.6%	6.8%	6.7%	6.5%	5.9%	5.4%	5.2%	4.9%	5.9%	5.7%	5.3%	3.3%	5.7%	7.3%	5.9%	5.0%	5.1%	5.4%
Implied CROCI	8.1%	8.4%	7.7%	6.9%	7.3%	7.2%	7.3%	7.6%	7.8%	8.0%	7.8%	8.5%	8.3%	8.2%	8.2%	8.0%	7.6%	7.5%	7.1%	6.8%	6.4%
Implied Economic Earnings/ Economic Earnings	106%	105%	105%	124%	107%	107%	112%	129%	145%	155%	160%	144%	145%	154%	245%	140%	105%	129%	144%	133%	119%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in EUR as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

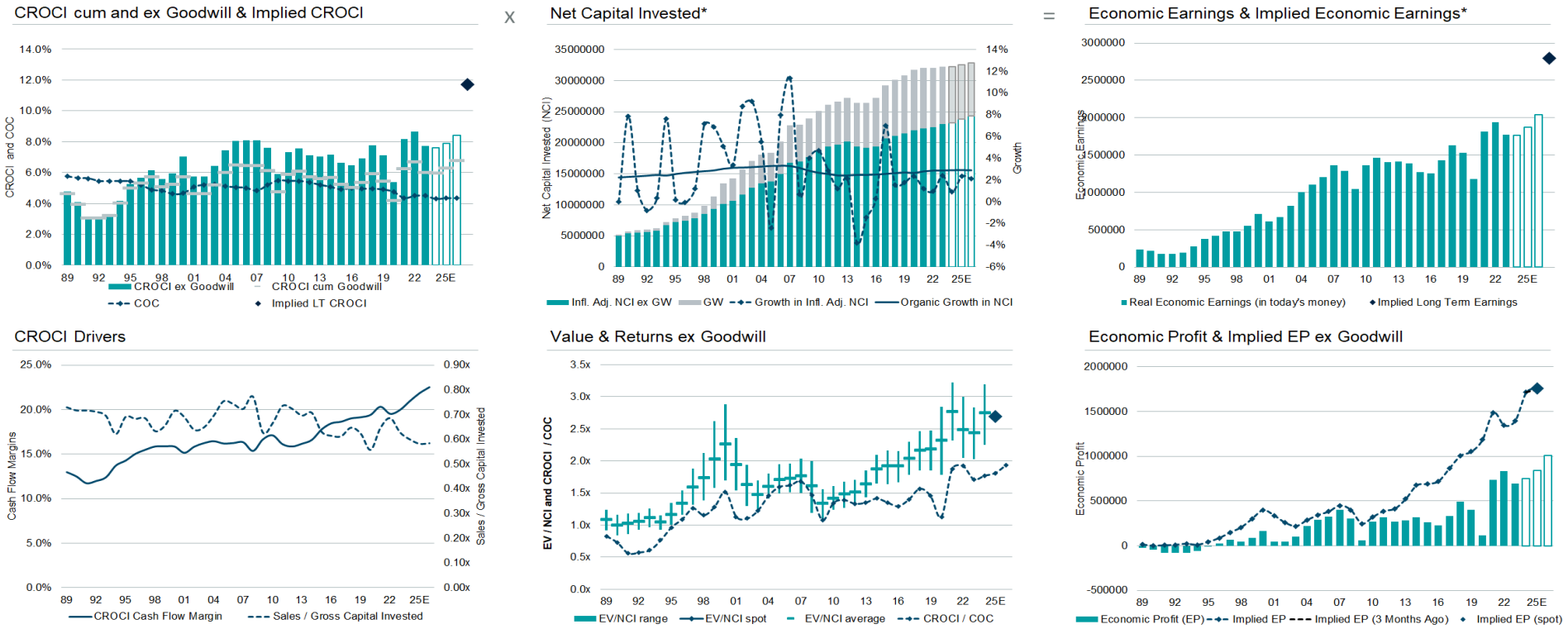
Figure 99: Japan Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (JPY tn)	259	272	219	195	193	179	185	237	262	300	273	307	326	327	344	403	404	467	531	527	517
Market Cap (JPY tn)	210	217	150	128	132	117	118	174	199	232	210	248	260	254	273	331	324	388	449	453	453
EV/NCI Ex. GW	1.11x	1.12x	0.89x	0.80x	0.79x	0.73x	0.71x	0.88x	0.92x	1.04x	0.92x	1.00x	0.99x	0.99x	1.00x	1.08x	1.01x	1.08x	1.16x	1.10x	1.03x
Economic PE	20.3x	18.7x	26.3x	27.9x	19.7x	26.0x	27.8x	22.1x	26.5x	27.6x	26.6x	24.0x	25.2x	33.4x	68.6x	38.5x	32.9x	33.1x	36.8x	33.0x	30.6x
Accounting PE	17.1x	16.5x	29.4x	21.5x	13.4x	16.2x	14.2x	13.8x	14.0x	15.8x	13.8x	13.2x	13.4x	15.1x	18.9x	14.0x	12.6x	12.9x	15.8x	14.7x	13.7x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	5.5%	6.0%	3.4%	2.9%	4.0%	2.8%	2.6%	4.0%	3.5%	3.8%	3.5%	4.2%	3.9%	2.9%	1.5%	2.8%	3.1%	3.3%	3.1%	3.3%	3.4%
Implied CROCI	5.6%	5.4%	4.6%	4.4%	4.3%	4.0%	3.8%	4.6%	4.6%	5.1%	4.6%	5.0%	4.9%	4.8%	4.7%	4.7%	4.6%	4.9%	5.0%	4.8%	4.5%
Implied Economic Earnings/ Economic Earnings	101%	90%	136%	153%	107%	142%	148%	115%	135%	135%	133%	119%	125%	164%	326%	168%	148%	149%	158%	144%	133%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in JPY as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Figure 100: Developed Markets Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	18231	21490	20257	17798	20023	21907	22872	25721	28546	29394	30044	34380	37736	39528	43736	53504	49915	52732	62643	64316	62929
Market Cap (USD bn)	14988	17685	15298	12803	15178	16660	17372	20356	22987	23535	23694	27247	29875	31123	34880	44803	41324	43967	53779	56336	56337
EV/NCI Ex. GW	1.72x	1.77x	1.61x	1.34x	1.41x	1.48x	1.51x	1.64x	1.87x	1.92x	1.92x	2.03x	2.16x	2.19x	2.32x	2.77x	2.49x	2.43x	2.75x	2.69x	2.53x
Economic PE	21.3x	21.8x	21.3x	22.6x	19.3x	19.5x	21.1x	23.3x	26.1x	29.0x	29.7x	29.3x	27.9x	30.7x	43.3x	34.0x	28.7x	31.5x	36.2x	34.2x	30.1x
Accounting PE	15.8x	16.1x	15.3x	15.8x	13.2x	12.9x	13.8x	15.9x	17.5x	19.4x	19.0x	18.7x	17.9x	19.3x	25.7x	20.9x	17.3x	19.0x	22.5x	21.7x	19.5x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	8.1%	8.1%	7.6%	5.9%	7.3%	7.6%	7.1%	7.0%	7.2%	6.6%	6.5%	6.9%	7.8%	7.1%	5.4%	8.2%	8.6%	7.7%	7.6%	7.9%	8.4%
Implied CROCI	8.6%	8.5%	8.4%	7.3%	7.7%	8.1%	8.1%	8.5%	9.5%	9.4%	9.6%	10.1%	10.7%	10.7%	11.0%	12.0%	11.2%	10.9%	11.8%	11.7%	11.0%
Implied Economic Earnings/ Economic Earnings	106%	105%	110%	124%	105%	106%	113%	121%	132%	142%	148%	145%	138%	150%	206%	148%	129%	142%	156%	149%	131%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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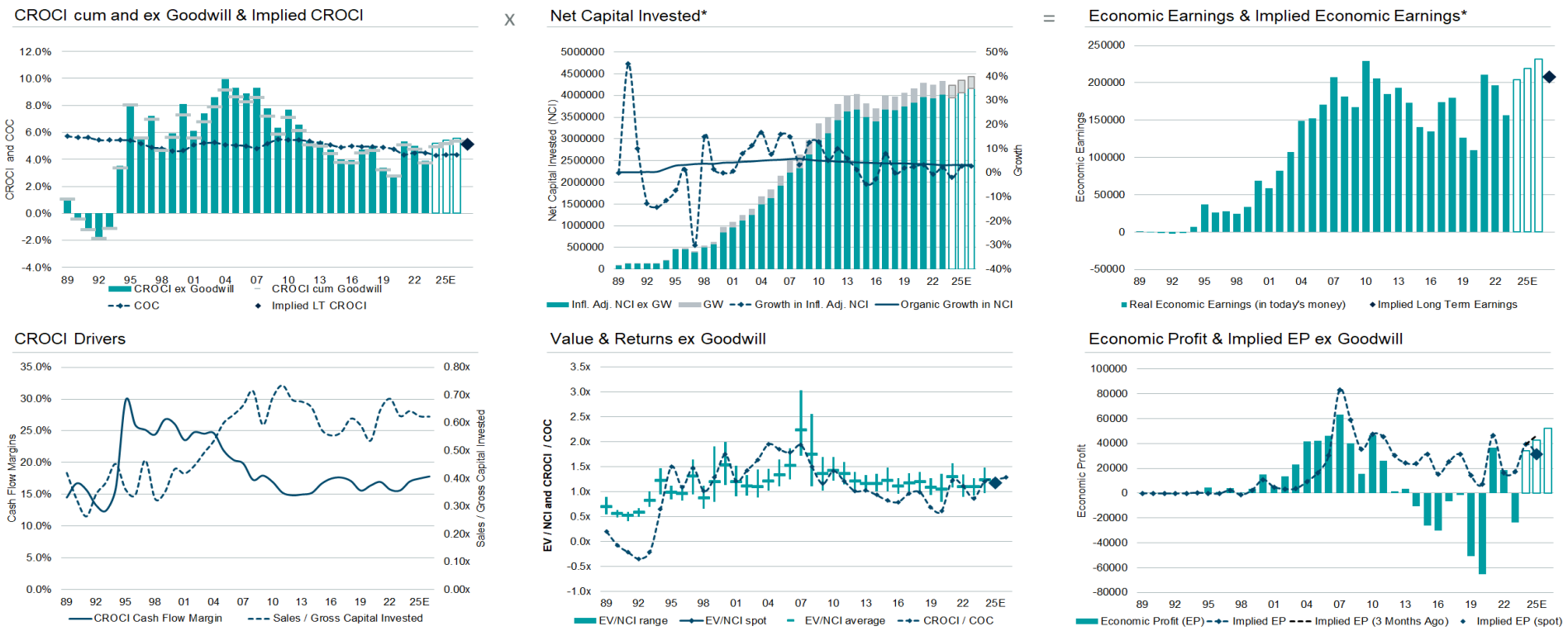
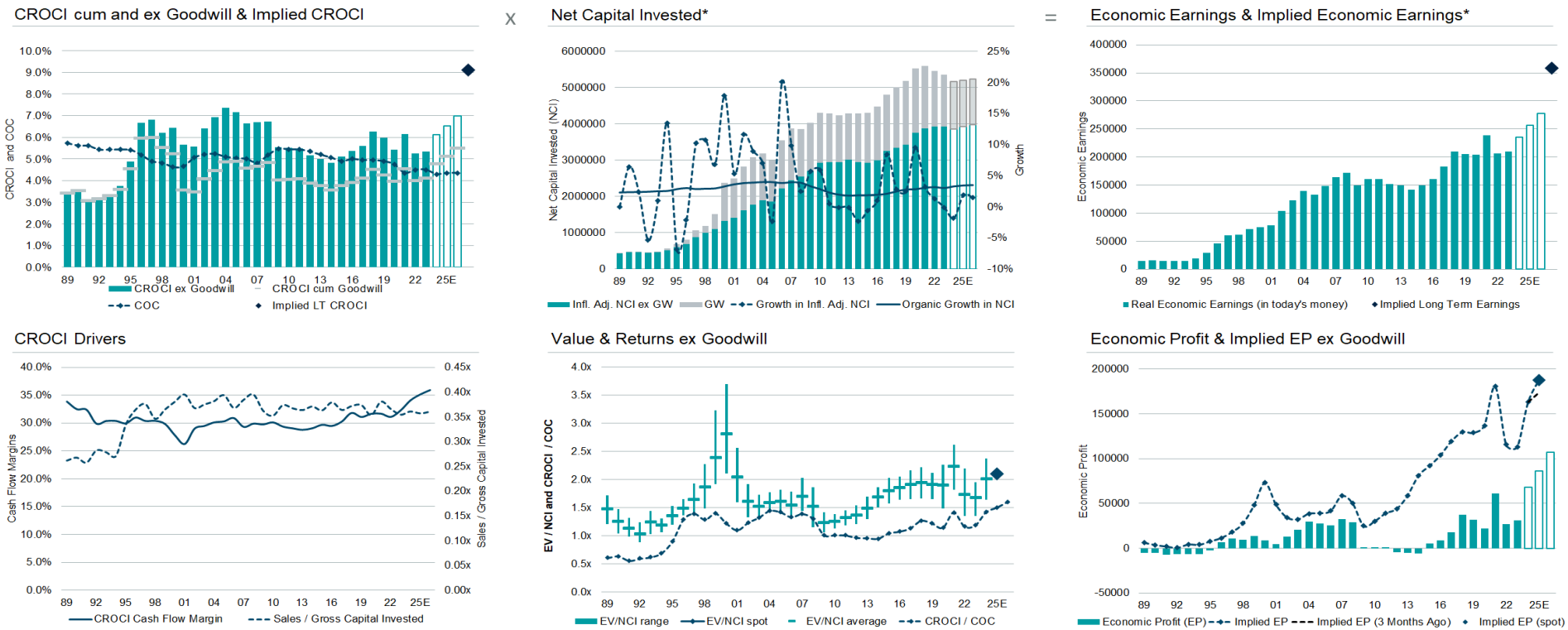
Figure 101: Emerging Markets Equities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	1784	3137	2677	2465	2934	3132	3247	3383	3502	3582	3200	3678	3869	3650	3648	4727	4111	4309	4806	4783	4668
Market Cap (USD bn)	1502	2806	2285	2050	2468	2625	2614	2683	2778	2887	2554	3072	3258	3047	3222	4250	3538	3697	4235	4294	4294
EV/NCI Ex. GW	1.51x	2.23x	1.74x	1.35x	1.42x	1.36x	1.21x	1.16x	1.16x	1.22x	1.11x	1.16x	1.19x	1.09x	1.04x	1.29x	1.10x	1.10x	1.23x	1.18x	1.10x
Economic PE	17.0x	23.9x	22.4x	21.3x	18.4x	20.6x	22.4x	21.8x	24.5x	30.3x	28.0x	24.5x	24.4x	32.0x	36.3x	24.2x	22.0x	28.1x	23.9x	21.8x	19.7x
Accounting PE	12.7x	19.5x	18.7x	15.4x	13.4x	14.1x	14.1x	13.6x	14.8x	18.2x	16.7x	15.5x	14.6x	17.4x	18.4x	14.7x	12.7x	15.1x	13.7x	12.9x	11.8x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	8.9%	9.3%	7.8%	6.3%	7.7%	6.6%	5.4%	5.3%	4.7%	4.0%	4.0%	4.7%	4.9%	3.4%	2.9%	5.3%	5.0%	3.9%	5.2%	5.4%	5.6%
Implied CROCI	7.6%	10.7%	9.0%	7.4%	7.7%	7.4%	6.5%	6.0%	5.9%	6.0%	5.5%	5.8%	5.9%	5.3%	5.0%	5.6%	4.9%	4.9%	5.3%	5.1%	4.8%
Implied Economic Earnings/ Economic Earnings	85%	115%	116%	117%	101%	113%	120%	114%	124%	148%	140%	121%	121%	157%	172%	105%	99%	126%	103%	95%	86%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

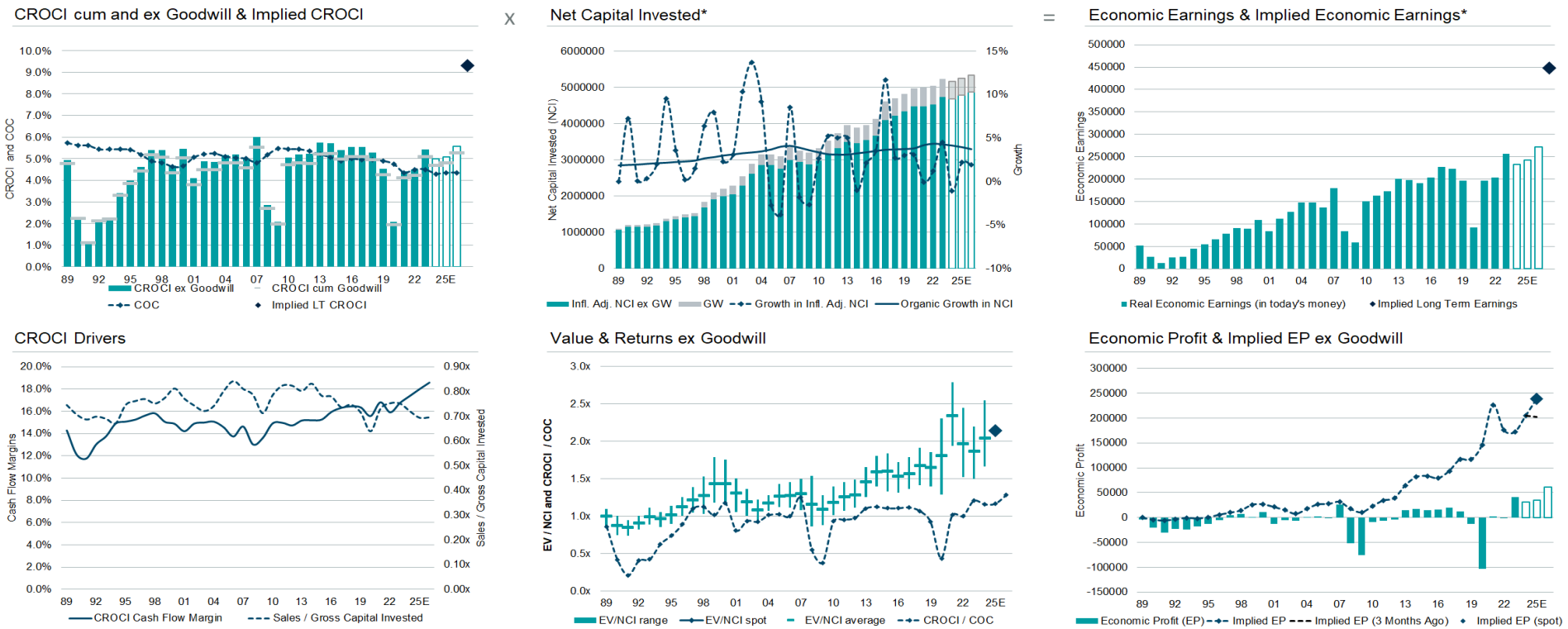
Figure 102: Communication Services CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2394	2959	2821	2478	2743	2952	3104	3494	3939	4237	4519	5092	5417	5544	6126	7541	6105	6227	7569	8250	7982
Market Cap (USD bn)	1681	2274	1979	1652	1908	2071	2195	2507	2975	3226	3417	3934	4123	4271	4830	6214	4771	4892	6340	7195	7196
EV/NCI Ex. GW	1.54x	1.69x	1.52x	1.22x	1.25x	1.32x	1.36x	1.48x	1.69x	1.79x	1.85x	1.90x	1.94x	1.90x	1.89x	2.22x	1.73x	1.68x	2.00x	2.10x	1.96x
Economic PE	23.1x	25.3x	22.5x	22.1x	22.8x	24.1x	26.4x	29.7x	35.0x	35.0x	34.4x	33.9x	30.9x	31.8x	34.8x	36.1x	32.9x	31.4x	32.8x	32.1x	28.1x
Accounting PE	16.0x	17.9x	14.5x	12.1x	13.0x	13.3x	13.8x	16.1x	19.1x	20.3x	19.2x	19.9x	18.6x	18.9x	20.0x	20.9x	17.8x	16.6x	18.2x	18.9x	17.2x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	6.6%	6.7%	6.7%	5.5%	5.5%	5.5%	5.2%	5.0%	4.8%	5.1%	5.4%	5.6%	6.3%	6.0%	5.4%	6.2%	5.3%	5.3%	6.1%	6.5%	7.0%
Implied CROCI	7.7%	8.2%	7.9%	6.7%	6.8%	7.2%	7.3%	7.7%	8.5%	8.8%	9.2%	9.4%	9.6%	9.3%	9.0%	9.7%	7.8%	7.5%	8.6%	9.1%	8.5%
Implied Economic Earnings/ Economic Earnings	115%	122%	117%	121%	124%	131%	141%	154%	178%	172%	172%	168%	153%	156%	165%	157%	148%	141%	141%	140%	122%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

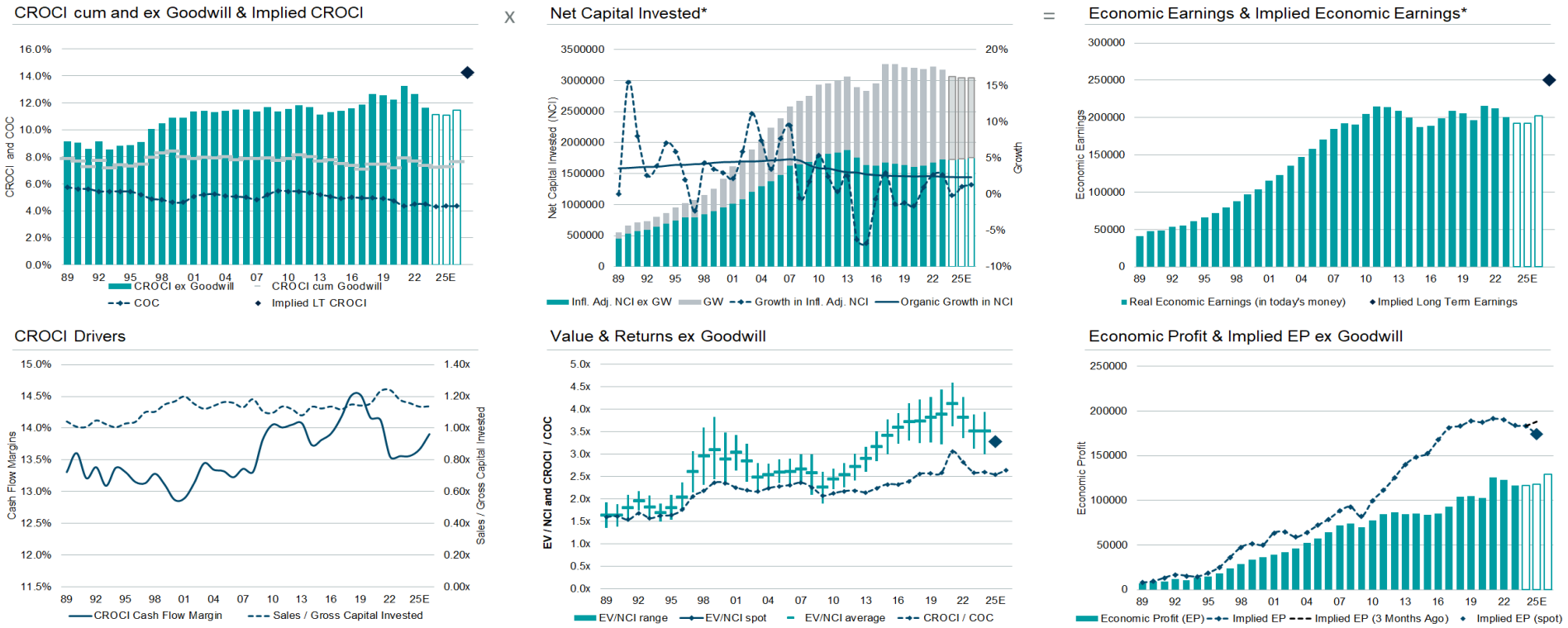
Figure 103: Consumer Discretionary CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2564	2900	2575	2407	2748	3101	3321	3998	4358	4559	4584	5278	5882	6062	6938	9123	7972	8275	9357	10296	10111
Market Cap (USD bn)	1772	2025	1521	1409	1879	2186	2344	3000	3306	3445	3374	3912	4412	4460	5299	7592	6371	6604	7678	8739	8739
EV/NCI Ex. GW	1.27x	1.29x	1.15x	1.09x	1.18x	1.26x	1.28x	1.45x	1.58x	1.60x	1.53x	1.56x	1.67x	1.65x	1.80x	2.33x	1.96x	1.86x	2.04x	2.14x	2.02x
Economic PE	25.5x	21.5x	40.4x	52.6x	23.3x	24.2x	24.6x	25.3x	27.8x	29.5x	27.6x	28.2x	31.5x	36.3x	87.1x	53.0x	43.6x	34.2x	40.8x	42.2x	36.3x
Accounting PE	18.9x	16.6x	43.3x	40.9x	13.9x	14.4x	14.3x	15.8x	16.6x	17.2x	15.9x	16.6x	18.4x	20.6x	37.7x	26.0x	21.2x	17.8x	22.0x	23.4x	20.9x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	5.0%	6.0%	2.8%	2.1%	5.1%	5.2%	5.2%	5.7%	5.7%	5.4%	5.5%	5.5%	5.3%	4.5%	2.1%	4.4%	4.5%	5.4%	5.0%	5.1%	5.6%
Implied CROCI	6.4%	6.2%	6.0%	6.0%	6.4%	6.9%	6.8%	7.6%	8.0%	7.8%	7.6%	7.7%	8.3%	8.1%	8.5%	10.2%	8.8%	8.4%	8.8%	9.3%	8.8%
Implied Economic Earnings/ Economic Earnings	128%	104%	209%	288%	127%	132%	131%	132%	141%	145%	138%	139%	156%	178%	414%	231%	196%	154%	176%	183%	158%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Figure 104: Consumer Staples CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2560	2926	2934	2683	3099	3367	3710	4120	4288	4397	4644	5008	5058	5219	5320	5807	5733	5714	5957	5752	5654
Market Cap (USD bn)	2144	2469	2284	2093	2499	2706	3033	3431	3580	3709	3894	4132	4113	4299	4430	4931	4786	4777	5033	4896	4896
EV/NCI Ex. GW	2.61x	2.66x	2.57x	2.26x	2.44x	2.54x	2.71x	2.89x	3.16x	3.41x	3.59x	3.71x	3.73x	3.82x	3.88x	4.12x	3.81x	3.50x	3.51x	3.28x	3.12x
Economic PE	22.6x	23.4x	22.0x	19.9x	21.1x	21.4x	23.2x	26.0x	27.9x	30.0x	30.9x	31.3x	29.5x	30.4x	31.7x	31.0x	30.1x	30.1x	31.5x	29.7x	27.2x
Accounting PE	18.3x	18.9x	17.1x	14.8x	15.8x	15.6x	17.0x	19.1x	20.8x	22.1x	22.4x	22.3x	20.6x	21.4x	22.0x	21.7x	21.4x	20.6x	21.1x	19.6x	18.2x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	11.5%	11.4%	11.7%	11.4%	11.6%	11.8%	11.7%	11.1%	11.3%	11.4%	11.6%	11.9%	12.6%	12.6%	12.2%	13.3%	12.7%	11.6%	11.2%	11.1%	11.5%
Implied CROCI	13.0%	12.8%	13.3%	12.4%	13.3%	13.8%	14.5%	15.0%	16.0%	16.7%	18.0%	18.4%	18.5%	18.7%	18.4%	17.9%	17.2%	15.8%	15.1%	14.3%	13.6%
Implied Economic Earnings/ Economic Earnings	113%	113%	114%	109%	115%	117%	124%	135%	141%	147%	155%	155%	146%	149%	151%	135%	136%	135%	135%	129%	118%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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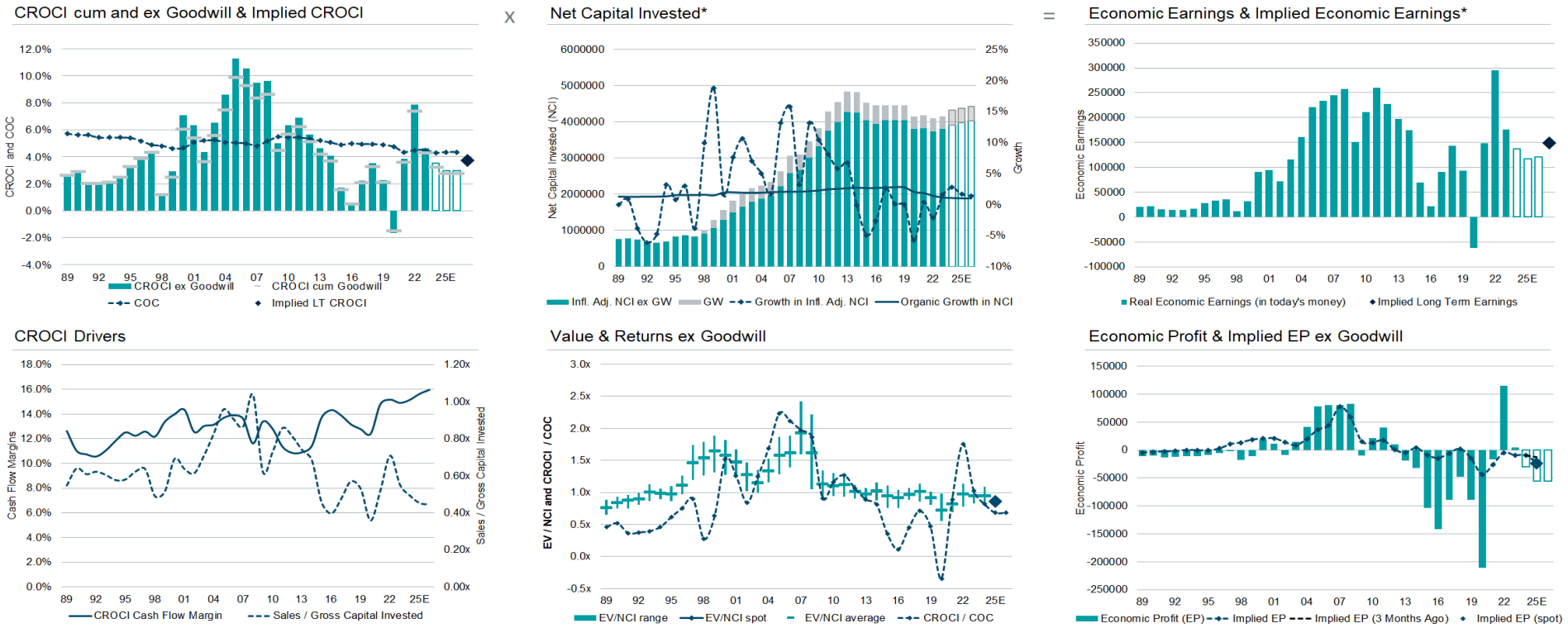
Figure 105: Energy CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2341	3335	2971	2445	2636	3096	3071	3223	3455	3076	2901	3173	3408	3139	2381	2740	3292	3436	3623	3424	3336
Market Cap (USD bn)	2234	3234	2760	2159	2300	2659	2568	2680	2858	2464	2253	2521	2780	2454	1670	2079	2733	2892	3024	2903	2903
EV/NCI Ex. GW	1.61x	1.93x	1.61x	1.13x	1.10x	1.12x	1.01x	0.97x	1.02x	0.94x	0.91x	0.96x	1.01x	0.91x	0.72x	0.82x	0.97x	0.94x	0.94x	0.86x	0.81x
Economic PE	15.2x	20.3x	16.7x	22.6x	17.3x	16.1x	17.7x	21.0x	24.9x	54.8x	nm	42.9x	28.7x	39.7x	nm	21.2x	12.3x	20.4x	26.9x	29.1x	27.2x
Accounting PE	9.9x	13.1x	11.1x	14.5x	11.3x	9.7x	10.4x	12.4x	14.6x	28.9x	48.7x	20.5x	14.6x	16.6x	nm	9.4x	6.2x	9.3x	11.5x	11.6x	10.9x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	10.6%	9.5%	9.6%	5.0%	6.3%	6.9%	5.7%	4.6%	4.1%	1.7%	0.6%	2.2%	3.5%	2.3%	-1.6%	3.9%	7.9%	4.6%	3.5%	3.0%	3.0%
Implied CROCI	8.0%	9.3%	8.4%	6.2%	6.0%	6.1%	5.4%	5.0%	5.2%	4.6%	4.5%	4.8%	5.0%	4.5%	3.4%	3.6%	4.4%	4.2%	4.1%	3.7%	3.5%
Implied Economic Earnings/ Economic Earnings	76%	98%	87%	124%	95%	88%	95%	109%	126%	269%	817%	212%	142%	195%	nm	92%	55%	92%	116%	126%	118%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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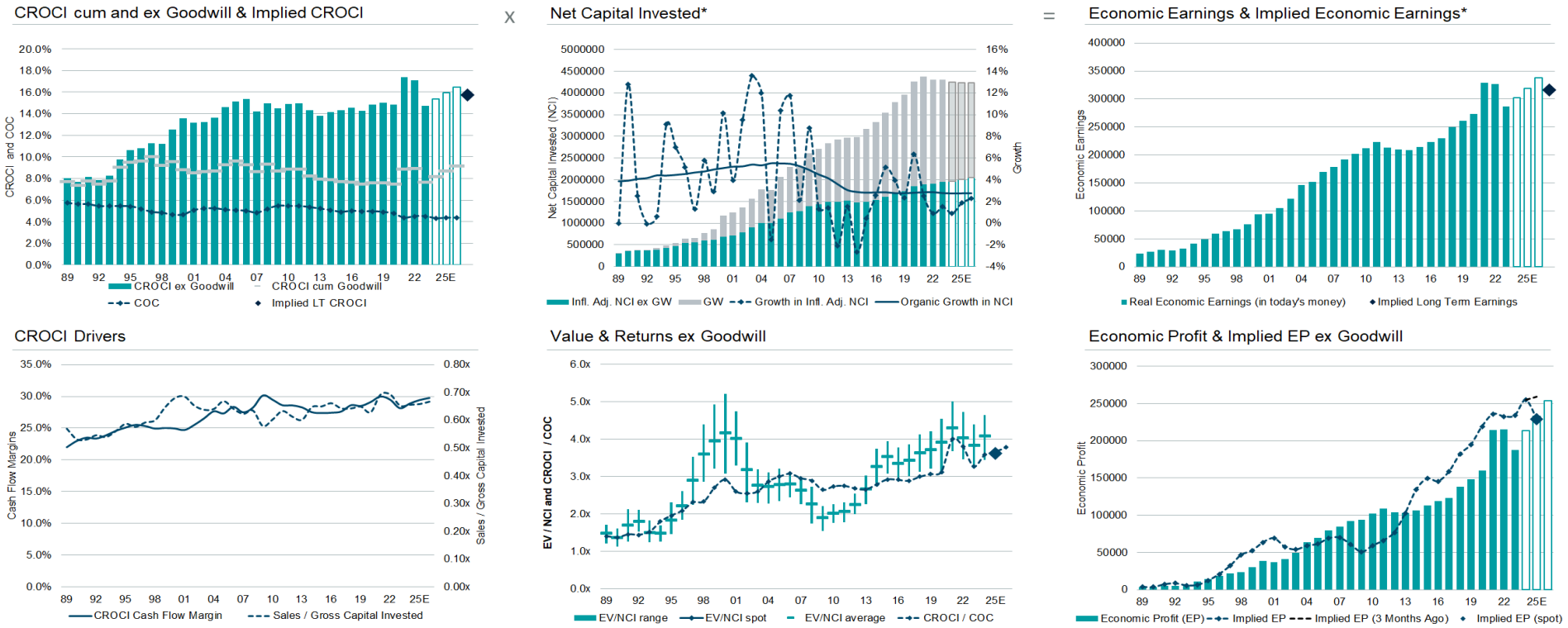
Figure 106: Healthcare CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2152	2348	2118	1966	2171	2358	2599	3173	3824	4248	4156	4528	5079	5443	6193	7062	6877	7037	7850	7271	7026
Market Cap (USD bn)	2052	2235	1951	1749	1937	2070	2281	2882	3452	3779	3591	3864	4277	4563	5216	6054	5971	6110	6911	6542	6542
EV/NCI Ex. GW	2.79x	2.62x	2.25x	1.89x	2.00x	2.06x	2.24x	2.66x	3.26x	3.53x	3.34x	3.43x	3.62x	3.71x	3.91x	4.29x	4.03x	3.82x	4.07x	3.62x	3.36x
Economic PE	18.1x	18.4x	15.1x	13.0x	13.4x	13.8x	15.7x	19.3x	23.1x	24.7x	23.0x	24.0x	24.4x	24.7x	26.4x	24.7x	23.6x	26.0x	26.5x	22.7x	20.4x
Accounting PE	17.8x	17.7x	14.2x	12.7x	12.3x	12.3x	13.7x	16.9x	19.3x	20.3x	18.1x	18.4x	18.5x	18.6x	19.9x	18.3x	17.6x	19.7x	20.4x	17.5x	16.0x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	15.4%	14.2%	15.0%	14.5%	14.9%	15.0%	14.3%	13.8%	14.1%	14.3%	14.5%	14.3%	14.8%	15.0%	14.8%	17.4%	17.1%	14.7%	15.4%	15.9%	16.5%
Implied CROCI	13.9%	12.6%	11.7%	10.4%	10.9%	11.2%	12.0%	13.8%	16.5%	17.3%	16.7%	17.0%	17.9%	18.2%	18.6%	18.7%	18.1%	17.2%	17.5%	15.7%	14.6%
Implied Economic Earnings/ Economic Earnings	91%	89%	78%	71%	73%	75%	84%	100%	117%	121%	115%	119%	121%	121%	125%	108%	106%	117%	114%	99%	89%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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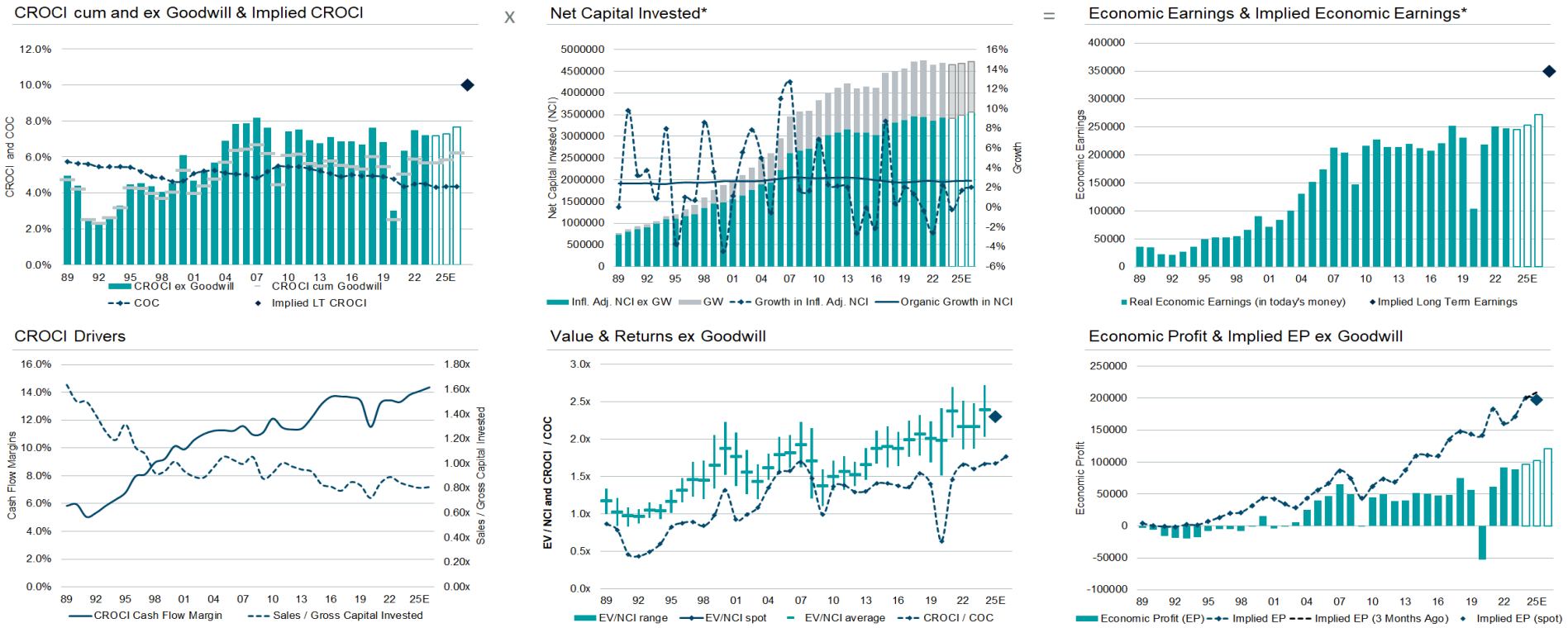
Figure 107: Industrials CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2959	3752	3479	2908	3427	3738	3749	4219	4670	4806	4716	5493	5796	5848	6026	7285	6620	7070	8030	8046	7904
Market Cap (USD bn)	2321	2945	2410	1844	2358	2608	2548	3087	3505	3569	3442	4073	4275	4286	4382	5686	5089	5509	6455	6575	6575
EV/NCI Ex. GW	1.81x	1.92x	1.71x	1.37x	1.50x	1.56x	1.52x	1.66x	1.87x	1.89x	1.87x	1.99x	2.06x	2.00x	1.98x	2.37x	2.16x	2.16x	2.38x	2.30x	2.17x
Economic PE	23.0x	23.5x	22.3x	25.4x	20.2x	20.8x	21.9x	24.5x	26.2x	27.5x	27.2x	29.7x	27.0x	29.3x	65.7x	37.3x	28.9x	30.0x	33.2x	31.7x	28.3x
Accounting PE	16.5x	17.1x	16.0x	18.7x	13.8x	13.4x	13.4x	15.9x	16.6x	17.6x	16.8x	18.2x	16.6x	17.3x	33.0x	19.8x	15.1x	17.1x	19.7x	19.0x	17.2x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	7.9%	8.2%	7.6%	5.4%	7.4%	7.5%	6.9%	6.8%	7.1%	6.9%	6.9%	6.7%	7.6%	6.8%	3.0%	6.3%	7.5%	7.2%	7.2%	7.3%	7.7%
Implied CROCI	9.1%	9.3%	8.8%	7.5%	8.2%	8.5%	8.1%	8.6%	9.5%	9.3%	9.4%	9.9%	10.2%	9.8%	9.4%	10.3%	9.7%	9.7%	10.2%	10.0%	9.4%
Implied Economic Earnings/ Economic Earnings	115%	113%	116%	139%	110%	113%	117%	127%	133%	135%	136%	147%	134%	143%	312%	162%	130%	135%	143%	138%	123%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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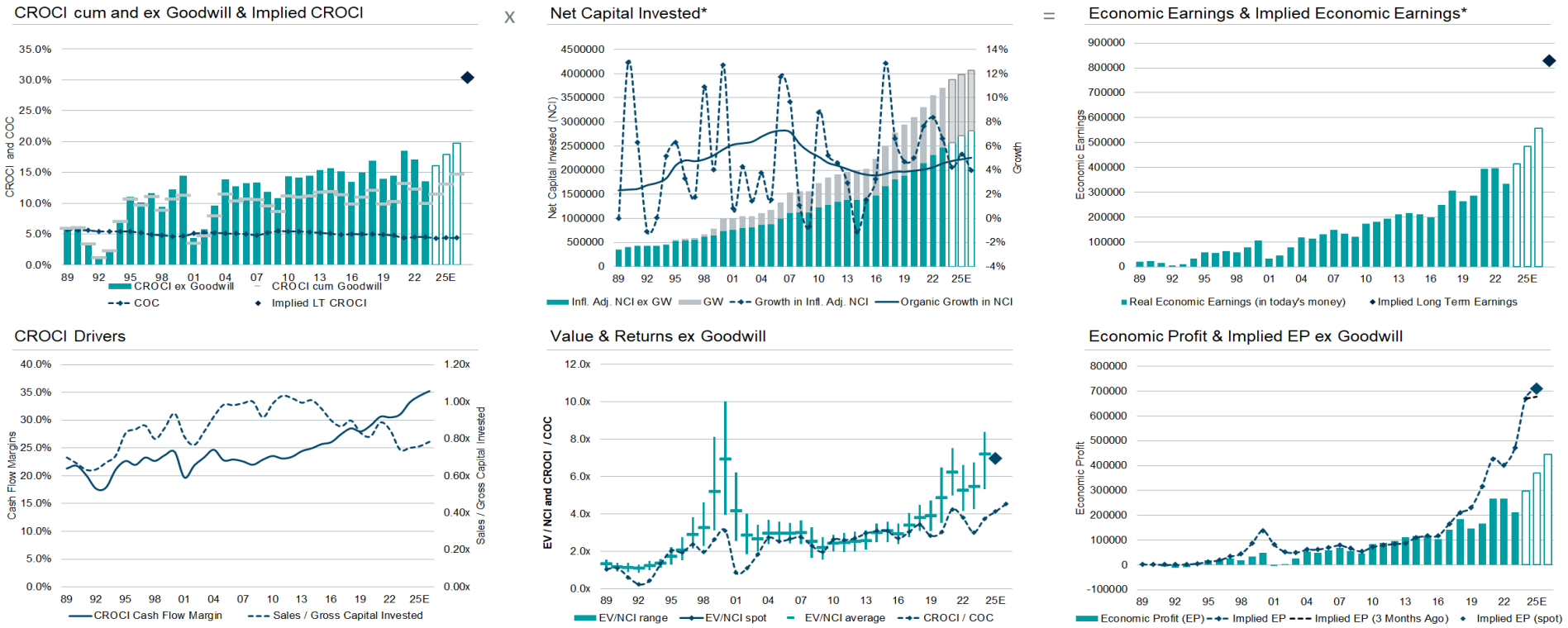
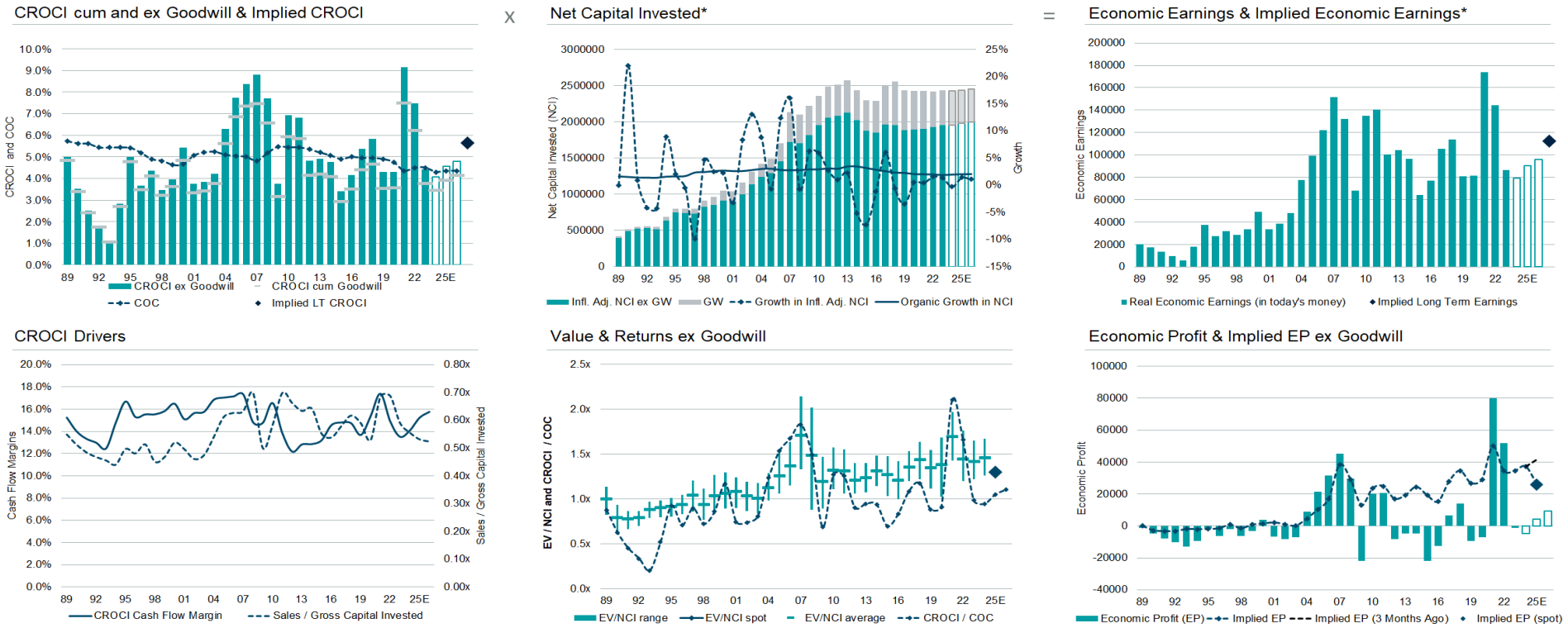
Figure 108: Information Technology CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	2126	2467	2142	1864	2274	2475	2651	2811	3295	3521	3583	4736	5789	6353	8386	11701	11053	12807	18132	19029	18536
Market Cap (USD bn)	2183	2483	2080	1861	2314	2495	2683	2925	3388	3597	3619	4695	5571	6022	8061	11372	10657	12361	17657	18810	18810
EV/NCI Ex. GW	2.95x	2.99x	2.52x	2.17x	2.40x	2.46x	2.50x	2.55x	2.97x	3.09x	2.92x	3.38x	3.77x	3.89x	4.84x	6.20x	5.24x	5.45x	7.17x	6.98x	6.41x
Economic PE	22.3x	22.5x	21.3x	20.1x	16.8x	17.4x	17.3x	16.6x	19.0x	20.4x	21.8x	22.6x	22.3x	28.0x	33.6x	33.6x	30.6x	40.2x	44.6x	39.0x	32.5x
Accounting PE	19.8x	19.2x	19.0x	16.5x	13.4x	13.8x	13.7x	13.7x	15.0x	15.6x	16.0x	16.5x	16.3x	19.7x	23.5x	24.4x	22.6x	27.2x	31.5x	28.4x	24.6x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	13.2%	13.3%	11.9%	10.8%	14.3%	14.2%	14.4%	15.3%	15.6%	15.1%	13.4%	15.0%	16.9%	13.9%	14.4%	18.5%	17.1%	13.6%	16.1%	17.9%	19.7%
Implied CROCI	14.7%	14.4%	13.1%	11.9%	13.1%	13.4%	13.4%	13.2%	15.1%	15.1%	14.6%	16.7%	18.7%	19.1%	23.0%	27.0%	23.6%	24.5%	30.8%	30.4%	27.9%
Implied Economic Earnings/ Economic Earnings	111%	108%	110%	110%	91%	95%	93%	86%	96%	100%	109%	112%	110%	137%	159%	146%	138%	181%	192%	170%	141%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

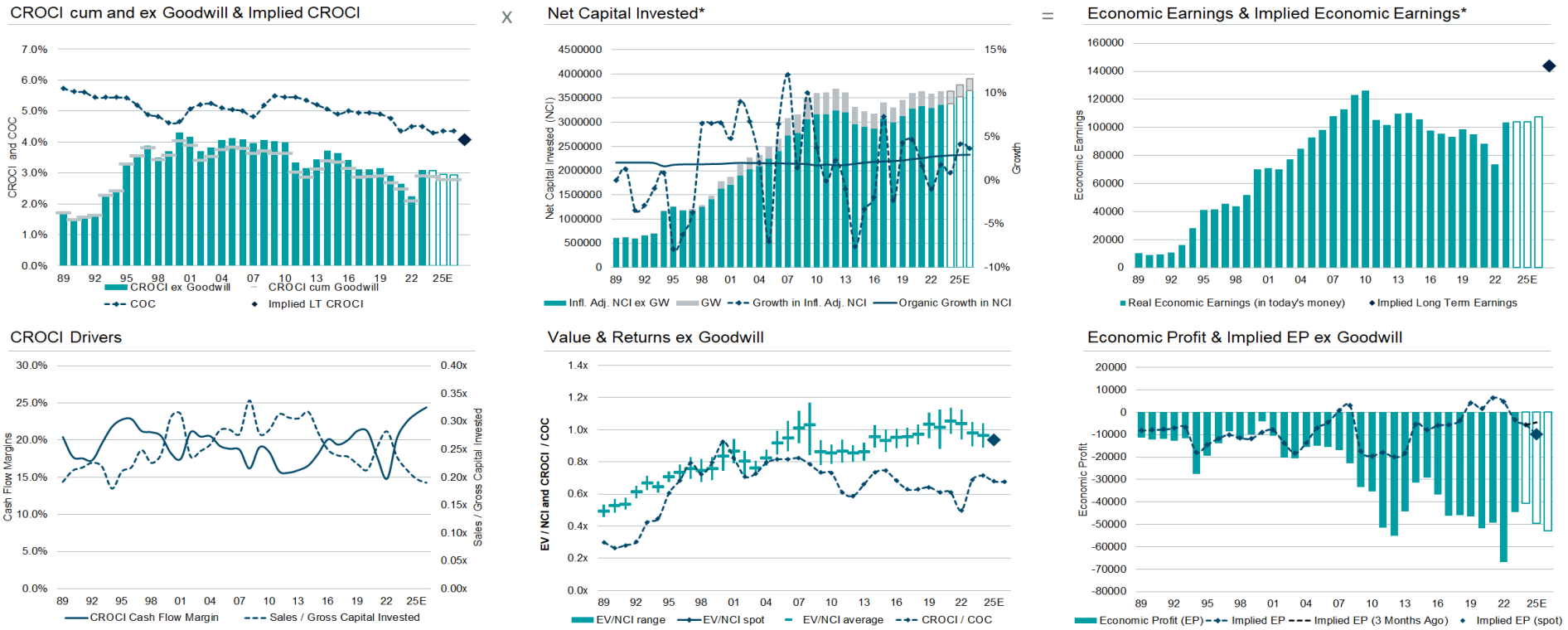
Figure 109: Materials CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	1271	1926	1724	1499	1805	1950	1868	1978	2039	1868	1786	2162	2317	2138	2240	2808	2500	2616	2780	2586	2536
Market Cap (USD bn)	1078	1570	1326	1093	1424	1520	1375	1465	1507	1336	1293	1694	1813	1619	1733	2311	2028	2103	2248	2085	2085
EV/NCI Ex. GW	1.36x	1.71x	1.48x	1.19x	1.31x	1.31x	1.21x	1.23x	1.31x	1.26x	1.21x	1.35x	1.43x	1.34x	1.37x	1.69x	1.44x	1.41x	1.45x	1.30x	1.23x
Economic PE	16.3x	19.3x	19.2x	31.7x	19.0x	19.1x	25.0x	25.1x	27.5x	37.1x	29.1x	25.2x	24.6x	31.2x	31.9x	18.5x	19.3x	31.9x	35.8x	28.5x	25.7x
Accounting PE	11.1x	13.3x	13.5x	19.2x	12.8x	12.5x	15.6x	16.2x	16.8x	21.3x	16.3x	14.9x	14.2x	16.8x	17.1x	10.7x	10.9x	15.8x	18.0x	14.6x	13.5x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	8.4%	8.8%	7.7%	3.7%	6.9%	6.8%	4.8%	4.9%	4.8%	3.4%	4.1%	5.4%	5.8%	4.3%	4.3%	9.2%	7.5%	4.4%	4.1%	4.6%	4.8%
Implied CROCI	6.8%	8.2%	7.7%	6.5%	7.2%	7.1%	6.5%	6.4%	6.6%	6.2%	6.0%	6.7%	7.1%	6.6%	6.5%	7.4%	6.5%	6.4%	6.2%	5.7%	5.4%
Implied Economic Earnings/ Economic Earnings	81%	93%	100%	174%	103%	104%	134%	130%	140%	182%	145%	125%	122%	153%	151%	80%	87%	144%	154%	124%	112%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Figure 110: Utilities CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	1617	1996	2115	1976	2053	2104	2133	2149	2227	2161	2206	2411	2432	2730	2847	3049	3056	3078	3183	3308	3427
Market Cap (USD bn)	998	1243	1201	943	992	989	954	1024	1131	1090	1119	1197	1248	1436	1486	1649	1604	1545	1607	1635	1635
EV/NCI Ex. GW	0.95x	1.01x	1.03x	0.86x	0.85x	0.87x	0.85x	0.86x	0.96x	0.93x	0.95x	0.96x	0.97x	1.03x	1.01x	1.05x	1.04x	0.98x	0.96x	0.94x	0.92x
Economic PE	23.2x	25.4x	25.3x	21.4x	21.4x	26.0x	27.1x	25.1x	25.7x	25.5x	27.8x	30.7x	31.2x	32.8x	34.9x	39.6x	46.4x	31.6x	31.3x	31.7x	31.2x
Accounting PE	16.1x	17.5x	16.8x	12.6x	12.8x	17.3x	16.0x	15.5x	15.9x	14.8x	15.5x	16.5x	17.5x	18.4x	19.1x	21.5x	23.3x	14.9x	14.9x	14.7x	14.1x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	4.1%	4.0%	4.1%	4.0%	4.0%	3.3%	3.1%	3.4%	3.7%	3.6%	3.4%	3.1%	3.1%	3.1%	2.9%	2.7%	2.2%	3.1%	3.1%	3.0%	2.9%
Implied CROCI	4.7%	4.9%	5.3%	4.7%	4.6%	4.7%	4.6%	4.5%	4.8%	4.6%	4.8%	4.7%	4.8%	5.1%	4.8%	4.6%	4.7%	4.4%	4.1%	4.1%	4.0%
Implied Economic Earnings/ Economic Earnings	116%	123%	131%	117%	116%	142%	145%	130%	130%	125%	139%	152%	154%	160%	166%	172%	209%	142%	135%	138%	136%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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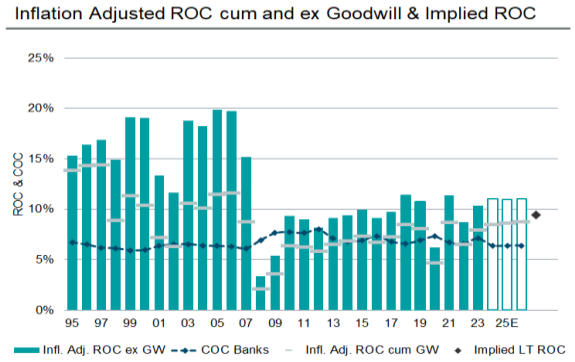
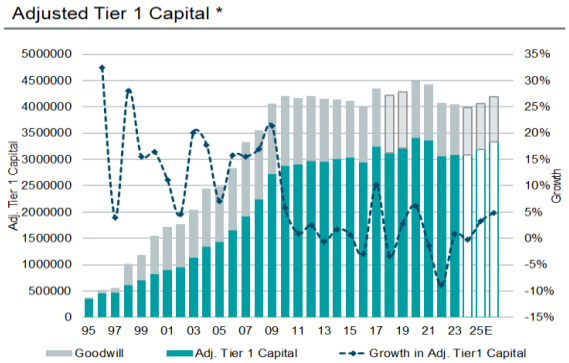
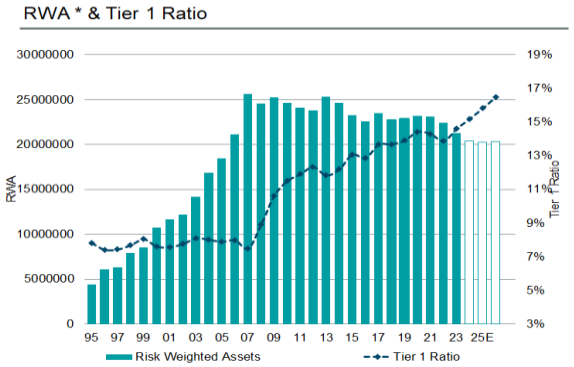
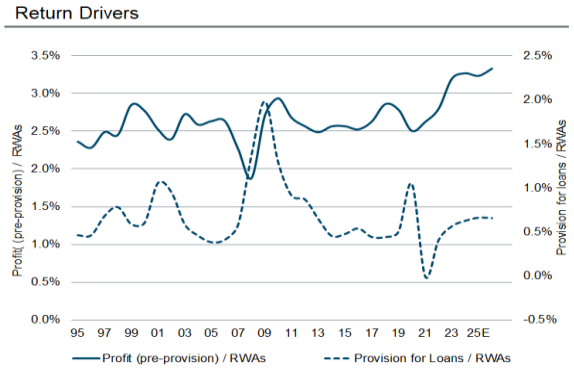
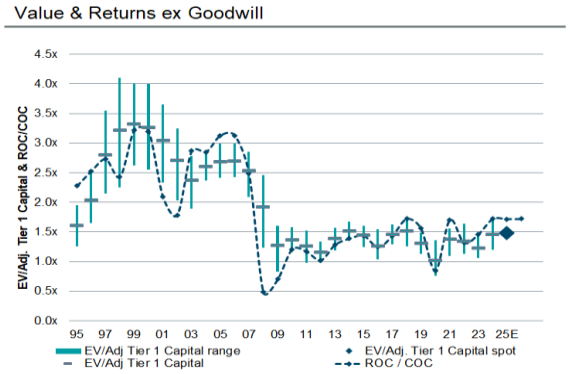
Figure 111: Financials CROCI

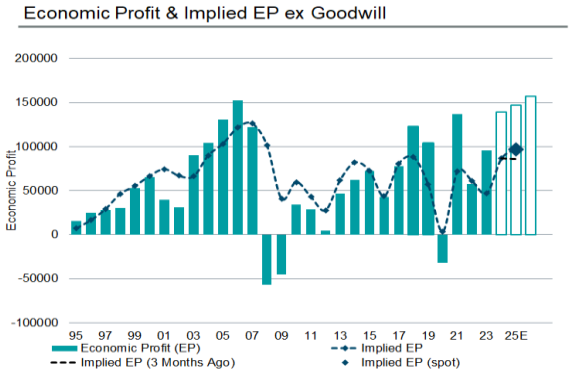








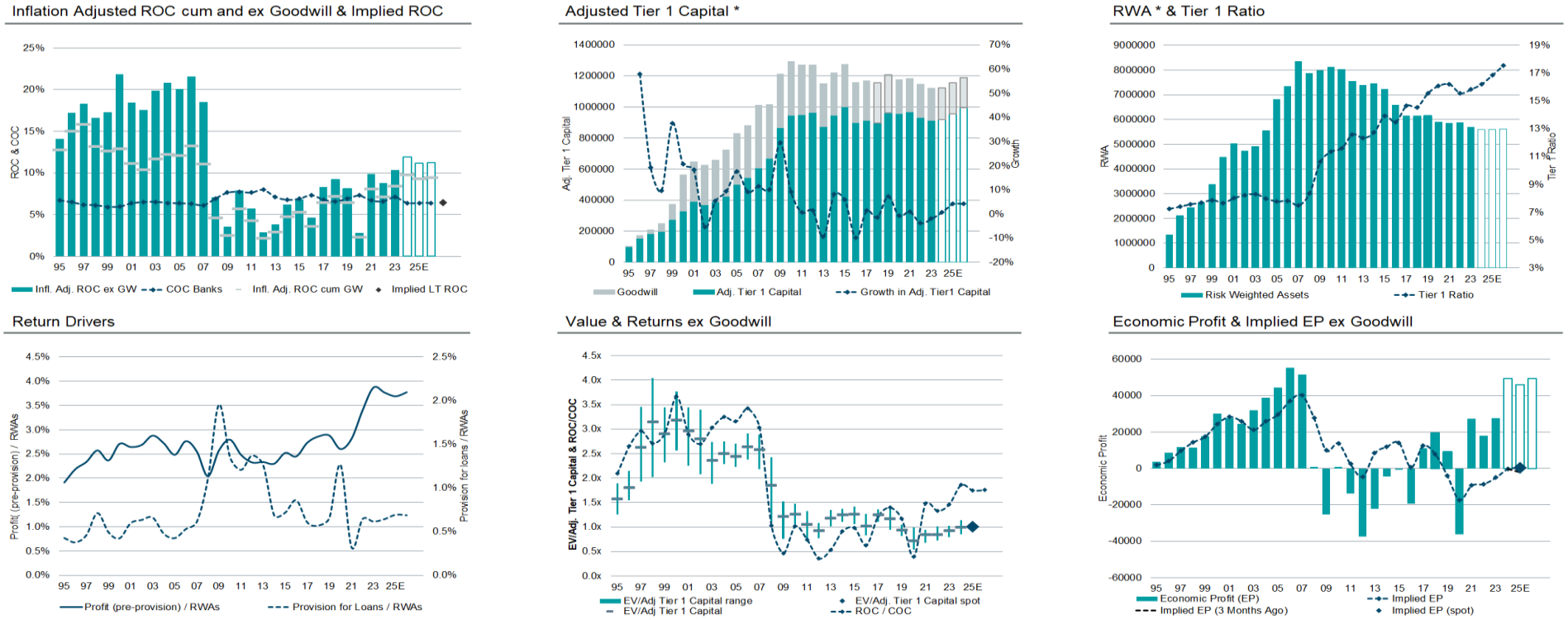




	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	3065	3407	3064	2523	2902	2745	2617	3160	3559	3456	2946	3818	3918	3534	2964	3993	3659	3573	4368	4709	4687
Market Cap (USD bn)	2746	3006	2303	1769	2383	2257	2191	2832	3210	3077	2650	3468	3555	3143	2561	3599	3297	3194	3988	4337	4315
EV/Adjusted Tier 1 Capital	2.69x	2.53x	1.92x	1.27x	1.36x	1.26x	1.15x	1.38x	1.51x	1.44x	1.25x	1.45x	1.52x	1.31x	1.02x	1.37x	1.34x	1.23x	1.45x	1.48x	1.37x
Adjusted PE	13.7x	16.7x	56.6x	23.6x	14.6x	14.0x	14.1x	15.1x	16.1x	14.5x	13.7x	14.9x	13.3x	12.2x	16.4x	12.0x	15.4x	11.8x	13.1x	13.4x	12.5x
COC Adjusted PE	17.2x	21.1x	75.9x	33.0x	20.7x	19.7x	21.0x	20.7x	21.5x	20.4x	20.1x	20.4x	17.8x	17.1x	25.2x	18.5x	22.6x	18.7x	19.6x	19.7x	18.4x
Accounting PE	12.9x	14.8x	40.7x	25.3x	12.1x	10.7x	11.0x	12.5x	12.1x	12.1x	11.6x	12.5x	11.2x	10.1x	12.7x	9.5x	9.4x	8.3x	10.2x	11.3x	10.5x
Cost of Capital (COC) - Financials	6.30%	6.12%	6.94%	7.66%	7.76%	7.66%	8.01%	7.12%	6.78%	6.90%	7.35%	6.80%	6.60%	6.90%	7.30%	6.70%	6.60%	7.10%	6.40%	6.40%	6.40%
Inflation Adjusted ROC ex Goodwill	19.7%	15.2%	3.4%	5.4%	9.3%	9.0%	8.2%	9.1%	9.4%	9.9%	9.2%	9.8%	11.4%	10.7%	6.2%	11.4%	8.7%	10.4%	11.0%	11.0%	11.0%
Implied ROC	17.0%	15.5%	13.3%	9.7%	10.6%	9.6%	9.2%	9.8%	10.3%	9.9%	9.2%	9.9%	10.0%	9.0%	7.4%	9.2%	8.8%	8.7%	9.3%	9.4%	8.8%
Implied Economic Earnings/ Economic Earnings	86%	102%	393%	181%	113%	107%	113%	108%	109%	100%	101%	101%	88%	84%	120%	80%	102%	84%	84%	86%	80%
Adjusted Tier 1 Capital Ex. GW (USD bn)	1138	1346	1600	1991	2132	2184	2273	2290	2351	2403	2351	2633	2586	2703	2916	2917	2737	2913	3020	3192	3414
Adjusted Tier 1 Capital Cum. GW (USD bn)	1935	2329	2541	2978	3112	3133	3211	3205	3229	3253	3195	3530	3476	3598	3834	3826	3637	3811	3905	4071	4293
Inflation Adjusted Earnings (USD bn)	224	205	54	107	199	196	186	209	221	238	215	257	294	290	181	332	238	302	332	351	376

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 10 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

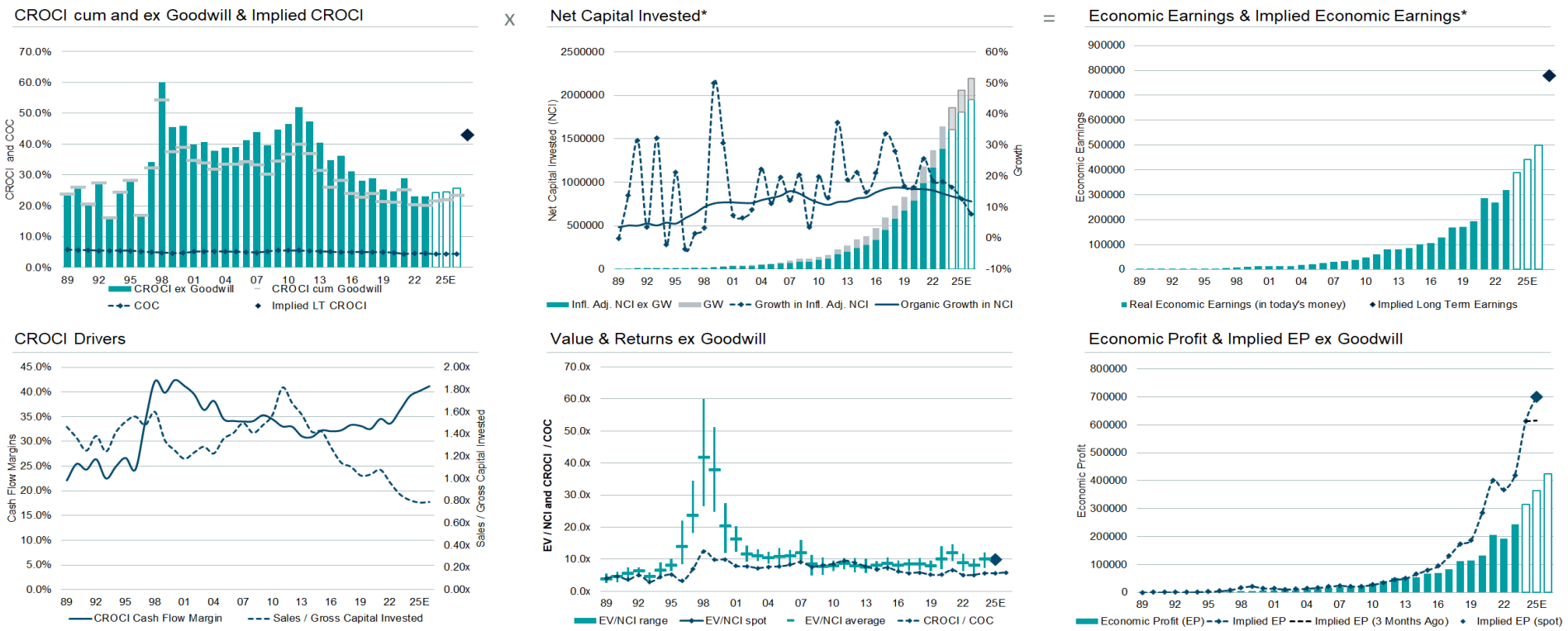
Figure 112: Europe Financials CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (EUR bn)	952	1073	867	750	865	738	675	790	912	994	726	921	857	746	573	706	694	773	894	962	962
Market Cap (EUR bn)	839	923	684	518	687	575	518	671	771	824	610	783	714	605	438	569	563	630	742	809	809
EV/Adjusted Tier 1 Capital	2.63x	2.58x	1.85x	1.21x	1.26x	1.04x	0.92x	1.17x	1.24x	1.26x	1.01x	1.25x	1.16x	0.93x	0.71x	0.83x	0.84x	0.92x	0.99x	1.01x	0.95x
Adjusted PE	12.2x	13.9x	25.9x	33.8x	16.0x	18.3x	32.0x	30.7x	20.0x	18.6x	21.9x	15.0x	12.6x	11.5x	24.9x	8.4x	9.6x	8.8x	8.4x	9.0x	8.4x
COC Adjusted PE	15.4x	17.7x	34.7x	47.2x	22.7x	25.7x	47.9x	42.1x	26.8x	26.2x	32.2x	20.6x	16.8x	16.2x	38.2x	13.0x	14.1x	13.9x	12.4x	13.2x	12.3x
Accounting PE	11.4x	12.1x	20.9x	31.9x	13.0x	12.2x	17.0x	20.7x	12.9x	12.4x	13.3x	11.6x	9.6x	8.4x	12.3x	6.8x	5.7x	5.4x	6.2x	6.9x	6.6x
Cost of Capital (COC) - Financials	6.30%	6.12%	6.94%	7.66%	7.76%	7.66%	8.01%	7.12%	6.78%	6.90%	7.35%	6.80%	6.60%	6.90%	7.30%	6.70%	6.60%	7.10%	6.40%	6.40%	6.40%
Inflation Adjusted ROC ex Goodwill	21.6%	18.5%	7.1%	3.6%	7.9%	5.7%	2.9%	3.8%	6.2%	6.8%	4.6%	8.3%	9.2%	8.0%	2.8%	9.9%	8.8%	10.4%	11.9%	11.2%	11.3%
Implied ROC	16.6%	15.8%	12.8%	9.2%	9.8%	8.0%	7.4%	8.4%	8.4%	8.7%	7.4%	8.5%	7.7%	6.4%	5.2%	5.6%	5.6%	6.5%	6.4%	6.4%	6.0%
Implied Economic Earnings/ Economic Earnings	77%	85%	180%	259%	124%	140%	256%	219%	136%	128%	161%	102%	83%	80%	182%	56%	63%	63%	53%	57%	54%
Adjusted Tier 1 Capital Ex. GW (EUR bn)	362	416	470	621	687	706	731	674	735	789	717	738	738	804	811	846	824	844	899	957	1018
Adjusted Tier 1 Capital Cum. GW (EUR bn)	588	697	721	879	950	950	968	889	953	1008	927	949	949	1008	1000	1039	1017	1040	1097	1155	1215
Inflation Adjusted Earnings (EUR bn)	78	77	33	22	54	40	21	26	46	54	33	61	68	65	23	84	72	88	107	107	115

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in EUR as on 10 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Figure 113: Magnificent Seven CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (USD bn)	455	566	490	478	592	737	986	1116	1484	1854	2152	2987	3963	4390	6647	10051	9215	10635	15838	17926	17468
Market Cap (USD bn)	490	597	528	542	682	852	1141	1310	1665	2044	2344	3140	4093	4520	6787	10165	9251	10615	15892	18236	18236
EV/NCI Ex. GW	10.93x	11.89x	8.35x	7.69x	7.83x	8.54x	7.86x	7.37x	7.98x	8.56x	8.13x	8.34x	8.49x	7.87x	10.06x	11.96x	8.90x	8.11x	10.02x	9.86x	8.75x
Economic PE	26.5x	27.1x	21.0x	17.2x	16.9x	16.4x	16.6x	18.2x	23.0x	23.7x	26.1x	29.7x	29.4x	31.2x	40.7x	41.3x	38.6x	35.2x	41.4x	40.5x	34.1x
Accounting PE	24.8x	23.1x	19.4x	15.4x	14.5x	14.1x	14.9x	17.4x	21.2x	21.0x	22.6x	25.5x	25.9x	27.4x	33.0x	33.6x	32.2x	28.9x	32.9x	32.5x	28.3x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	41.2%	43.9%	39.7%	44.7%	46.4%	52.0%	47.4%	40.5%	34.7%	36.1%	31.2%	28.1%	28.9%	25.3%	24.7%	28.9%	23.0%	23.1%	24.2%	24.4%	25.7%
Implied CROCI	54.6%	57.3%	43.3%	42.2%	42.7%	46.6%	42.1%	38.3%	40.4%	41.9%	40.6%	41.3%	42.0%	38.6%	47.8%	52.0%	40.0%	36.5%	43.1%	42.9%	38.1%
Implied Economic Earnings/ Economic Earnings	133%	130%	109%	94%	92%	90%	89%	95%	117%	116%	130%	147%	146%	153%	193%	180%	174%	158%	178%	176%	148%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in USD as on 03 January 2025.
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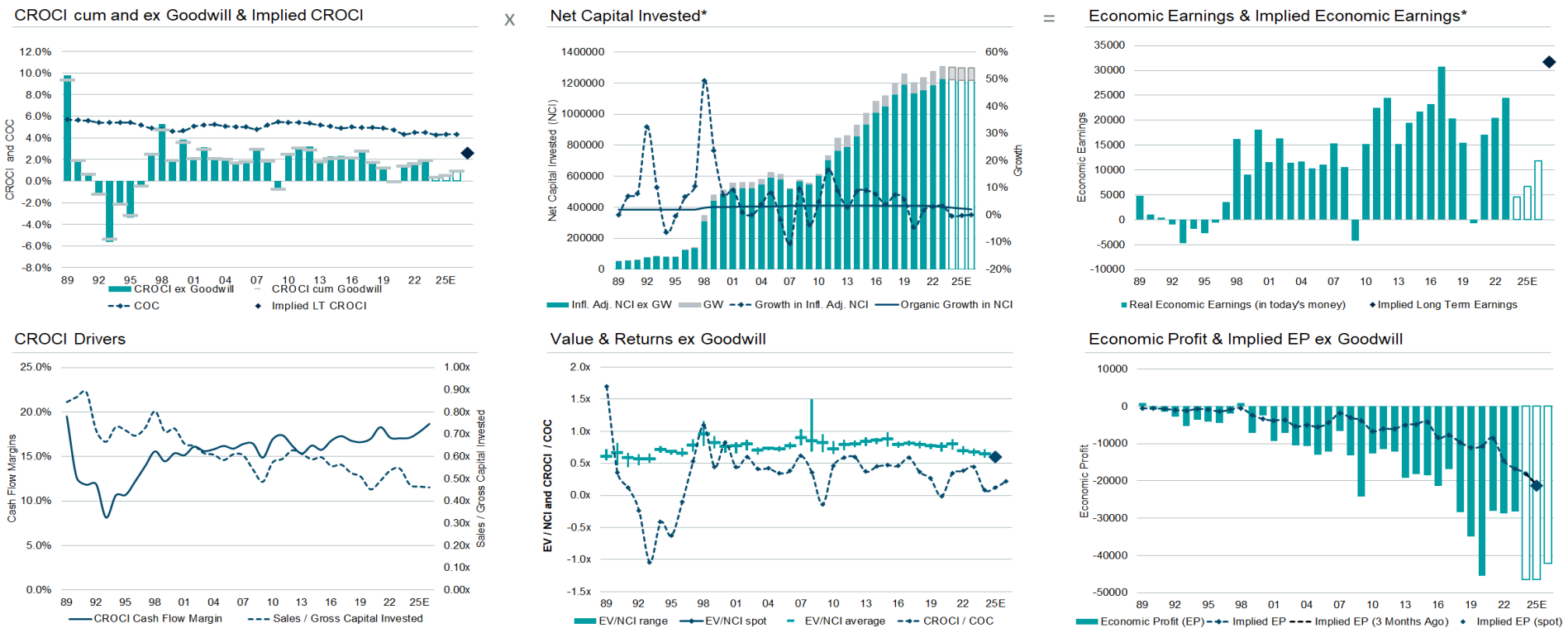
Figure 114: Europe Automobiles CROCI



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Enterprise Value (EUR bn)	302	318	337	318	313	402	449	490	554	632	625	677	711	743	720	783	712	752	767	729	720
Market Cap (EUR bn)	116	165	148	115	123	155	160	206	246	277	219	256	264	234	209	333	287	314	312	265	265
EV/NCI Ex. GW	0.77x	0.89x	0.85x	0.82x	0.72x	0.78x	0.80x	0.84x	0.85x	0.88x	0.79x	0.81x	0.78x	0.77x	0.76x	0.80x	0.69x	0.67x	0.65x	0.60x	0.58x
Economic PE	40.4x	30.1x	45.5x	nm	28.3x	24.4x	25.0x	43.2x	37.5x	37.8x	34.2x	27.7x	43.3x	59.1x	nm	53.9x	39.9x	33.6x	nm	nm	59.3x
Accounting PE	13.3x	11.1x	15.5x	nm	7.9x	6.8x	7.5x	9.2x	9.2x	8.9x	7.1x	6.7x	7.7x	8.0x	16.7x	6.4x	4.7x	4.7x	8.5x	6.7x	6.0x
Cost of Capital	5.00%	4.82%	5.18%	5.48%	5.45%	5.45%	5.35%	5.20%	5.07%	4.90%	5.00%	4.95%	4.95%	4.90%	4.75%	4.35%	4.50%	4.50%	4.30%	4.35%	4.35%
CROCI Ex. GW	1.9%	3.0%	1.9%	-0.8%	2.5%	3.2%	3.2%	1.9%	2.3%	2.3%	2.3%	2.9%	1.8%	1.3%	-0.1%	1.5%	1.7%	2.0%	0.4%	0.5%	1.0%
Implied CROCI	3.9%	4.3%	4.4%	4.5%	3.9%	4.3%	4.3%	4.4%	4.3%	4.3%	3.9%	4.0%	3.9%	3.8%	3.6%	3.5%	3.1%	3.0%	2.8%	2.6%	2.5%
Implied Economic Earnings/ Economic Earnings	202%	145%	236%	nm	154%	133%	134%	225%	190%	185%	171%	137%	214%	289%	nm	234%	180%	151%	740%	478%	258%

Source: Company reports, Bloomberg Finance L.P., DWS and CROCI. The table shows aggregate data of companies in CROCI's global coverage. Data in EUR as on 03 January 2025.
* Displayed in today's money. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Glossary A: Introduction to CROCI

Cash Return on Capital Invested (CROCI) is a cash-flow-based analysis which, by making a series of economic adjustments to traditional accounting data, aims to make non-financial companies comparable - regardless of industry or domicile. The main areas where the "economic data" differ from accounting data are as follows:

- Accounting for "hidden" liabilities – CROCI Enterprise Value (EV) includes not only financial liabilities (such as debt) but also operational liabilities (such as operating lease commitments, warranties, pension funding, specific provisions etc).
- Depreciating similar assets in a similar manner - Adjusting depreciation to reflect "economic depreciation" and effective useful economic life.
- Replacement value of assets – Inflating the value of net assets using the relevant inflator (based on the real age of assets).
- Unreported assets – Systematically capitalizing real cash-generative assets that are left off the balance sheet. Research and development costs and advertising are examples of such assets. In the data and charts presented throughout this document, "E" refers to financial years that are not yet reported. Data for these years are calculated by applying the CROCI model to market's consensus estimates of accounting data. The CROCI Group does not make any forecasts or projections of accounting data.

CROCI Disclaimer

Risk Considerations

The CROCI Model: The analysis above has been built on the CROCI premise that stocks with lower CROCI Economic PE ratios may outperform stocks with higher CROCI Economic PE ratios over time. This premise may not be correct and prospective investors should evaluate this assumption prior to investing based on CROCI analysis. CROCI represents one of many possible ways to analyze and value stocks. Potential investors must form their own view of the CROCI methodology and evaluate whether CROCI and investment associated with CROCI are appropriate for them. The CROCI Group does not provide investment advice.

CROCI analysis: The discussion above is based on analysis of agglomerations of the companies in the CROCI universe, which consists of over 850 companies globally. These agglomerations of companies may not be representative of the countries, regions, and sectors which they are intended to reflect.

Glossary B: CROCI & Real Value

Real Investor:

Definition: An investor whose investments are driven principally by the careful analysis of company fundamentals, including their economic cash returns and their economic valuation. Specifically, a Real Investor has two characteristics:

1. Fundamental: any investment is informed or driven by the interplay between the cash flow generation, the capital intensity and the valuation of that company;

2. Skeptical of reported financial statements as a guide to investing: Real Investors believe that the income statement and balance sheet in a company's accounts are not necessarily designed to be helpful to equity investors, and that a synthesis of all the notes to the accounts and diligent restatement of the accounts must happen in order to render valuations comparable and meaningful; and

Real Investors look to economic value to inform investment, and believe that the reported financial statement data may not be representative of the economic reality of a company.

Since CROCI makes adjustments to financial statements in order to include all relevant information in the notes to the accounts, and to restate the accounts in order to render economic valuations, which are meaningful and comparable, CROCI may be one valuable approach for the Real Investor.

Real Value:

Definition: Economic value as calculated by the CROCI process via the adjustments to and normalisations of reported financial statements, conducted by CROCI's team of company analysts.

Notes: The CROCI process seeks to make company financial data more consistent, comparable and economically meaningful through a series of reviews and adjustments. This contrasts with more conventional definitions of "Value" that tend to be based on accounting measures such as equity or profits.

The principal indicator of Real Value is CROCI's Economic PE. An attractive Economic PE ratio suggests that the market is undervaluing the cash flow being produced by the operating assets, all other things being equal. The term Real Value can therefore be used attributively to refer to companies with the lowest CROCI Economic PE.

Rolling 12 months performance as of 31 January 2025

Name	Currency	Live Date	01/24 - 01/25	01/23 - 01/24	01/22 - 01/23	01/21 - 01/22	01/20 - 01/21	01/19 - 01/20	01/18 - 01/19	01/17 - 01/18	01/16 - 01/17	01/15 - 01/16
CROCI US Strategy	USD	2 Feb. 2004	17.4%	6.5%	4.6%	24.1%	13.1%	9.6%	-3.5%	29.3%	25.7%	-8.8%
CROCI US Dividends Strategy	USD	13 Mar. 2012	16.8%	0.3%	5.4%	23.2%	13.3%	10.6%	2.1%	25.3%	25.3%	-0.6%
CROCI Euro Strategy	EUR	2 Feb. 2004	-0.1%	7.1%	-4.0%	17.1%	2.0%	15.9%	-10.6%	23.3%	13.4%	1.8%
CROCI Japan Strategy	JPY	2 Feb. 2004	6.2%	42.6%	6.8%	10.7%	15.3%	13.8%	-8.9%	24.4%	16.1%	-2.8%
CROCI World Value EUR Strategy	EUR	29 Nov. 2010	14.8%	6.9%	7.4%	31.1%	3.9%	17.5%	0.8%	10.8%	19.6%	-7.7%
CROCI World Value USD Strategy	USD	29 Nov. 2010	9.9%	6.9%	4.0%	20.9%	13.9%	13.5%	-7.2%	27.8%	19.4%	-11.5%
CROCI Sectors Plus EUR Strategy	EUR	18 Nov. 2015	7.4%	1.8%	9.4%	39.3%	27.4%	8.7%	-4.2%	11.1%	31.3%	-12.0%
CROCI Sectors Plus USD Strategy	USD	18 Nov. 2015	2.9%	1.9%	6.0%	28.6%	39.7%	4.9%	-11.7%	28.1%	31.2%	-15.7%
CROCI Global Dividends EUR Strategy	EUR	15 Mar. 2012	10.7%	8.1%	7.8%	21.8%	-9.7%	15.0%	1.2%	9.4%	21.5%	-4.5%
CROCI Global Dividends USD Strategy	USD	15 Mar. 2012	6.0%	8.1%	4.5%	12.4%	-1.0%	11.1%	-6.8%	26.1%	21.3%	-8.4%
CROCI Innovation Leaders ESG EUR Strategy	EUR	15 Apr. 2019	26.3%	19.7%	-8.3%	20.6%	17.0%	26.7%	4.8%	15.8%	17.5%	1.9%
CROCI Innovation Leaders ESG USD Strategy	USD	15 Apr. 2019	20.9%	19.7%	-11.2%	11.3%	28.3%	22.4%	-3.4%	33.5%	17.4%	-2.3%

Performance data before live date is simulated and was calculated by means of retroactive application of the Strategy/Index model. All returns in respective currency, nclude reinvested dividends (net of withholding tax) but do not include fees that might be charged on an investment product. It is not possible to invest directly in a strategy. The performance shown here is for model portfolios. The performance of any actual investment products may differ significantly. The CROCI team does not provide investment advice, stock recommendations or act in any other fiduciary capacity. This information is intended for informational purposes only and does not constitute investment advice, a recommendation, an offer or solicitation. No distribution is allowed into the USA. Source: DWS, Bloomberg, Factset

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