

# DACH Capital Market Study

ANALYSIS OF COST OF CAPITAL PARAMETERS AND SECTOR MULTIPLES  
FOR THE CAPITAL MARKETS IN GERMANY, AUSTRIA AND SWITZERLAND  
AS OF 31 DECEMBER 2023

Volume 14, April 2024

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Dear business partners and friends of ValueTrust,

We are pleased to release our fourteenth edition of the **ValueTrust DACH<sup>1)</sup> Capital Market Study** for Q4 2023 carried out in cooperation with **finexpert** and the Institute of Accounting and Auditing at the **WU** Vienna.

In this Study, we provide certain **cost of capital inputs required to perform an enterprise valuation** in Germany, Austria and Switzerland:

- the relevant parameters used to calculate the cost of capital under the CAPM, including risk-free rate, market risk premium and beta;
- implied and historical market/sector returns;
- capital structure-adjusted implied sector returns, which serve as an indicator for the unlevered cost of equity (the levered cost of equity can be calculated by adapting the company specific debt situation to the unlevered cost of equity, serving as an alternative to the CAPM);
- an analysis of empirical (ex-post) cost of equity in the form of total shareholder returns consisting of capital gains and dividends (total shareholder returns can be used as a plausibility check for the implied (ex-ante) returns);
- a trading multiples overview.

We examine the relevant cost of capital parameters for the German, Austrian and Swiss capital markets in form of the CDAX<sup>2)</sup>, WBI<sup>3)</sup> and SPI<sup>4)</sup>. The constituents of these indices were allocated to twelve **finexpert** sector indices (so-called "super sectors"): Banking, Insurance, Financial Services, Consumer Service, Consumer Goods, Pharma & Healthcare, Information Technology, Telecommunication, Utilities, Basic Materials, Industrials and Real Estate.

Historical data was compiled between the reference dates 31 December 2017 and 31 December 2023, and is updated semi-annually with the objective to track capital market performance over time.

Further knowledge and information for financial decision making is provided at [www.finexpert.info](http://www.finexpert.info).

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- Chris is the founder and board member of ValueTrust
- Previously he was a Partner at KPMG and Managing Director for the DACH region at Duff & Phelps
- He has more than 30 years of experience in corporate valuation and financial advisory
- He is Honorary Professor for "Practice of transaction-oriented company valuation and value-oriented management" at the LMU in Munich
- He is member of the DVFA Expert Group "Fairness Opinions" and "Best Practice Recommendations Corporate Valuation"
- He is also Co-Founder of the European Association of Certified Valuers and Analysts (EACVA e.V.)



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- He advises clients on initiatives that drive shareholder value: capital allocation, assessment of strategic alternatives, forecasting and scenario planning
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- Fredrik is Vice President at ValueTrust and gained more than 6 years of project experience in corporate valuation and financial advisory
- He has extensive experience in valuation and value management projects in various industries
- He holds a masters degree (M.Sc.) in Business Administration from the LMU in Munich and is a Chartered Financial Analyst (CFA) charterholder

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## DISCLAIMER

This Study presents an empirical analysis which serves the purpose of illustrating the cost of capital of Germany's, Austria's, and Switzerland's capital markets. The available information and the corresponding exemplifications do not allow for a complete presentation of a proper derivation of cost of capital. Furthermore, the market participant must consider that the company specific cost of capital can vary widely due to individual corporate circumstances.

The listed information is not specific to anyone and consequently, it cannot be directed to an individual or juristic person. Although we are always striving for reliable, accurate and current information, we cannot guarantee that the data is applicable in current and future valuation analyses. The same applies to the underlying data from the data provider S&P Capital IQ.

We recommend a self-contained, technical, and detailed analysis of the specific situation and we dissuade from acting solely based on the information provided.

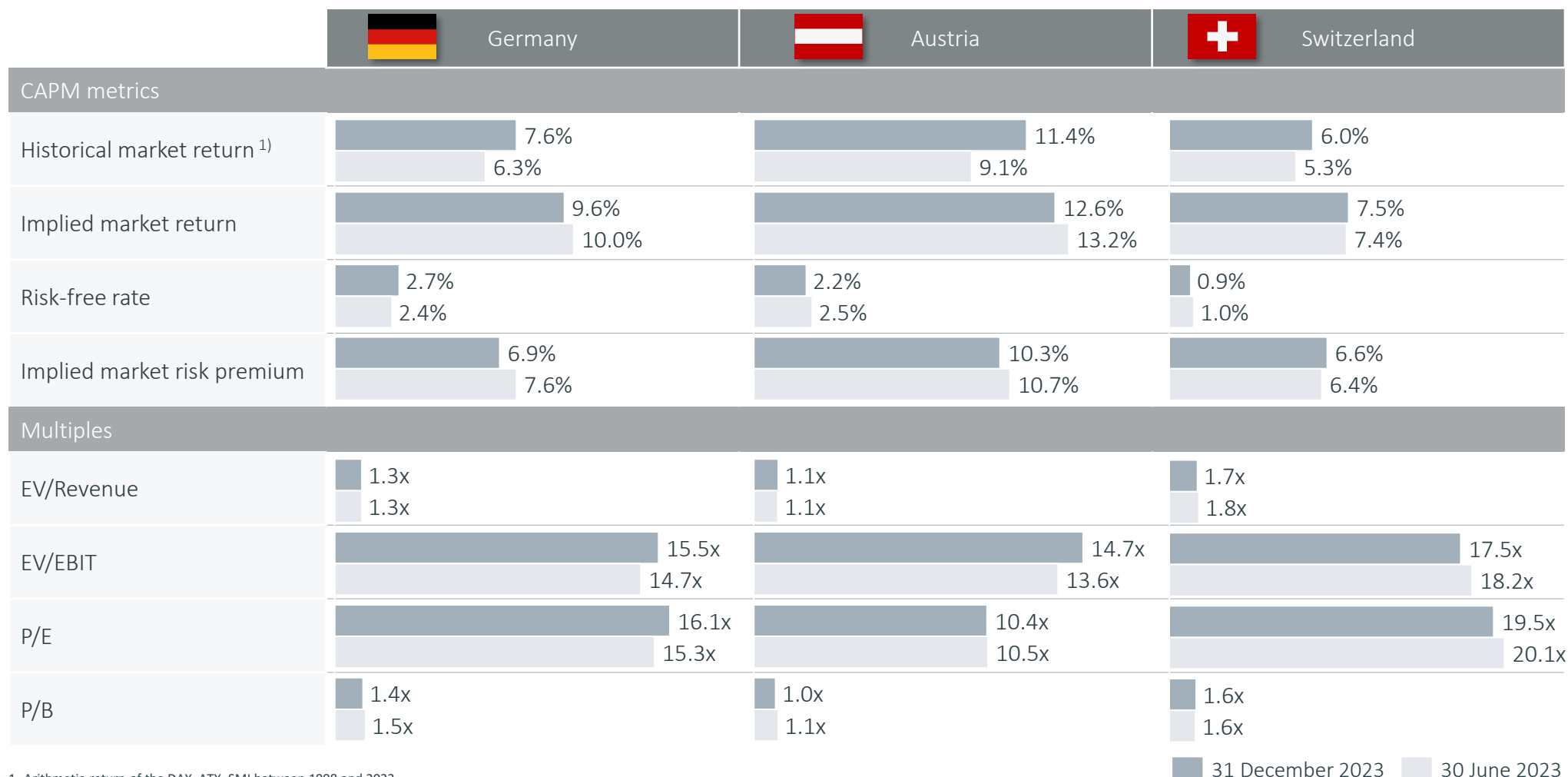
ValueTrust and its co-authors do not assume any responsibility or liability for the up-to-datedness, completeness or accuracy of this Study or its contents.

01

Executive summary

# The implied market risk premium decreased for Germany over the past 6 months due to a higher risk-free rate, and increased for Switzerland due to a higher implied market return

Market risk premium and trading multiples by country, Q4 2023















1. Arithmetic return of the DAX, ATX, SMI between 1998 and 2023.

■ 31 December 2023 ■ 30 June 2023

# The Consumer Goods sector has the highest implied levered cost of equity at 10.6%, while the Real Estate sector has the lowest at 5.8%

Cost of equity by sector and methodology for the DACH region, Q4 2023

Sectors	Implied levered cost of equity	Levered cost of equity (CAPM) <sup>1</sup>	1 / PE-ratio (1yf)	Total shareholder return (Ø 6y) <sup>2</sup>
 Banking	10.0%	8.6%	7.9%	10.3%
 Insurance	10.3%	7.9%	6.9%	14.1%
 Financial Services	7.0%	10.7%	5.8%	18.6%
 Consumer Service	6.5%	9.7%	4.9%	14.4%
 Consumer Goods	10.6%	8.9%	6.3%	8.1%
 Pharma & Healthcare	7.7%	10.0%	4.4%	16.5%
 Information Technology	6.2%	9.5%	5.1%	14.2%
 Telecommunication	9.0%	7.3%	5.7%	8.9%
 Utilities	8.1%	8.0%	8.0%	17.7%
 Basic Materials	9.1%	9.4%	7.8%	2.3%
 Industrials	7.5%	10.1%	6.3%	14.4%
 Real Estate	5.8%	7.2%	6.3%	5.4%























































1. Based on 2-year sector beta, risk-free rate of 2.7% and implied market risk premium of 6.9% for the German market;

2. Total shareholder returns can be viewed as historic, realized cost of equity. However, it has to be considered that total shareholder returns vary widely, depending on the relevant time period.



# The Pharma & Healthcare sector trades at high valuations, as financial metrics returned from elevated levels, and market capitalization remained stable

Trading multiples by sector for the DACH region, Q4 2023

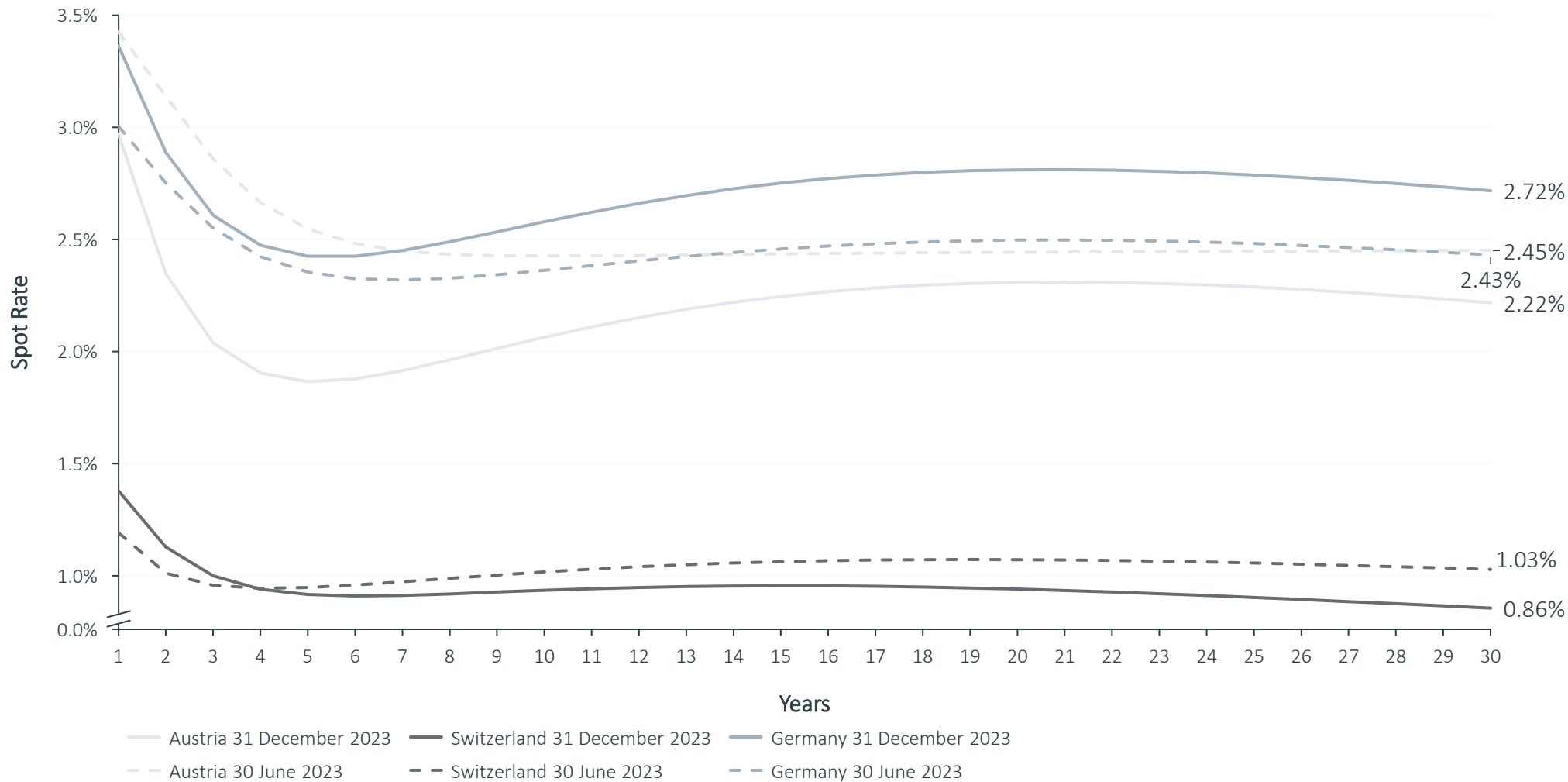
Sectors	EV/Revenue 1yf	EV/EBIT 1yf	P/E 1yf	P/B LTM
 Banking	n.a.	n.a.	 12.6x	 0.9x
 Insurance	n.a.	n.a.	 14.5x	 1.7x
 Financial Services	n.a.	n.a.	 17.4x	 1.0x
 Consumer Service	 1.0x	 16.7x	 20.5x	 1.8x
 Consumer Goods	 1.0x	 15.0x	 15.8x	 1.4x
 Pharma & Healthcare	 3.8x	 22.7x	 22.5x	 2.5x
 Information Technology	 1.6x	 16.8x	 19.8x	 2.4x
 Telecommunication	 1.5x	 15.1x	 17.5x	 1.5x
 Utilities	 1.8x	 13.0x	 12.5x	 1.7x
 Basic Materials	 1.0x	 13.9x	 12.8x	 1.1x
 Industrials	 1.2x	 15.2x	 15.8x	 1.5x
 Real Estate	 8.4x	 31.3x	 15.8x	 0.9x

02

Risk-free rate

Germany's risk-free rate experienced a 29 bps increase in the last 6 months to 2.72%, while Austria decreased 23 bps to 2.22% and Switzerland decreased 17 bps to 0.86%

Risk-free rate for Germany, Austria and Switzerland based on long-term bonds (Svensson method), 31 December 2023



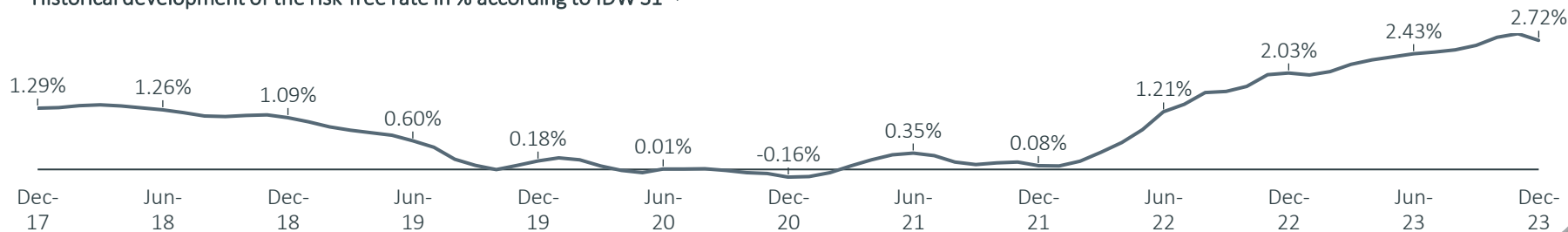
# While the Swiss and Austrian risk-free rates decreased compared to June 2023, Germany reached a new peak in the observation period

Historical risk-free rate by country since 31 December 2017, in %



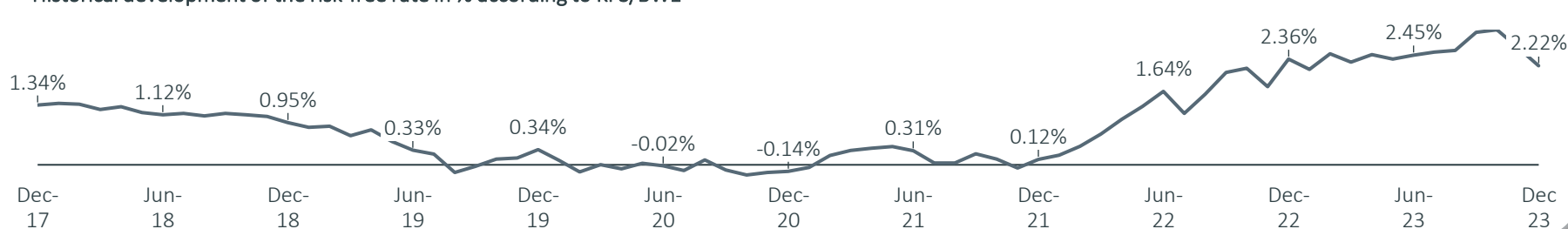
Germany

Historical development of the risk-free rate in % according to IDW S1 <sup>1)</sup>



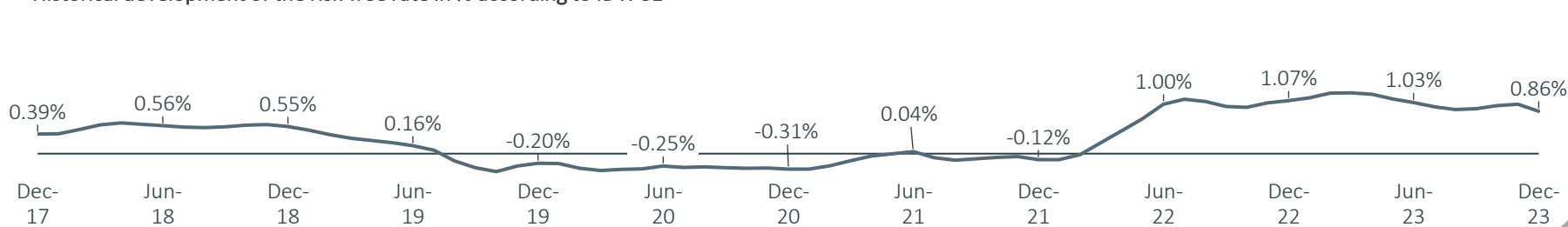
Austria

Historical development of the risk-free rate in % according to KFS/BW1 <sup>2)</sup>



Switzerland

Historical development of the risk-free rate in % according to IDW S1 <sup>1)</sup>



1. Interest rate as of reference date using 3-month average yield curves in accordance with IDW S 1;

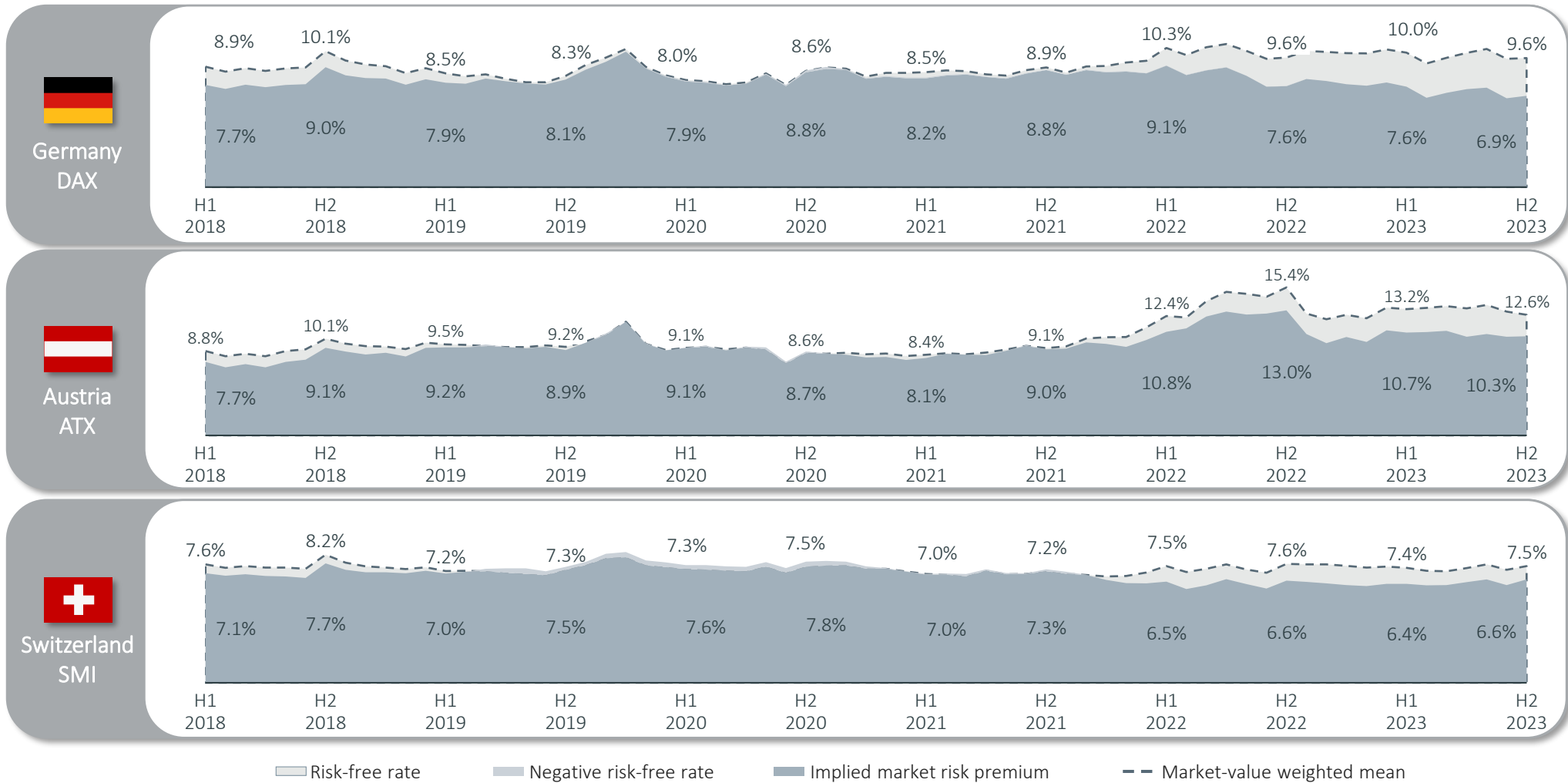
2. Interest rate calculated using the daily yield curve in accordance with KFS/BW 1 (no 3-month average).00

# 03

## Market returns and risk premium a. Implied returns (ex-ante analysis)

# The implied market risk premium increased 20 bps to 6.6% in Switzerland, declined 40 bps to 10.3% in Austria and decreased 70 bps to 6.9% in Germany due to weaker implied returns

Implied market risk premium by country since 2018, in %

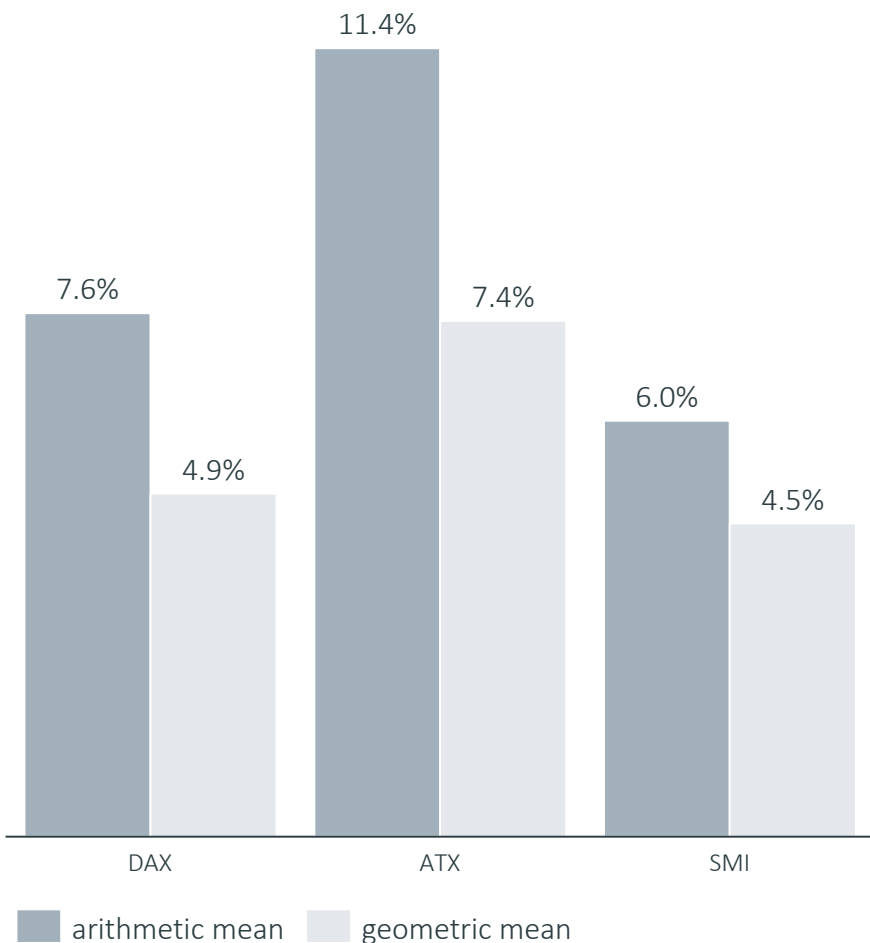


# 03

## Market returns and risk premium b. Historical returns (ex-post analysis)

## Over an investment period of 25 years, the Austrian capital market had the highest historical (arithmetic) returns (11.4%), followed by Germany (7.6%) and Switzerland (6.0%)

Arithmetic and geometric mean of historical market returns as of 31 December 2023, 1998-2023



- In addition to the ex-ante analysis, we also analyze **historical (ex-post) returns over a long-term observation period of 25 years**, indicating a return potential for the German, Austrian and Swiss capital markets.
- The analysis of historical returns can be used for **plausibility checks of the cost of capital**, more specifically of the **return requirements**, which were evaluated through the CAPM.
- For a detailed analysis of historical returns, we use a **return triangle<sup>1)</sup>**, providing **realized annual returns** from **different investment periods**.
- Specifically, the return triangle provides average annual returns for **different buying and selling points in time**, using the **geometric and arithmetic mean**.
- Average annual returns are calculated as **total shareholder returns**, which include the **return on investment** and **dividend yield**.
- Return on investment and dividend yield is captured by **total return indices** and therefore, our analysis is based on the **DAX** for Germany, **ATX Total Return** for Austria and the **SMI Total Return** for Switzerland.
- The following slides show the historical shareholder returns for different holding periods between 1998 and 2023, based on the arithmetic and geometric mean.

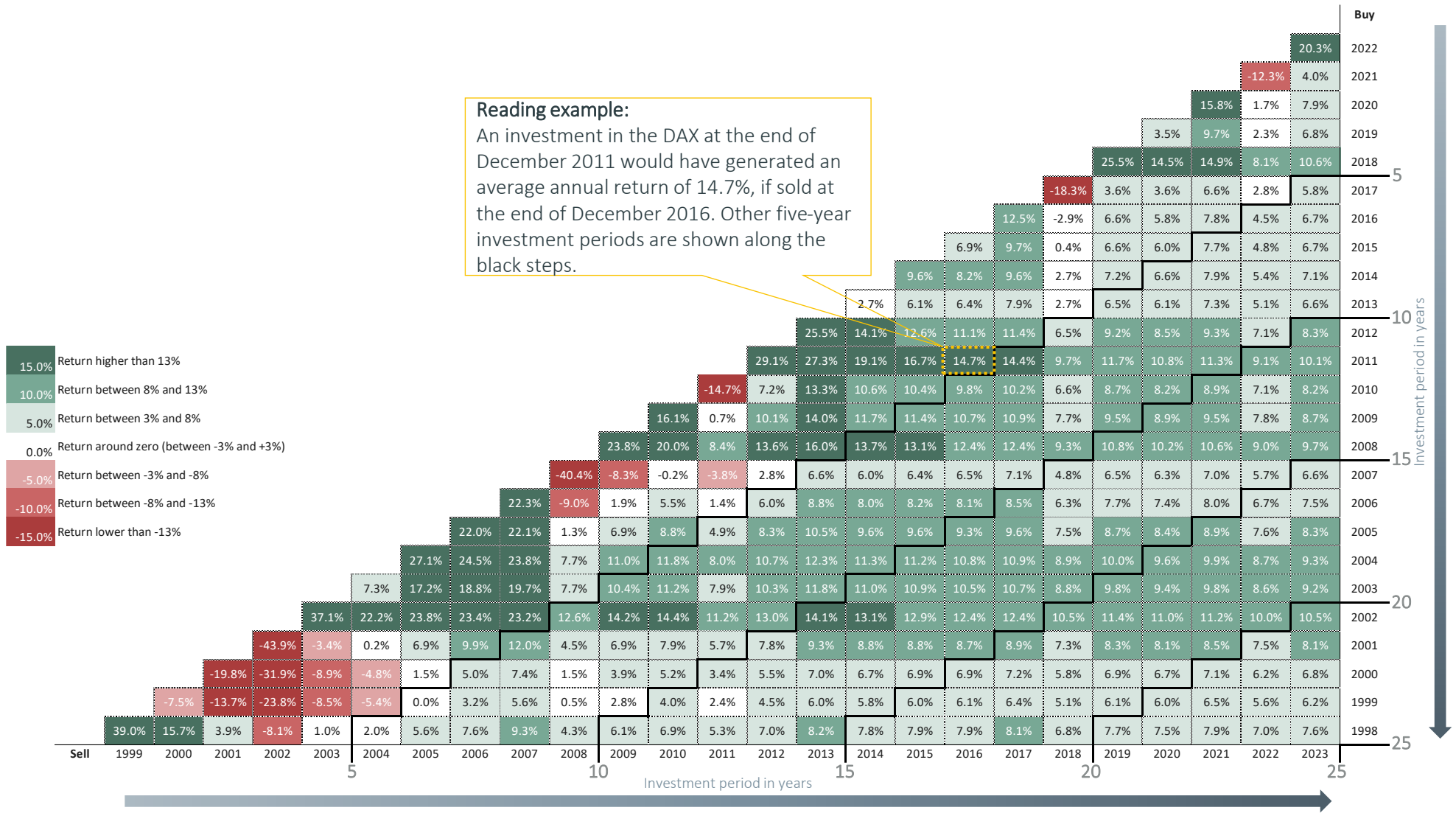
1. The German Stock Institute e.V. (DAI) developed the return triangle for DAX and EURO STOXX.





# With a return of 20.3% in the last 12 months, the DAX outperformed the ATX (15.4%) and SMI (7.1%)

Arithmetic mean of historical market returns as of 31 December 2023, DAX Performance Index, 1998-2023

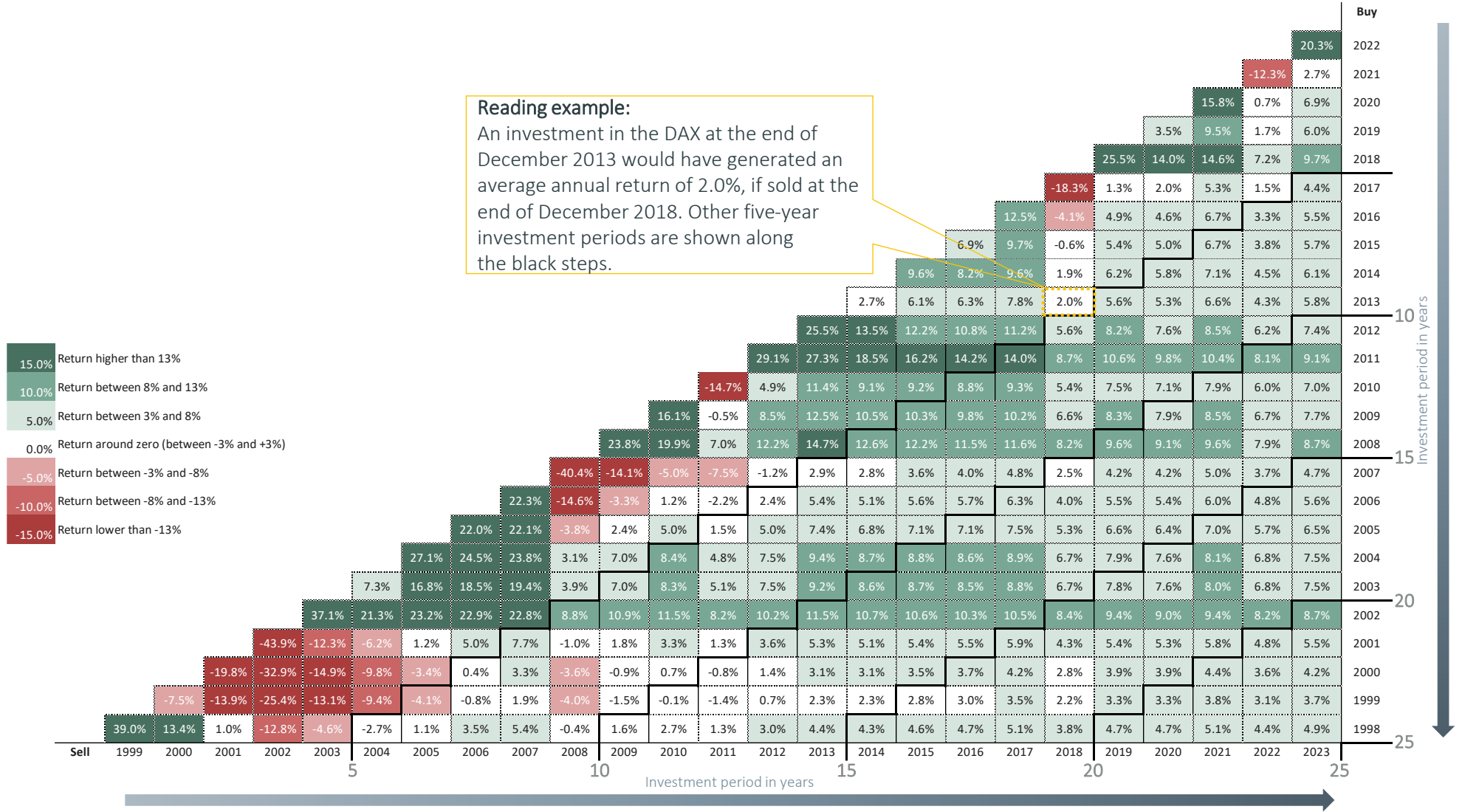


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# The strong performance of the DAX in the last 12 months results in a significant improvement of the return of an investment in 2017 from 1.5% to 4.4%

Geometric mean of historical market returns as of 31 December 2023, DAX Performance Index, 1998-2023

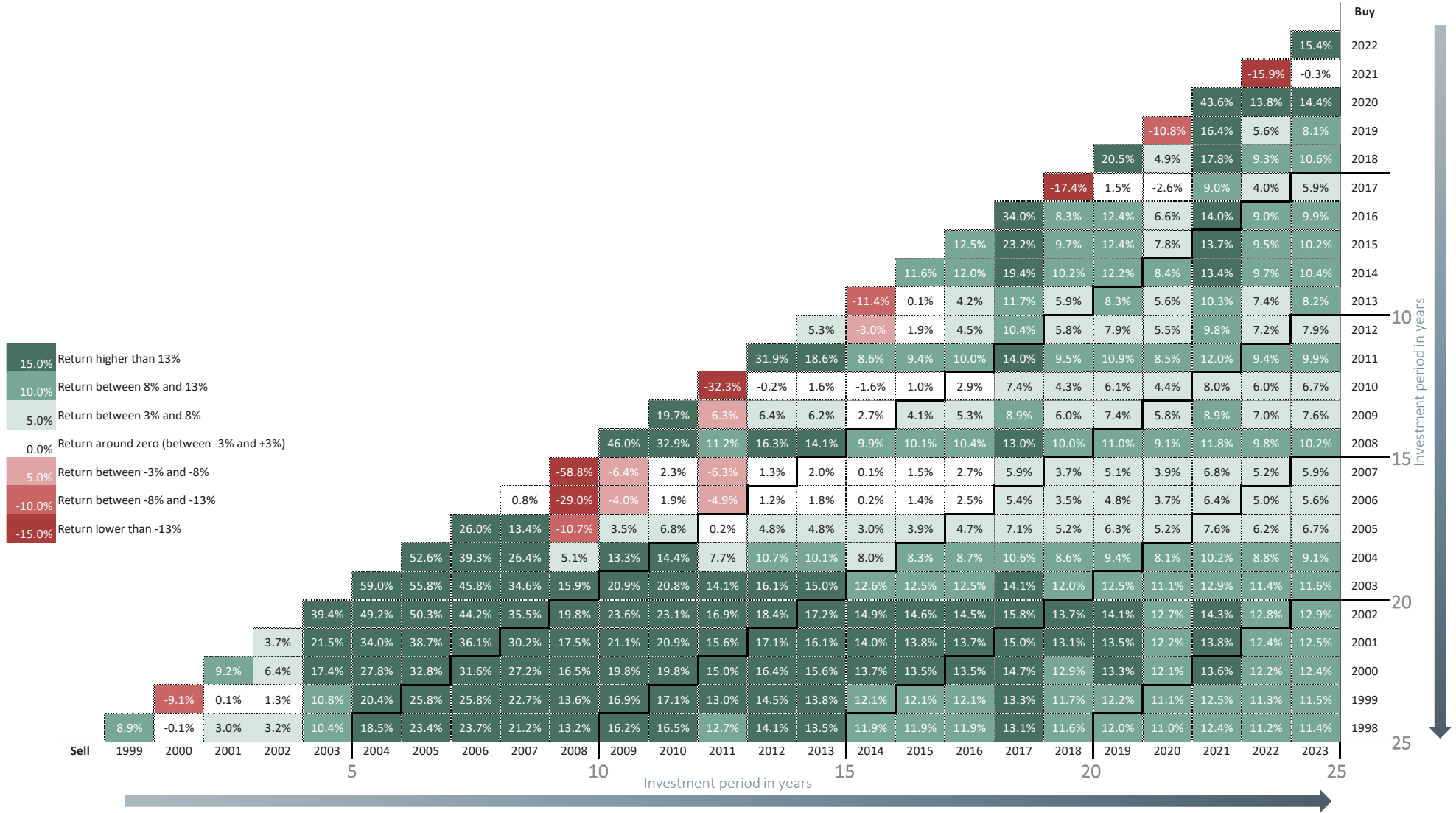


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# With a return of 15.4% over the past 12 months, ATX performance is below the DAX (20.3%) but higher than the historical long-term average of 11.4% p.a. over 25 years

Arithmetic mean of historical market returns as of 31 December 2023, ATX Performance Index, 1998-2023

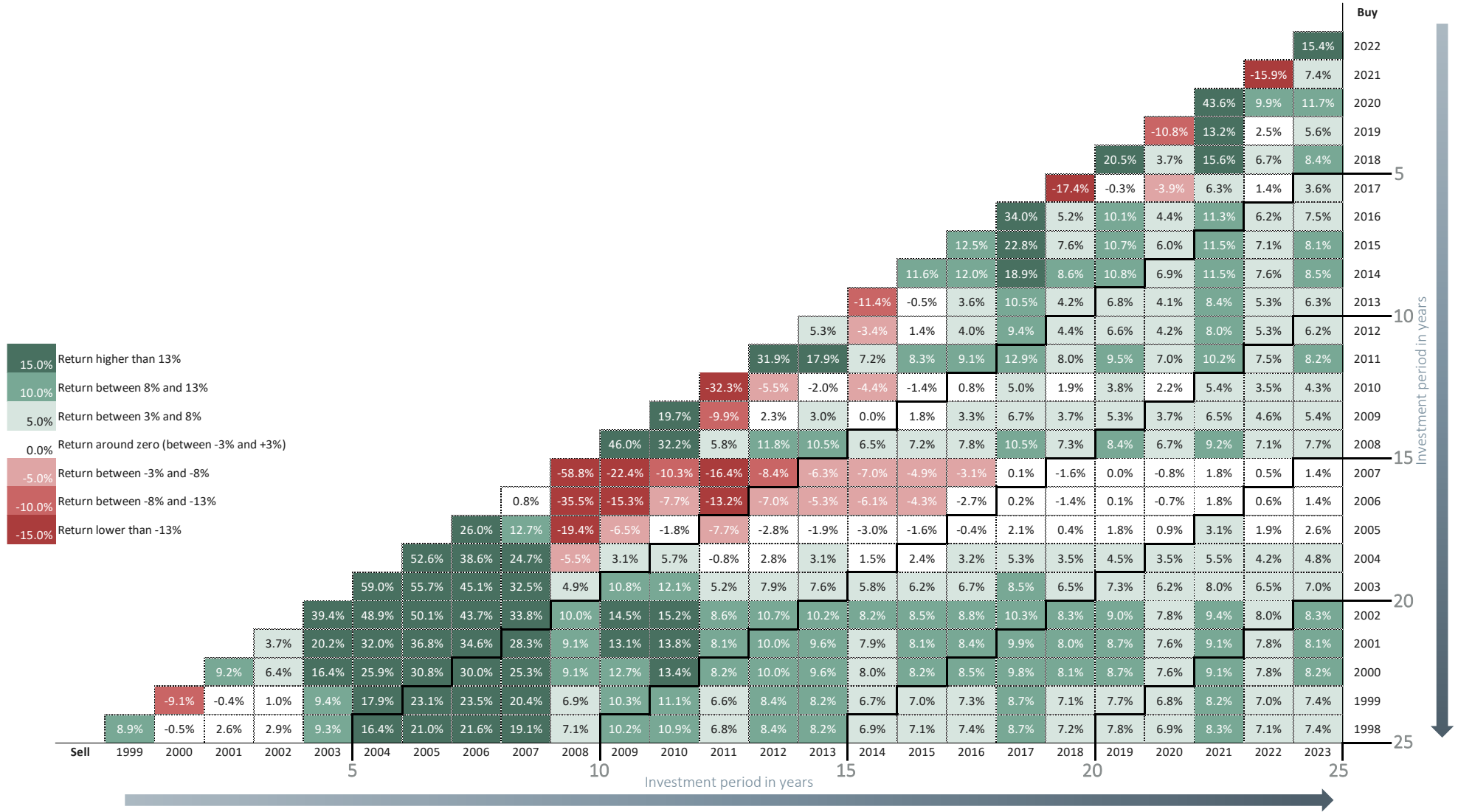


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# Performance of the ATX in the last 12 months also improved the geometric mean return of an investment in 2017 (from 1.4% to 3.6%)

Geometric mean of historical market returns as of 31 December 2023, ATX Performance Index, 1998-2023

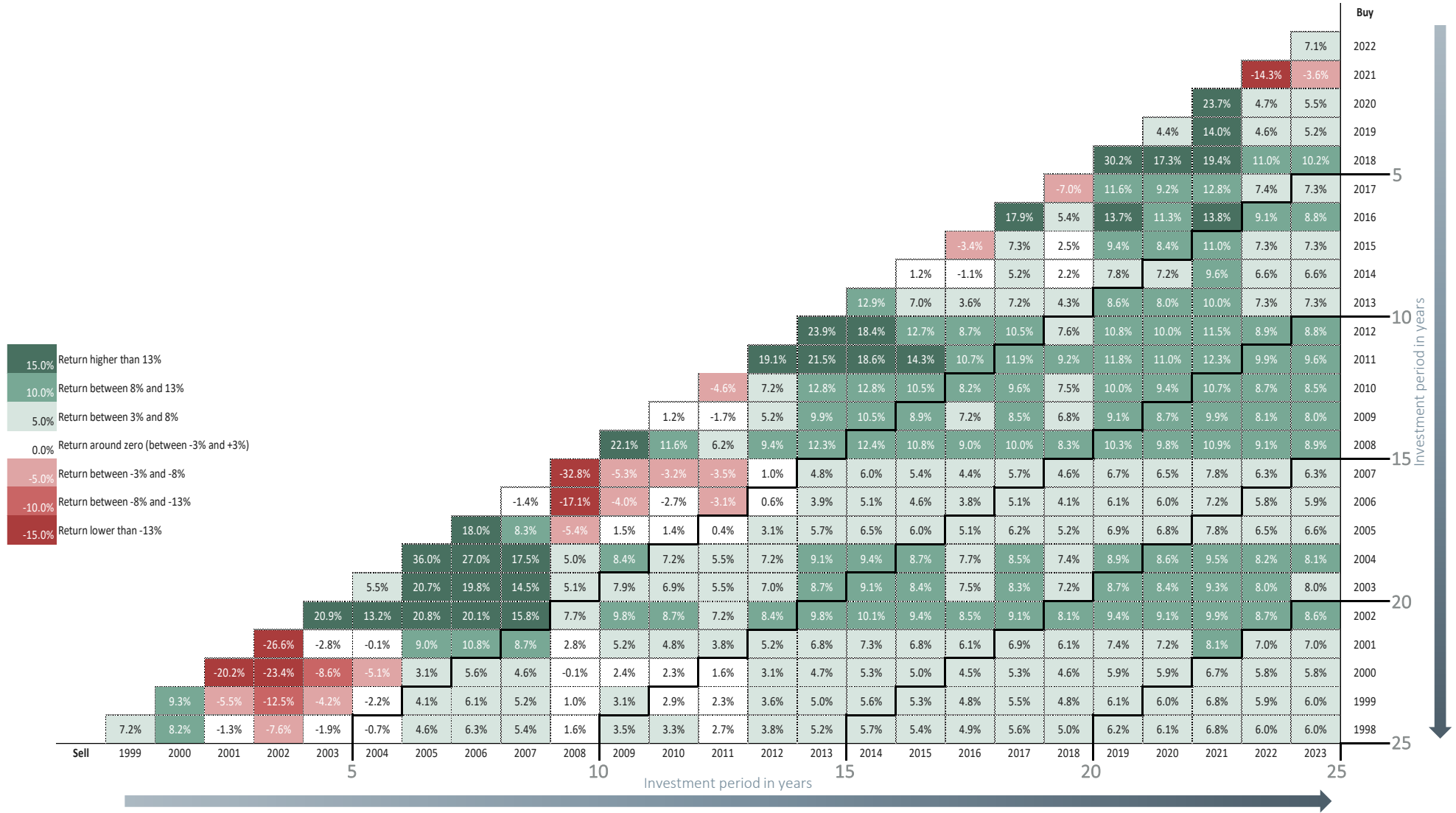


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# With a return of 7.1% over the past 12 months, performance of the SMI is significantly below the DAX and ATX

Arithmetic mean of historical market returns as of 31 December 2023, SMI Performance Index, 1998-2023

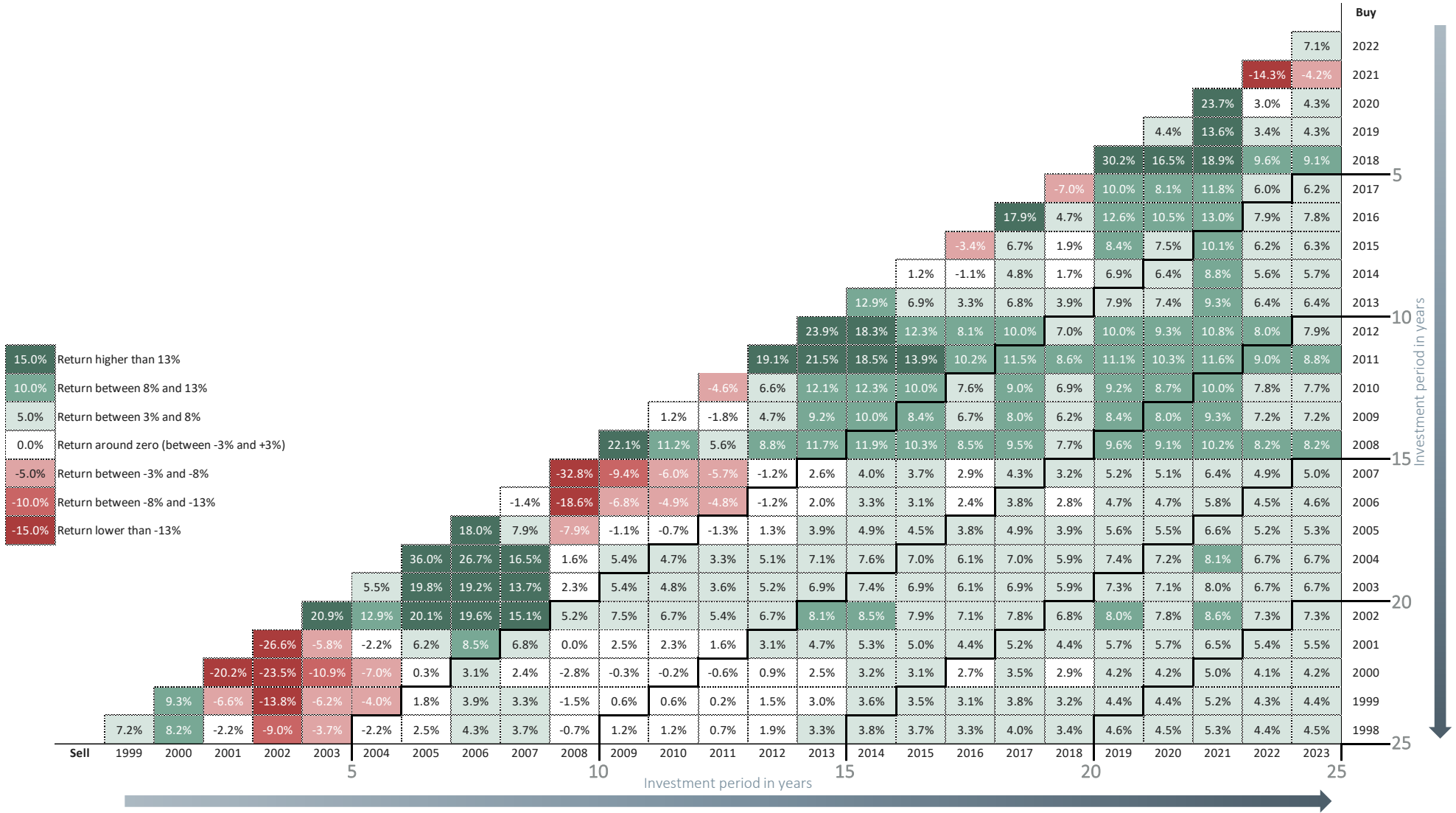


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Being the least volatile compared to DAX and ATX, the performance of the SMI in the last 12 months has slightly improved the geometric mean return of an investment in 2017 (from 6.0% to 6.2%)

Geometric mean of historical market returns as of 31 December 2023, SMI Performance Index, 1998-2023



- 15.0% Return higher than 13%
- 10.0% Return between 8% and 13%
- 5.0% Return between 3% and 8%
- 0.0% Return around zero (between -3% and +3%)
- 5.0% Return between -3% and -8%
- 10.0% Return between -8% and -13%
- 15.0% Return lower than -13%







Source: [https://www.dai.de/files/dai\\_usercontent/dokumente/renditedreieck/2015-12-31%20DAX-Rendite-Dreieck%2050%20Jahre%20Web.pdf](https://www.dai.de/files/dai_usercontent/dokumente/renditedreieck/2015-12-31%20DAX-Rendite-Dreieck%2050%20Jahre%20Web.pdf)








04 Beta

# The highest betas are in the Information Technology and Industrial sectors, which are the most cyclical, and the lowest in the Utilities and Real Estate sectors, which have stable earnings streams

Levered and unlevered beta factors by sector as of 31 December 2023

■ 2-years weekly    ■ 5-years monthly

Sector	Beta levered	Beta unlevered
 Banking <sup>1)</sup>	0.76 0.86	n.a.
 Insurance <sup>1)</sup>	0.94 0.75	n.a.
 Financial Services <sup>1)</sup>	1.06 1.16	n.a.
 Consumer Services	1.06 1.02	0.85 0.82
 Consumer Goods	1.09 0.90	0.78 0.67
 Pharma & Healthcare	1.10 1.07	1.00 0.96

Sector	Beta levered	Beta unlevered
 Information Technology	1.14 0.99	0.95 0.84
 Telecommunication	0.94 0.67	0.71 0.51
 Utilities	0.76 0.77	0.56 0.59
 Basic Materials	1.07 0.98	0.75 0.70
 Industrials	1.28 1.08	1.02 0.87
 Real Estate	0.76 0.66	0.50 0.44
 DACH region <sup>2)</sup>	1.04 1.02	

1. We refrained from adjustments of the companies' specific debt (unlevered) because indebtedness is part of the companies' operational activities and economic risk. Bank specific regulations about the minimum capital within financial institutions let us assume that the indebtedness degree is widely comparable. For that reason, it is possible to renounce the adaptation of levered betas.

2. For all DACH companies, the market value-weighted mean of the levered beta was calculated. This value deviates slightly from 1 due to the exclusion of statistically insignificant betas.



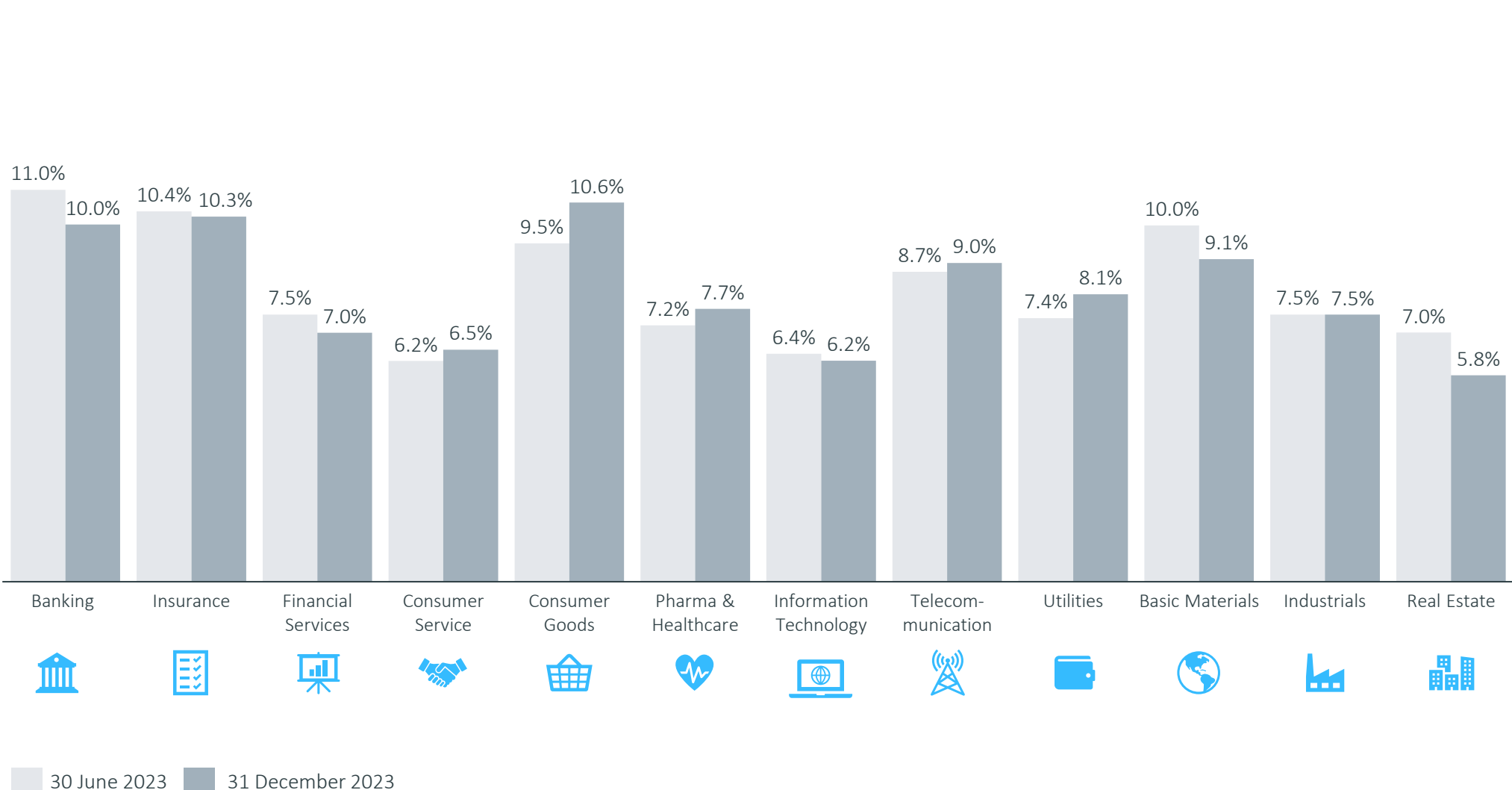
05

## Sector returns

a. Implied returns (ex-ante analysis)

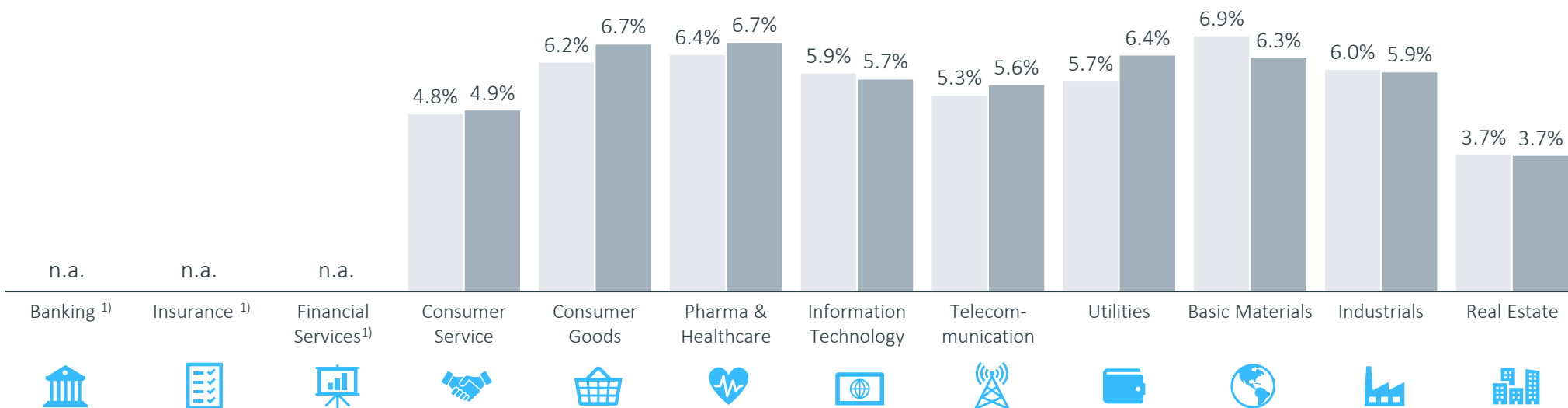
# The implied levered return showed a mixed picture, while the Consumer Goods sector increased significantly, the Real Estate sector declined strongly over the last 6 months

Implied levered returns by sector, 31 December 2023 vs. 30 June 2023



# The implied unlevered returns<sup>1)</sup> remain relatively stable, while it increased in the Utilities sector, the Basic Materials sector showed a decline

Implied unlevered returns by sector, 31 December 2023 vs. 30 June 2023

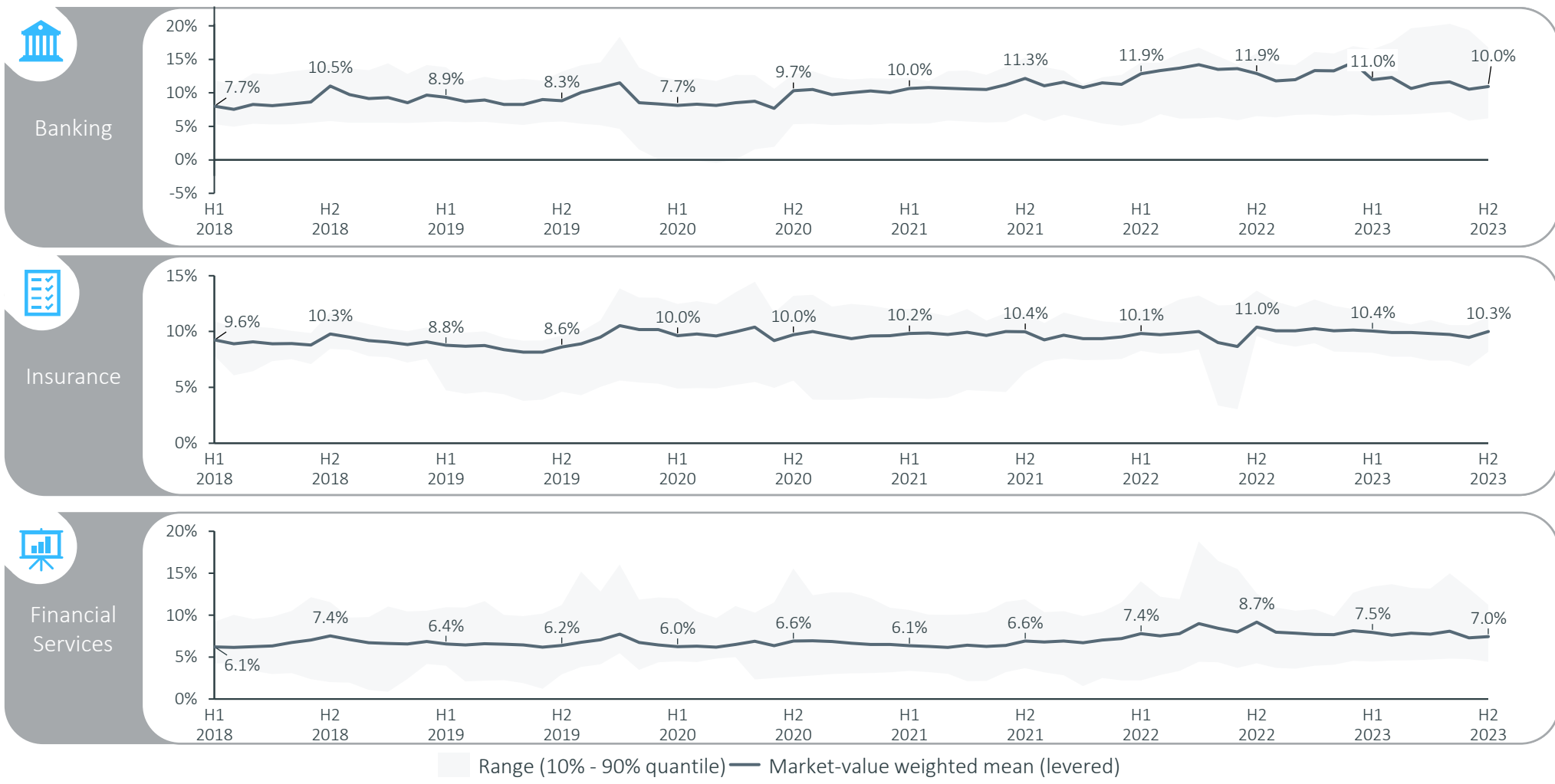


■ 30 June 2023 ■ 31 December 2023

1. No unlevered returns are reported for the Banking, Insurance and Financial Services sector, as debt is part of operating activities.

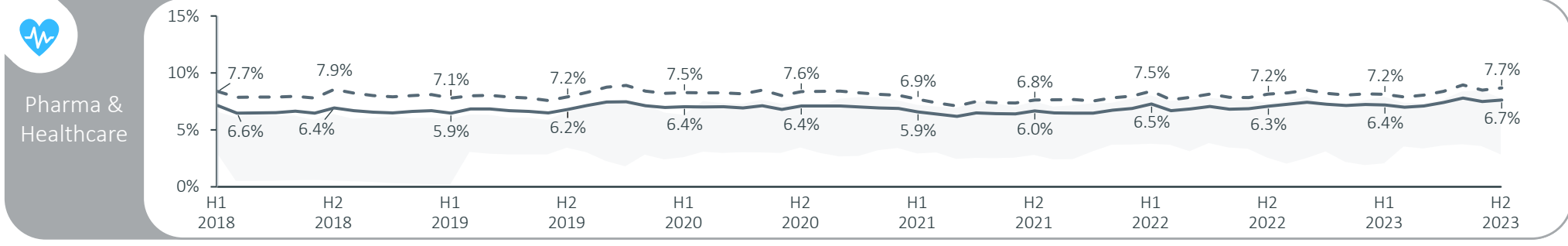
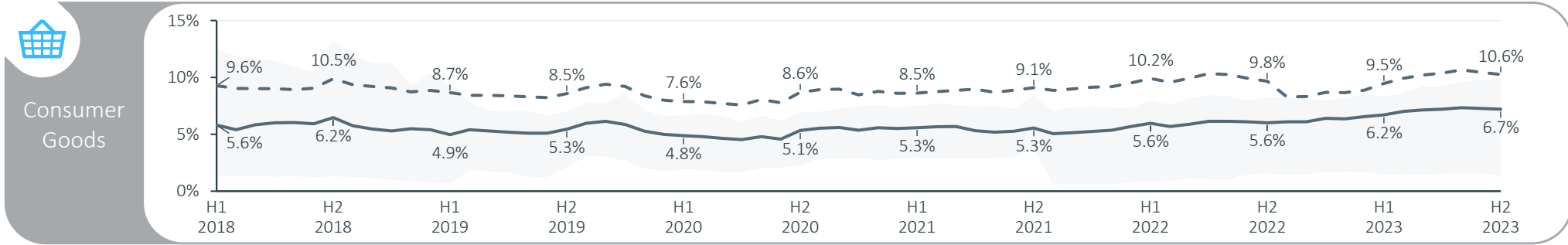
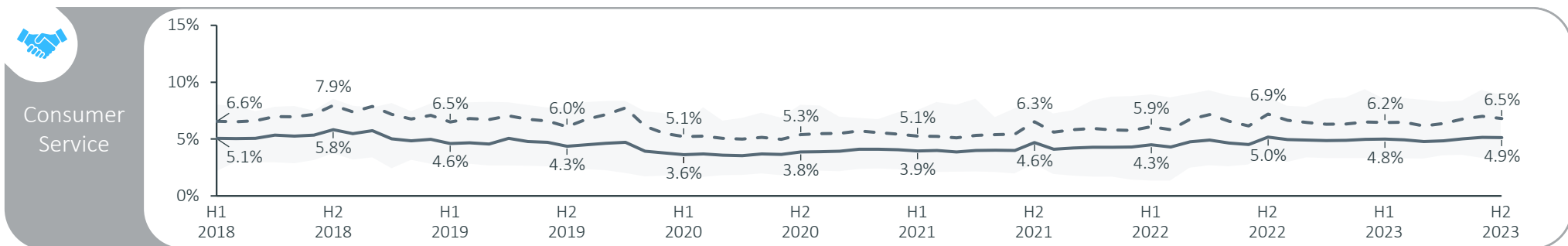
# The implied return of Banking, Insurance, and Financial Services sectors decreased towards the historical total share holder return level after reaching their peaks in December 2022

Implied levered sector returns since 2018



# Implied sector returns for Pharma & Healthcare and Consumer Services have been relatively stable over time, while Consumer Goods showed more volatility at higher levered implied returns

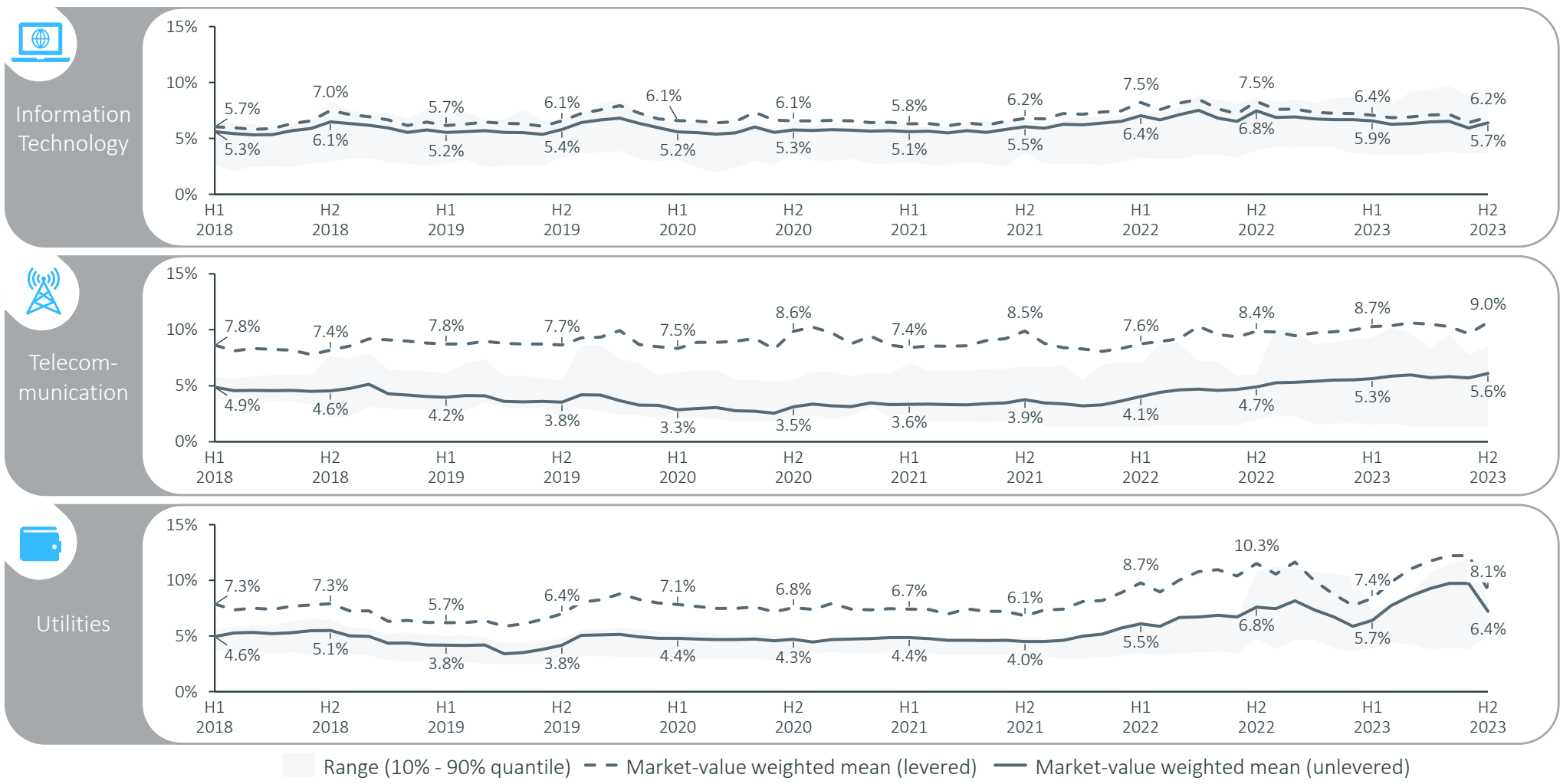
Levered and unlevered implied sector returns since 2018



Range (10% - 90% quantile) - - Market-value weighted mean (levered) — Market-value weighted mean (unlevered)

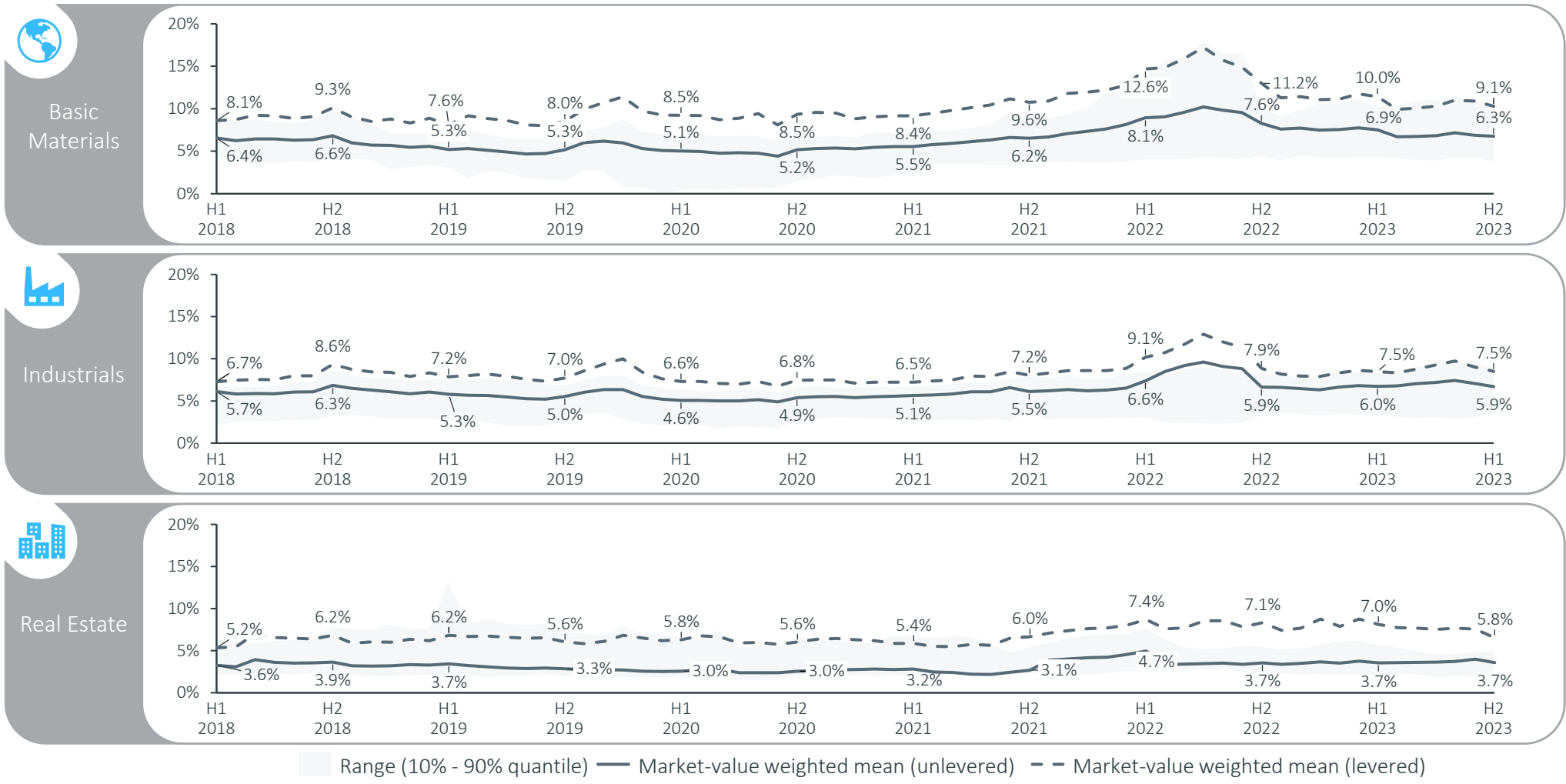
# The implied return of the Telecommunication sector further increased since its low in 2021 and reached its peak due to the reduction of P/E multiples driven by earnings growth

Levered and unlevered implied sector returns since 2018



# Implied returns of the Basic Materials and Real Estate sectors declined significantly; returns remained constant for the Industrial sector in the second half of 2023

Levered and unlevered implied sector returns since 2018



05

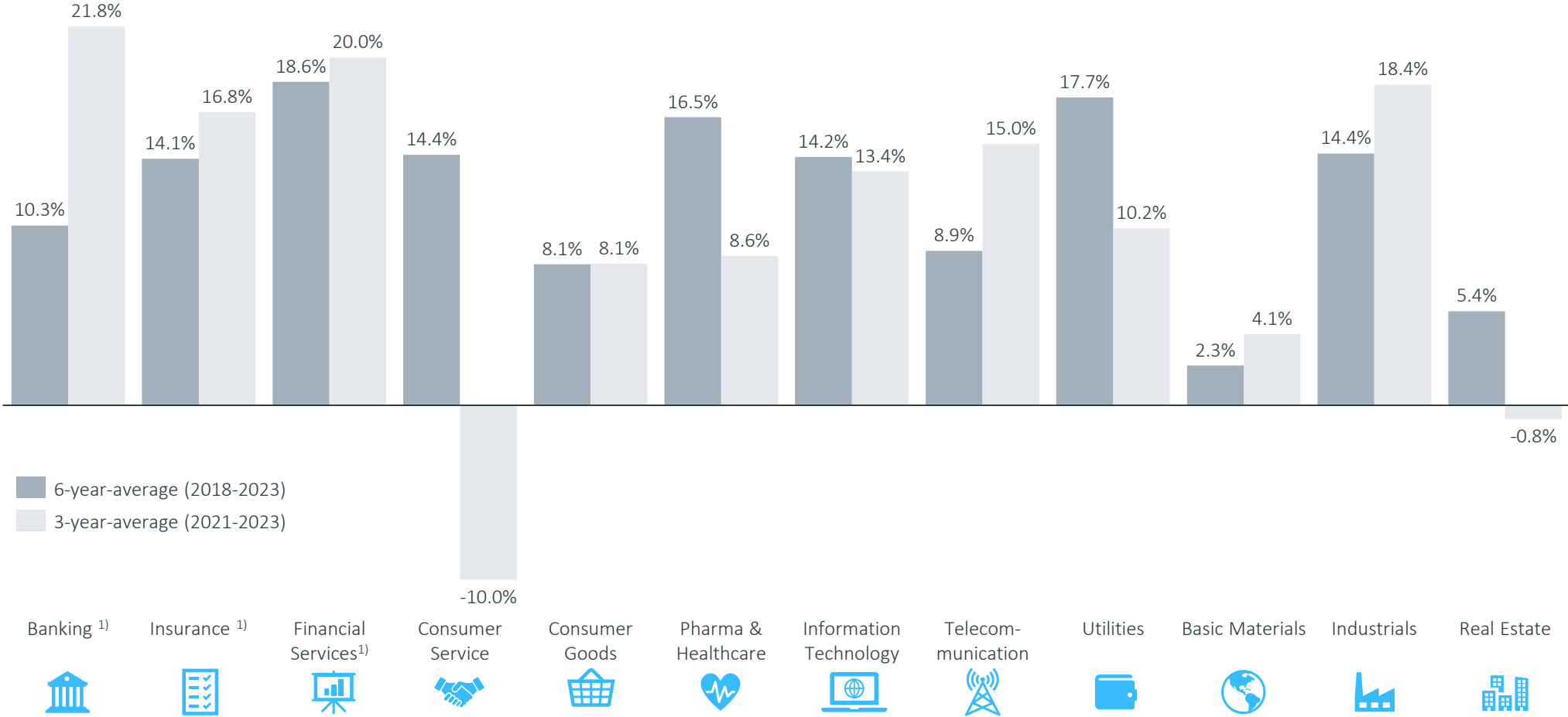
## Sector returns

b. Historical returns (ex-post analysis)



# Historical sector returns show varying impact of interest rate increases on sectors; Consumer Service sector returns were even negative while the Banking sector benefits from higher interest rates

Three- and six-year-average historical sector returns as of 31 December 2023



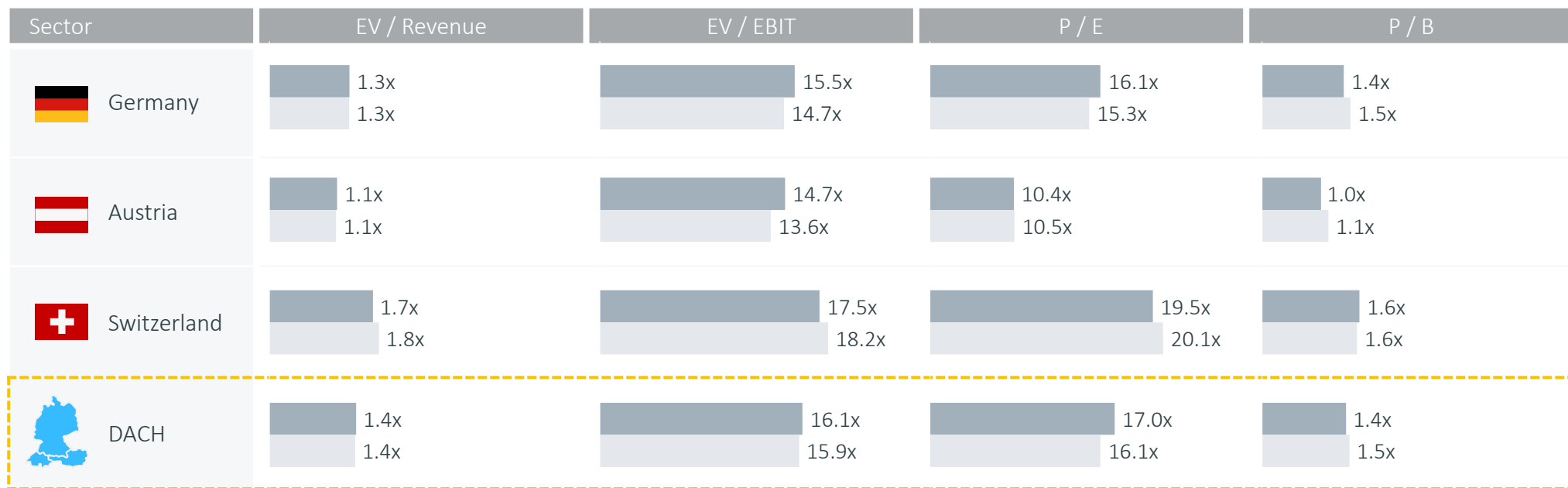
1. The returns for the sectors Banking, Insurance and Financial Services are levered sector returns. For all other sectors unlevered returns are displayed.

06

Trading multiples

# EV/EBIT and P/E multiples have slightly increased in the past 6 months; Switzerland continues to show the highest valuation levels, followed by Germany and Austria



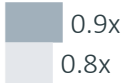

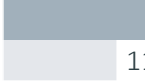
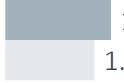

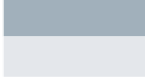
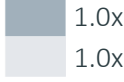

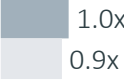
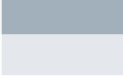
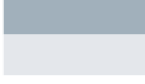
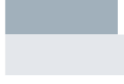

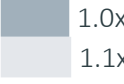




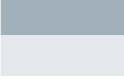
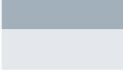
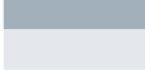
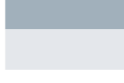
Median forward multiples by country, 31 December 2023 and 30 June 2023



31 December 2023
  30 June 2023

# P/E multiples increased in the Banking and Financial Services, as market capitalization growth was higher than earnings estimates growth

Median forward multiples by sector, 31 December 2023 and 30 June 2023

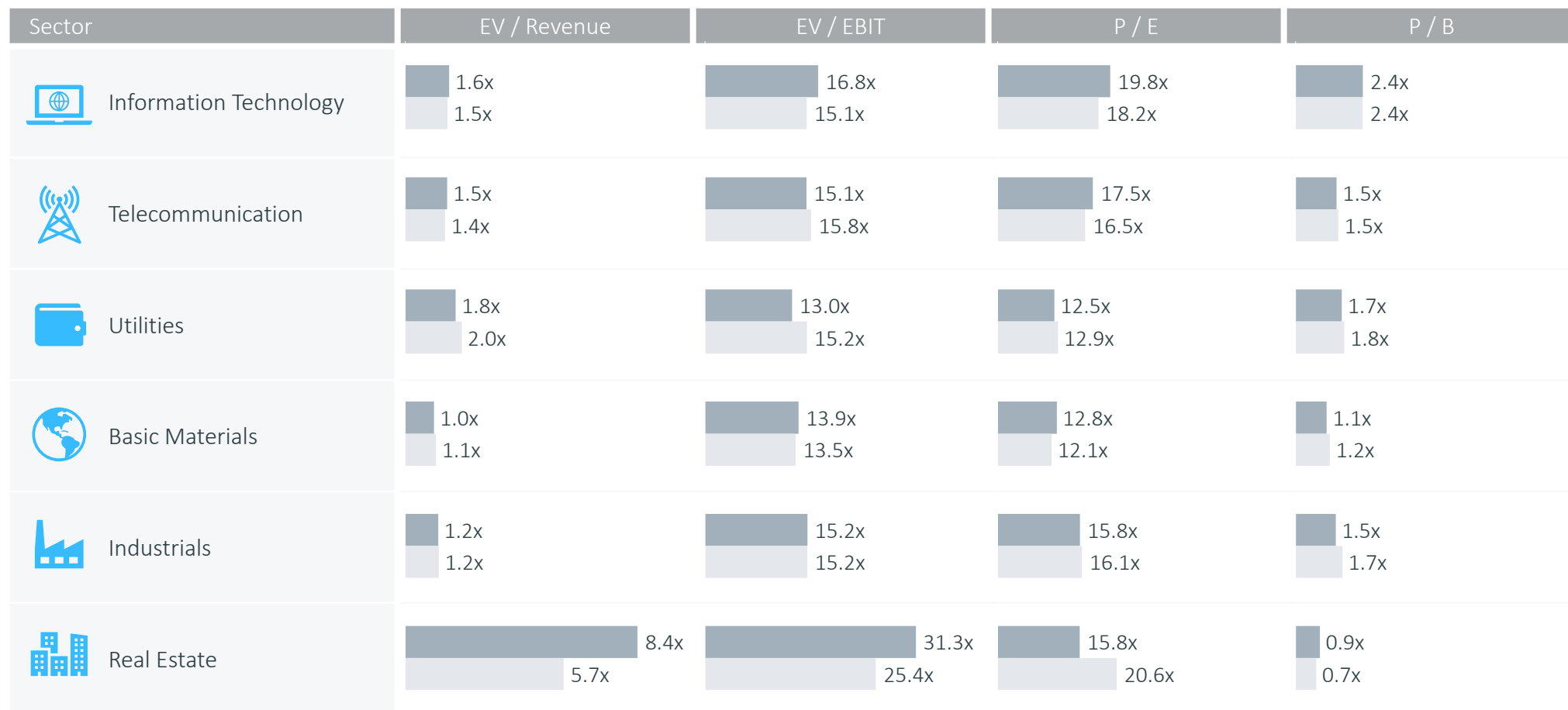
Sector	EV / Revenue	EV / EBIT	P / E	P / B
 Banking	n.a.	n.a.	 12.6x 10.7x	 0.9x 0.8x
 Insurance	n.a.	n.a.	 14.5x 11.8x	 1.7x 1.5x
 Financial Services	n.a.	n.a.	 17.4x 15.3x	 1.0x 1.0x
 Consumer Service	 1.0x 0.9x	 16.7x 16.7x	 20.5x 21.1x	 1.8x 2.2x
 Consumer Goods	 1.0x 1.1x	 15.0x 14.2x	 15.8x 16.4x	 1.4x 1.4x
 Pharma & Healthcare	 3.8x 4.3x	 22.7x 20.6x	 22.5x 22.2x	 2.5x 2.9x

■ 31 December 2023   ■ 30 June 2023

Note: For companies in the Banking, Insurance and Financial Services sectors, Revenue- and EBIT-Multiples are not meaningful and thus are not reported.

# The Real Estate sector's P/E decreased significantly, as earnings estimates relative to market capitalization increased more sharply in the last 6 months













Median forward multiples by sector, 31 December 2023 and 30 June 2023



■ 31 December 2023   ■ 30 June 2023

# Overall, based on median sector multiples, the Banking sector ranks lowest, and the Pharma & Healthcare sector ranks highest, while the Real Estate sector shows a mixed picture

Sector multiples ranking based on median, 1yf as of 31 December 2023

	EV / Revenue 1yf	EV / EBIT 1yf	P / E 1yf	P / B LTM	Ø Ranking
 Banking	n.a.	n.a.	11	11	11.0
 Insurance	n.a.	n.a.	9	4	6.5
 Financial Services	n.a.	n.a.	5	10	7.5
 Consumer Service	9	4	2	3	4.5
 Consumer Goods	8	7	6	8	7.3
 Pharma & Healthcare	2	2	1	1	1.5
 Information Technology	4	3	3	2	3.0
 Telecommunication	5	6	4	6	5.3
 Utilities	3	9	12	5	7.3
 Basic Materials	7	8	10	9	8.5
 Industrials	6	5	7	7	6.3
 Real Estate	1	1	8	12	5.5

The Banking sector showed the least expensive valuation level of all sectors.

The Pharma & Healthcare sector showed the highest multiples, followed by Information Technology, Consumer Service and Telco.

Note: Multiples are ranked from highest to lowest values: 1 – highest (dark green), 9/12 – lowest (red).

# Appendix

## Background and approaches

# German government bonds are used to derive risk-free rates for Germany and Austria, while the risk-free rate for Switzerland is based on Swiss government bonds

## Risk-free rate

The **risk-free rate** is a return available on a security that the market generally regards as free of default risk. It serves as an input parameter for the **CAPM** and is used to determine the risk-adequate cost of capital.

The risk-free rate is a yield, which is obtained from **long-term government bonds** of countries with top notch ratings. By using interest rate data of different maturities, a **yield curve** can be estimated for fictitious zero-coupon bonds (spot rates) for a period of up to 30 years. The German Central Bank (Deutsche Bundesbank) and the Swiss National Bank (Schweizer Nationalbank) publish – on a daily basis – the parameters needed to determine the yield curve using the **Svensson method**. Based on the respective yield curve, a **uniform risk-free rate** is derived under the assumption of present value equivalence to an infinite time horizon.

The **German bonds** are internationally classified as **almost risk-free securities** due to their AAA rating according to S&P. As a result, the **Austrian** Chamber of Public Accountants and Tax Consultants also recommends deriving the risk-free rate from the yield curve using the parameters published by the German Central Bank.<sup>1)</sup> Likewise, bonds issued by **Switzerland** enjoy a AAA rating and are also considered risk-free according to the Swiss National Bank.<sup>2)</sup> Hence, a similar approach as for Germany and Austria is in our view appropriate for Switzerland with Swiss parameters.<sup>3)</sup>

To compute the risk-free rate for a specific reference date, the **Institute of Public Auditors** (Institut der Wirtschaftsprüfer, **IDW**) in Germany recommends using an **average value** deduced from the daily yield curves over the **past three months** (IDW S 1).

In contrast, the **Austrian Expert Opinion (KFS/BW 1)** on company valuation recommends deriving the risk-free rate in line with the evaluated company's cash flow profile from the yield curve that is valid for the **reference date (reference date principle)**. Consequently, in the following analyses, we depict the **yield curve** for Germany following IDW S 1, while for Austria we adhere to the recommendations of KFS/BW 1.

For **Switzerland**, there is no generally accepted recommendation as to the determination of the risk-free rate. The most widely used risk-free rates in valuation practice are the yield of a **10-year Swiss government bond** as of the reference date as well as the **yield derived from the 3-month average of the daily yield curves** (in accordance with IDW S 1).

1. [www.bundesbank.de](http://www.bundesbank.de)

2. Swiss National Bank – Zinssätze und Renditen, p.11

3. *ibid.*, p.12



# The concept of implied cost of capital recently gained momentum

## Market returns and market risk premium: Implied returns

The **future-oriented** computation of **implied market returns** and **market risk premiums** is based on profit estimates for public companies and return calculations. This approach is called ex-ante analysis and allows us to calculate the “**implied cost of capital**”.

The **ex-ante method** offers an **alternative** to the **ex-post approach** of calculating the cost of capital by means of a regression analysis through the **CAPM**. The ex-ante analysis method seeks cost of capital which represent the **return expectations of market participants**. The approach assumes that the estimates of financial analysts reflect the expectations of the capital market.

The concept of **implied cost of capital** recently gained momentum. For example, when it was recognized by the German *Fachausschuss für Unternehmensbewertung* “**FAUB**”.<sup>1)</sup> It is acknowledged that implied cost of capital capture the **current capital market situation** and are thus able to reflect the effects of the current **low interest rate environment**.

Furthermore, recent **court rulings** with regards to appraisal proceedings appreciate the forward-looking nature of **implied cost of capital**. As of the **reference date**, it offers a more insightful perspective compared to the exclusive use of ex-post data.

In the analysis, we use – a simplified annual formula – the formula of the Residual Income Valuation Model by *Babbel*:<sup>2)</sup>

$$r_t = \frac{NI_{t+1}}{MC_t} + \left(1 - \frac{BV_t}{MC_t}\right) * g$$

With the following parameter definitions:

$r_t$  = Cost of equity at time t

$NI_{t+1}$  = Expected net income in the following time period t+1

$MC_t$  = Market capitalization at time t

$BV_t$  = Book value of equity at time t

$g$  = Projected growth rate

By solving the model for the cost of capital, we obtain the implied return on equity.<sup>3)</sup> Since *Babbel's* model does not need any explicit assumptions except for the growth rate it turns out to be **robust**. We source all data (i.e. expected annual net income, market capitalization, and book value of equity, etc.) of the analyzed companies from the data supplier S&P Capital IQ. As a typified growth rate, we apply the European Central Bank target inflation rate of **2.0% as a typified growth rate**.

We determine the **implied market returns** for the DAX, ATX and SMI. We consider these indices to be a valid approximation for the total markets.<sup>4)</sup> Subtracting the risk-free rate from the implied market returns results in the implied market risk premium.

To determine the appropriate market risk premium for valuation purposes, it is also important to take into account historical returns and volatility. Especially in times of crisis it may make sense to apply an average market risk premium over several periods instead of a reference date value.

1. cf. Castedello/Jonas/Schieszl/Lenkner, Die Marktrisikoprämie im Niedrigzinsumfeld – Hintergrund und Erläuterung der Empfehlung des FAUB (WPg, 13/2018, p. 806-825);

2. cf. Babbel, Challenging Stock Prices: Stock prices und implied growth expectations, in: Corporate Finance, N. 9, 2015, p. 316-323, in particular p. 319. In the observation period from H2 2020 until H2 2021, we applied t+2 earnings forecasts in our model due to distortions by the COVID-19 crisis;

3. cf. Reese, 2007, Estimation of the cost of capital for evaluation purposes; Aders/Aschauer/Dollinger, Die implizite Marktrisikoprämie am österreichischen Kapitalmarkt (RWZ, 6/2016, p. 195-202);

4. Approx. 75% of the total market capitalization (CDAX, WBI, SPI) is covered.

## Betas are calculated based on regressions and adjusted to take the capital structure into account

### Betas

**Beta** is used in the **CAPM** and also referred to as beta coefficient or beta factor. Beta is a measure of **systematic risk** of a security of a specific company (**company beta**) or a specific sector (**sector beta**) in comparison to the market. A beta of less than 1 means that the security is theoretically less **volatile** than the market. A beta of greater than 1 indicates that the security's price is more volatile than the market.

Beta factors are estimated based on **historical returns of securities** in comparison to an **approximate market portfolio**. Since a company valuation is **forward-looking**, it has to be examined which risk factors from the past also apply to the future, and to which extent. In valuing non-listed companies or companies without meaningful share price performance, it is common practice to use a beta factor from a group of comparable companies ("**peer group beta**"), a suitable sector ("**sector beta**") or one single listed company in the capital market with a similar business model and similar risk profile ("**pure play beta**"). Within this Capital Market Study, we have used **sector betas** which are computed as **arithmetic means of the statistically significant beta factors of all companies** of a particular sector.

The calculation of beta factors is usually accomplished through a **linear regression analysis**. We use the CDAX, WBI, and SPI as country specific reference indices.

It is important to set a time period over which the data is collected (**benchmark period**), and whether daily, weekly or monthly returns (**return interval**) are analyzed. In practice, it is common to use **observation periods of two years** with the regression of **weekly returns** or **five years** with the regression of **monthly returns**. Both alternatives are displayed in our Study.

In the CAPM, company specific **risk premiums** include **business risk**, and financial **risk**. The beta factor of levered companies ("**levered beta**") is usually higher compared to a company with an identical business model but without debt (due to financial risk). Hence, **changes in the capital structure** require an **adjustment of the betas** and therefore of the company specific risk premiums.

Various adjustment formulas are available to calculate the **unlevered beta**. We prefer to use the **adjustment formula by Harris/Pringle** which assumes a value-based financing policy, stock-flow adjustments without time delay, uncertain tax shields and a so-called **debt beta**. We calculate the debt beta based on the respective company's rating or the average sector rating (if a company's rating is not available) through the application of the **credit spread** derived from the expected cost of debt. We do not adjust the credit spread for unsystematic risks. Capital market data, in particular historical market prices, is provided by the data supplier S&P Capital IQ.

# Implied sector returns simplify the calculation of the levered cost of equity

## Sector returns: Implied returns

Besides the future-oriented calculation of **implied market returns**, we also calculate **implied returns for sectors**. That offers an **alternative** to and simplification of the **ex-post analysis** of the company's cost of capital via the **CAPM**. Using this approach, the calculation of sector betas via regression analyses is not necessary.

The **implied sector returns** can be used as an **indicator** for the **sector specific levered cost of equity**, which already consider **sector specific leverage**.

The following return calculations are again based on the Residual Income Valuation Model by *Babbel*.<sup>1)</sup> The required data (i.e. net income, market capitalization, and book value of equity) are sourced from the data provider S&P Capital IQ. With regards to profit growth, we assume a growth rate of 2.0%.

We unlever the implied returns with the following **equation** for the **cost of equity**<sup>2)</sup> to take into account the specific leverage:<sup>3)</sup>

$$r_E^L = r_E^U + (r_E^U - R_f) * \frac{D}{E}$$

with:

$$\begin{aligned} r_E^L &= \text{Levered cost of equity} \\ r_E^U &= \text{Unlevered cost of equity} \\ R_f &= \text{Risk-free rate} \\ \frac{D}{E} &= \text{Debt}^{4)}\text{-to-equity ratio} \end{aligned}$$

The **implied unlevered sector returns** serve as an indicator for the **aggregated and unlevered cost of equity** for **specific sectors**. The process of relevering a company's cost of capital to reflect a company specific debt situation (cf. calculation example on the next slide) can be accomplished without using the CAPM.

1. cf. Babbel, Challenging Stock Prices: Share prices and implied growth expectations (Corporate Finance, n. 9, 2015, p. 316-323, especially p. 319); cf. Aders/Aschauer/Dollinger, Die implizite Marktrisikoprämie am österreichischen Kapitalmarkt (RWZ, 6/2016, p. 195-202);  
2. In situations in which the debt betas in the market are distorted, we would have to adjust these betas to avoid unsystematic risks. For simplification reasons, we deviate from our typical analysis strategy to achieve the enterprise value (Debt beta > 0) and assume that the cost of debt are at the level of the risk-free rate. This process is designed by the so-called Practitioners formula (uncertain tax shields, debt beta = 0), cf. Pratt/Grabowski, Cost of Capital, 5th ed., 2014, p. 253;

3. We assume that the cash and cash equivalents are used entirely for operational purposes. Consequently, we do not deduct excess cash from the debt;  
4. "Debt" is defined as all interest-bearing liabilities. The debt illustration of the companies in the Banking, Insurance and Financial Services sector only serves an informational purpose. We will not implement an adjustment to these companies' specific debt (unlevered) because their indebtedness is part of their operational activities and economic risk.

# An exemplary calculation of relevered cost of equity to adjust for the company specific capital structure

Sector returns: Implied returns

## Calculation example:

As of the reference date 31 December 2023, we observe a sector specific, unlevered cost of equity of **6.3%** (market-value weighted mean) in the German Basic Materials sector. For the exemplary company X, which operates in the German Basic Materials sector, the following assumptions were made:

- Debt-to-equity ratio of X: **40%**
- Risk-free rate: **2.72%** (cf. slide 13)

Based on these inputs, we calculate the relevered cost of equity for company X with the adjustment formula:

$$r_E^L = 6.3\% + (6.3\% - 2.72\%) * 40\% = 7.8\%$$

**7.8%** is the company's relevered cost of equity. In comparison, the levered cost of equity of the Basic Materials sector is **9.1%**, reflecting the sectors' lower average leverage.

## Historical sector returns are calculated using market-weighted aggregated sector indices

### Sector returns: Historical returns

In **addition** to **historical market returns**, we calculate **historical sector returns**.

Our analysis contains **total shareholder returns** including **share price development** and **dividend yield**.

We calculate **total annual shareholder returns as of 31 December** for every listed company of CDAX, WBI, and SPI. We aggregate these returns market-value weighted **to sector returns**. Our calculations comprise the time period between 2018 and 2023.

Since total annual shareholder returns tend to fluctuate to a great extent, their explanatory power is limited. Therefore, we do not only calculate the 1-year market-value weighted means, but 3-year (2021-23) as well as the 6-year (2018-23) averages.

# The multiples approach can be used for company valuation

## Trading multiples

Besides income-based valuation models (earnings value, DCF), the **multiples approach** offers a practical approach for an enterprise value estimation. The multiples method estimates a subject company's value **relative** to another company's value. The enterprise value is derived by multiplying a reference value (revenue or earnings values are frequently used) of the subject company by the respective multiples of **comparable companies**.

Within this Study, we calculate the following **multiples for the "super-sectors"** as well as **for the DACH market** consisting of the German, Austrian and Swiss capital markets (CDAX, WBI and SPI):

- Revenue-Multiples ("EV<sup>1</sup>/Revenue")
- EBIT-Multiples ("EV<sup>1</sup>/EBIT")
- Price-to-Earnings-Multiples ("P/E")
- Price-to-Book Value-Multiples ("P/B")

Multiples are presented for the reference dates 31 December 2023 and 30 June 2023. The reference values are based on one-year forecasts of analysts (so called forward multiples, in the following "**1yf**"). Solely the Price-to-Book-Value-Multiples are calculated with book values as of the reference dates. We present **median** values.

We present historical multiples starting as of 30 June 2018 in the appendix and update the applied multiples **semi-annually at the predefined reference date (as of 31 December and as of 30 June)**.

For the purpose of **simplification**, we exclude negative multiples and multiples in the highest quantile (95%). The multiples in the lowest quantile (5%) build the lower limit.

We source the data (i.e. market capitalization, revenue, EBIT, etc.) from the data provider S&P Capital IQ. Based on the availability of data, especially in terms of forecasts, the number of companies underlying each specific multiple varies.

Additionally, we present a **ranking table** of the sector multiples. Sector multiples are sorted from highest to lowest for each analyzed multiple. The resulting score in the ranking is displayed in the table and visualized by a color code that assigns a dark **green color** to the **highest rank** and a **red color** to the **lowest rank**. Thus, a green colored high rank indicates a high valuation level, whereas a red colored low rank suggests a low valuation level. We then aggregate the rankings and calculate an average of all single rankings for each sector multiple. This is shown in the right column of the ranking table. This **average ranking** indicates the overall **relative valuation levels** of the sectors when using multiples.

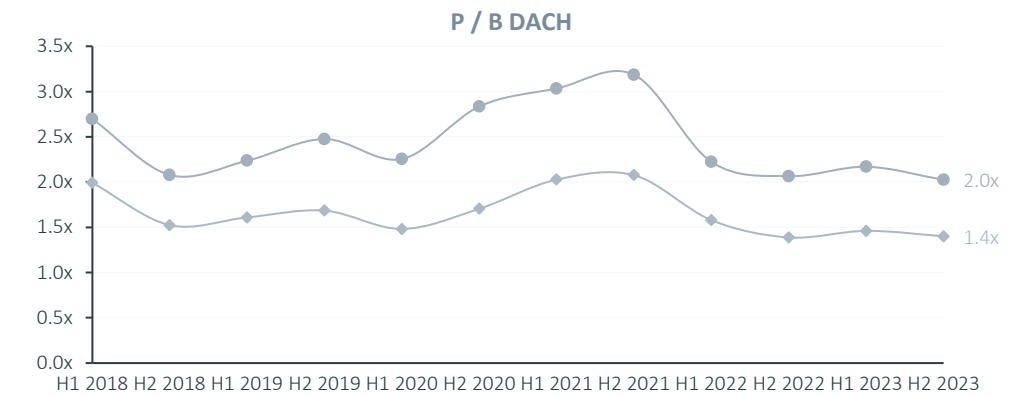
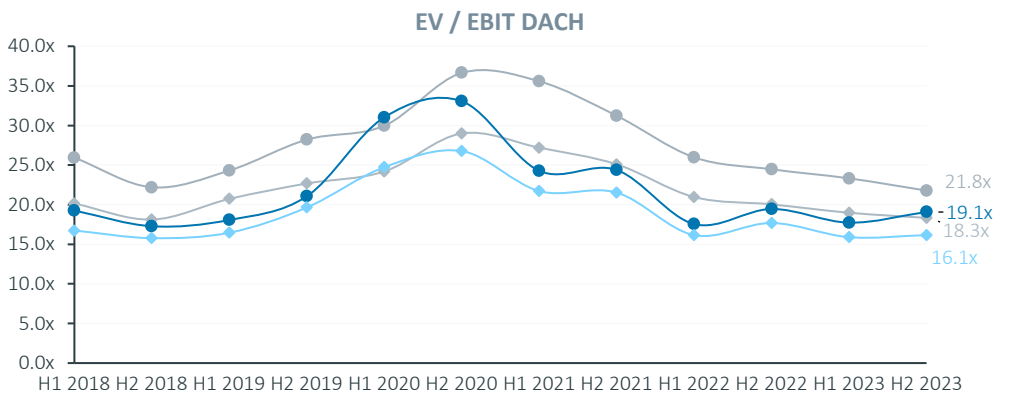
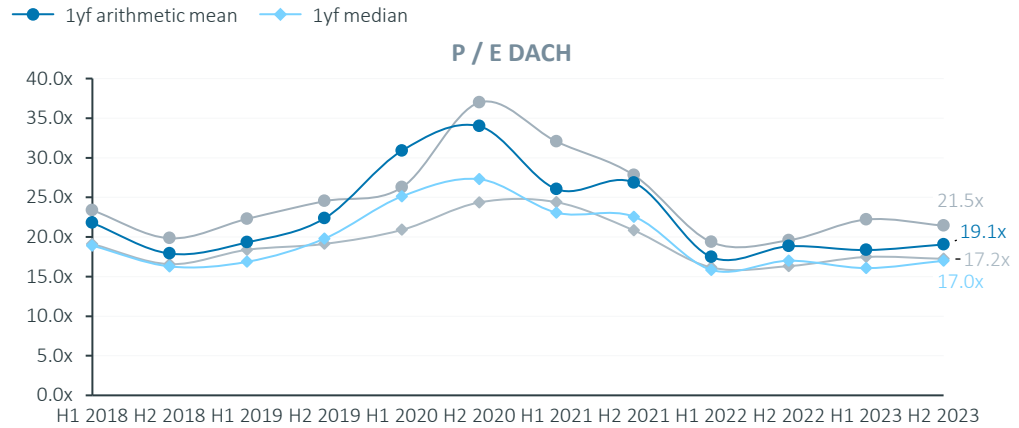
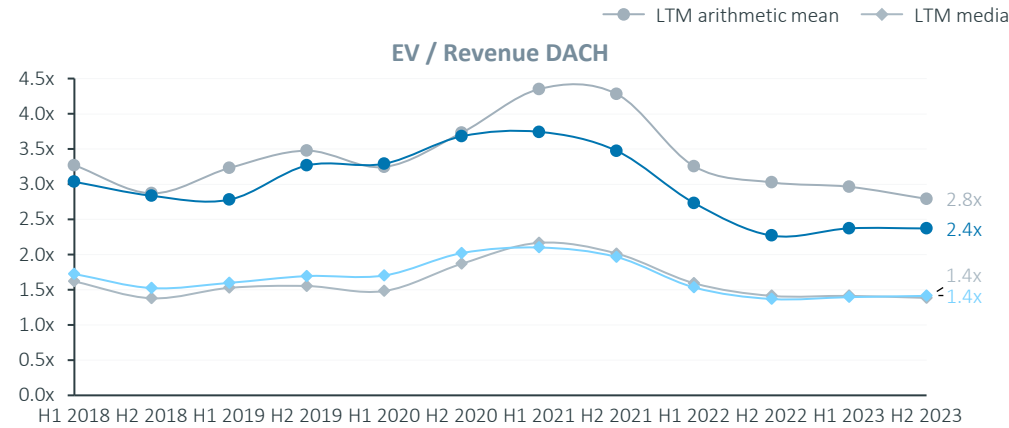
1. Enterprise value

# Appendix

Historical development of trading multiples  
since 2018

# DACH region

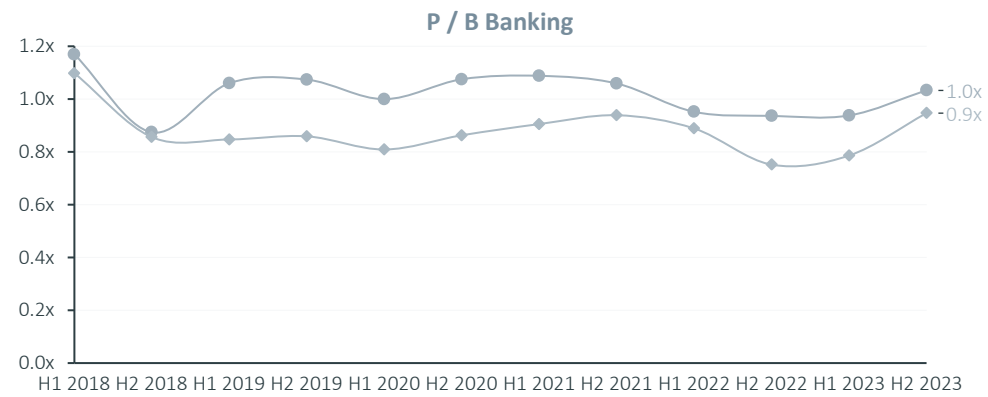
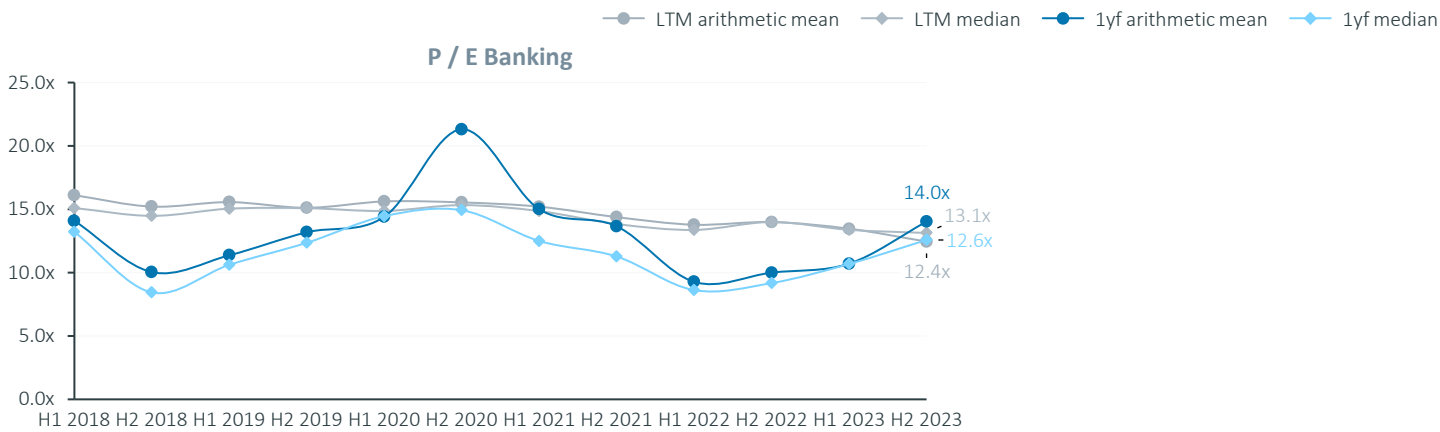
## Revenue-, EBIT-, P/E- and P/B-Multiples





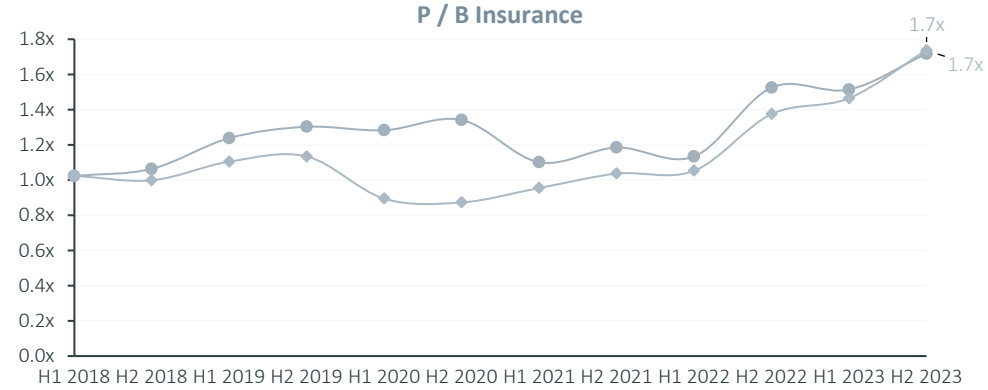
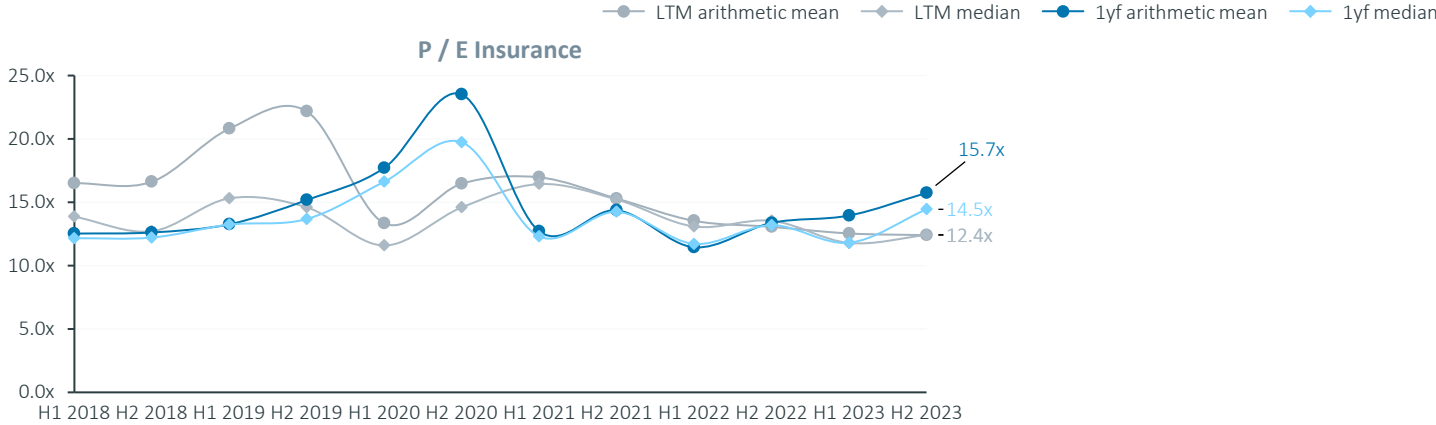
# Banking

## P/E- and P/B-Multiples



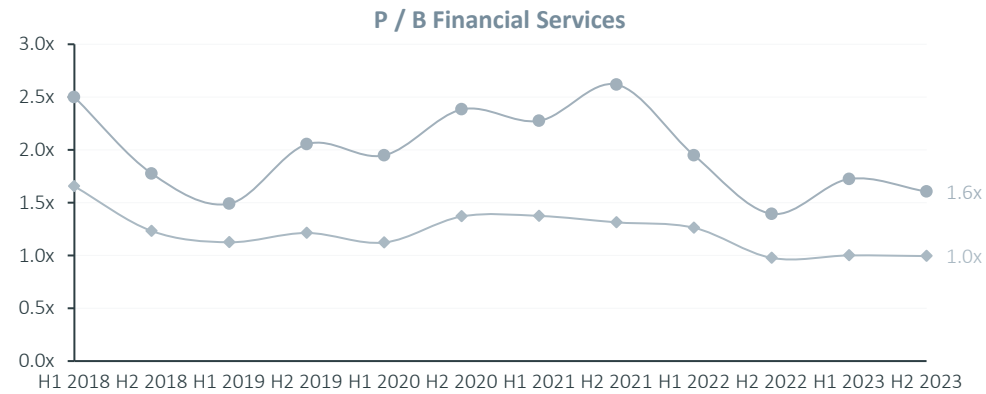
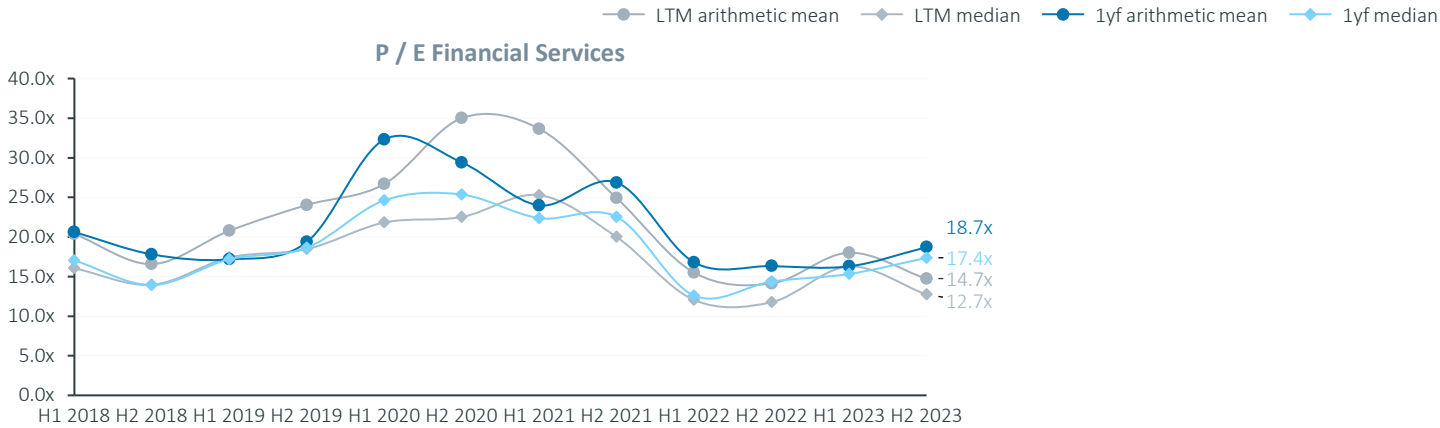
# Insurance

## P/E- and P/B-Multiples



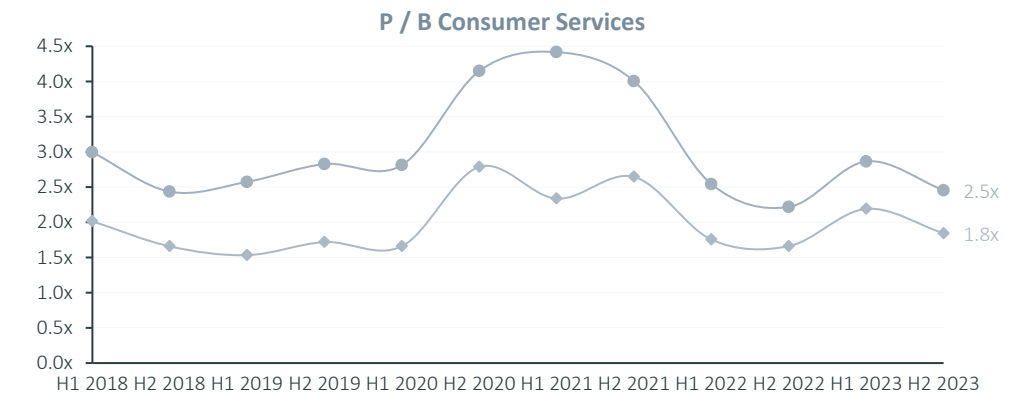
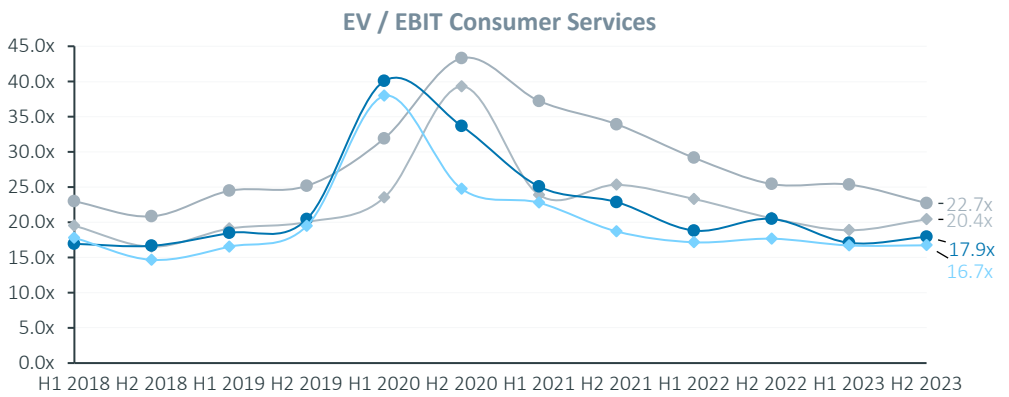
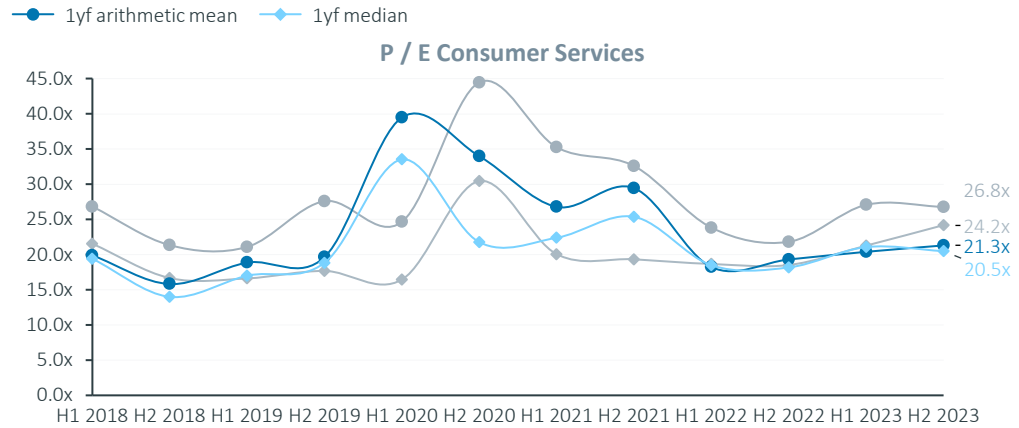
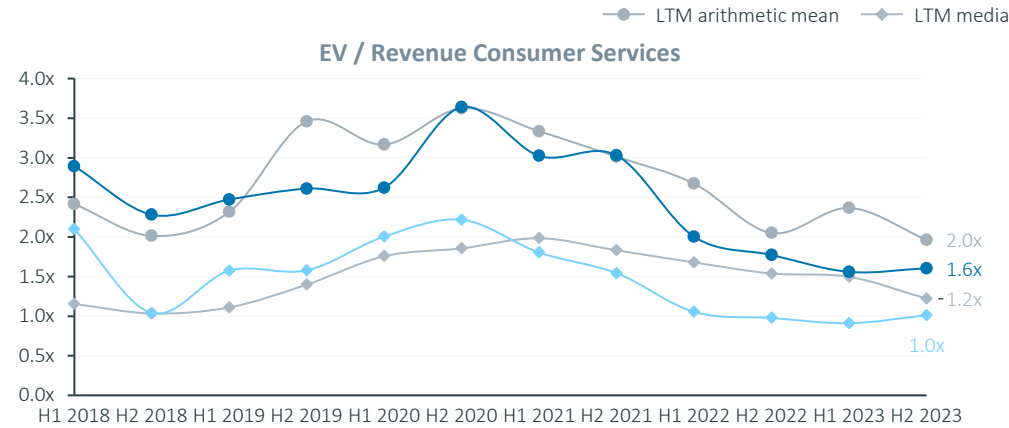
# Financial Services

## P/E- and P/B-Multiples



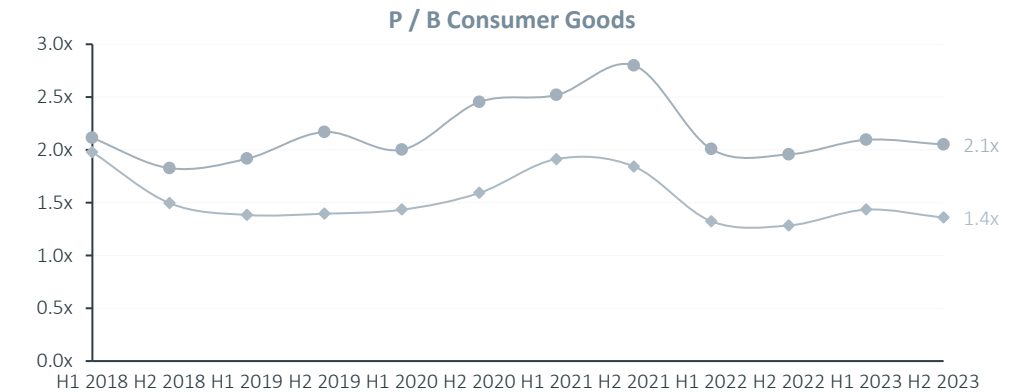
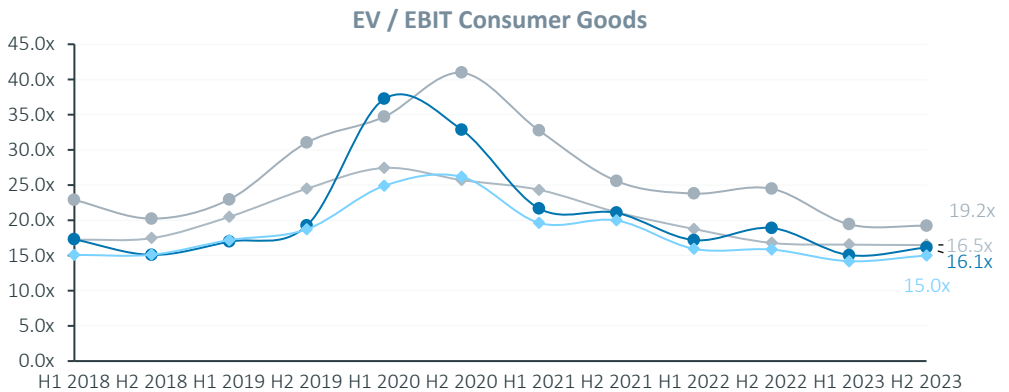
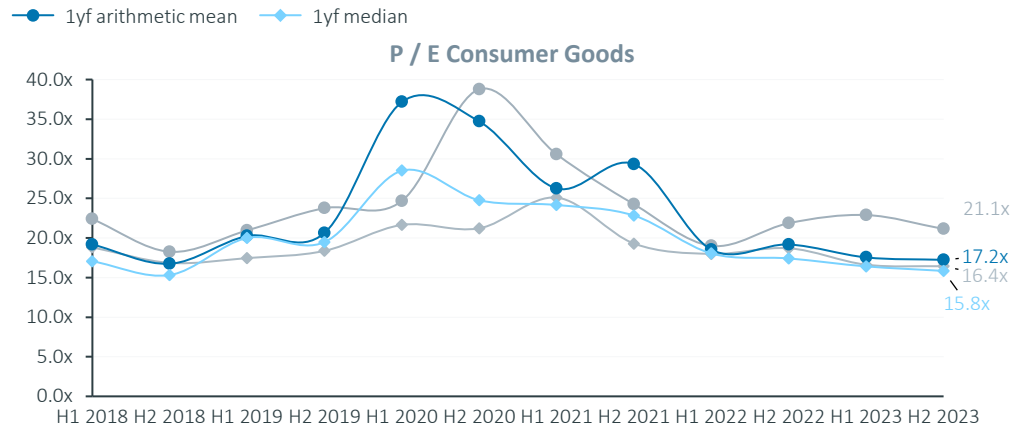
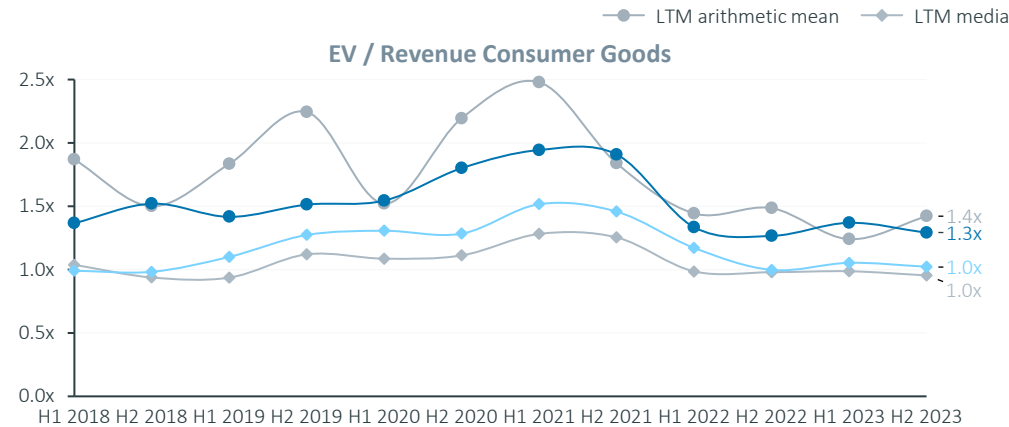
# Consumer Services

Revenue-, EBIT-, P/E- and P/B-Multiples



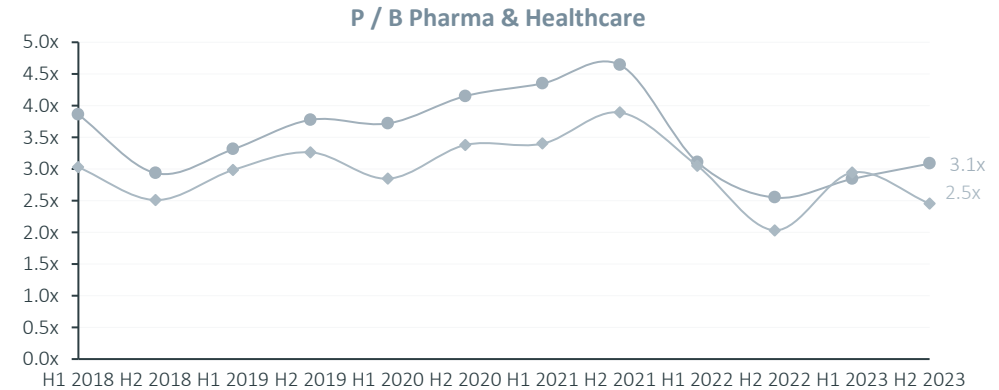
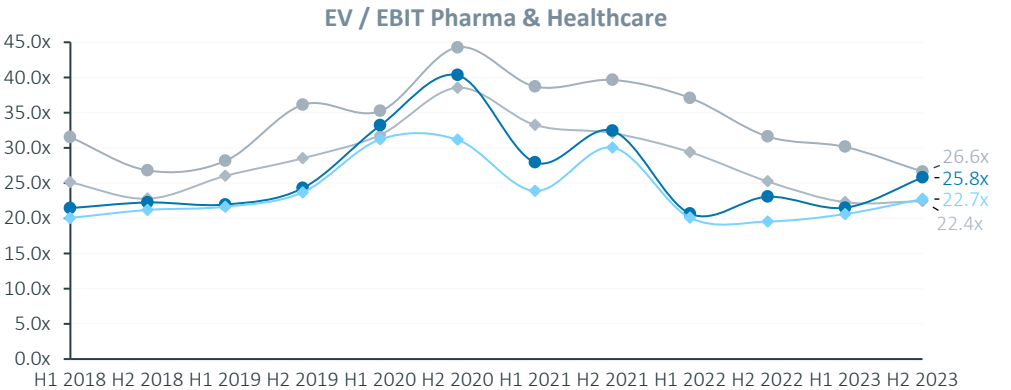
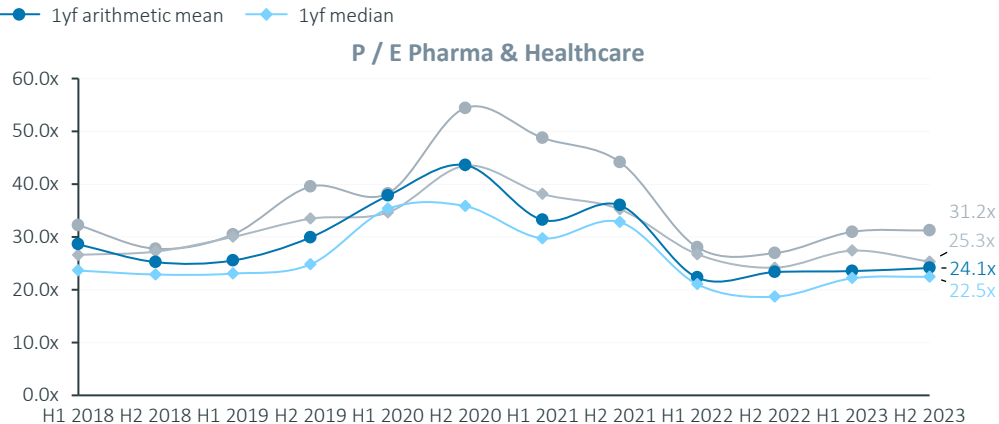
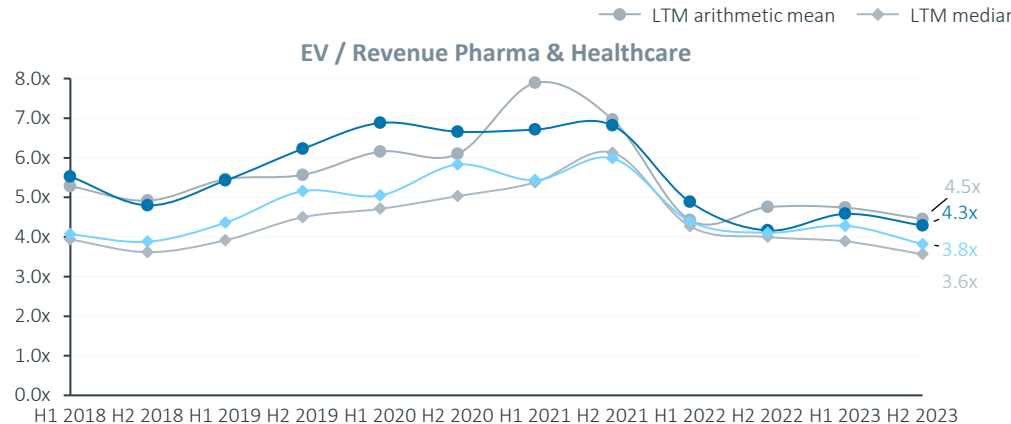
# Consumer Goods

Revenue-, EBIT-, P/E- and P/B-Multiples



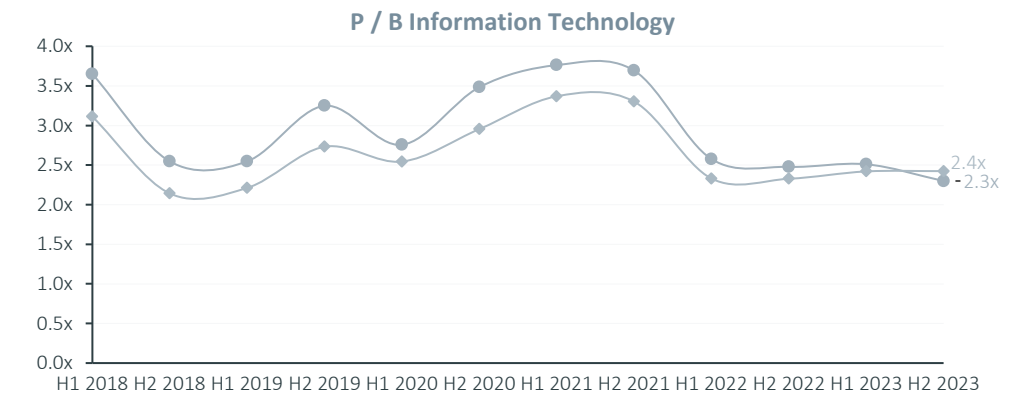
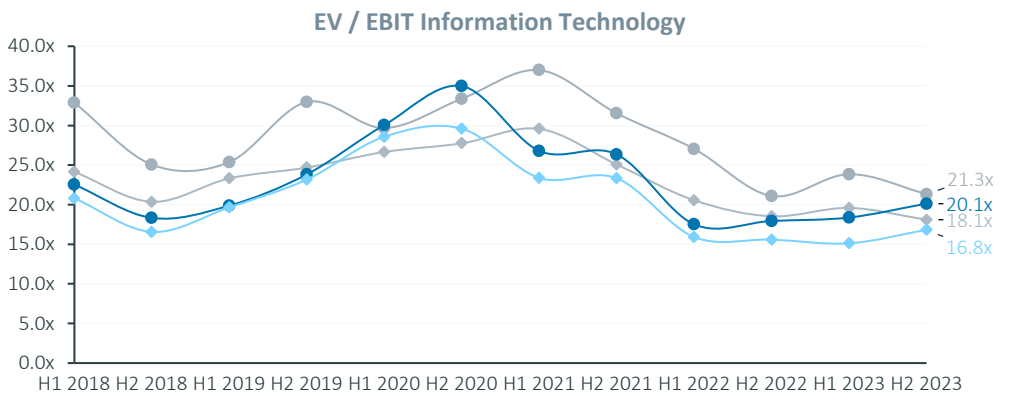
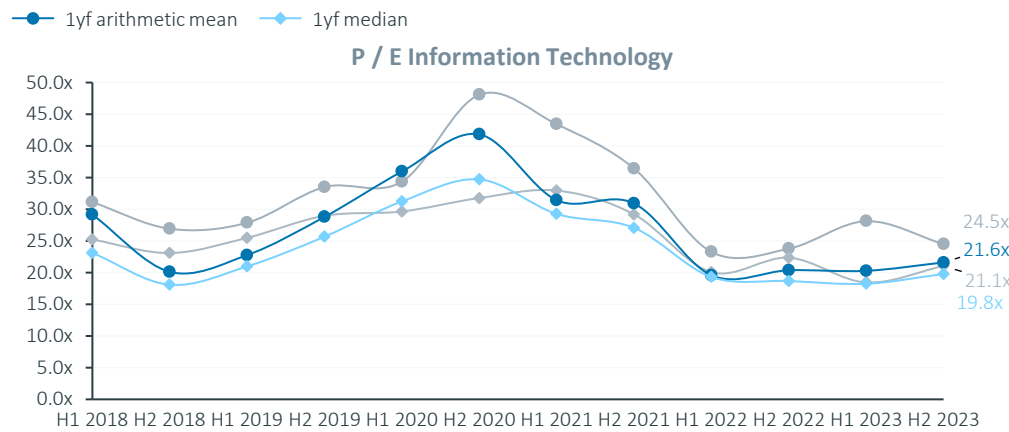
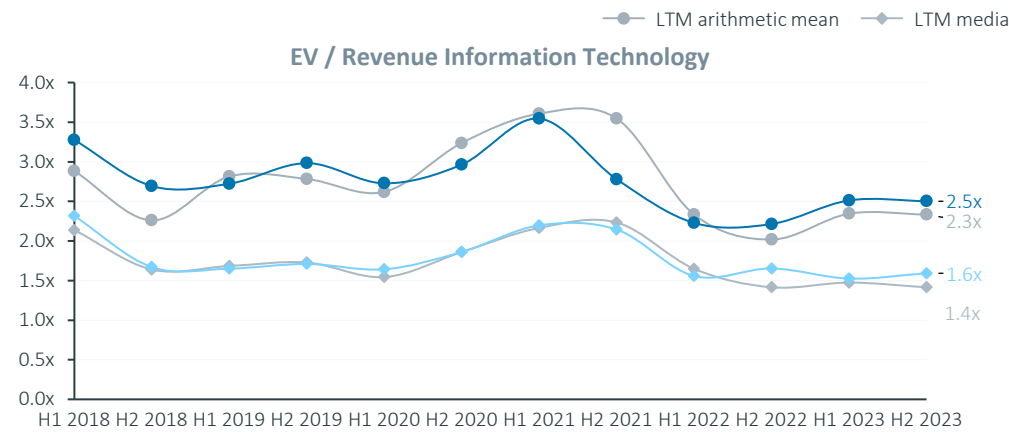
# Pharma & Healthcare

Revenue-, EBIT-, P/E- and P/B-Multiples



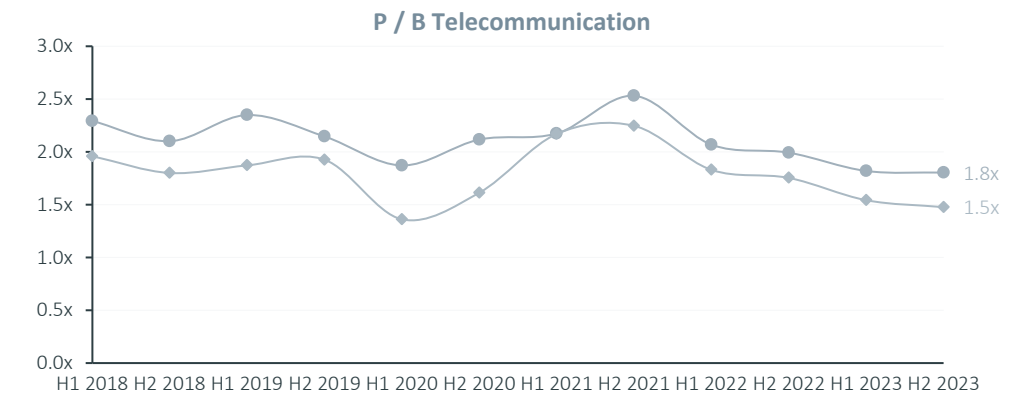
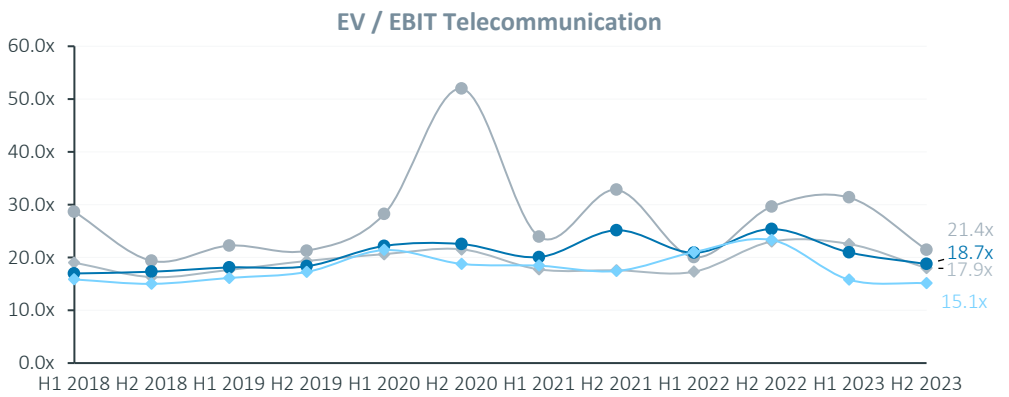
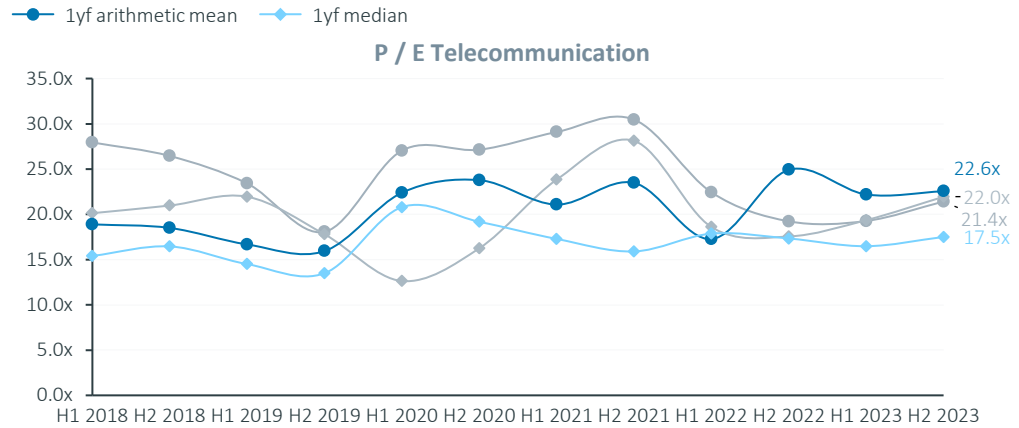
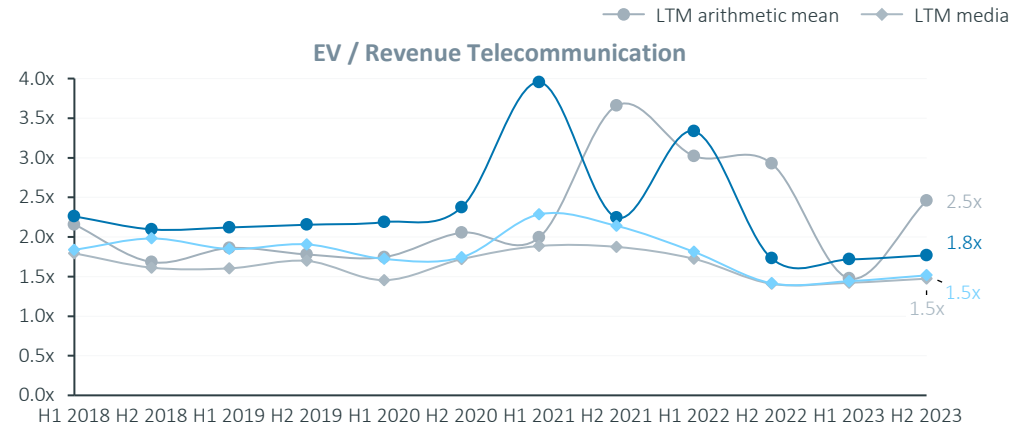
# Information Technology

Revenue-, EBIT-, P/E- and P/B-Multiples



# Telecommunication

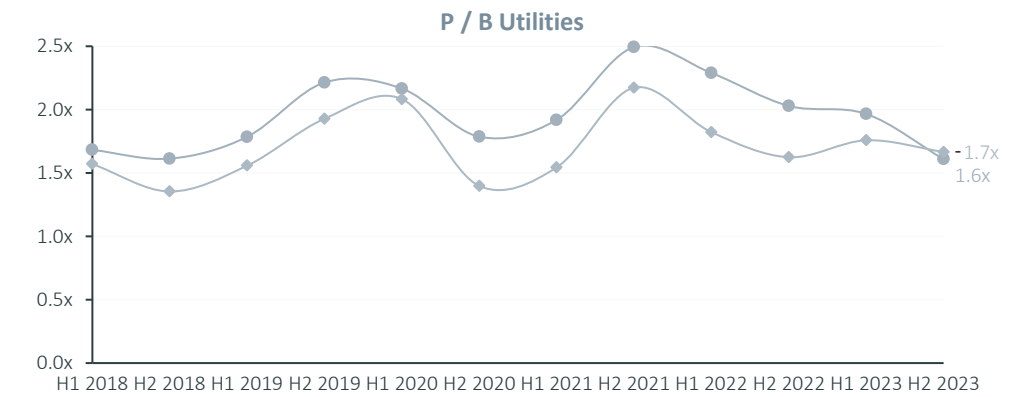
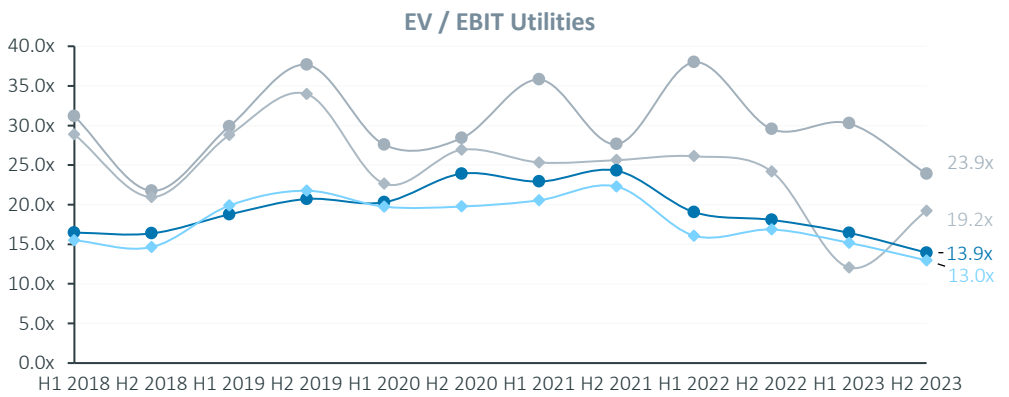
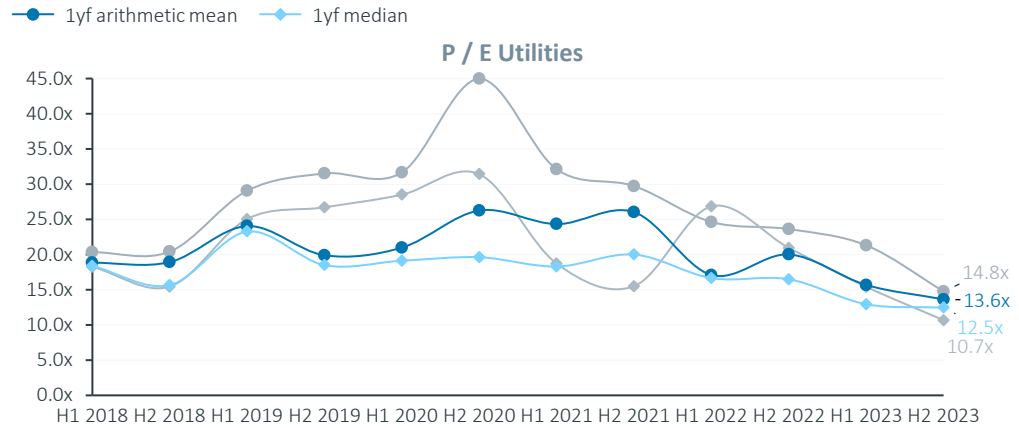
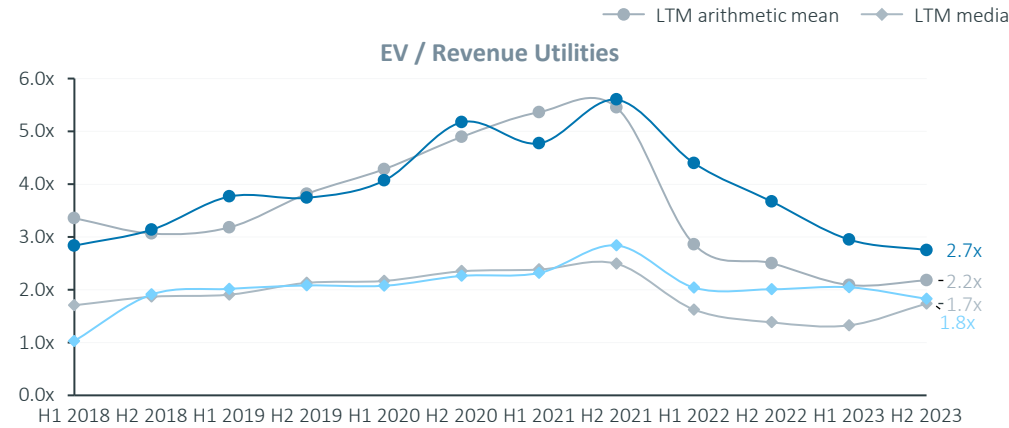
Revenue-, EBIT-, P/E- and P/B-Multiples





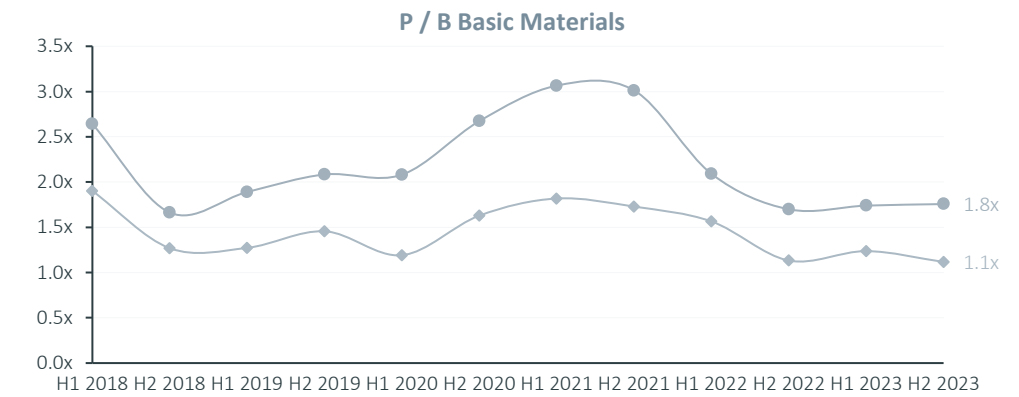
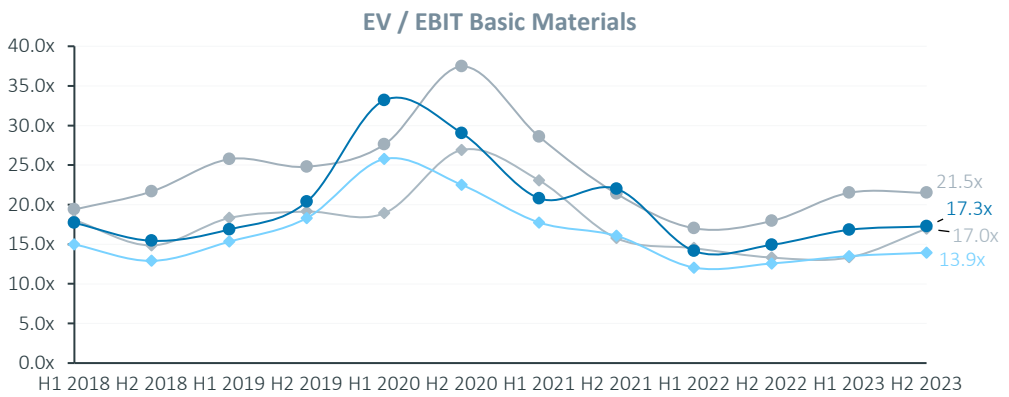
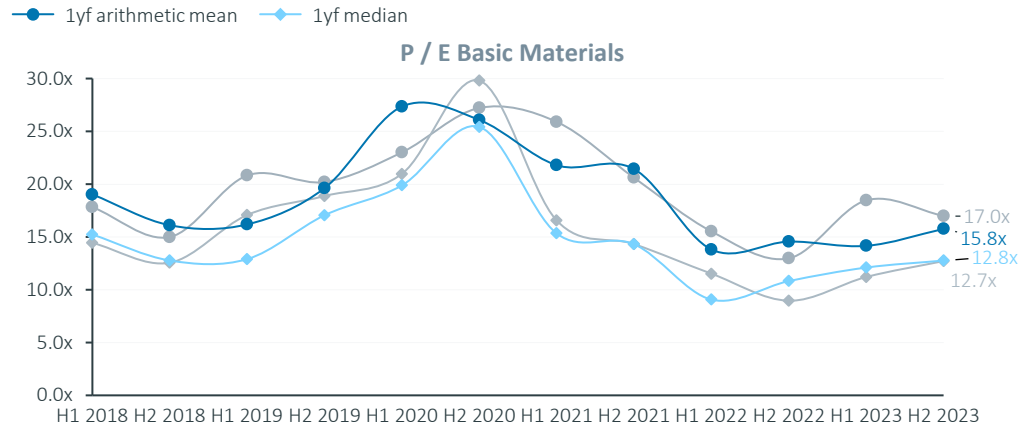
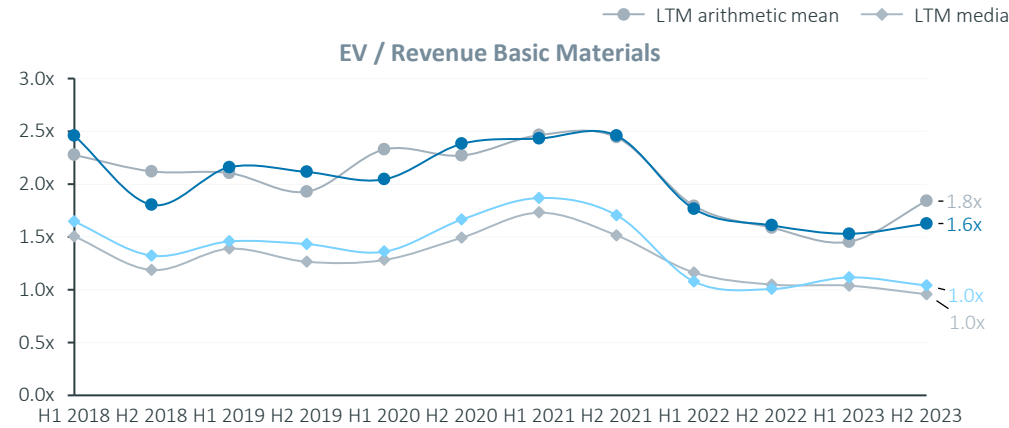
# Utilities

## Revenue-, EBIT-, P/E- and P/B-Multiples



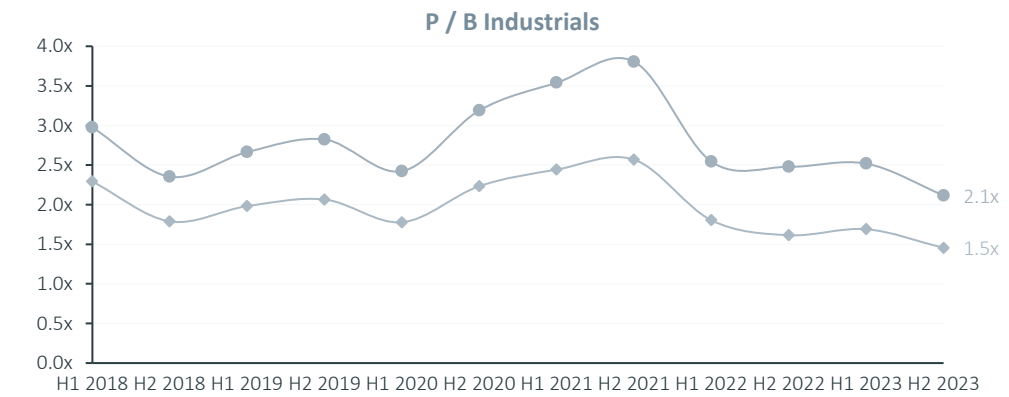
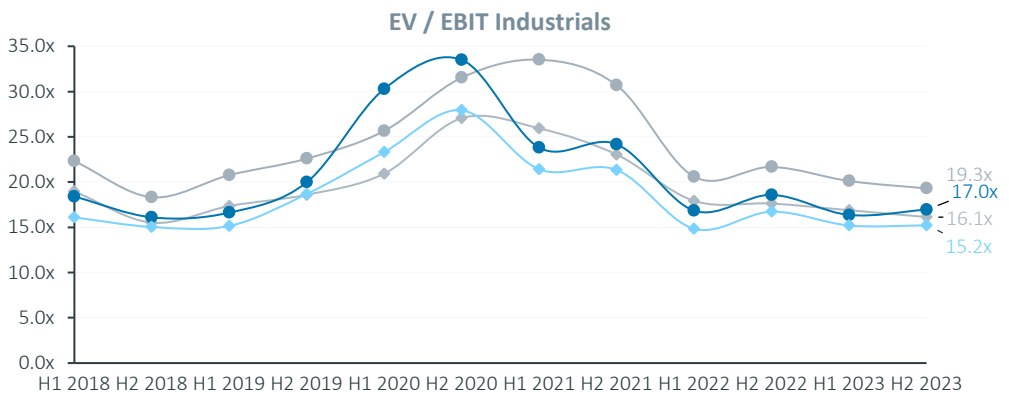
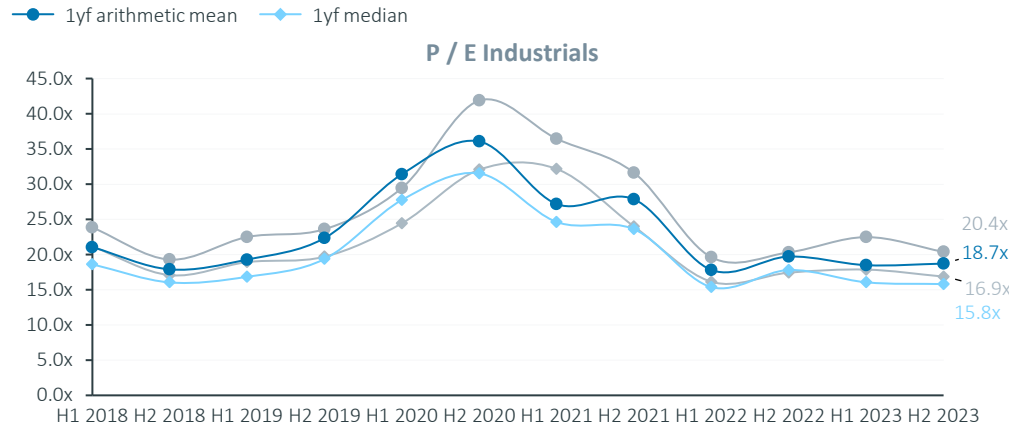
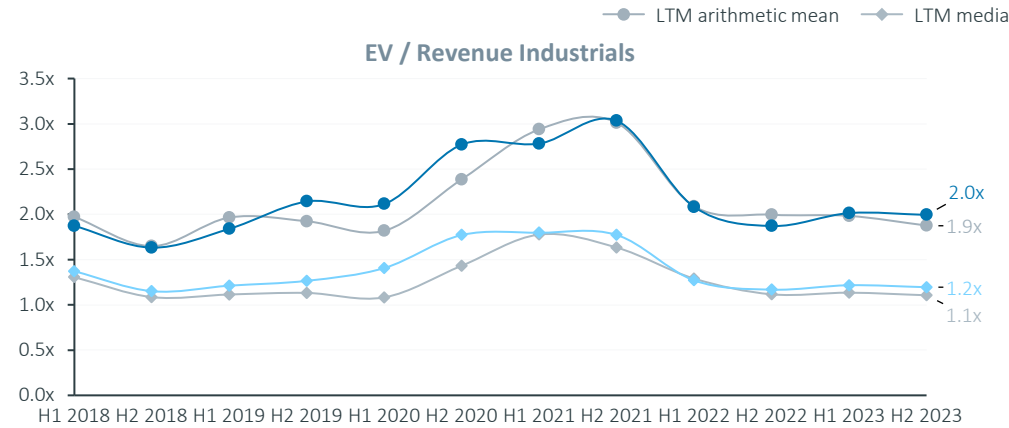
# Basic Materials

Revenue-, EBIT-, P/E- and P/B-Multiples



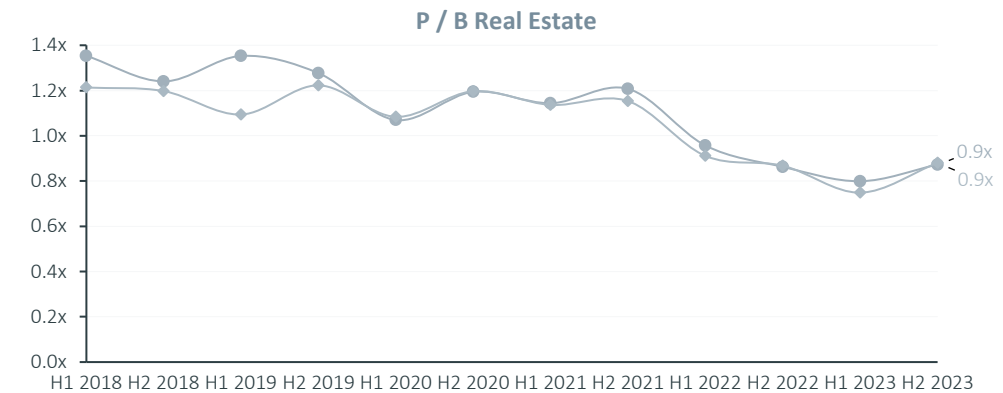
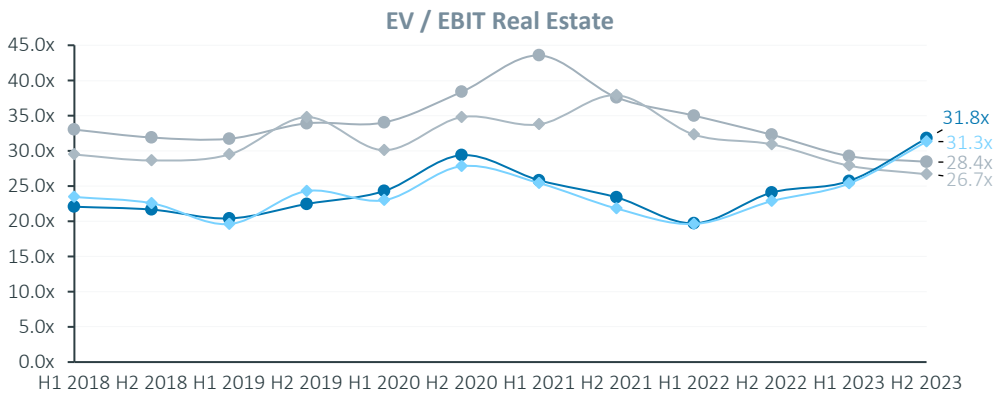
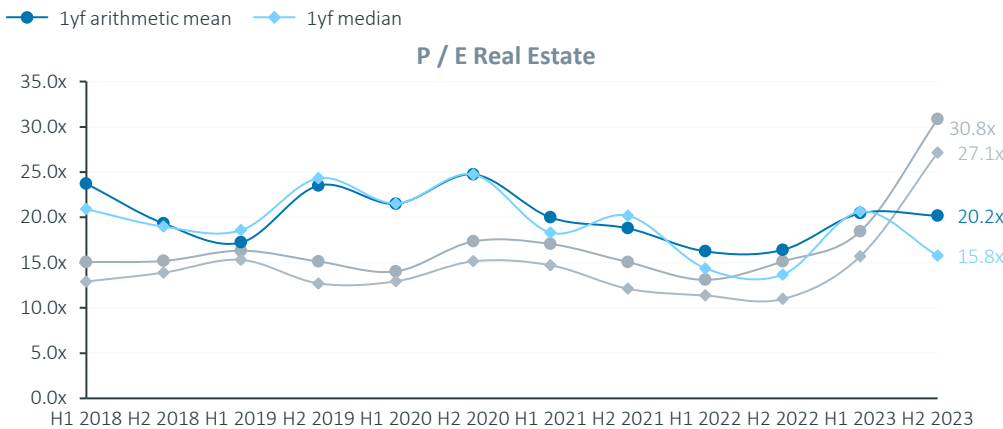
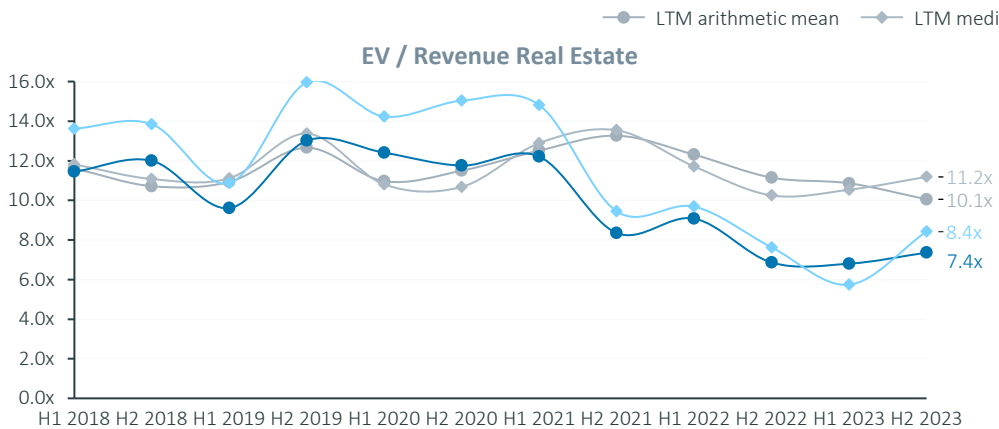
# Industrials

## Revenue-, EBIT-, P/E- and P/B-Multiples



# Real Estate

## Revenue-, EBIT-, P/E- and P/B-Multiples

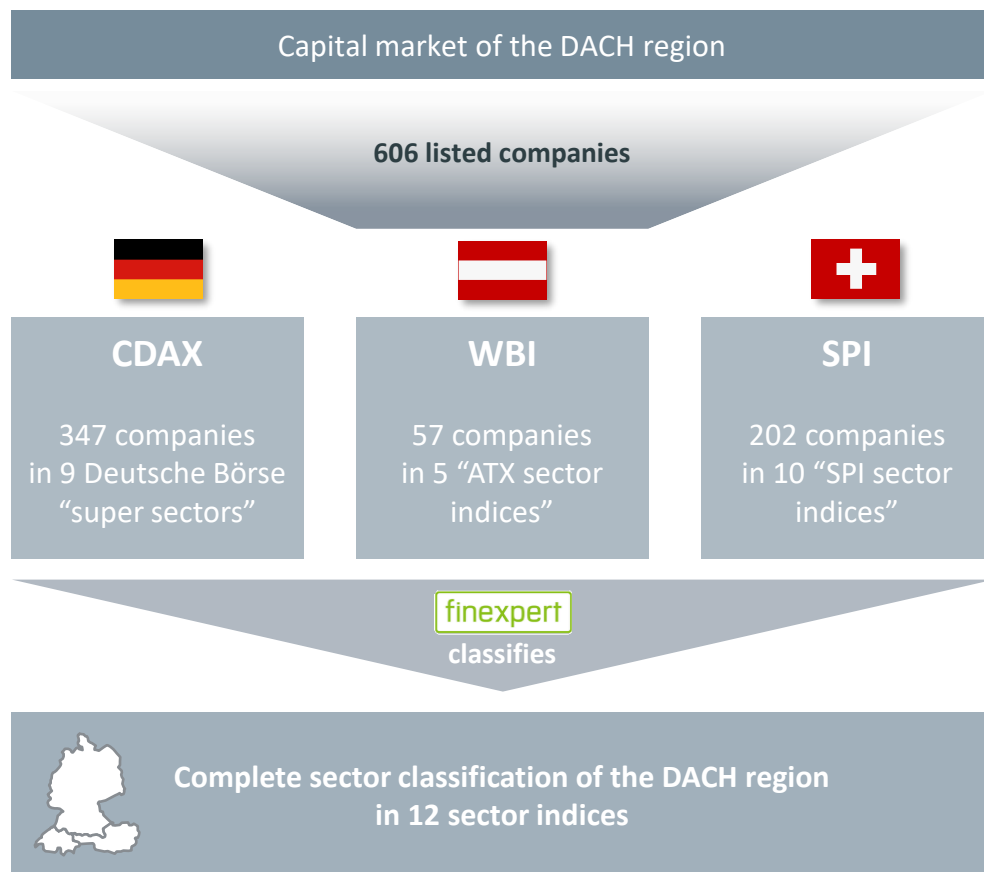


# Appendix

Composition of the sectors of CDAX, WBI  
and SPI as of 31 December 2023

# The capital market of the DACH region comprises 606 listed companies that are allocated to twelve sector indices

**finexpert** sector indices of the DACH region



The **finexpert** sector indices aim to cover the **entire capital market of the DACH region**. This Study contains all equities of the **German Composite DAX Index (CDAX)**, **Vienna Stock Exchange Index (WBI)** and **Swiss Performance Index (SPI)**. These three indices contain all shares listed on the **Official and Semi-Official Market**.

The **606 public companies**, which are listed in the mentioned indices as of 31 December 2023, build the base for the **sector classification** and the **subsequent analyses**:

- The German DAX Sector All Index<sup>1)</sup> includes 347 companies listed in the Prime Standard and General Standard and is grouped to nine “Deutsche Börse super sectors”.
- The Austrian ATX has five sector indices, and ValueTrust allocates the remaining companies of the WBI to the twelve sector indices listed below.
- The Swiss SPI contains ten sector indices that comprise 202 companies.

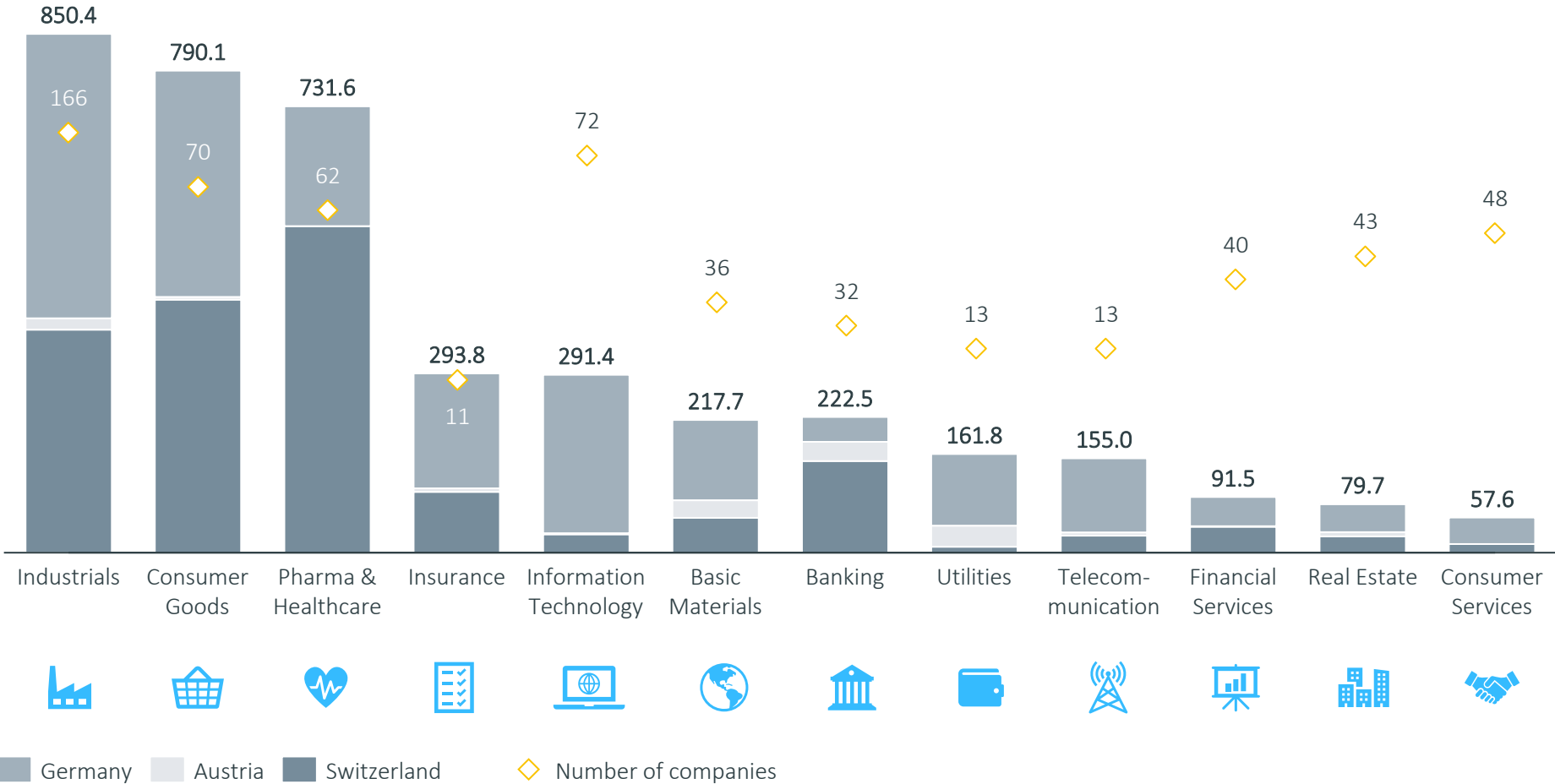
**finexpert** allocated all constituents of three market indices and the respective sector index classifications to twelve **finexpert** sector indices, called “super sectors”:

- |                       |                          |
|-----------------------|--------------------------|
| ▪ Banking             | ▪ Information Technology |
| ▪ Insurance           | ▪ Telecommunication      |
| ▪ Financial Services  | ▪ Utilities              |
| ▪ Consumer Service    | ▪ Basic Materials        |
| ▪ Consumer Goods      | ▪ Industrials            |
| ▪ Pharma & Healthcare | ▪ Real Estate            |

1. The DAX Sector All Index contains all equities listed in the Prime and General Standard as well as in the Scale segment of the Frankfurt stock exchange.

# Industrials, Consumer Goods and Pharma & Healthcare sectors represent over 60% of the market capitalization in the DACH region

finexpert sector market capitalization in the DACH region as of 31 December 2023 (in EUR bn)



# Banking, Insurance and Financial Services

## DACH Capital Market Study

### Banking

#### Germany

COMMERZBANK AG  
DEUTSCHE BANK AG  
DT.PFANDBRIEFBK AG  
PROCREDIT HOLDING AG  
WUESTENROT & WUERTTEMBERG AG

#### Austria

BANK FUER TIROL UND VBG AG  
BAWAG AG  
BKS BANK AG  
ERSTE GROUP BANK AG  
OBERBANK AG  
RAIFFEISEN BANK INTERNATATIONAL AG

#### Switzerland

BASELSTADT. KANTONALBANK AG  
BASLER KANTONALBANK SA  
BC DE GENEVE SA  
BC DU JURA SA  
BC VAUDOISE SA  
BERNER KANTONALBANK AG  
CEMBRA MONEY BANK AG  
EFG INTERNATIONAL AG  
GLARNER KANTONALBANK AG  
GRAUB KANTONALBANK AG  
HYPOTHEKARBANK LENZBURG AG  
JULIUS BAER EUROPE AG  
LUZERNER KANTONALBANK AG  
SCHWEIZERISCHE NATIONALBANK AG  
ST GALLER KANTONALBANK GA  
THURGAUER KANTONALBANK AG  
UBS GROUP AG  
VALIANT BANK AG  
VONTOBEL EUROPE AG  
WALLISER KANTONALBANK AG  
ZUGER KANTONALBANK AG

### Insurance

#### Germany

ALLIANZ SE  
DFV DEUTSCHE FAMILIENVERSICHERUNG AG  
HANNOVER RUECK SE  
MUENCHNER RUECK AG  
TALANX AG

#### Austria

UNIQA INSURANCE GROUP AG  
VIENNA INSURANCE GROUP AG

#### Switzerland

BALOISE HOLDING AG  
HELVETIA HOLDING AG  
SWISS LIFE HOLDING AG  
ZURICH INSURANCE AG

### Financial Services

#### Germany

ALBIS LEASING AG  
BROCKHAUS CAPITAL MGMT  
CAPSENIXX AG  
CREDITSHLF AG  
DEUTSCHE BETEILIGUNGS AG  
DEUTSCHE BOERSE AG  
DF DEUTSCHE FORFAIT AG  
DWS GROUP GMBH & CO KGAA  
FINTECH GROUP AG  
FORIS AG  
GRENKE AG  
HEIDELBERGER BETEILIGUNGSHOLDING AG  
HESSE NEWMAN CAPITAL AG  
HYPOPORT AG  
KAP BETEILIGUNGS-AG  
LINUS DIGITAL FINANCE AG  
MLP AG  
MUTARES AG  
OVH HOLDING AG  
PEARL GOLD AG  
SIXT LEASING SE  
SPOBAG  
VALUE MANAGEMENT & RESEARCH AG  
WCM BETEILIGUNGS- UND GRUNDBESITZ-AG  
WEBAC HOLDING AG

#### Austria

ADDIKO BANK AG  
BURGENLAND HOLDING AG  
WIENER PRIVATBANK SE

#### Switzerland

BELLEVUE GROUP AG  
CIE FIN TR  
GLOBAL ASSET MGMT AG  
LEONTEQ AG  
ONE SWISS BANK SA  
PARTNERS GROUP HOLDING AG  
PRIVATE EQUITY HOLDING AG  
R&S GROUP HOLDING AG

SWISSQUOTE GROUP HOLDING LTD  
TALENTHOUSE AG  
VALARTIS GROUP AG  
VZ HOLDING AG



# Consumer Service and Consumer Goods

## DACH Capital Market Study

### Consumer Service

#### Germany

ABOUT YOU HOLDING AG  
 ARTNET AG  
 AUTO1 GROUP SE  
 BASTEI LUEBBE AG  
 BET-AT-HOME.COM AG  
 BIJOU BRIGITTE AG  
 CECONOMY AG  
 CTS EVENTIM AG & CO. KGAA  
 DELIVERY HERO AG  
 DELTICOM AG  
 ELUMEO SE  
 FIELMANN AG  
 HAWESKO HOLDING AG  
 HELLOFRESH SE  
 HORNBAACH HOLDING AG & CO. KGAA  
 INTERTAINMENT AG  
 KLASSIK RADIO AG  
 LUDWIG BECK AG  
 METRO AG  
 NEXR TECHNOLOGIES SE  
 PHICOMM AG  
 PROSIEBENSAT.1 MEDIA SE  
 READCREST CAPITAL AG  
 SCOUT24 AG  
 SPLENDID MEDIEN AG  
 SPORTTOTAL AG  
 STROEER SE & CO. KGAA  
 TAKKT AG  
 TRAVEL24.COM AG  
 UNITED LABELS AG  
 WESTWING GROUP AG  
 WILD BUNCH AG  
 WINDELN.DE SE  
 YOUR FAMILY ENTERTAINMENT AG  
 ZALANDO SE  
 ZEAL NETWORK SE

#### Switzerland

APG SGA AG

ASMALLWORLD AG  
 DUFREY AG  
 GALENICA AG  
 HIGHLIGHT EVENT & ENTERTAINMENT AG  
 JUNGFRAUBAHN HOLDING AG  
 KHD HUMBOLDT WEDAG AG  
 MOBILEZONE HOLDING AG  
 OREL FUSSLER HOLDING AG  
 TX GROUP  
 VILLARS HOLDING SA  
 ZUR ROSE GROUP AG

### Consumer Goods

#### Germany

A.S.CREATION TAPETEN NA  
 ADIDAS AG  
 BAYERISCHE MOTOREN WERKE AG  
 BEIERSDORF AG  
 BERENTZEN-GROUP AG  
 BERTRANDT AG  
 BIKE24 HOLDING AG  
 BORUSSIA DORTMUND GMBH & CO. KGAA  
 CEWE STIFTUNG & CO.KGAA  
 CONTINENTAL AG  
 DAIMLER TRUCK HOLDING AG  
 DAIMLER AG  
 DIERIG HOLDING AG O.N.  
 EINHELL GERMANY AG  
 ELRINGKLINGER AG  
 GERRY WEBER INTERNATIONAL AG  
 GRAMMER AG  
 HELLA KGAA HUECK & CO.  
 HENKEL AG & CO. KGAA  
 HUGO BOSS AG  
 KNAUS AG  
 LEIFHEIT AG  
 MING LE SPORTS AG  
 MISTER SPEX SE  
 MUEHL PRODUKT & SERVICE AG  
 PFERDEWETTEN.DE AG  
 PORSCHE AUTOMOBIL HLD. SE  
 PROGRESS-WERK OBERKIRCH AG  
 PUMA SE  
 ROY ASSET HOLDING SE  
 SAF-HOLLAND SE  
 SCHAEFFLER AG  
 SCHLOSS WACHENHEIM AG  
 STO SE & CO. KGAA  
 STS GROUP AG  
 SUEDZUCKER AG  
 TC UNTERHALTUNGSELEKTRONIK AG  
 VILLEROY & BOCH AG

VOLKSWAGEN AG  
 WASGAU PRODUKTIONS & HANDELS AG  
 WESTAG & GETALIT AG

#### Austria

AGRANA BETEILIGUNGS-AG  
 DO & CO AG  
 GURKTALER AG  
 JOSEF MANNER & COMP. AG  
 LINZ TEXTIL HOLDING AG  
 PIERER MOBILITY AG  
 POLYTEC HOLDING AG  
 STADLAUER MALZFABRIK AG  
 WOLFORD AG

#### Switzerland

AIRESIS SA  
 ARYZTA AG  
 AUTONEUM AG  
 BARRY CALLEBAUT AG  
 BELL AG  
 CALIDA HOLDING AG  
 EMMI AG  
 GM SA  
 HOCHDORF HOLDING AG  
 LALIQUE GROUP SE  
 LECLANCHE SA  
 LINDT & SPRUENGLI AG  
 METALL ZUG AG  
 NESTLE SA  
 ORIOR AG  
 RICHEMONT SA  
 STADLER RAIL AG  
 SWATCH GROUP SA  
 V-ZUG

# Pharma & Healthcare and Information Technology

## DACH Capital Market Study

### Pharma & Healthcare

#### Germany

4 SC AG  
 AAP IMPLANTATE AG  
 BIOFRONTERA AG  
 BIOTEST AG.  
 CARL ZEISS MEDITEC AG  
 CO.DON AG  
 DERMAPHARM HOLDING SE  
 DRAEGERWERK AG & CO. KGAA  
 ECKERT & ZIEGLER AG  
 EPIGENOMICS AG  
 EVOTEC AG  
 FRESENIUS MEDICAL CARE AG & CO. KGAA  
 FRESENIUS SE & CO.KGAA  
 GERRESHEIMER AG  
 HEIDELBERG PHARMA AG  
 MATERNUS-KLINK AG  
 MEDICLIN AG  
 MEDIGENE AG  
 MEDIOS AG  
 MERCK AG & CO. KGAA  
 MORPHOSYS AG  
 PAION AG  
 PHARMASGP HOLDING SE  
 RHOEN-KLINIKUM AG  
 SARTORIUS AG  
 SCHOTT PHARMA INH  
 SIEMENS HEALTHINEERS AG  
 STRATEC SE  
 SYGNIS AG  
 SYNLAB AG  
 VITA 34 AG

#### Austria

MARINOMED BIOTECH AG

#### Switzerland

ADDEX AG  
 AEVIS HOLDING SA  
 ALCON INC.  
 BACHEM HOLDING AG

BASILEA PHARMACEUTICA AG  
 BB BIOTECH AG  
 COLTENE HOLDING AG  
 DOTTIKON ES HOLDING AG  
 EVOLVA HOLDING SA  
 IDORSIA LTD  
 IVF HARTMANN AG  
 KUROS BIOSCIENCES AG  
 LONZA GROUP AG  
 MEDARTIS HOLDING AG  
 MOLECULAR PARTNERS AG  
 NOVARTIS AG  
 OBSEVA SA  
 POLYPEPTIDE GROUP AG  
 POLYPHOR AG  
 RELIEF THERAPEUTICS HOLDING AG  
 ROCHE AG  
 SANDOZ GRP  
 SANTHERA PHARM. HOLDING AG  
 SIEGFRIED HOLDING AG  
 SKAN GROUP AG  
 SONOVA HOLDING AG  
 STRAUMANN HOLDING AG  
 TECAN GROUP AG  
 XLIFE SCIENCES AG  
 YPSOMED HOLDING AG

### Information Technology

#### Germany

ADESSO AG  
 ADVA OPTICAL NETWORKING SE  
 AIXTRON SE  
 ALL FOR ONE STEEB AG  
 ALLGEIER SE  
 ATOSS SOFTWARE AG  
 B & S BANKSYSTEME AG  
 BECHTLE AG  
 CANCOM SE  
 CENIT AG  
 CHERRY AG  
 COMPUGROUP MEDICAL SE  
 DATA MODUL AG  
 ELMOS SEMICONDUCTOR AG  
 FIRST SENSOR AG  
 FORTEC ELEKTRONIK AG  
 GFT TECHNOLOGIES SE  
 GIGASET AG  
 INFINEON TECHNIK AG  
 INIT INNOVATION SE  
 INTERSHOP COMMUNICATIONS AG  
 INTICA SYSTEMS AG  
 INVISION AG  
 IONOS GROUP SE  
 IVU TRAFFIC TECHNOLOGIE AG  
 KPS AG  
 MEVIS MEDICAL SOLUTIONS AG  
 NAGARRO SE  
 NEMETSCHKE SE  
 NEW WORK SE  
 NEXUS AG  
 NORCOM INFORMATION TECHNOLOGY AG  
 OHB SE  
 PANAMAX AG  
 PARAGON AG  
 PSI AG  
 Q.BEYOND AG  
 REALTECH AG

#### SAP SE

SCHWEIZER ELECTRONIC AG  
 SECUNET SECURITY AG  
 SERVICEWARE AG  
 SILTRONIC AG  
 SNP AG  
 SOCIAL CHAIN AG  
 SOFTWARE AG  
 STEMMER IMAGING AG  
 SUESS MICROTEC AG  
 SYZYGY AG  
 TEAMVIEWER AG  
 TELES AG  
 TISCON AG  
 UNITED INTERNET AG  
 USU SOFTWARE AG  
 VIVANCO GRUPPE AG  
**Austria**  
 AT&S AUSTRIA TECH.& SYSTEMTECH. AG  
 AUSTRIACARD HOLDINGS AG  
 FREQUENTIS AG  
 KAPSCH TRAFFICOM AG  
 MASCHINENFABRIK HEID AG  
 RATH AG  
**Switzerland**  
 ALSO HOLDING AG  
 AMS AG  
 ASCOM HOLDING AG  
 CREALOGIX HOLDING AG  
 HUBER+SUHNER AG  
 KUDELSKI SA  
 LOGITECH INTERNATIONAL SA  
 SOFTWAREONE HOLDING AG  
 TEMENOS GROUP AG  
 U-BLOX HOLDING AG  
 WISEKEY INTERNATIONAL HOLDING AG

# Telecommunication, Utilities and Basic Materials

## DACH Capital Market Study

### Telecommunication

#### Germany

1+1 AG  
 11 88 0 SOLUTIONS AG  
 3U HOLDING AG  
 DEUTSCHE TELEKOM AG  
 ECOTEL COMMUNICATION AG  
 FREENET AG  
 LS TELCOM AG  
 NFON AG  
 TELEFONICA DEUTSCHLAND HOLDING AG  
 YOC AG

#### Austria

TELEKOM AUSTRIA AG

#### Switzerland

SWISSCOM AG

### Utilities

#### Germany

E.ON SE  
 ENBW ENERGIE B./W. AG  
 ENCAVIS AG  
 GELSENWASSER AG  
 MAINOVA AG  
 MVV ENERGIE AG  
 RWE AG  
 UNIPER SE

#### Austria

EVN AG  
 VERBUND AG

#### Switzerland

BKW ENERGIE AG  
 EDISUN POWER EUROPE AG  
 ROMANDE ENERGIE HOLDING SA

### Basic Materials

#### Germany

ALTECH ADVANCED MATERIALS AG  
 ALZCHEM GROUP AG  
 AURUBIS AG  
 B.R.A.I.N. AG  
 BASF SE  
 BAYER AG  
 COVESTRO AG  
 DECHENG TECHNOLOGY AG  
 EISEN- & HUETTENWERKE AG  
 EVONIK INDUSTRIES AG  
 FUCHS PETROLUB SE  
 H & R GMBH & CO KGAA  
 K & S AG  
 LANXESS AG  
 SALZGITTER AG  
 SGL CARBON SE  
 SIMONA AG  
 SURTECO SE  
 SYMRISE AG  
 WACKER CHEMIE AG

#### Austria

AMAG AUSTRIA METALL AG  
 LENZING AG  
 OMV AG  
 PORR AG  
 SCHOELLER-BLECKMANN AG  
 STRABAG SE  
 VOESTALPINE AG  
 WIENERBERGER AG

#### Switzerland

CLARIANT AG  
 CPH CHEMIE & PAPIER HOLDING AG  
 EMS-CHEMIE AG  
 GIVAUDAN SA  
 GURIT HOLDING AG  
 SCHMOLZ & BICKENBACH AG  
 SUNMIRROR AG  
 ZWAHLEN & MAYR SA

# Industrials

## DACH Capital Market Study

### Industrials (1/2)

#### Germany

7C SOLARPARKEN AG  
ALBA SE  
AMADEUS FIRE AG  
AUMANN AG  
BASLER AG  
BAYWA AG  
BILFINGER SE  
BRENNTAG AG  
COM.CHARG.SOL.AG  
CROPENERGIES AG  
DEUTSCHE POST AG  
DEUTZ AG  
DMG MORI AG  
DR. HOENLE AG  
DR.ING.H.C.F.PORSCH  
DUERR AG  
ENAPTER AG  
ENERGIEKONTOR AG  
FRANCOTYP-POSTALIA HOLDING AG  
FRAPORT AG  
FRIEDRICH VORWERK GROUP SE  
FRIWO AG  
GEA GROUP AG  
GESCO AG  
HAMBURGER HAFEN & LOGISTIK AG  
HANSEYACHTS AG  
HAPAG-LLOYD AG  
HEIDELBERG.DRUCKMASCHINEN AG  
HEIDELBERGCEMENT AG  
HENSOLDT AG  
HGEARS AG  
HOCHTIEF AG  
INDUS HOLDING AG  
INFAS HLDG AG  
JENOPTIK AG  
JOST WERKE AG  
JUNGHEINRICH AG  
KATEK SE

KHD HUMBOLDT WEDAG  
KION GROUP AG  
KLOECKNER & CO: SE  
KNORR-BREMSE AG  
KOENIG & BAUER AG  
KRONES AG  
KSB AG  
KWS SAAT SE  
LPKF LASER & ELECTRONICS AG  
LUFTHANSA AG  
MANZ AG  
MASCHINENFABRIK BERTHOLD HERMLE AG  
MASTERFLEX AG  
MAX AUTOMATION AG  
MBB SE  
MEDION AG  
MTU AERO ENGINES AG  
MUELLER-DIE LILA LOGISTIK AG  
NORDEX SE  
NORDWEST HANDEL AG  
NORMA GROUP SE  
ORBIS AG  
PFEIFFER VACUUM TECHNOLOGY AG  
PITTLER MASCHINENFABRIK AG  
PNE WIND AG  
PVA TEPLA AG  
R. STAHL AG  
RATIONAL AG  
RHEINMETALL AG  
RINGMETALL AG  
SFC ENERGY AG  
SIEMENS AG  
SIEMENS ENERGY AG  
SINGULUS TECHNOLOGIES AG  
SINO-GERMAN UNITED AG  
SIXT SE  
SMA SOLAR TECHNOLOGY AG  
SOFTING AG  
STABILUS SE

TECHNOTRANS AG  
THYSSENKRUPP AG  
THYSSENKRUPP NUCERA  
TRATON SE  
TUFF GROUP AG  
UZIN UTZ AG  
VARTA AG  
VERBIO VEREINIGTE BIOENERGIE AG  
VISCOM AG  
VITESCO TECHNOLOGIES GROUP AG  
VOLTABOX AG  
VOSSLOH AG  
WACKER NEUSON SE  
WASHTEC AG  
ZHONGDE WASTE TECHNOLOGY AG

#### Austria

ANDRITZ AG  
CLEEN ENERGY AG  
FACC AG  
FLUGHAFEN WIEN AG  
FRAUENTHAL HOLDING AG  
MAYR-MELNHOF KARTON AG  
OESTERREICHISCHE POST AG  
PALFINGER AG  
RHI MAGNESITA NV  
ROSENBAUER INTERNATIONAL AG  
SEMPERIT AG HOLDING  
SW UMWELTTECHNIK AG  
ZUMTOBEL GROUP AG

#### Switzerland

ABB LTD  
ACCELLERON INDUSTRIES LTD  
ADECCO GROUP AG  
ADVAL TECH HOLDING AG  
ALUFLEXPACK AG  
ARBONIA AG  
BELIMO AUTOMATION AG  
BOSSARD HOLDING AG  
BUCHER INDUSTRIES AG

BURCKHARDT AG  
BURKHALTER HOLDING AG  
BVZ HOLDING AG  
BYSTRONIC AG  
CICOR MANAGEMENT AG  
COMET HOLDING AG  
DAETWYLER HOLDING AG  
DKSH HOLDING AG  
DORMAKABA HOLDING AG  
ELMA ELECTRONIC AG  
FEINTOOL INTERNATIONAL HOLDING AG  
FISCHER AG  
FLUGHAFEN ZUERICH AG  
FORBO HOLDING AG  
GAVAZZI HOLDING AG  
GEBERIT AG  
IMPLENIA AG  
INFICON HOLDING AG  
INTERROLL HOLDING AG  
KARDEX AG  
KLINGELNBERG LTD  
KOMAX HOLDING AG  
KUEHNE & NAGEL INTERNATIONAL AG  
LAFARGEHOLCIM AG  
LANDIS+GYR GROUP AG  
LEM HOLDING AG  
MCH GROUP AG  
MEDACTA GROUP SA  
MEDMIX LTD  
MEIER TOBLER AG  
MEYER BURGER AG  
MIKRON SA  
MONTANA AEROSPACE AG  
OC OERLIKON CORPORATION AG  
PERFECT SA  
PERROT DUVAL HOLDING SA  
PHOENIX AG  
RIETER MASCHINENFABRIK AG

# Industrial (cont'd) and Real Estate

## DACH Capital Market Study

### Industrials (2/2)

SCHINDLER AUFZUEGE AG  
 SCHLATTER HOLDING AG  
 SCHWEITER TECHNOLOGIES AG  
 SENSIRION HOLDING AG  
 SFS GROUP AG  
 SGS SA  
 SIG COMBIBLOC GROUP AG  
 SIKA AG  
 STARRAG GROUP HOLDING AG  
 SULZER AG  
 VAT GROUP AG  
 VETROPACK HOLDING AG  
 VON ROLL HOLDING AG  
 ZEHNDER GROUP AG

### Real Estate

#### Germany

ACCENTRO REAL ESTATE AG  
 ALSTRIA OFFICE REIT-AG  
 DEMIRE DEUTSCHE MITTELSTAND REAL ESTATE AG  
 DEUTSCHE EUROSHOP AG  
 DEUTSCHE KONSUM REIT-AG  
 DEUTSCHE REAL ESTATE AG  
 DEUTSCHE WOHNEN AG  
 DIC ASSET AG  
 FAIR VALUE REIT-AG  
 FCR IMMOBILIEN AG  
 GATEWAY REAL ESTATE AG  
 HAMBORNER REIT AG  
 INSTONE REAL ESTATE GROUP N.V.  
 LEG IMMOBILIEN AG  
 PATRIZIA IMMOBILIEN AG  
 TAG IMMOBILIEN AG  
 TTL AG  
 VONOVIA SE

#### Austria

CA IMMOBILIEN ANLAGEN AG  
 IMMOFINANZ AG  
 S IMMO AG  
 UBM DEVELOPMENT AG  
 WARIMPEX FINANZ- UND BETEILIGUNGS AG

#### Switzerland

ALLREAL HOLDING AG  
 ARUNDEL AG  
 DEUTSCHE KONSUM REIT-AG  
 EPIC SUISSE AG  
 FUNDAMENTA REAL ESTATE AG  
 HIAG IMMOBILIEN HOLDING AG  
 INA INVEST HOLDING AG  
 INTERSHOP HOLDING AG  
 INVESTIS HOLDING SA  
 MOBIMO HOLDING AG  
 NOVAVEST REAL ESTATE AG  
 ORASCOM DEVELOPMENT HOLDING AG  
 PEACH PROPERTY GROUP AG

PLAZZA AG  
 SWISS FINANCE & PROPERTY GROUP AG  
 SWISS PRIME SITE AG  
 VARIA US PROPERTIES AG  
 WARTECK INVEST AG  
 ZUEBLIN IMMOBILIEN HOLDING AG  
 ZUG ESTATES HOLDING AG

# VALUETRUST

FINANCIAL EXPERTS IN ACTION

