

DACH Capital Market Study

as of June 30, 2023

Analysis of cost of capital parameters and sector multiples
for the capital markets in Germany, Austria and Switzerland



Volume 13, August 2023

Content & contacts

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Preface & people

The Capital Market Study for the second quarter of 2023 analyzes cost of capital, shareholder returns, valuation multiples and recent trends in the DACH region

DACH Capital Market Study

Dear business partners and friends of ValueTrust,

We are pleased to release our thirteenth edition of the **ValueTrust DACH¹⁾ Capital Market Study for Q2 2023** carried out by ValueTrust in cooperation with **finexpert** and the Institute of Accounting and Auditing at the **WU** Vienna. Within this Study, we provide certain cost of capital inputs required to perform an enterprise valuation in Germany, Austria and Switzerland. The Study also shows trends of the analyzed data over time.

In this Study we provide:

- 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 **relevered 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 CDAX²⁾, WBI³⁾ and SPI⁴⁾. 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 **June 30, 2017** and **June 30, 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.

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1. D (Germany), A (Austria), CH (Switzerland)

2. German Composite DAX Index.

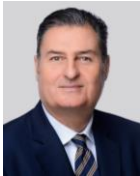
3. Vienna Stock Index

4. Swiss Performance Index

Experienced financial experts from ValueTrust, finexpert and the WU Vienna contributed to this Study

DACH Capital Market Study

VALUETRUST



Prof. Dr. Christian Aders
Senior Managing Director, ValueTrust

- More than 30 years of experience in corporate valuation and financial advisory
- Previously Partner at KPMG and Managing Director at Duff & Phelps
- Honorary professor for "Practice of transaction-oriented company valuation and value-oriented management" at LMU Munich
- Member of the DVFA Expert Group "Fairness Opinions" and "Best Practice Recommendations Corporate Valuation"
- Co-Founder of the European Association of Certified Valuators and Analysts (EACVA e.V.)



Fredrik Müller
Vice President, ValueTrust

- More than 6 years of project experience in corporate valuation and financial advisory
- Extensive experience in valuation and value management projects in various industries



Benedikt Brambs
Managing Director, ValueTrust Switzerland

- More than 15 years of experience in transaction and strategy consulting projects
- Business enterprise valuations, intangible asset analyses, business modelling and portfolio assessments
- Company strategy, operational efficiency and commercial due diligence projects
- Company performance, market, industry and competitive landscape analysis as decision support
- Strategic planning, mergers and acquisitions, legal compliance, financial reporting, tax and reorganizations



Prof. Dr. Bernhard Schwetzler
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- Senior Advisor ValueTrust
- Co-Founder and board member of the European Association of Certified Valuators and Analysts (EACVA e.V.)



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- Member of the Working Group on Business Valuation of the Austrian Chamber of Public Accountants and Tax Advisors
- Nominated expert in valuation disputes

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.










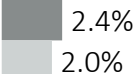

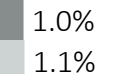












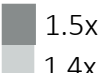


ValueTrust and its co-authors do not assume any responsibility or liability for the up-to-datedness, completeness or accuracy of this Study or its contents.

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Executive summary

The implied market risk premium for Germany has remained constant over the past 6 months, it has declined slightly for Switzerland and even more for Austria due to lower implied market returns

Market risk premium and trading multiples by countries of the DACH region, Q2 2023





























































	 Germany	 Austria	 Switzerland
CAPM metrics			
Historical market return ¹⁾			
Implied market return			
Risk-free rate			
Implied market risk premium			
Multiples			
EV/Revenue			
EV/EBIT			
P/E			
P/B			

■ 30.06.2023 ■ 31.12.2023

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

The Banking sector has the highest implied levered cost of equity, indicating future growth potential from higher interest rates, whereas historical returns have been among the weakest

Cost of equity by sector and methodology for the DACH region, Q2 2023





































Sectors	Implied levered cost of equity	Levered cost of equity (CAPM) ¹⁾	1 / PE-ratio (1yf)	Total shareholder return (Ø 6y) ²⁾
 Banking	 11.0%	 8.5%	 9.4%	 5.3%
 Insurance	 10.4%	 9.6%	 8.5%	 11.9%
 Financial Services	 7.5%	 10.6%	 6.5%	 12.8%
 Consumer Service	 6.2%	 10.4%	 4.7%	 20.7%
 Consumer Goods	 9.5%	 11.0%	 6.1%	 12.2%
 Pharma & Healthcare	 7.2%	 10.3%	 4.5%	 11.5%
 Information Technology	 6.4%	 11.2%	 5.5%	 17.7%
 Telecommunication	 8.7%	 8.0%	 6.1%	 6.6%
 Utilities	 7.4%	 8.0%	 7.7%	 16.1%
 Basic Materials	 10.0%	 10.9%	 8.3%	 6.9%
 Industrials	 7.5%	 11.9%	 6.2%	 15.0%
 Real Estate	 7.0%	 8.7%	 4.8%	 5.2%

1. Based on 2-year sector beta, risk-free rate of 2.43% and implied market risk premium of 7.6% 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 Real Estate sector has the highest trading multiples, with the exception of P/B multiples, which are the lowest, as assets are marked at fair market value and currently trade at a discount

Trading multiples by sector for the DACH region, Q2 2023

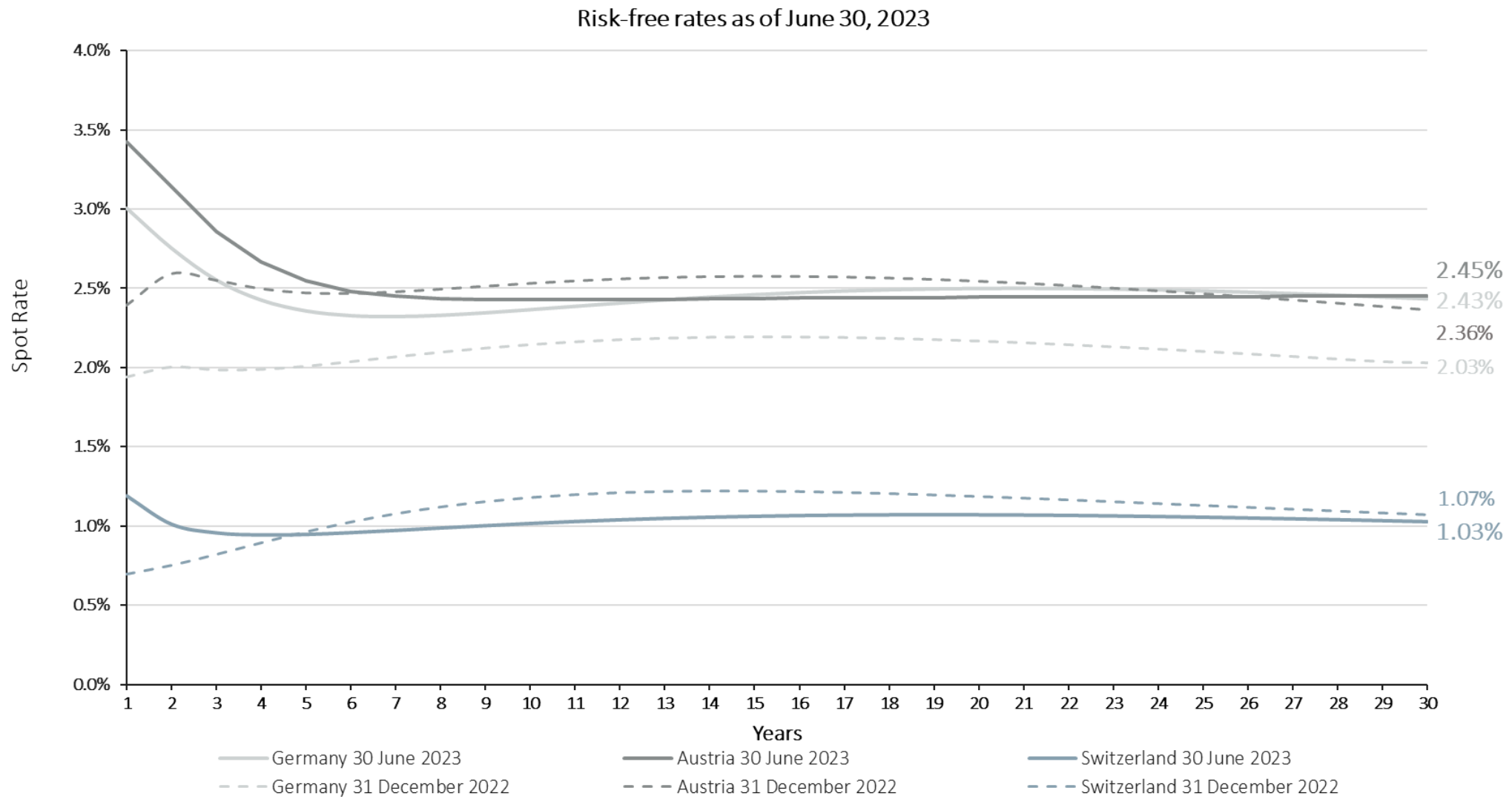
Sectors	EV/Revenue	EV/EBIT	P/E	P/B
 Banking	n.a.	n.a.	 10.7x	 0.8x
 Insurance	n.a.	n.a.	 11.8x	 1.5x
 Financial Services	n.a.	n.a.	 15.3x	 1.0x
 Consumer Service	 0.9x	 16.7x	 21.1x	 2.2x
 Consumer Goods	 1.1x	 14.2x	 16.4x	 1.4x
 Pharma & Healthcare	 4.3x	 20.6x	 22.2x	 2.9x
 Information Technology	 1.5x	 15.1x	 18.2x	 2.4x
 Telecommunication	 1.4x	 15.8x	 16.5x	 1.5x
 Utilities	 2.0x	 15.2x	 12.9x	 1.8x
 Basic Materials	 1.1x	 13.5x	 12.1x	 1.2x
 Industrials	 1.2x	 15.2x	 16.1x	 1.7x
 Real Estate	 5.7x	 25.4x	 20.6x	 0.7x

3

Risk-free rate

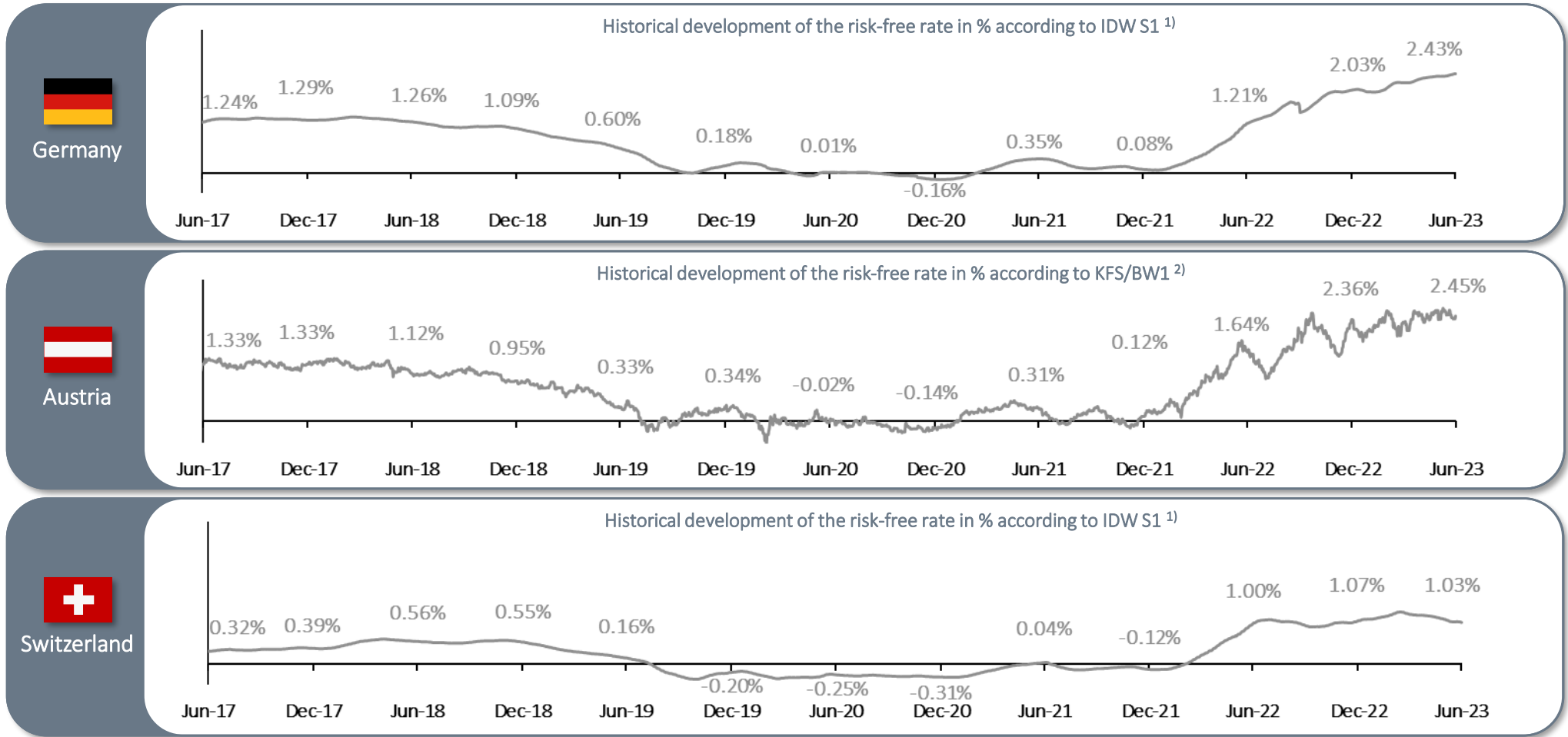
Germany’s risk-free rate experienced a significant increase of 40 basis points in the last 6 months to 2.43%, followed by Austria (9 basis points to 2.45%) and Switzerland (-4 basis points to 1.03%)

Risk-free rate for Germany, Austria and Switzerland based on long-term bonds (Svensson method), June 30, 2023



While the Swiss risk-free rate decreased for the first time since December 2021, Germany and Austria reached new periodic highs in the observation period since June 2017

Historical risk-free rate development by country since June 30, 2017
in %



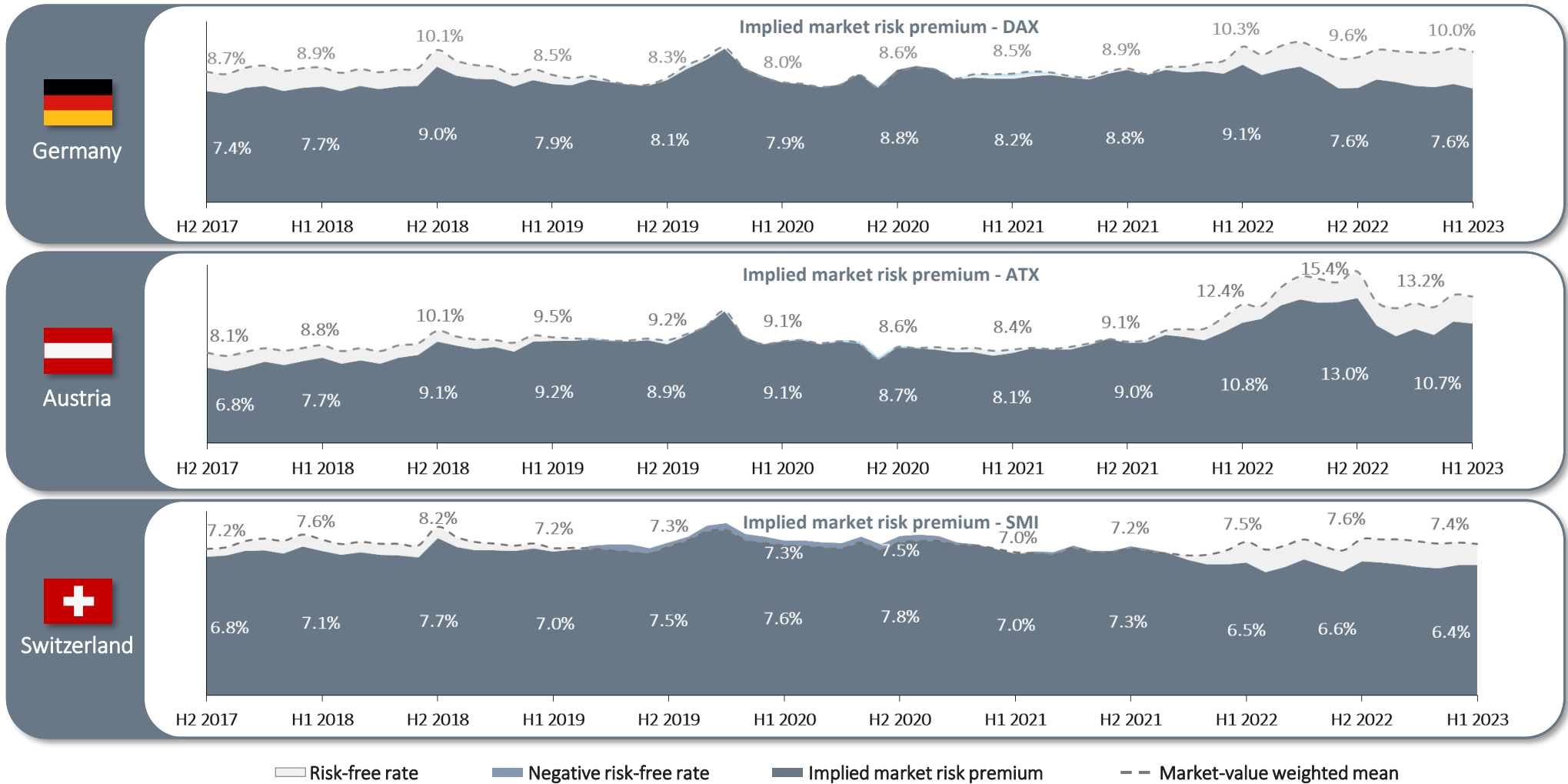
1. Interest rate as of reference date using 3-month average yield curves in accordance with IDW S 1;
2. Interest rate calculated using the daily yield curve in accordance with KFS/BW 1 (no 3-month average).

4

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

Germany’s implied market risk premium remained stable (7.6%), declined slightly for Switzerland (20 basis points to 6.4%) and strongly for Austria (230 basis points to 10.7%) due to weaker implied returns

Implied market risk premium by country since June 30, 2017
in %

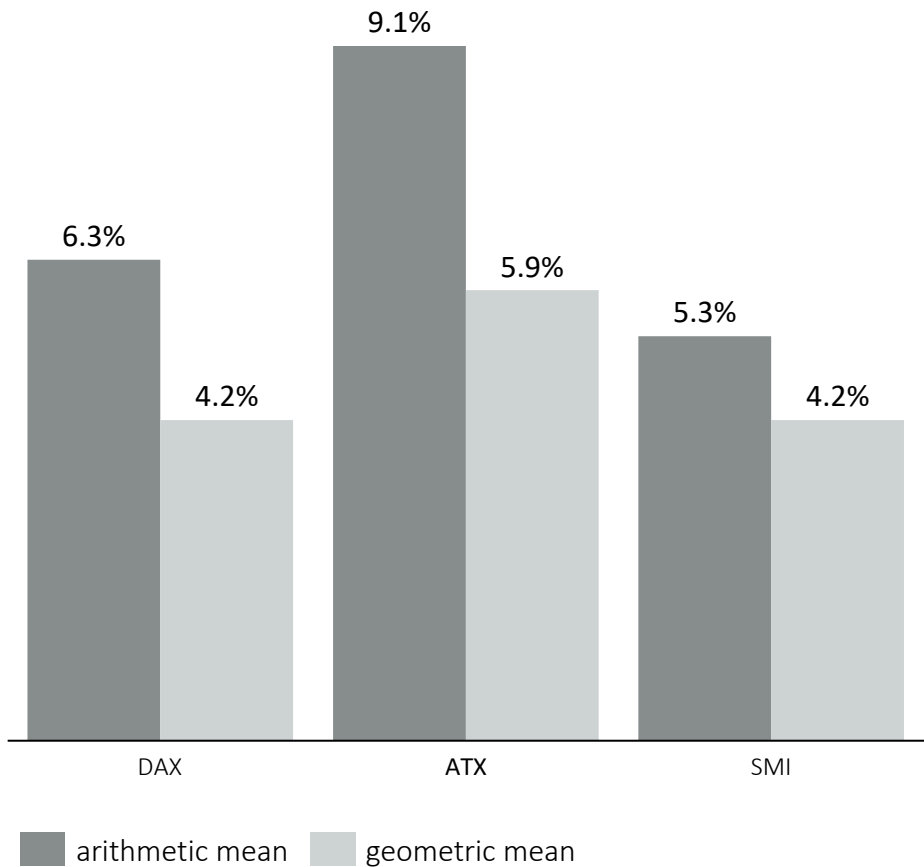


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Market returns and market risk premium
b. Historical returns (ex-post analysis)

The Austrian capital market had the highest historical (arithmetic) returns (9.1%) over an investment period of 25 years, followed by the German (6.3%) and Swiss capital market (5.3%)

Arithmetic and geometric mean of historical market returns as of June 30, 2023, over 25 years, 1998-2023



In addition to the ex-ante analysis above, we also analyze **historical (ex-post) returns**. Historical returns over a **long-term observation period**, indicate an expected **return potential** of 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 **return requirements**, which were evaluated through the CAPM.

To enable a precise analysis of the historical returns of the German, Austrian and Swiss capital markets, we use the so-called **return triangle**.¹⁾ It helps present the **annually realized returns** from **different investment periods** in a simple and understandable way. Especially the **different buying and selling points in time** and the different annual holding periods are illustrated comprehensively. To calculate the **average annual returns** over several years, we use both the **geometric and arithmetic mean**.

In this Study, we analyze the so-called **total shareholder returns**, which include the **returns on investments** and the **dividend yields**.

As only **total return indices** capture both return on investments and dividend yields, our analysis is based on the **DAX** for Germany, **ATX Total Return** for Austria and the **SMI Total Return** for Switzerland.

The **observation period** is **25 years**. All ex-post returns are calculated using the **data as of the reference date June 30, 2023**.

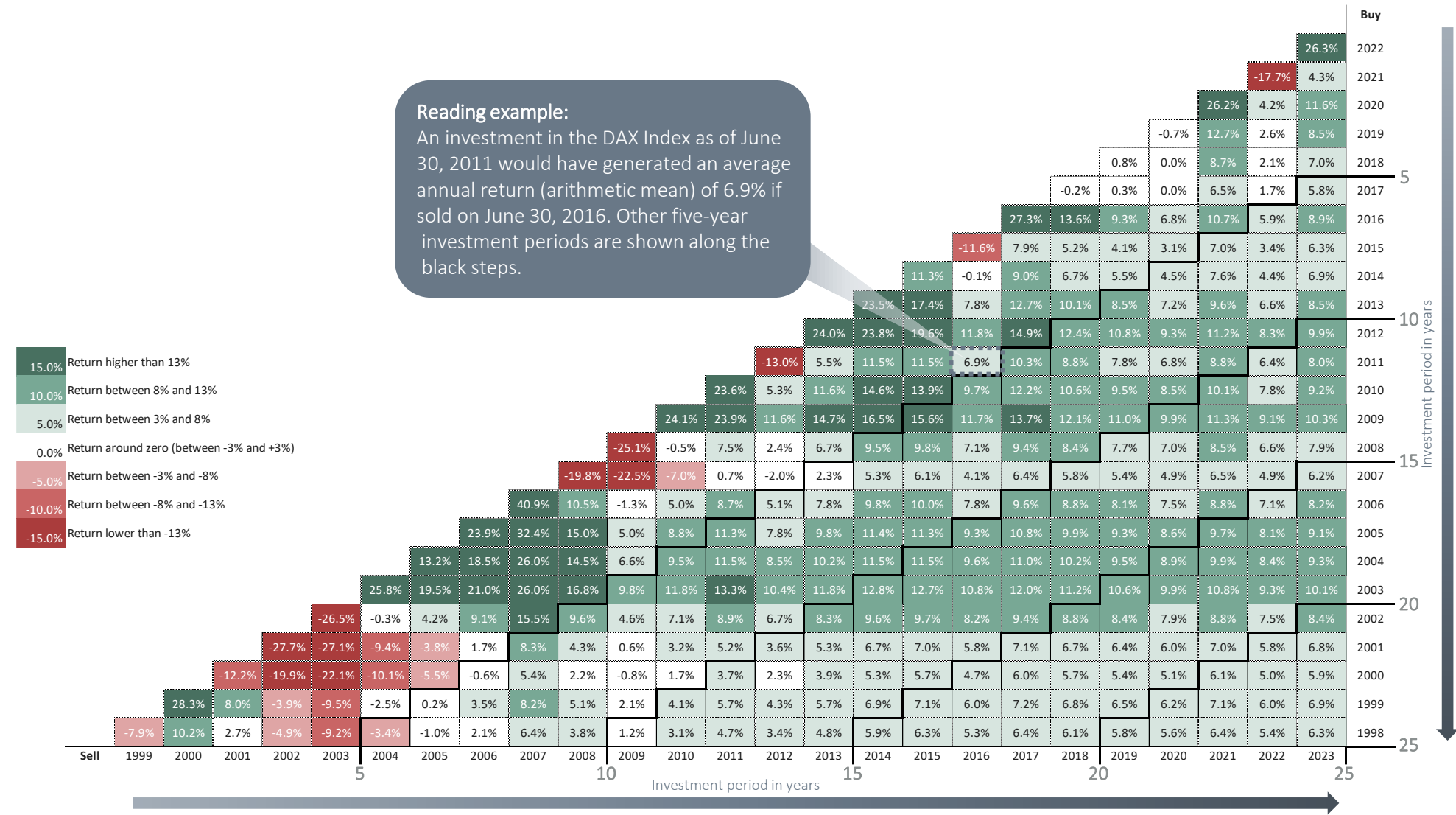
The following slides show the historical shareholder returns for different holding periods between June 30, 1998, and June 30, 2023, based on the arithmetic and geometric mean.

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



With a return of 26.3% in the last 12 months, performance of the DAX outperformed the ATX (14.8%) and SMI (8.3%)

Arithmetic mean of historical market returns as of June 30, 2023, DAX Performance Index, 1998-2023

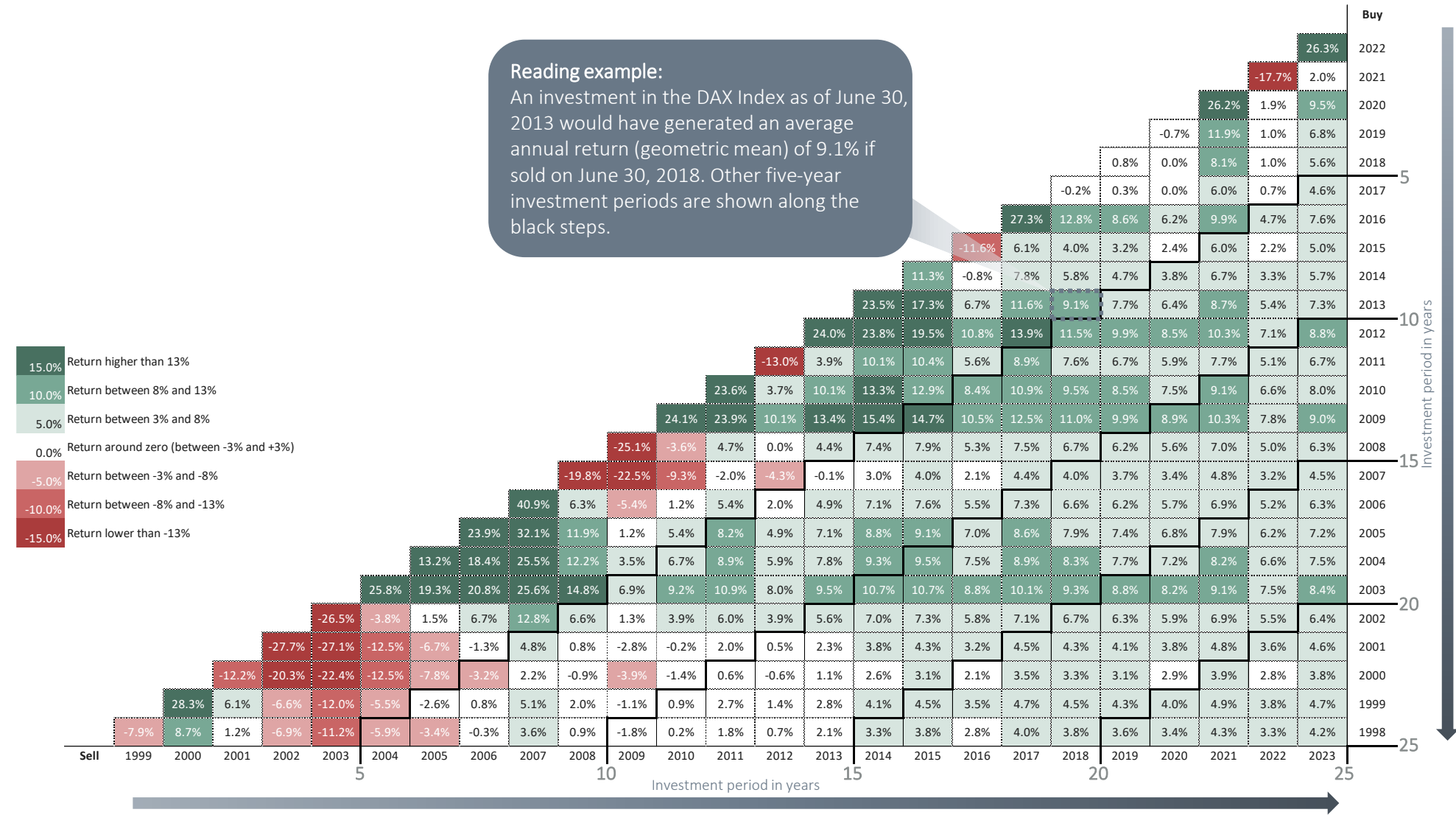


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The strong performance of the DAX in the last 12 months resulted in a significant improvement of the return of an investment in 2017 from 0.7% to 4.6%

Geometric mean of historical market returns as of June 30, 2023, DAX Performance Index, 1998-2023

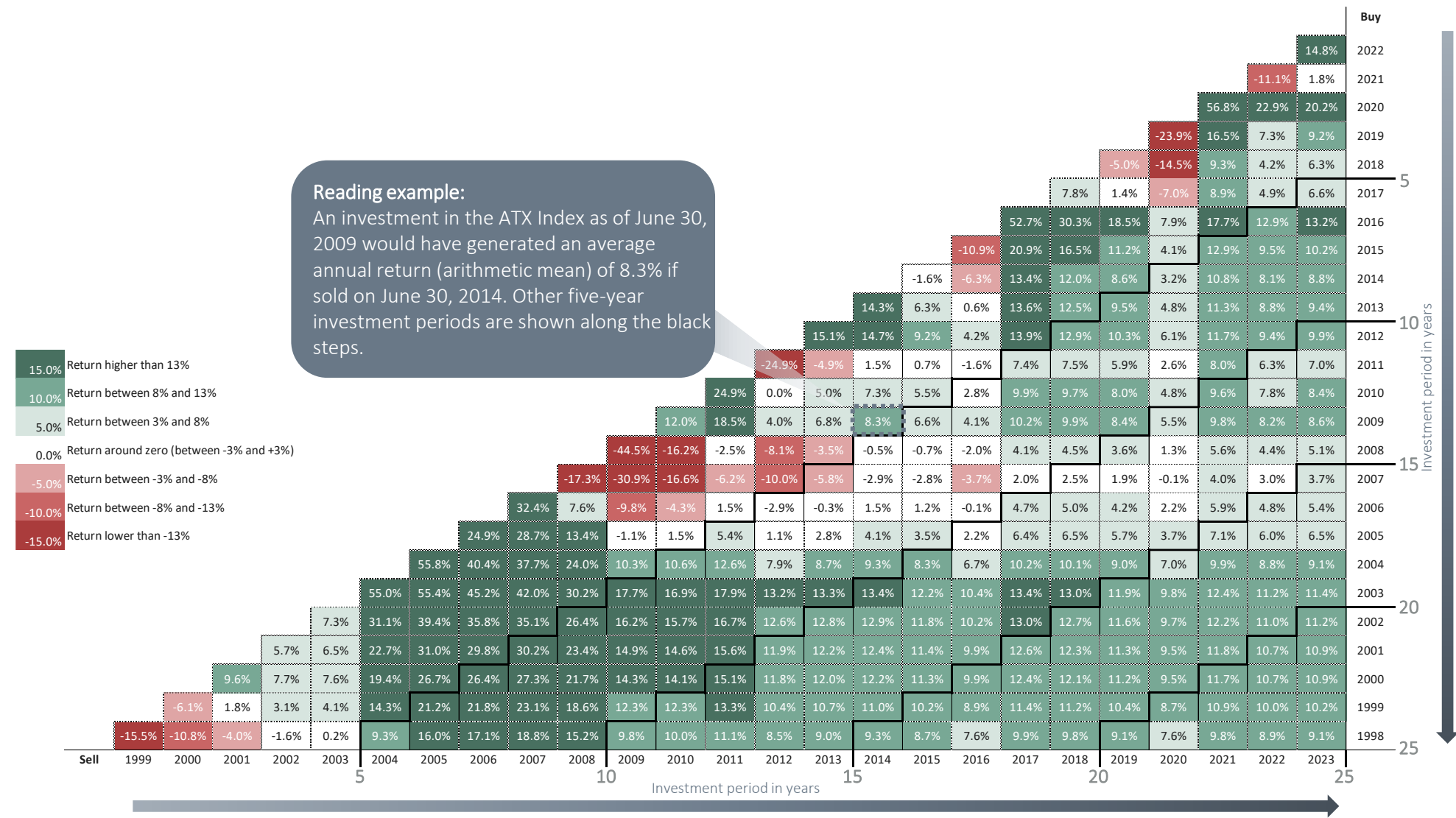


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With a return of 14.8% over the past 12 months, performance of the ATX lags the DAX (26.3%) but was above the historical long-term average of 9.1% p.a. over 25 years

Arithmetic mean of historical market returns as of June 30, 2023, ATX Performance Index, 1998-2023

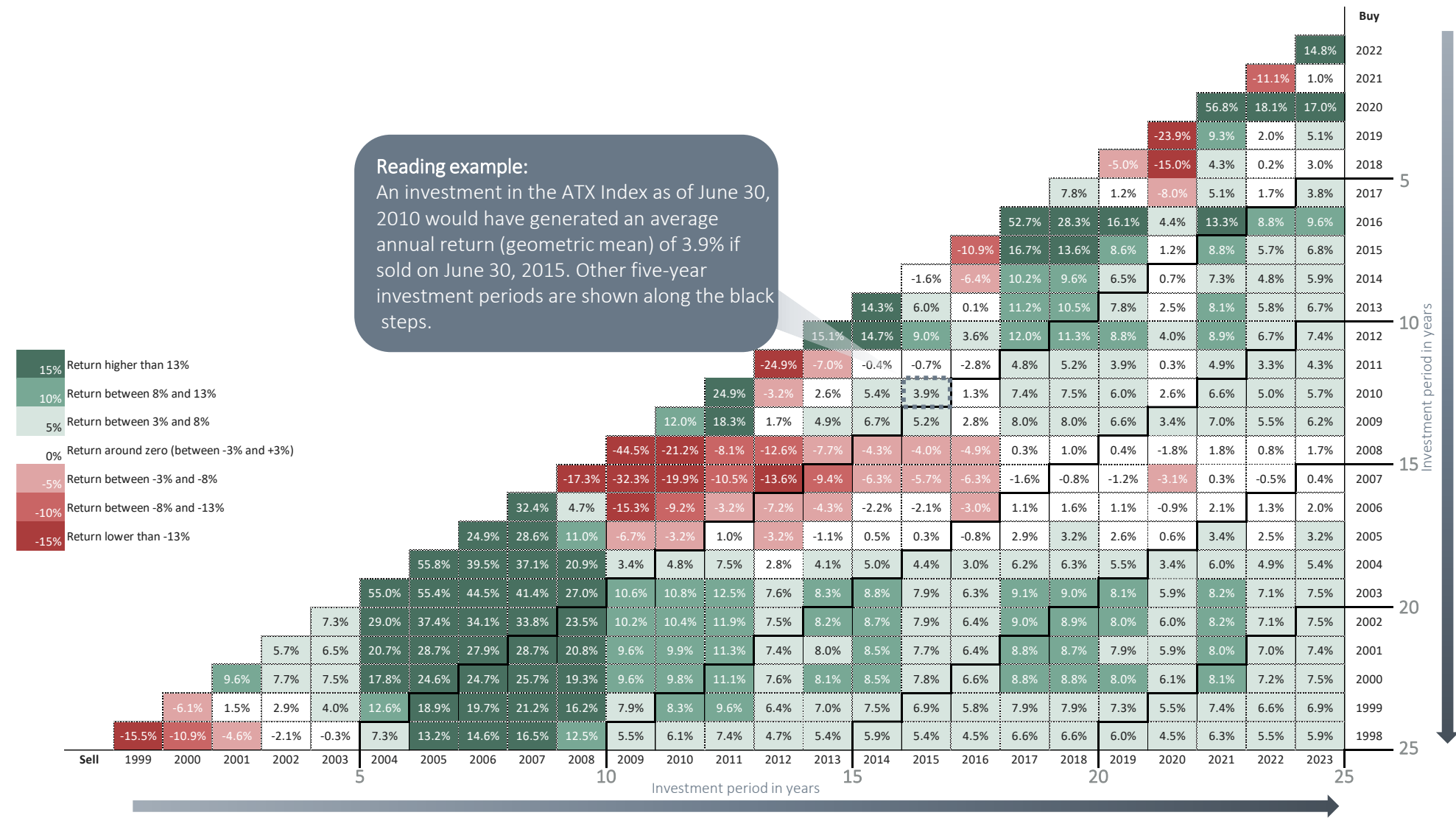


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Performance of the ATX in the last 12 months also improved the geometric mean return of an investment in 2017 (from 1.7% to 3.8%)

Geometric mean of historical market returns as of June 30, 2023, ATX Performance Index, 1998-2023

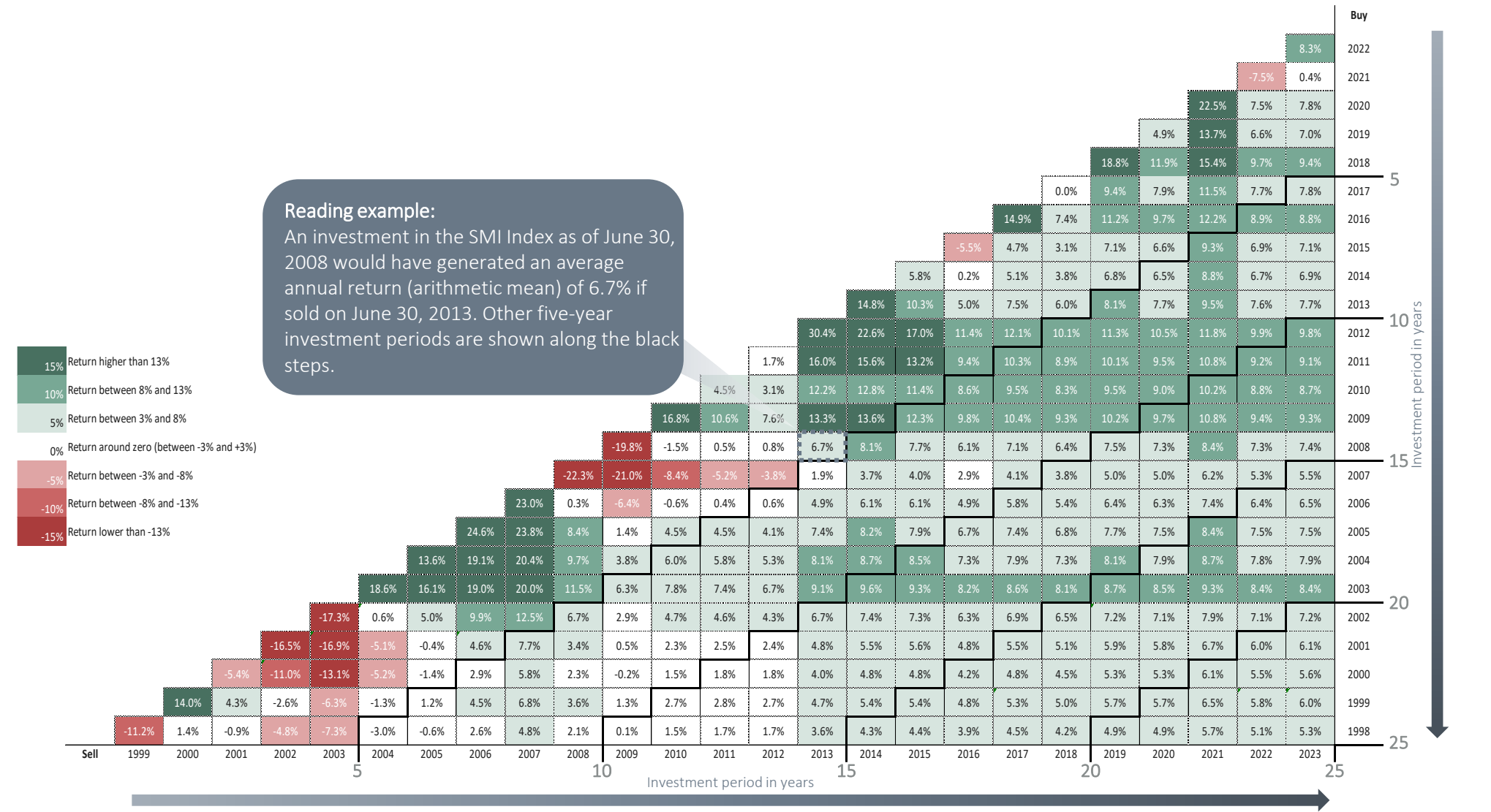


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With a return of 8.3% over the past 12 months, performance of the SMI ranks last compared to the DAX (26.3%) and ATX (14.8%)



Arithmetic mean of historical market returns as of June 30, 2023, SMI Performance Index, 1998-2023

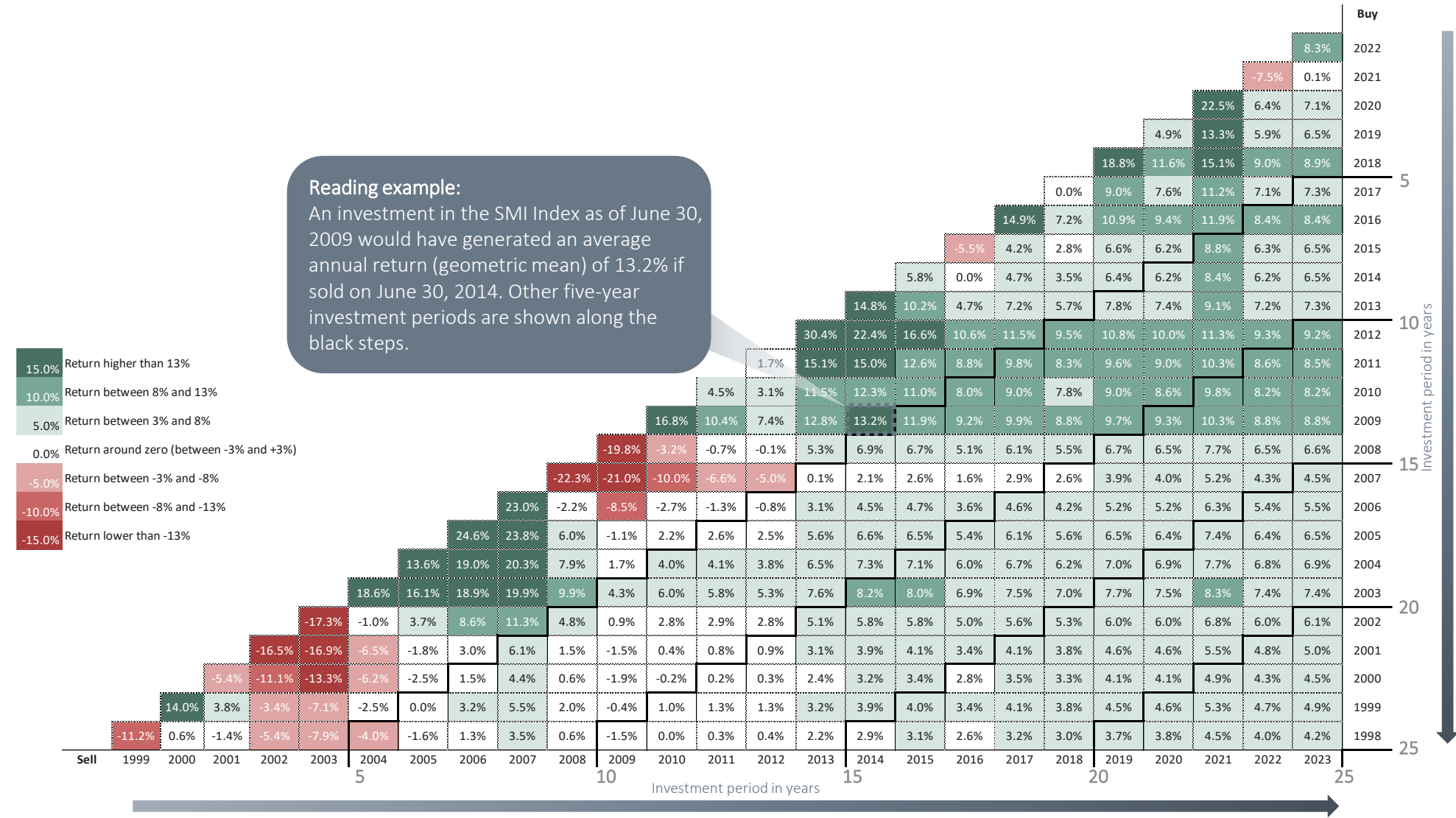


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Performance of the SMI in the last 12 months has slightly improved the geometric mean return of an investment in 2017 (from 7.1% to 7.3%)

Geometric mean of historical market returns as of June 30, 2023, SMI Performance Index, 1998-2023



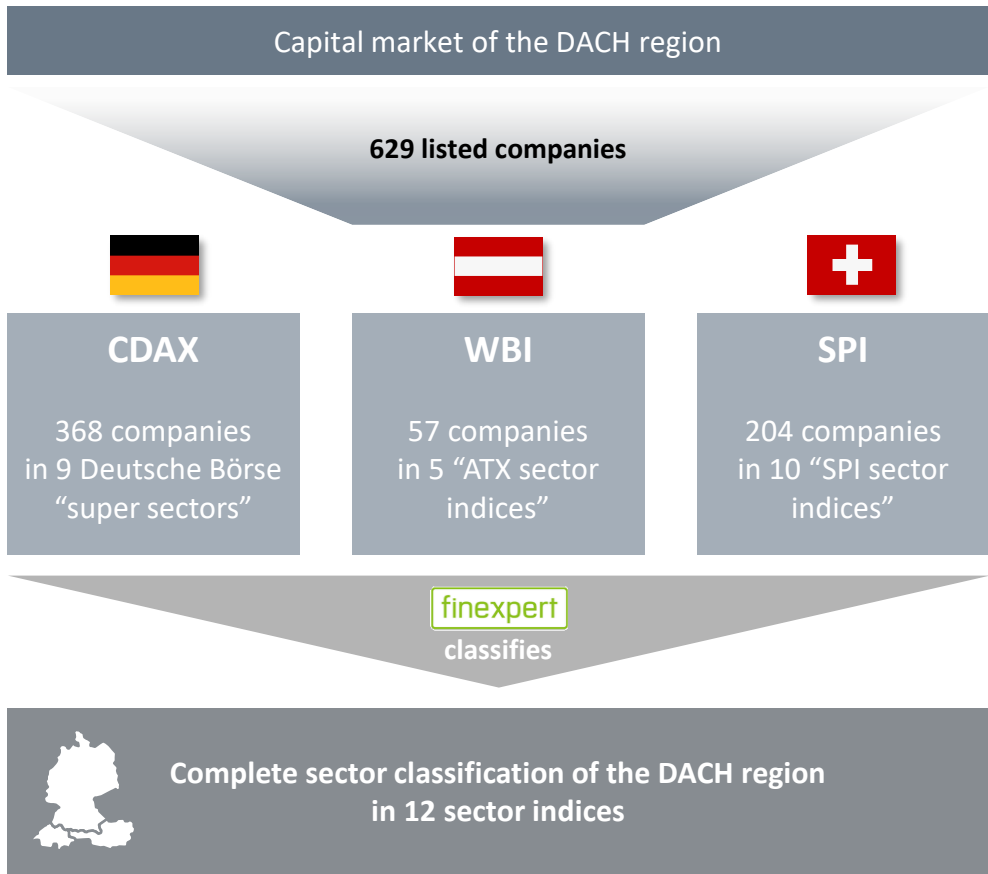
Source: https://www.dai.de/files/dai_usercontent/dokumente/renditedreieck/2015-12-31%20DAX-Rendite-Dreieck%2050%20Jahre%20Web.pdf

5

Sector classification of the DACH region
*based on **finexpert** sector indices*

The capital market of the DACH region comprises 629 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 **629 public companies**, which are listed in the mentioned indices as of June 30, 2023, build the base for the **sector classification** and the **subsequent analyses**:

- The German DAX Sector All Index¹⁾ includes 368 companies listed in the Prime Standard and General Standard and is grouped to nine “Deutsche Börse super sectors”.
- The Austrian ATX only has five sector indices, ValueTrust distributes the remaining companies of the WBI to the twelve sector indices listed below.
- The Swiss SPI contains ten sector indices that comprise 204 companies.

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

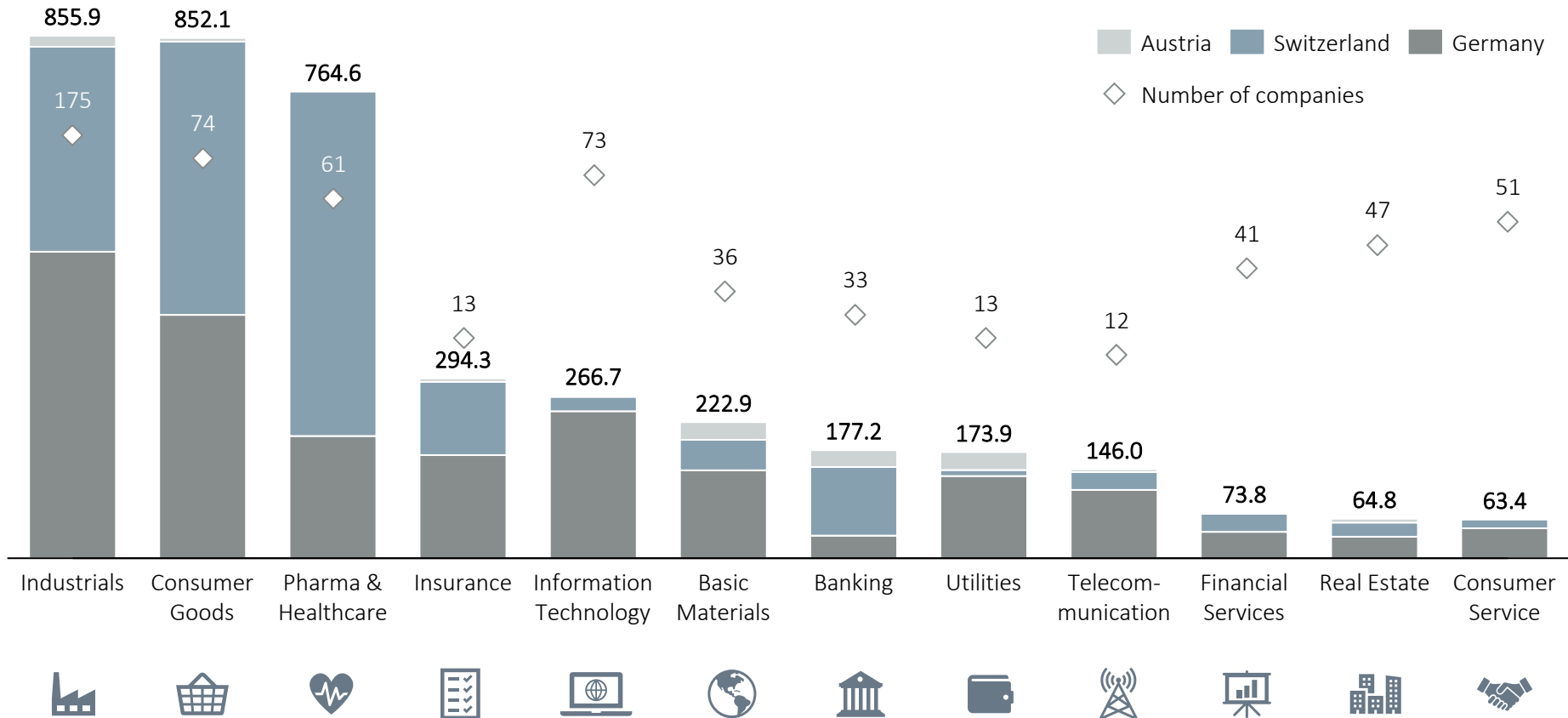
The **twelve sector indices** for this Study are:

- | | |
|-----------------------|--------------------------|
| ▪ 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 entire market capitalization in the DACH region

finexpert sector market capitalization in the DACH region as of June 30, 2023 (in EUR bn)

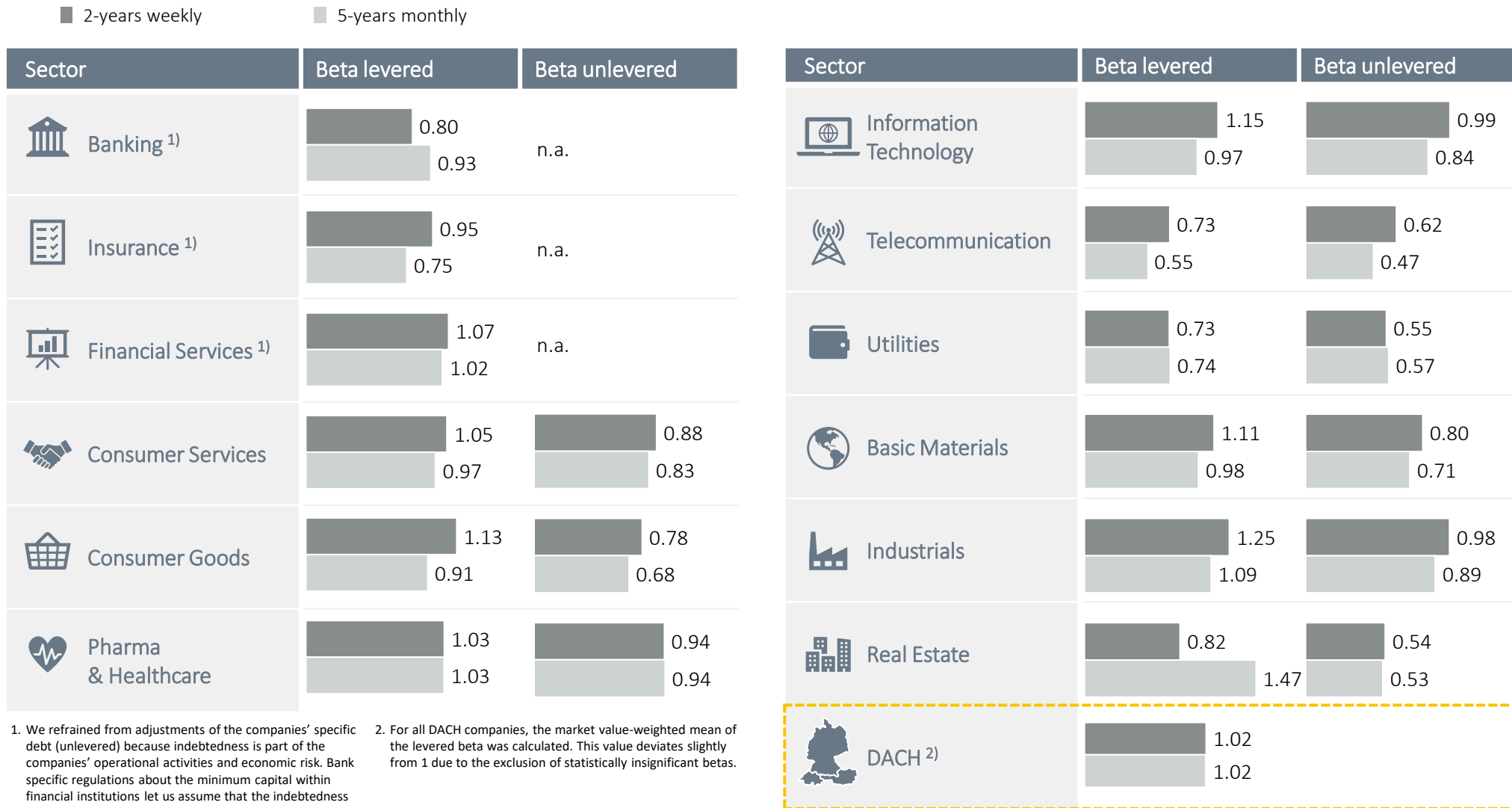


6

Betas

The highest betas are observed 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 June 30, 2023



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.

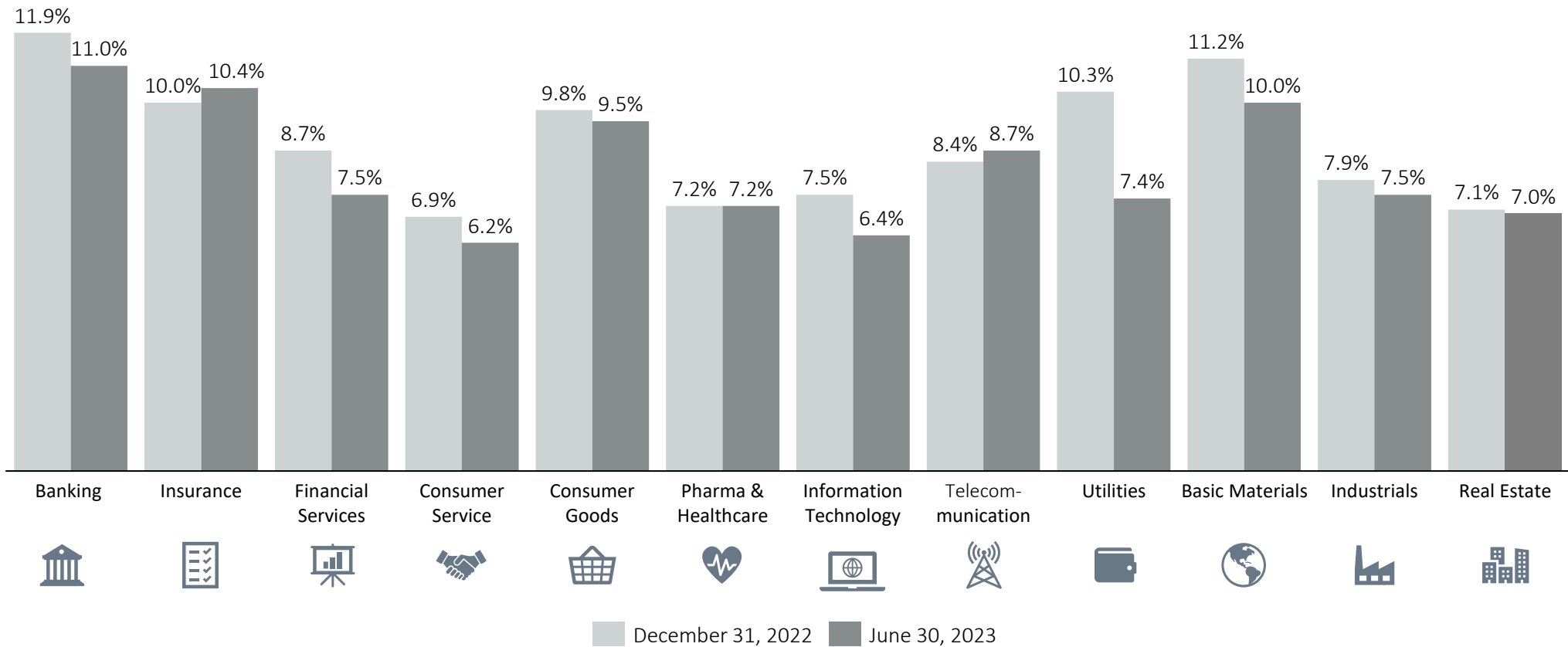
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Sector returns

a. Implied returns (ex-ante analysis)

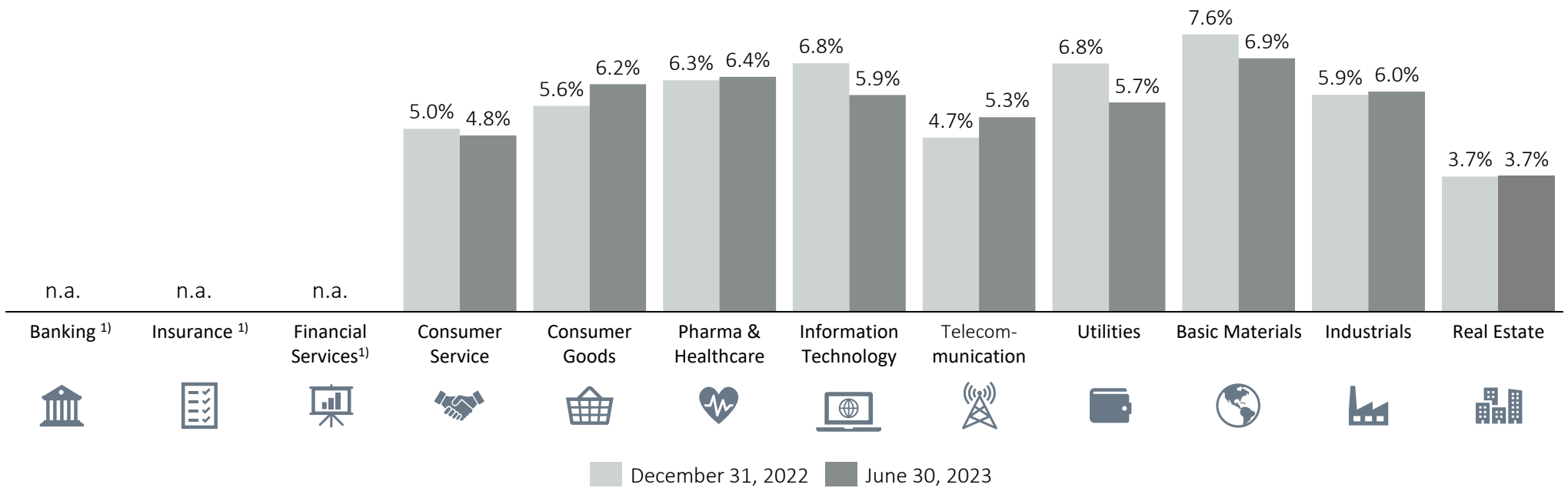
Overall, implied levered returns declined over the past 6 months due to higher market capitalization, remained stable in one sector, and increased only in the Insurance and Telecommunication sectors

Implied levered returns by sector, June 30, 2023, vs. December 31, 2022



Implied unlevered returns¹⁾ rose in four sectors, remained constant in one, and declined in four sectors over the past 6 months, most notably in the Utilities sector, which also had low historical returns

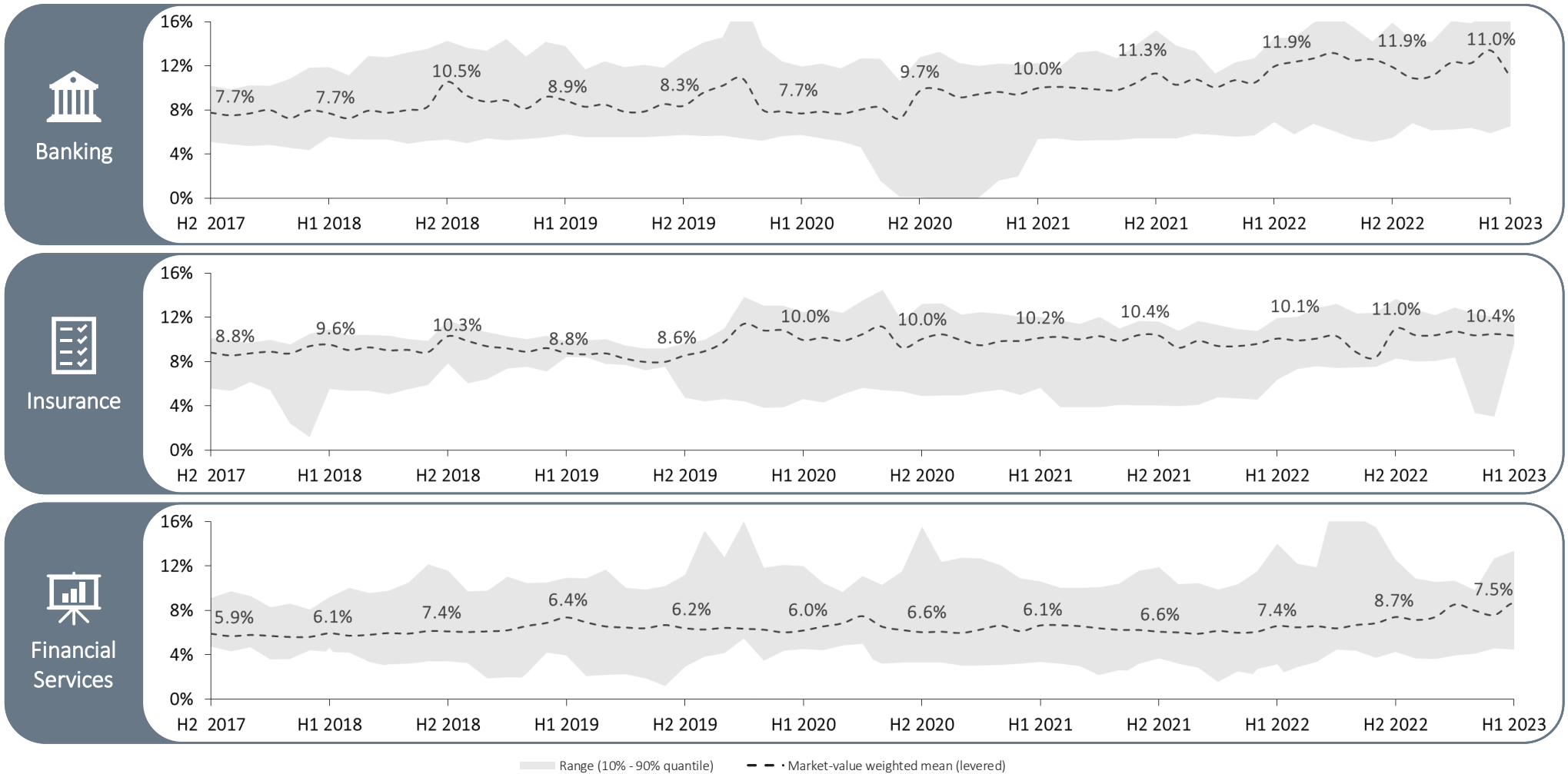
Implied unlevered returns by sector, June 30, 2023 vs. December 31, 2022



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

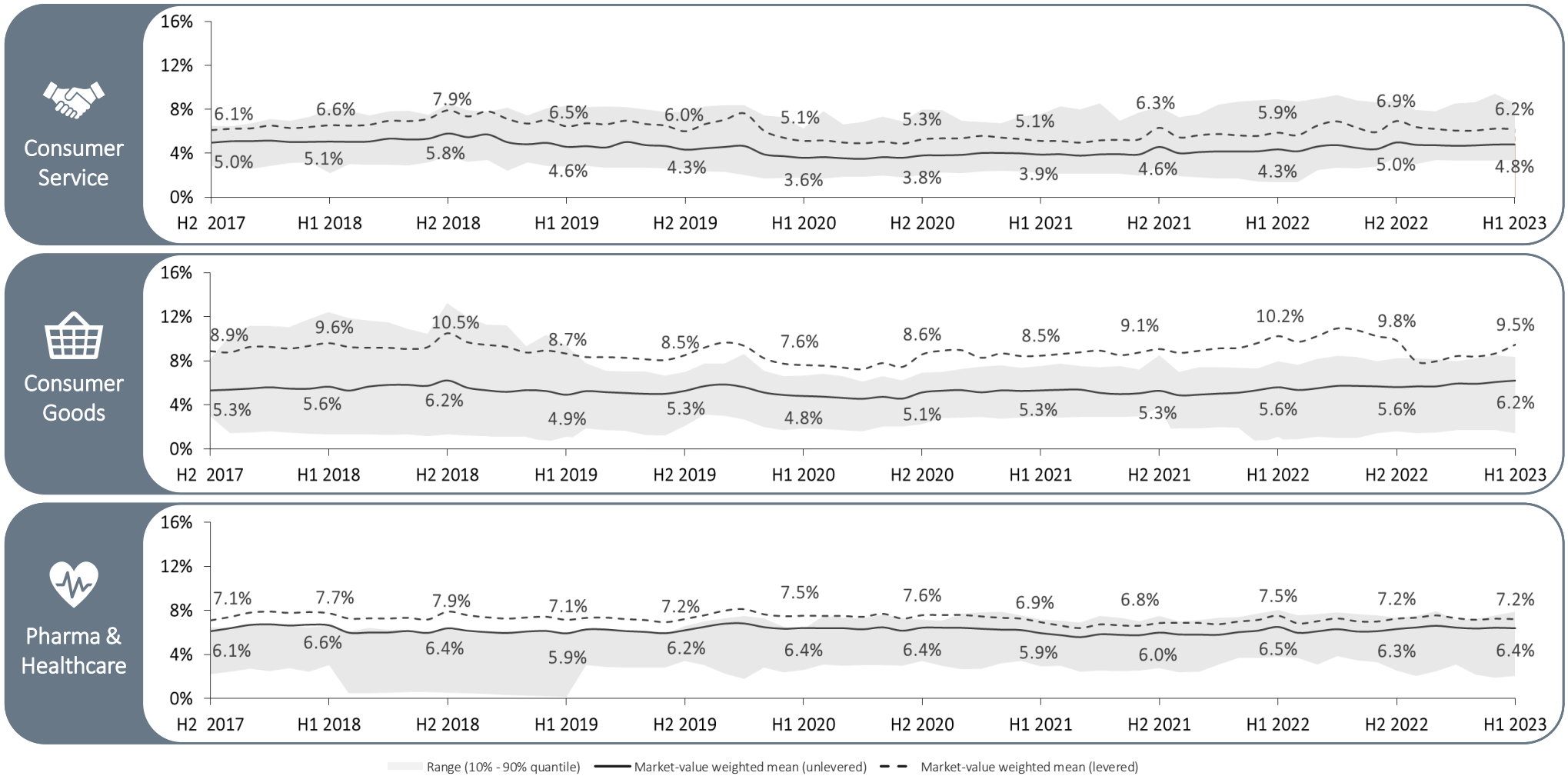
Implied levered returns of the Banking and Insurance sectors have increased since 2020, and the Financial Services sector had the highest implied levered return in 2022

Implied levered sector returns since 2017



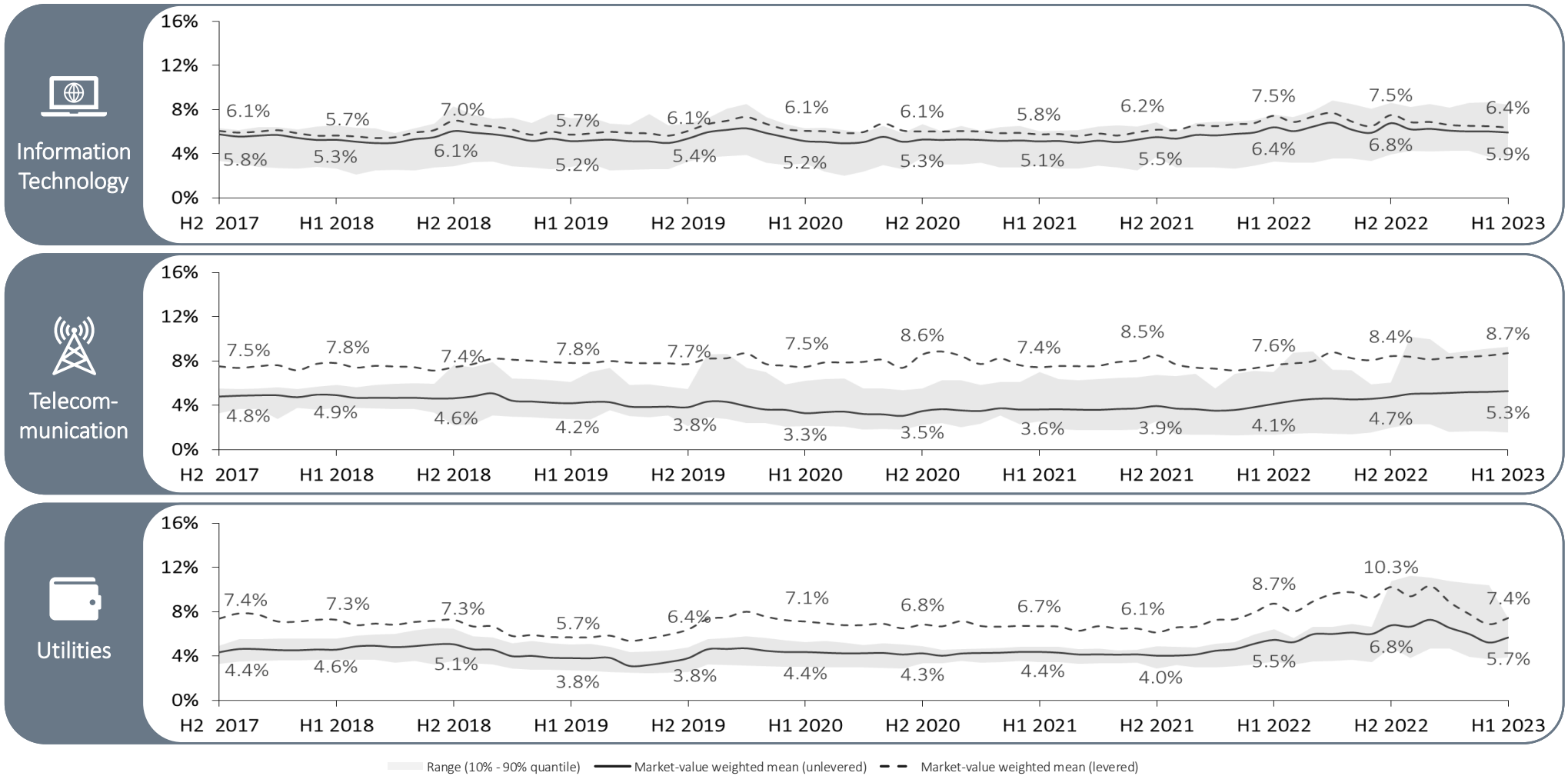
Implied sector returns for Pharma & Healthcare and Consumer Services have been relatively stable over time, while Consumer Goods showed more volatility at higher levered implied returns

Levered and unlevered implied sector returns since 2017



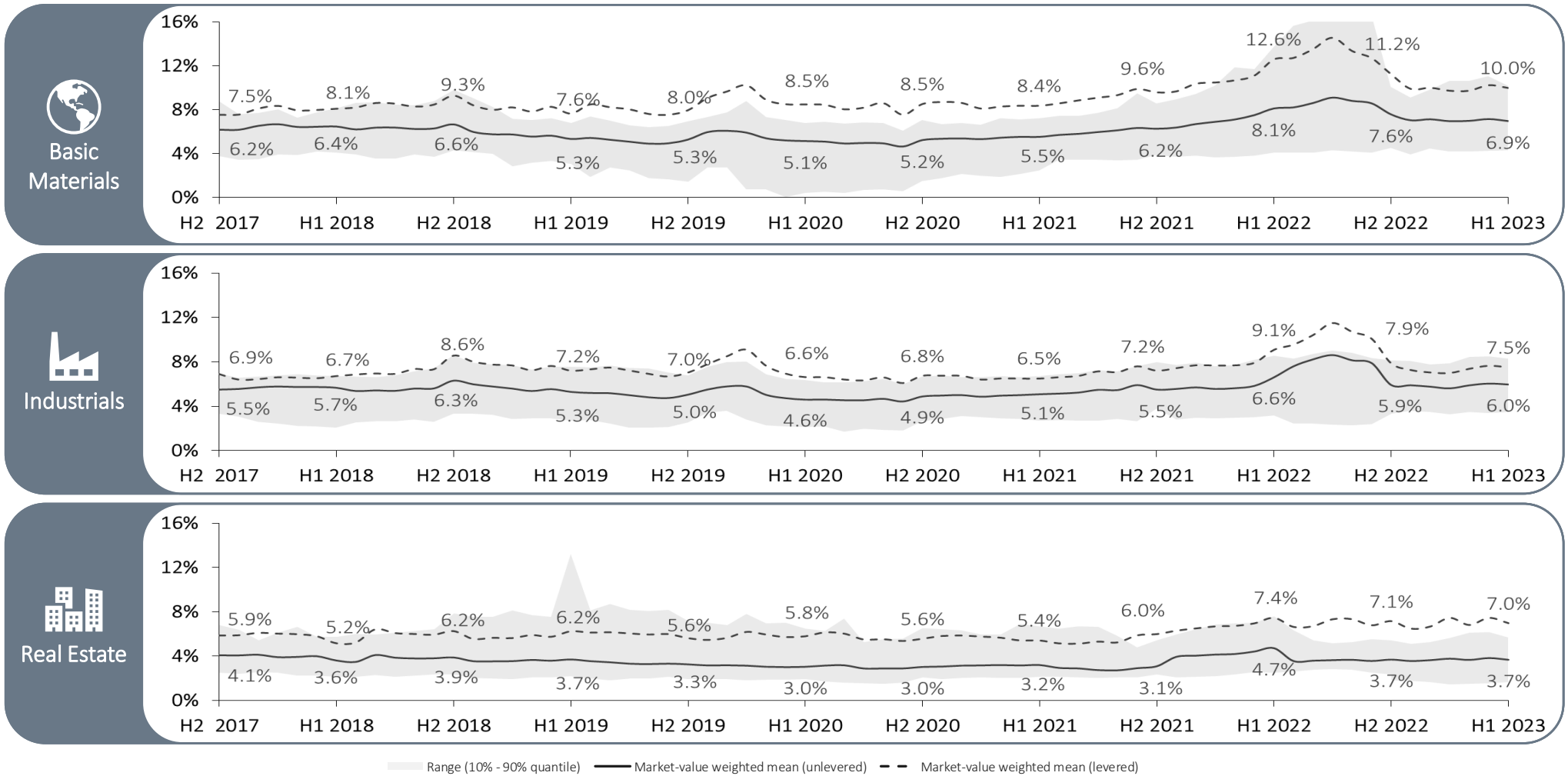
The Information Technology and Telecommunications sector had comparatively high implied returns in the last 6 months, while implied returns of the Utilities sector declined towards historical levels

Levered and unlevered implied sector returns since 2017



Implied returns of the Basic Materials and Industrials sectors normalized and returned towards historical levels; returns remained constant for the Real Estate sector in the first half of 2023

Levered and unlevered implied sector returns since 2017



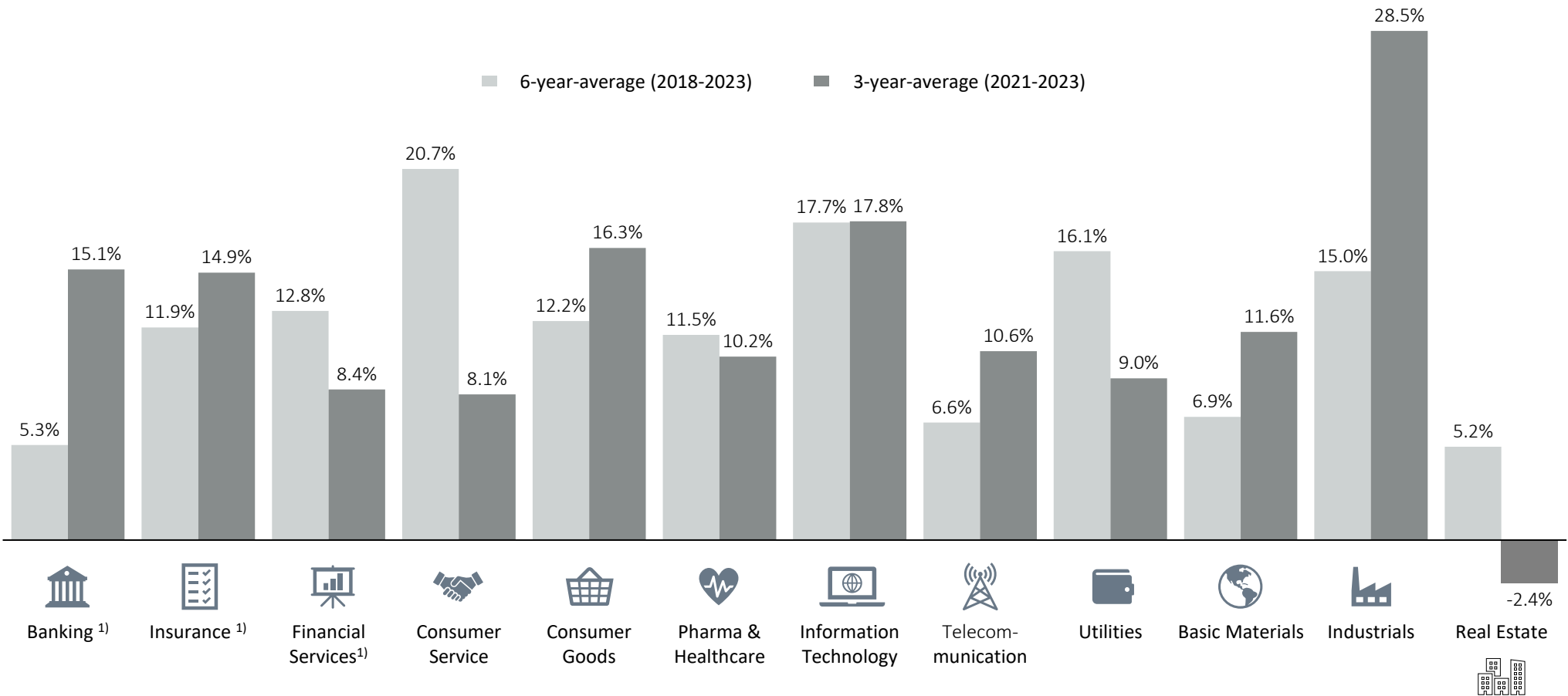
7

Sector returns

b. Historical returns (ex-post analysis)

Historical sector returns are volatile and show varying impact of interest rate increases on sectors; Real Estate sector returns were even negative while the Banking sector benefits from higher interest rates

Three- and six-year-average historical sector returns as of June 30, 2023







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

8

Trading multiples

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

Median forward multiples by country, June 30, 2023, and December 31, 2022

























Sector	EV / Revenue	EV / EBIT	P / E	P / B
 Germany	<div><div>1.3x</div><div>1.3x</div></div>	<div><div>14.7x</div><div>15.5x</div></div>	<div><div>15.3x</div><div>15.8x</div></div>	<div><div>1.5x</div><div>1.4x</div></div>
 Austria	<div><div>1.1x</div><div>1.2x</div></div>	<div><div>13.6x</div><div>14.5x</div></div>	<div><div>10.5x</div><div>10.2x</div></div>	<div><div>1.1x</div><div>1.0x</div></div>
 Switzerland	<div><div>1.8x</div><div>1.7x</div></div>	<div><div>18.2x</div><div>19.8x</div></div>	<div><div>20.1x</div><div>20.6x</div></div>	<div><div>1.6x</div><div>1.5x</div></div>
 DACH	<div><div>1.4x</div><div>1.4x</div></div>	<div><div>15.9x</div><div>17.7x</div></div>	<div><div>16.1x</div><div>17.0x</div></div>	<div><div>1.5x</div><div>1.4x</div></div>

June 30, 2023

December 31, 2022

P/E multiples increased in the Banking, Insurance, Consumer Service and Pharma & Healthcare sectors, as market capitalization grew stronger than earning estimates in the last 6 months

Median forward multiples by sector, June 30, 2023, and December 31, 2022







Sector	EV / Revenue	EV / EBIT	P / E	P / B
 Banking	n.a.	n.a.	 10.7x 9.2x	 0.8x 0.8x
 Insurance	n.a.	n.a.	 11.8x 13.2x	 1.5x 1.4x
 Financial Services	n.a.	n.a.	 15.3x 14.4x	 1.0x 1.0x
 Consumer Service	 0.9x 1.0x	 16.7x 17.7x	 21.1x 18.2x	 2.2x 1.7x
 Consumer Goods	 1.1x 1.0x	 14.2x 15.8x	 16.4x 17.4x	 1.4x 1.3x
 Pharma & Healthcare	 4.3x 4.1x	 20.6x 19.5x	 22.2x 18.7x	 2.9x 2.0x

 June 30, 2023  December 31, 2022

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

In contrast to a slight overall decline, the Real Estate sector's EV/EBIT and P/E multiples increased, as earnings estimates relative to market capitalization declined more sharply in the last 6 months













Median forward multiples by sector, June 30, 2023, and December 31, 2022

Sector	EV / Revenue	EV / EBIT	P / E	P / B
 Information Technology	<div><div>1.5x</div><div>1.7x</div></div>	<div><div>15.1x</div><div>15.6x</div></div>	<div><div>18.2x</div><div>18.7x</div></div>	<div><div>2.4x</div><div>2.3x</div></div>
 Telecommunication	<div><div>1.4x</div><div>1.4x</div></div>	<div><div>15.8x</div><div>23.3x</div></div>	<div><div>16.5x</div><div>17.3x</div></div>	<div><div>1.5x</div><div>1.8x</div></div>
 Utilities	<div><div>2.0x</div><div>2.0x</div></div>	<div><div>15.2x</div><div>16.9x</div></div>	<div><div>12.9x</div><div>16.5x</div></div>	<div><div>1.8x</div><div>1.6x</div></div>
 Basic Materials	<div><div>1.1x</div><div>1.0x</div></div>	<div><div>13.5x</div><div>12.6x</div></div>	<div><div>12.1x</div><div>10.8x</div></div>	<div><div>1.2x</div><div>1.1x</div></div>
 Industrials	<div><div>1.2x</div><div>1.2x</div></div>	<div><div>15.2x</div><div>16.7x</div></div>	<div><div>16.1x</div><div>17.8x</div></div>	<div><div>1.7x</div><div>1.6x</div></div>
 Real Estate	<div><div>5.7x</div><div>7.6x</div></div>	<div><div>25.4x</div><div>22.9x</div></div>	<div><div>20.6x</div><div>13.7x</div></div>	<div><div>0.7x</div><div>0.9x</div></div>

June 30, 2023 December 31, 2022

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 June 30, 2023

	EV / Revenue 1yf	EV / EBIT 1yf	P / E 1yf	P / B LTM	Ø Ranking
 Banking	n.a.	n.a.	12	11	11.5
 Insurance	n.a.	n.a.	11	7	9.0
 Financial Services	n.a.	n.a.	8	10	9.0
 Consumer Service	9	3	2	3	4.3
 Consumer Goods	8	8	6	8	7.5
 Pharma & Healthcare	2	2	1	1	1.5
 Information Technology	4	7	4	2	4.3
 Telecommunication	5	4	5	6	5.0
 Utilities	3	6	9	4	5.5
 Basic Materials	7	9	10	9	8.8
 Industrials	6	5	7	5	5.8
 Real Estate	1	1	3	12	4.3

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

The Pharma & Healthcare sector showed the highest multiples on average, followed by the Consumer Service, Information Technology and Real Estate sectors.

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.¹⁾ Likewise, bonds issued by **Switzerland** enjoy a AAA rating and are also considered risk-free according to the Swiss National Bank.²⁾ Hence, a similar approach as for Germany and Austria is in our view appropriate for Switzerland with Swiss parameters.³⁾

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

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**”.¹⁾ 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*:²⁾

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

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.³⁾ 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.⁴⁾ 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/Lenckner, 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*.¹⁾ 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**²⁾ to take into account the specific leverage:³⁾

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

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 June 30, 2023, we observe a sector specific, unlevered cost of equity of **6.9%** (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: **2.43%** (cf. slide 13)

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

$$r_E^L = 6.9\% + (6.9\% - 2.43\%) * 40\% = 8.7\%$$

8.7% is the company's relevered cost of equity. In comparison, the levered cost of equity of the Basic Materials sector is **10.0%**, reflecting the sectors' higher 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 June 30**, 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 (2021-2023) as well as the 6-year (2018-2023) 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 ("**EV¹**/Revenue")
- EBIT-Multiples ("**EV¹**/EBIT")
- Price-to-Earnings-Multiples ("**P/E**")
- Price-to-Book Value-Multiples ("**P/B**")

Multiples are presented for the reference dates June 30, 2023 and December 31, 2022. The reference values are based on one-year forecasts of analysts (so called forward multiples, in the following "**1y^f**"). 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 June 30, 2017 in the appendix and update the applied multiples **semi-annually at the predefined reference date (as of December 31 and as of June 30)**.

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.

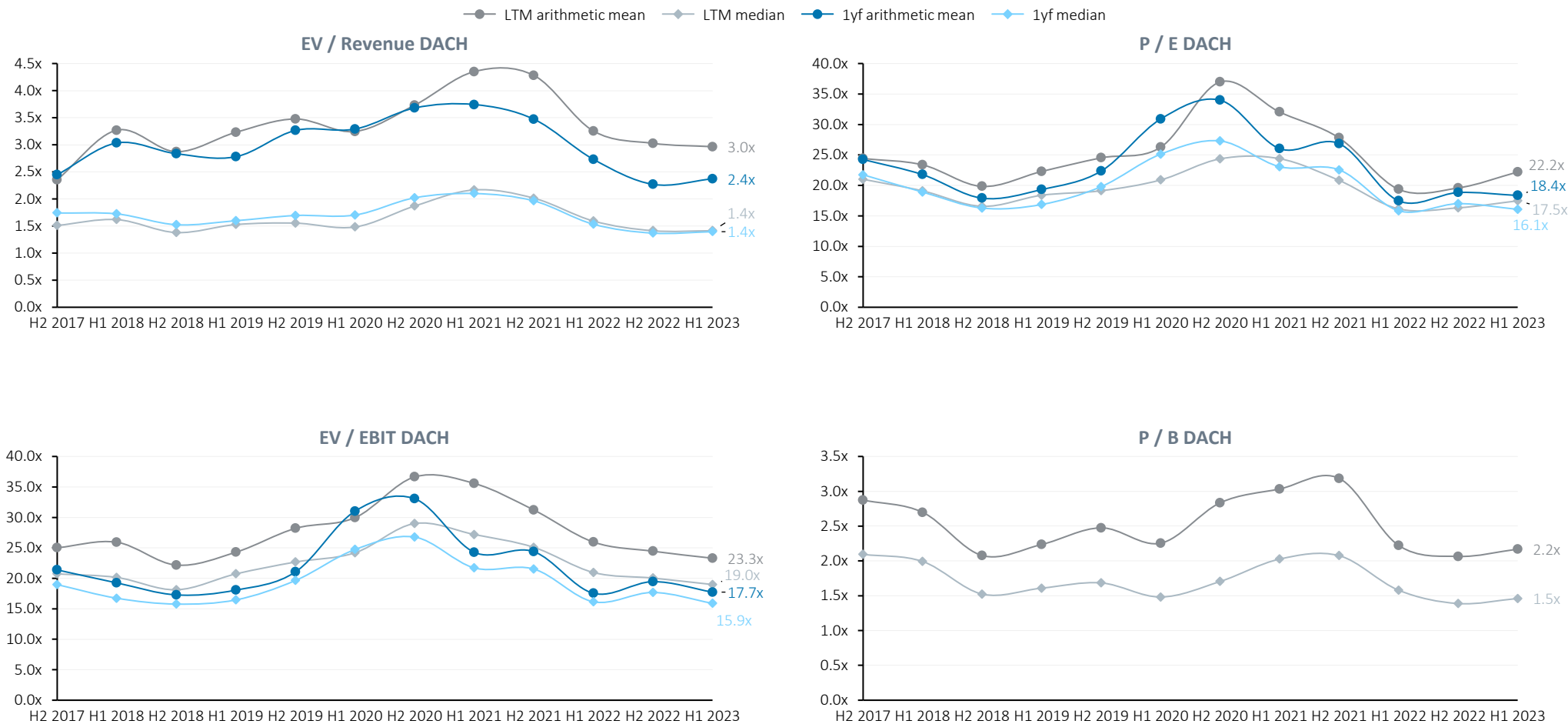
Additionally, we present a **ranking table** of the sector multiples. Sector multiples are sorted from highest to lowest for each analyzed multiple. The resulting score in the ranking is displayed in the table and visualized by a color code that assigns a dark **green color** to the **highest rank** 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 2017*

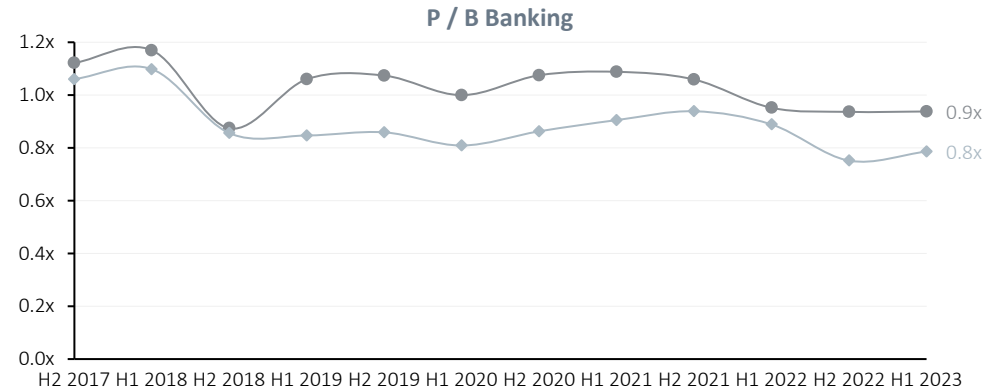
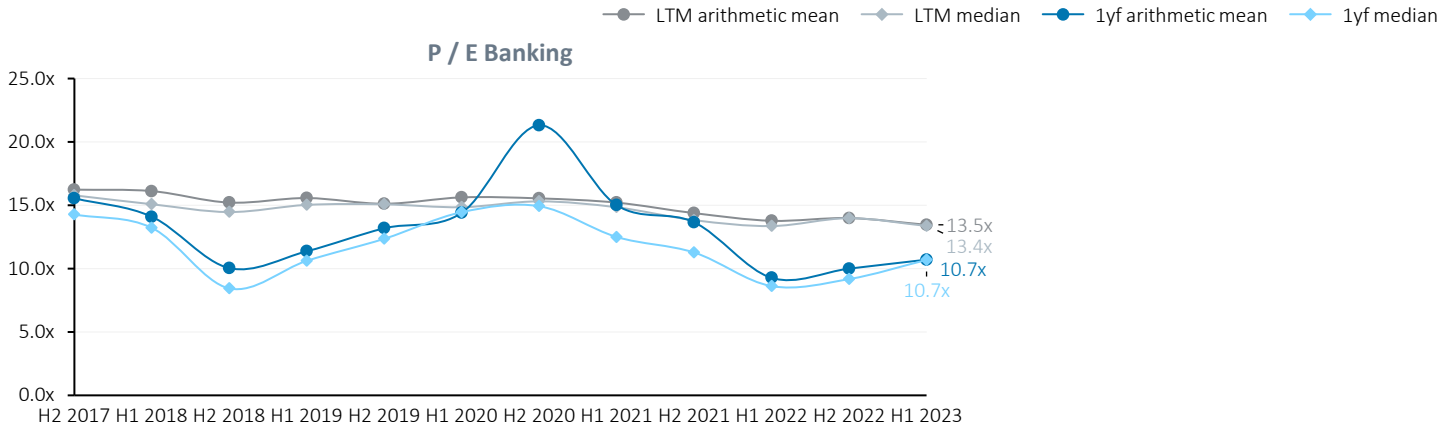
DACH region

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



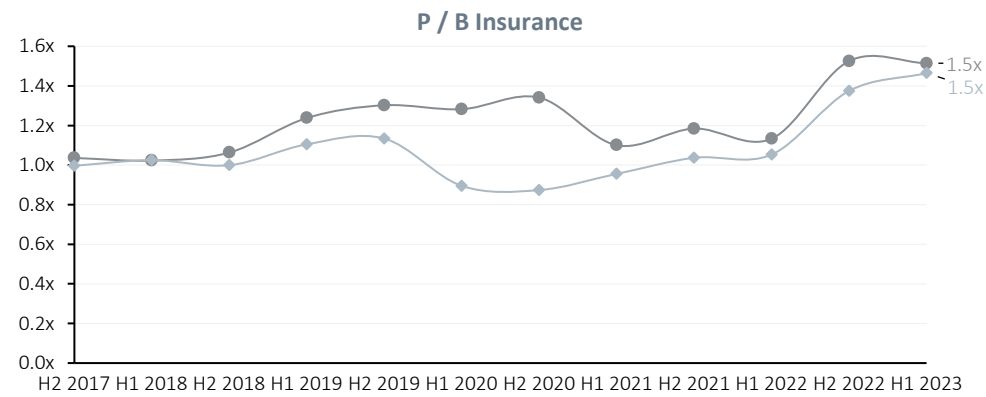
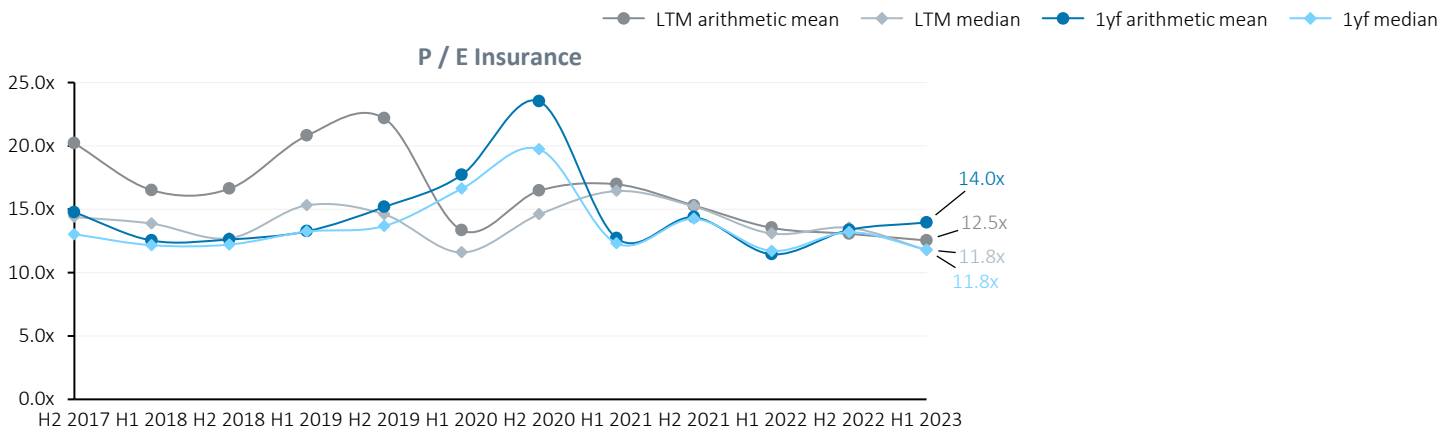
Banking

P/E- and P/B-Multiples



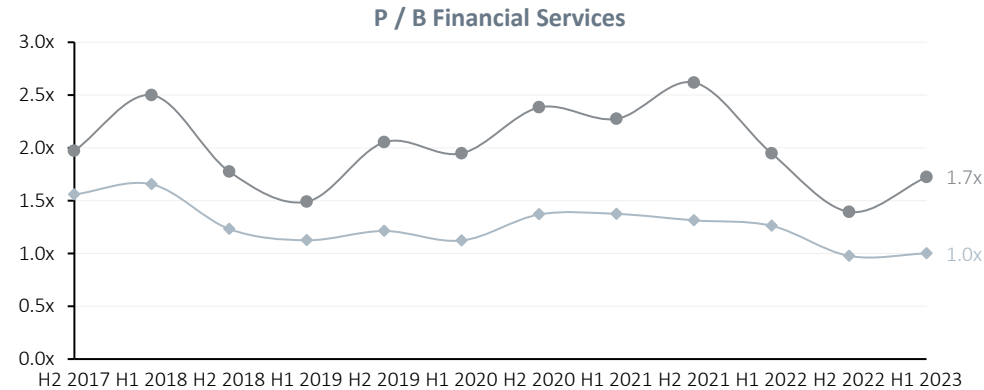
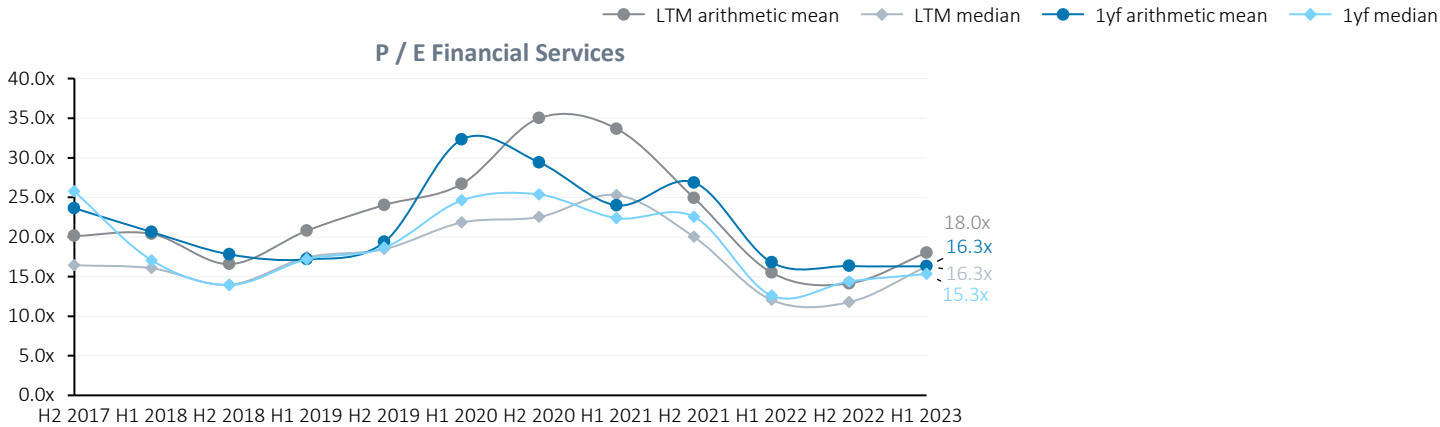
Insurance

P/E- and P/B-Multiples



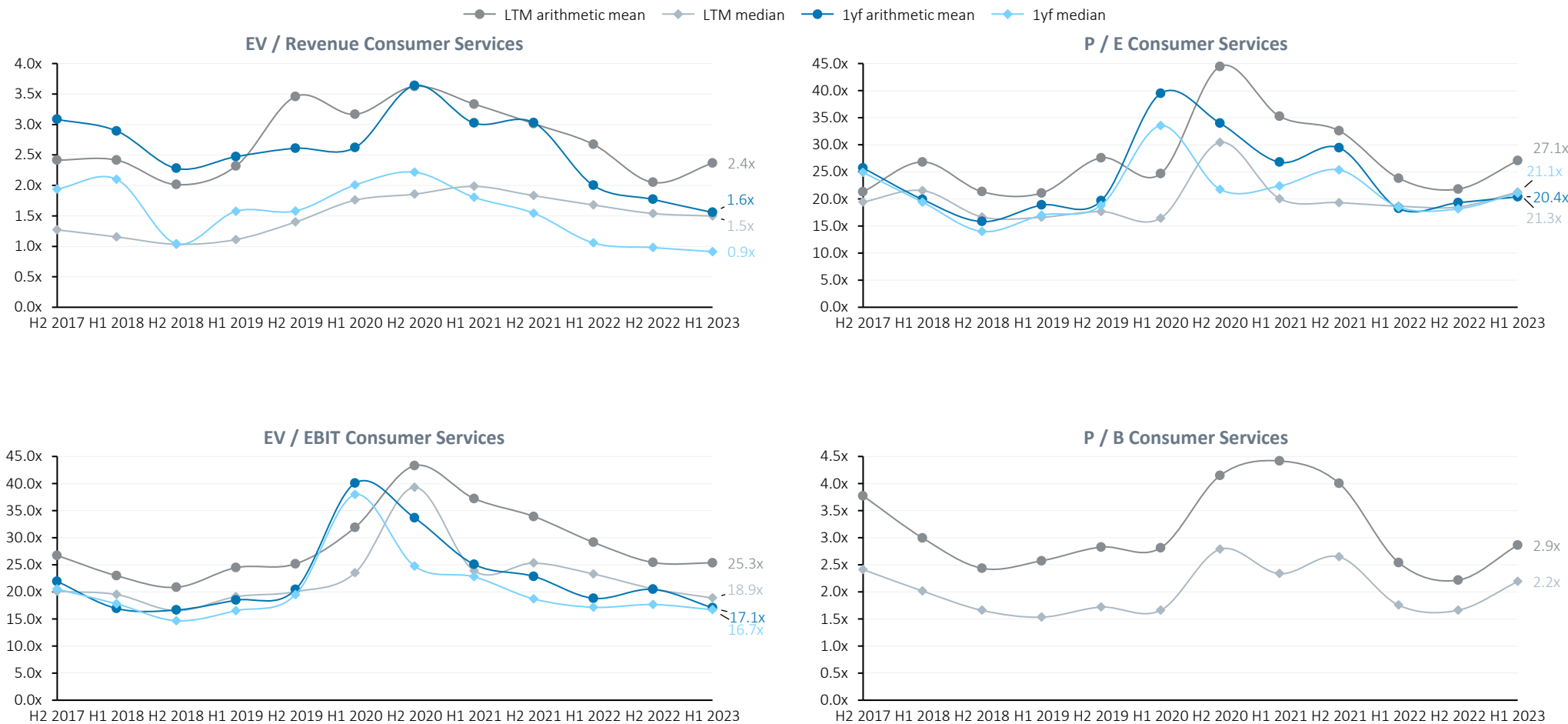
Financial Services

P/E- and P/B-Multiples



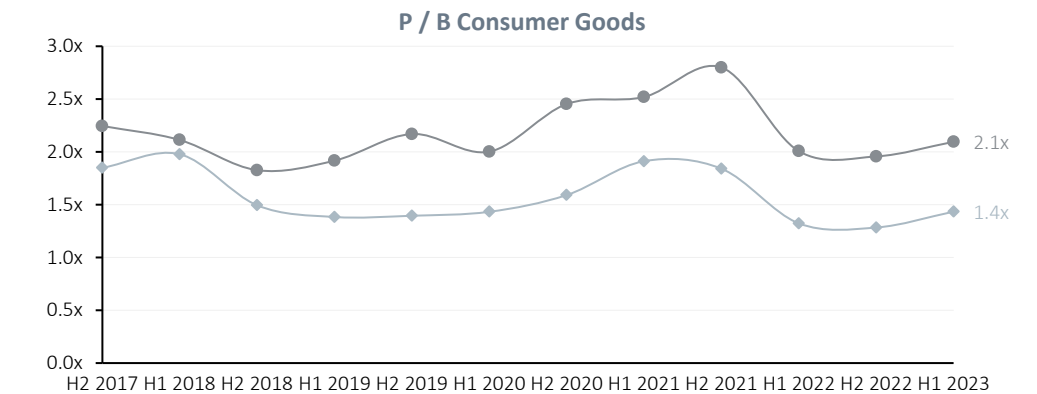
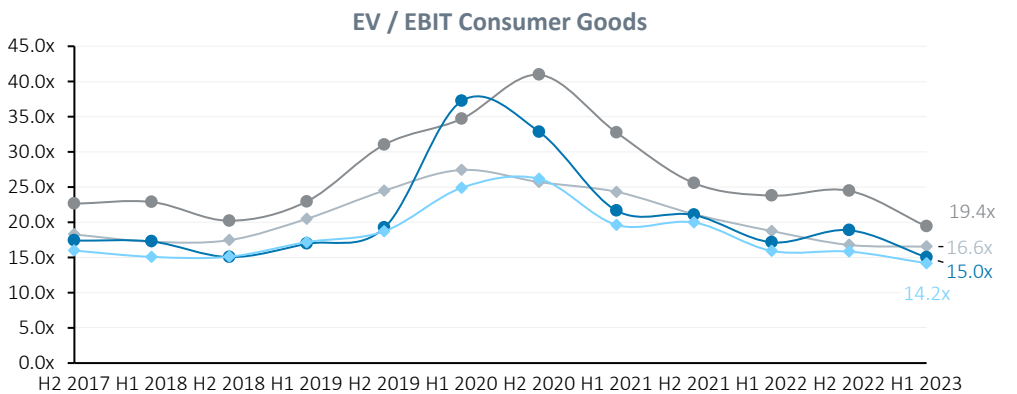
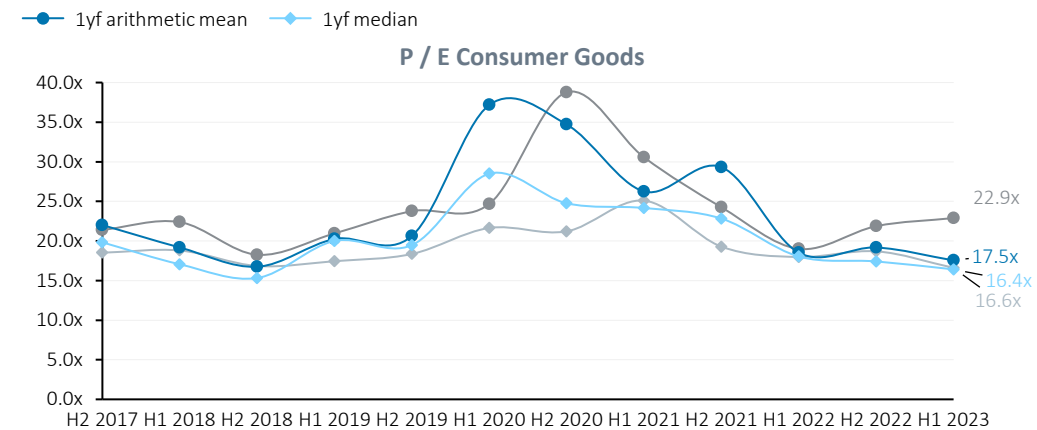
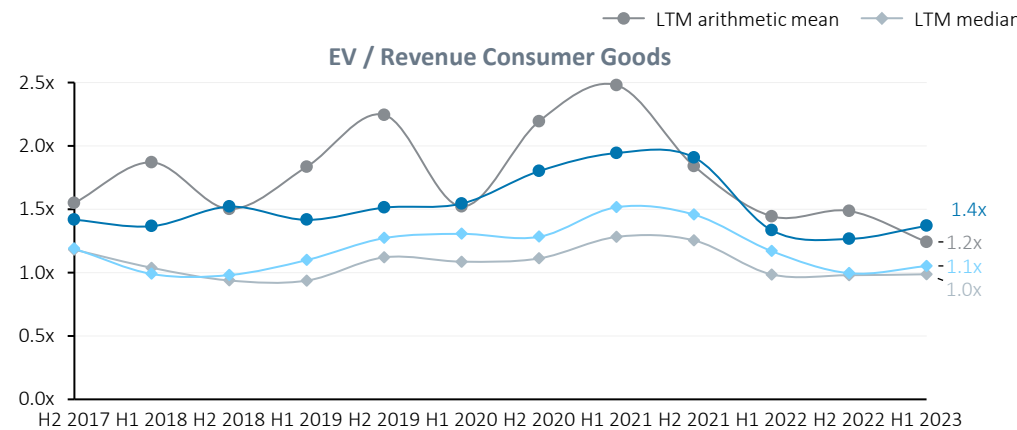
Consumer Services

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



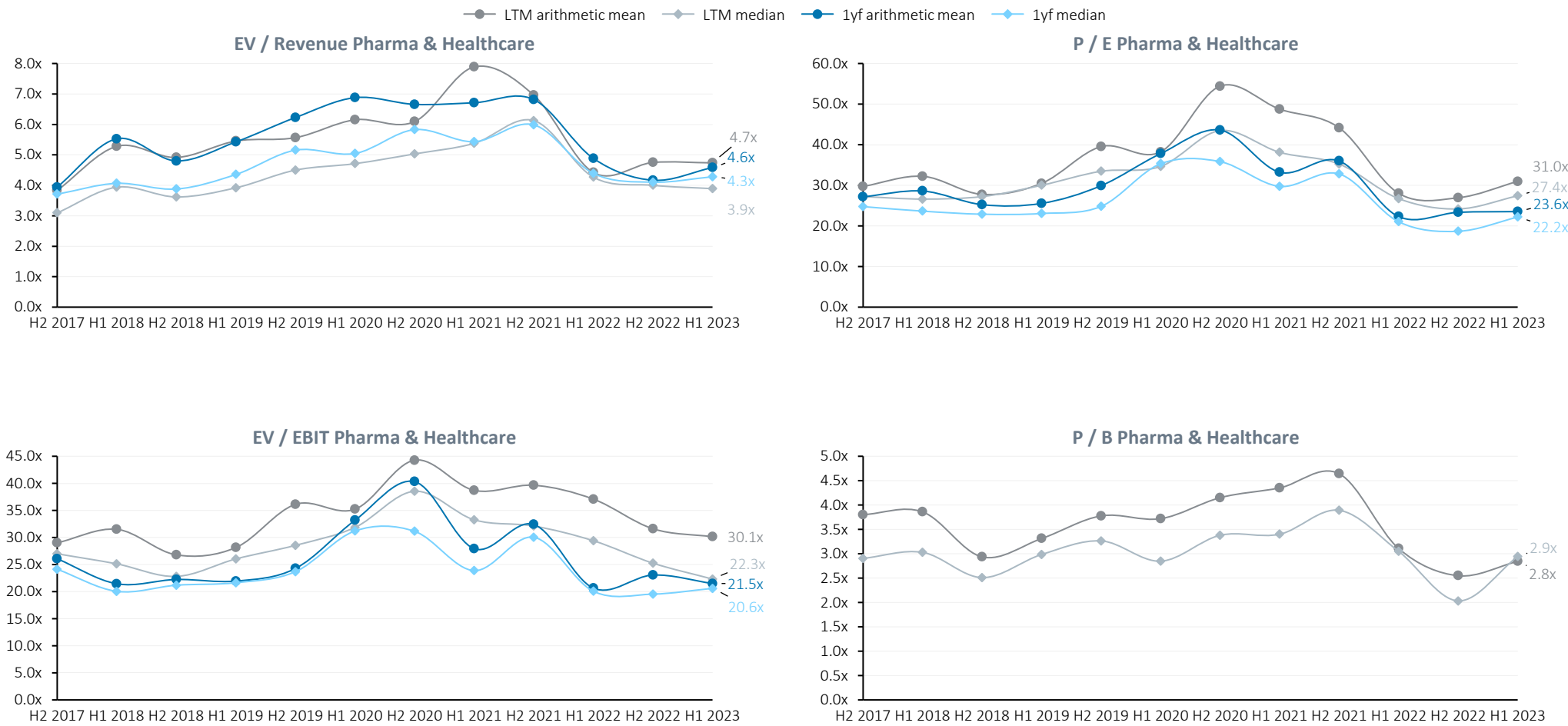
Consumer Goods

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



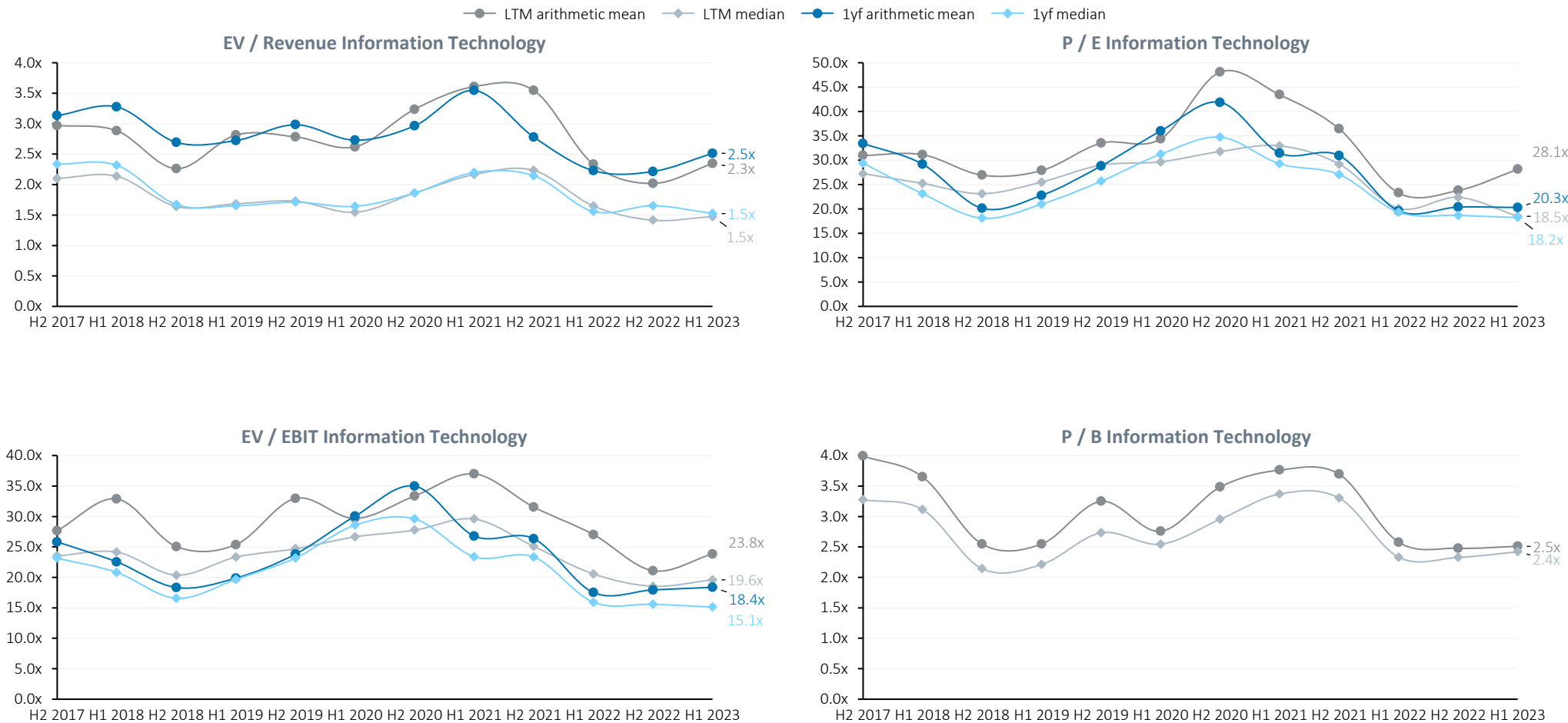
Pharma & Healthcare

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



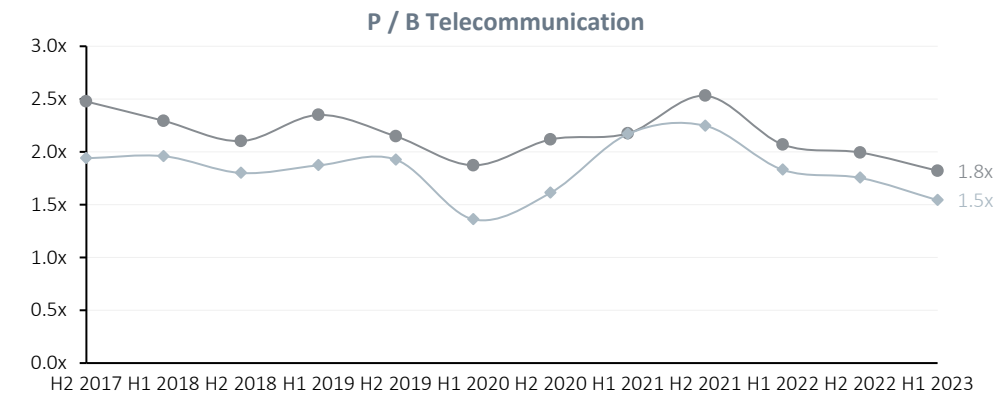
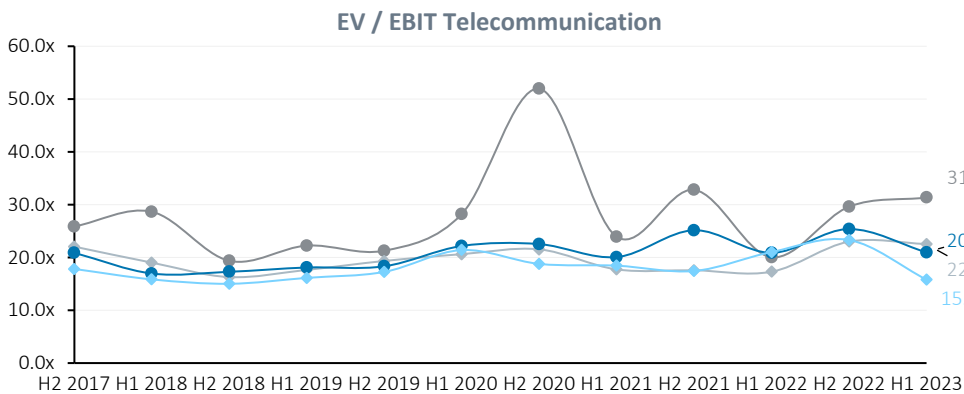
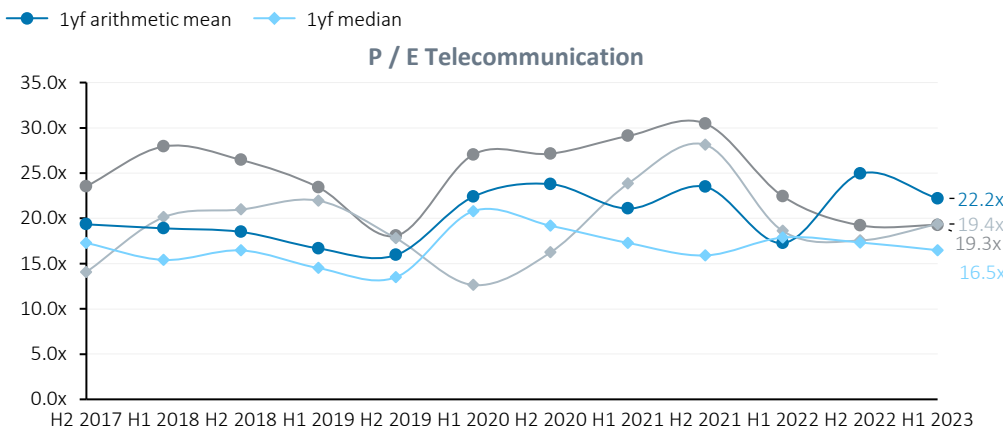
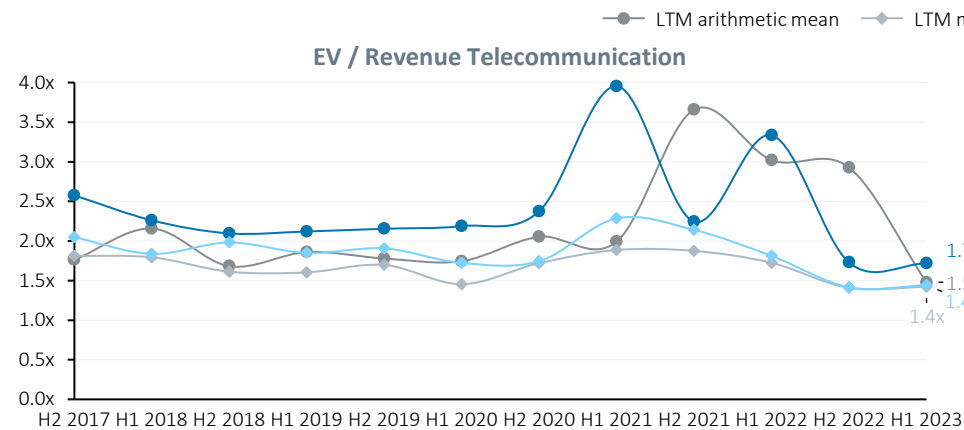
Information Technology

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



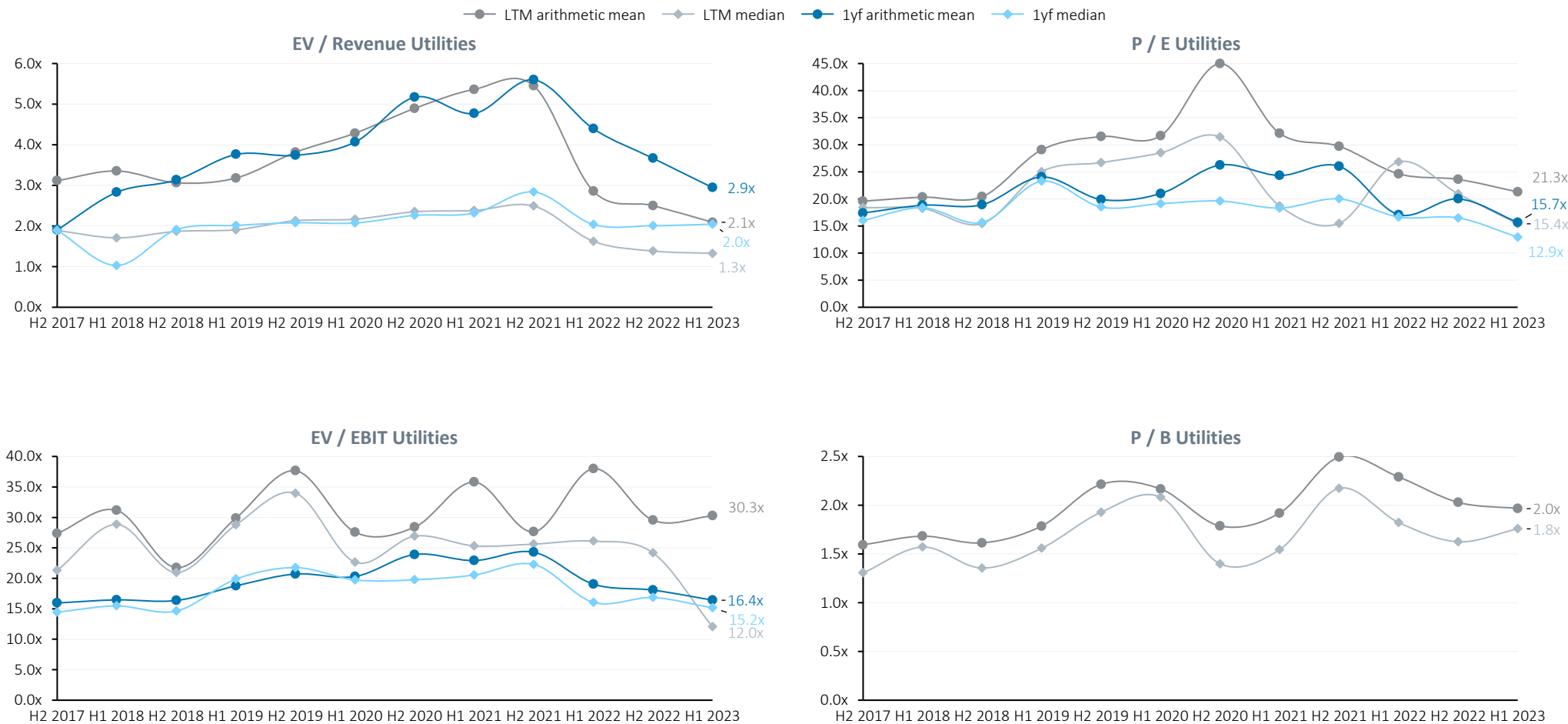
Telecommunication

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



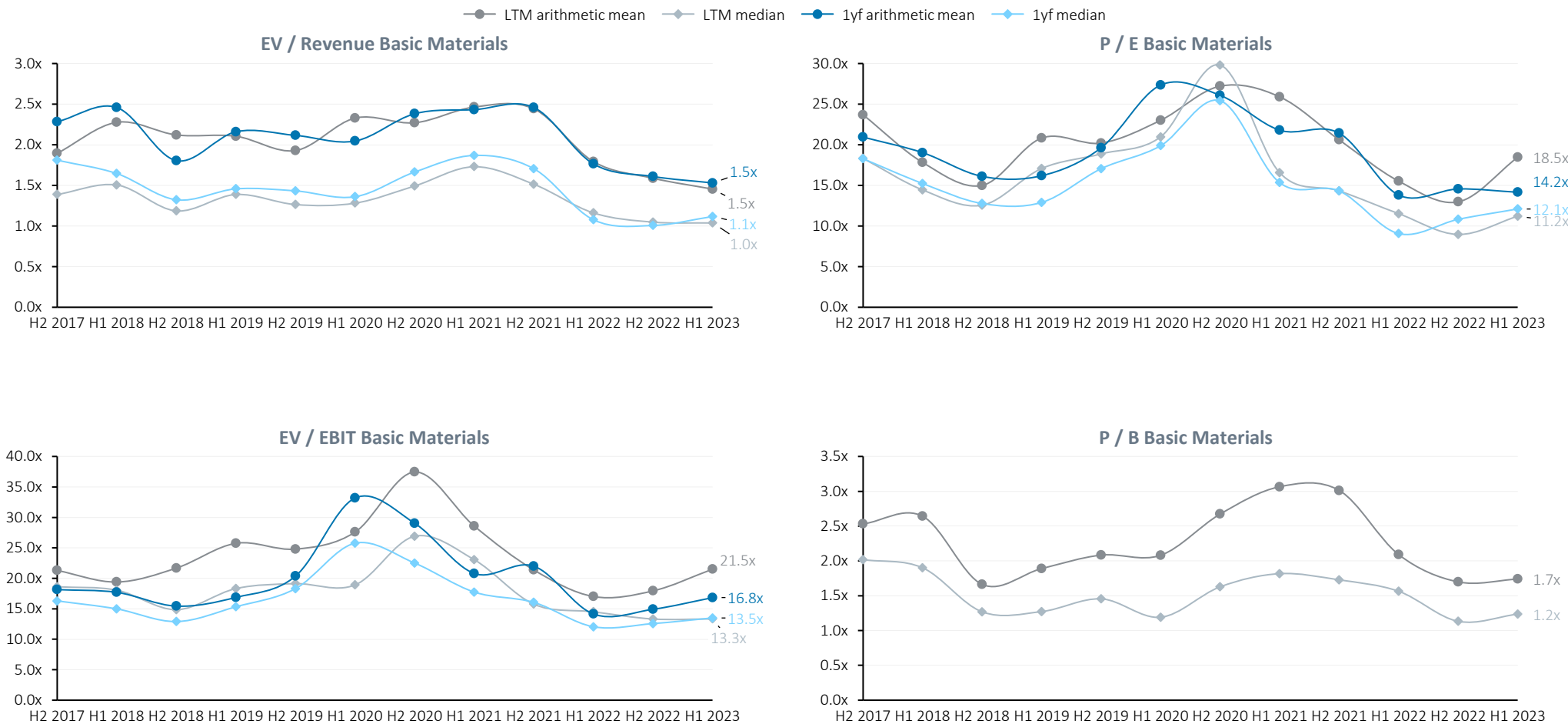
Utilities

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



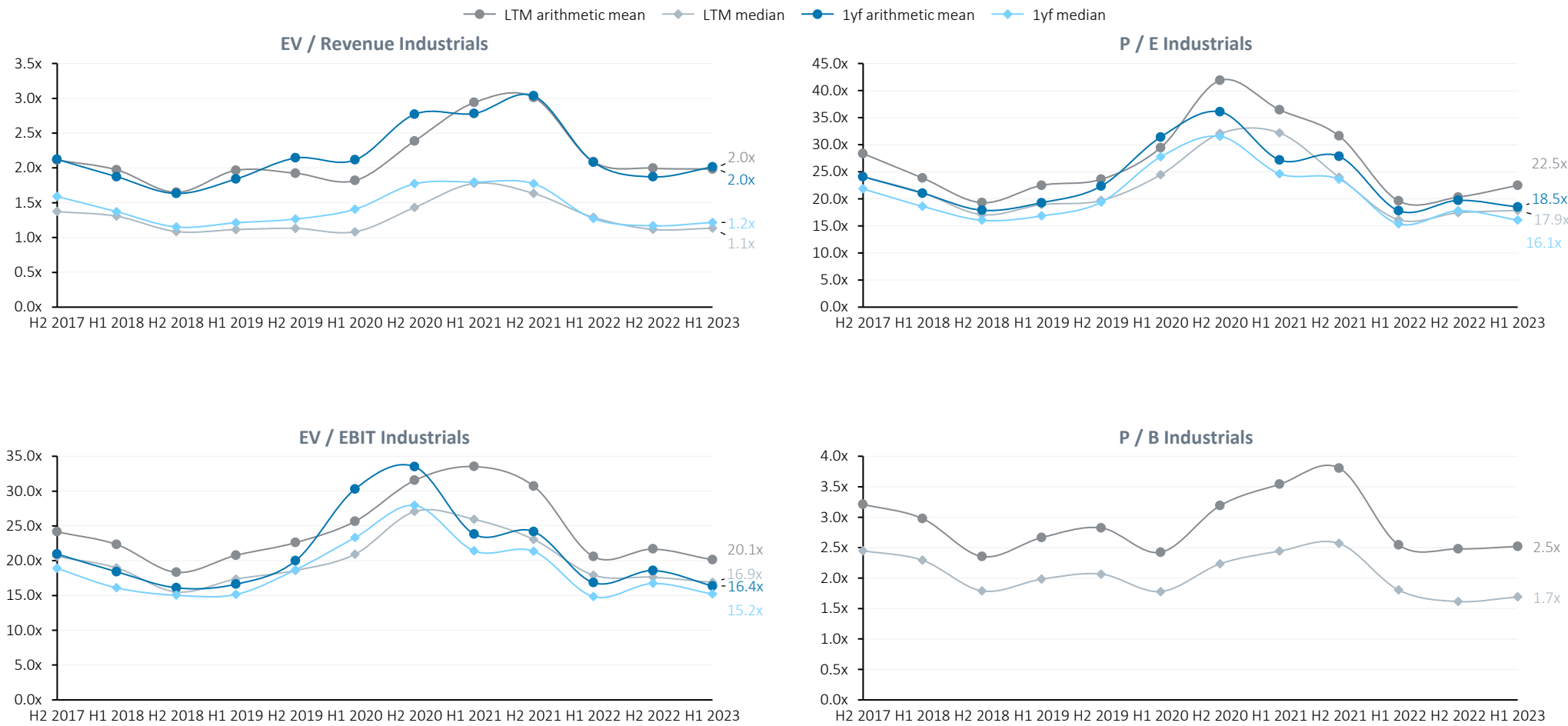
Basic Materials

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



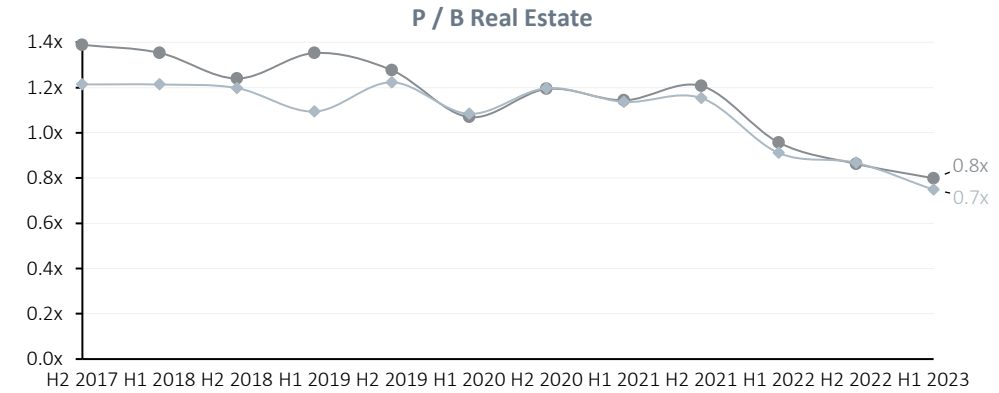
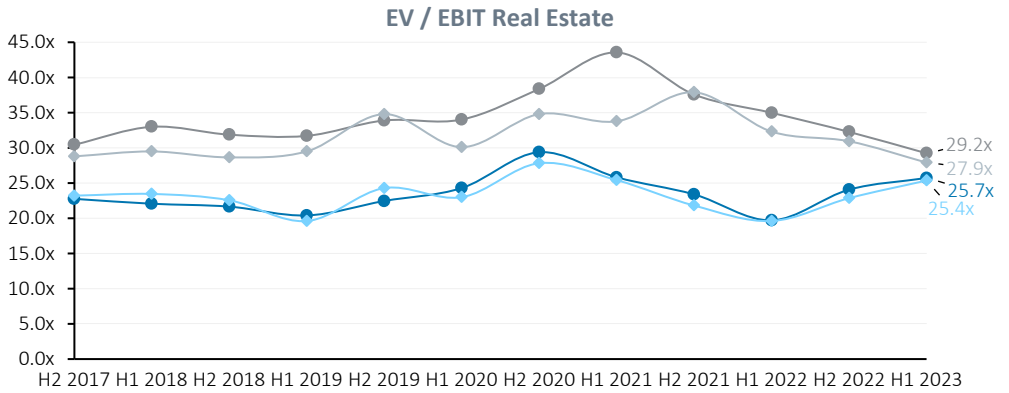
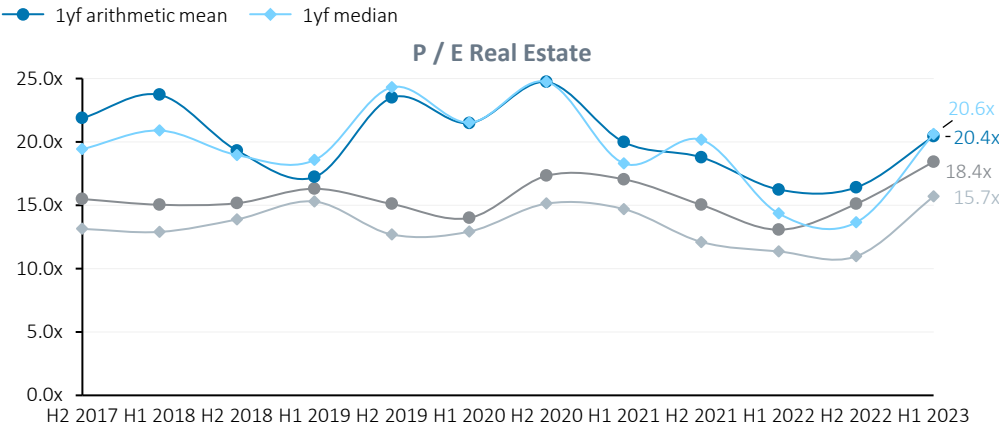
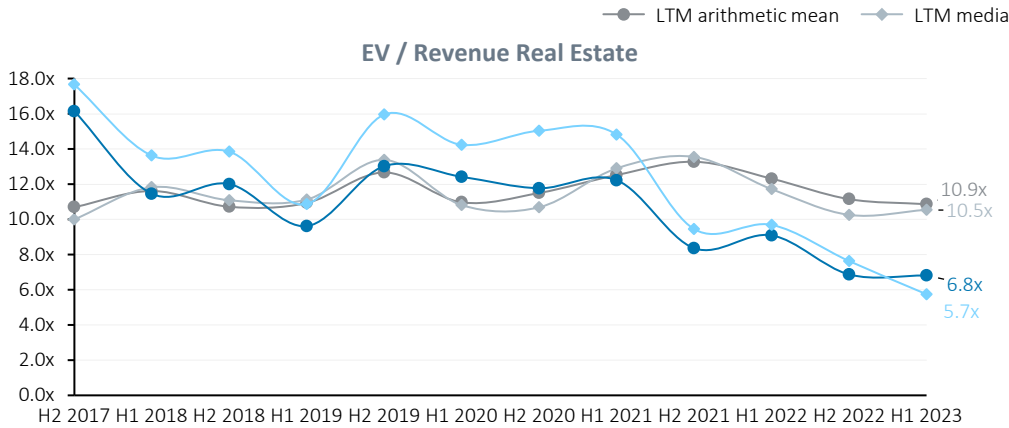
Industrials

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 June 30, 2023

Banking, Insurance and Financial Services

DACH Capital Market Study

Banking

Germany

AAREAL BANK AG
COMMERZBANK AG
DEUTSCHE BANK AG
DT.PFANDBRIEFBK AG
PROCREDIT HOLDING AG
WUESTENROT & WUERTEMBERG 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 AG
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
SWISS RE AG
VAUDOISE VERSICHERUNGEN HOLDING SA
ZURICH INSURANCE AG

Financial Services

Germany

ALBIS LEASING AG
BROCKHAUS CAPITAL MGMT
CAPSENIXX AG
CREDITSHF AG
DEUTSCHE BETEILIGUNGS AG
DEUTSCHE BOERSE AG
DEUTSCHE CANNABIS AG
DF DEUTSCHE FORFAIT AG
DWS GROUP GMBH & CO KGAA
FINTECH GROUP AG
FORIS AG
FRITZ NOLS AG
GRENKE AG
HEIDELBERGER BETEILIGUNGSHOLDING AG
HESSE NEWMAN CAPITAL AG
HYPOPORT AG
KAP BETEILIGUNGS-AG
LINUS DIGITAL FINANCE AG
MLP AG
MUTARES AG
OVB 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
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
ELANIX BIOTECHNIK AG
ELUMEO SE
FIELMANN AG
HAWESKO HOLDING AG
HELLOFRESH SE
HOME24 SE
HORNBACH HOLDING AG & CO. KGAA
INTERENTAINMENT AG
KLASSIK RADIO AG
LUDWIG BECK AG
METRO AG
NEXR TECHNOLOGIES SE
PHICOMM AG
PROSIEBENSAT.1 MEDIA SE
READCREST CAPITAL AG
SCOUT24 AG
SLEEPZ 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
DUFRI 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 AG
ADIDAS AG
BAWAG AG
BAYERISCHE MOTOREN WERKE AG
BEIERSDORF AG
BERENTZEN-GROUP AG
BERTRANDT AG
BIKE24 HOLDING AG
BKS BANK AG
BORUSSIA DORTMUND GMBH & CO. KGAA
CEWE STIFTUNG & CO.KGAA
CONTINENTAL AG
DAIMLER TRUCK HOLDING AG
DAIMLER AG
DIERIG HOLDING AG
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
LEONI 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
VALENS HOLDING AG
VILLEROY & BOCH AG
VOLKSWAGEN AG
WASGAU PRODUNKIONS & HANDELS AG
WESTAG & GETALIT AG

Austria

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

Switzerland

AIRENIS 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
BB BIOTECH 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
SIEMENS HEALTHINEERS AG
STRATEC SE
SYGNIS AG
SYNLAB AG
VITA 34 AG

Austria

MARINOMED BIOTECH AG

Switzerland

ACHIKO AG
ADDEX AG
AEVIS HOLDING SA
ALCON INC.

BACHEM HOLDING AG
BASILEA PHARMACEUTICA AG
COLTENE HOLDING AG
DOTTIKON ES HOLDING AG
EVOLVA HOLDING SA
IDORSIA LTD
IVF HARTMANN AG
KINARUS THERAPEUTICS HOLDING AG
KUIROS BIOSCIENCES AG
LONZA GROUP AG
MEDARTIS HOLDING AG
MOLECULAR PARTNERS AG
NOVARTIS AG
OBSEA SA
POLYPEPTIDE GROUP AG
POLYPHOR AG
RELIEF THERAPEUTICS HOLDING AG
ROCHE AG
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
GK SOFTWARE SE
INFINEON TECHNIK AG
INIT INNOVATION SE
INTERSHOP COMMUNICATIONS AG
INTICA SYSTEMS AG
INVISION AG
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
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 Industrials

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

Industrials (1/2)

Germany

7C SOLARPARKEN AG
A.I.S. 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.PORSCHE
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
MS INDUSTRIE AG
MTU AERO ENGINES AG
MUELLER-DIE LILA LOGISTIK AG
NESCHEN 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
SCHUMAG AG
SFC ENERGY AG
SIEMENS AG
SIEMENS ENERGY AG
SINGULUS TECHNOLOGIES AG

Industrials (cont'd) and Real Estate

DACH Capital Market Study

Industrials (2/2)

SINO-GERMAN UNITED AG
SIXT SE
SLM SOLUTIONS GROUP AG
SMA SOLAR TECHNOLOGY AG
SOFTING AG
SOLAR-FABRIK AG
STABILUS SE
TECHNOTRANS AG
THYSSENKRUPP AG
TRATON SE
TUFF GROUP AG
UZIN UTZ AG
VA-Q-TEC 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 UMWELTECHNIK 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
SCHAFFNER AG
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
TORNOS HOLDING AG
VAT GROUP AG
VETROPACK HOLDING AG
VON ROLL HOLDING AG
ZEHNDER GROUP AG

Real Estate (1/2)

Germany

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

Austria

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

Switzerland

ALLREAL HOLDING AG
ARUNDEL 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

Real Estate (cont'd) and Basic Materials

DACH Capital Market Study

Real Estate (2/2)

NOVAVEST REAL ESTATE AG
ORASCOM DEVELOPMENT HOLDING AG
PEACH PROPERTY GROUP AG
PLAZZA AG
PSP SWISS PROPERTY 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

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

VALUETRUST

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