



Equity Market Review October 2022

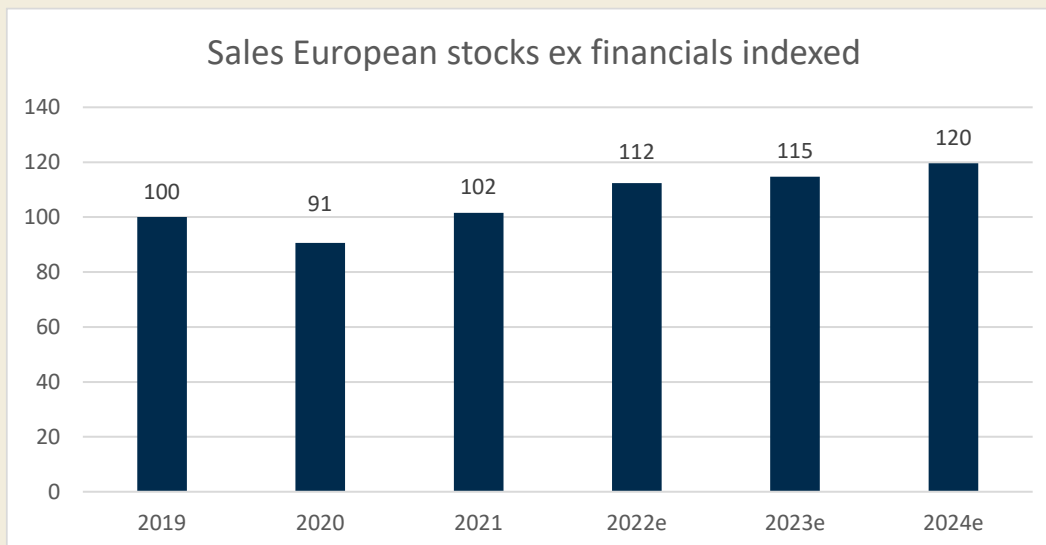
A quantitative view on the valuation of the European stock market

Prof. Dr. Peter Schömig, CFA

As announced, the European Central Bank has started an interest rate hike path in recent months. Roughly 11 years after the last increase, the ECB raised key interest rates by 0.50% on July 21, marking a historic turning point in its monetary policy. A second increase of 0.75% on September 8, then led to a reference interest rate of 1.25% in total. The main reason for this move was inflation expectations, which were revised upward (7.6% January-August) due to energy, food, and pipeline costs. However, the level is still below the level set by the U.S. Federal Reserve (current Federal Funds rate in the range of 3% to 3.25%). Thus, in both Europe and the U.S., the low interest rate cycle seems to be over.

This situation has led to increased volatility in stock markets, accompanied by expectations of further interest rate hikes. As the financial valuation of companies is largely based on discounting models, their values have been adjusted downwards accordingly. At company level, the expectation of stagnating or negative economic growth weighs heavily. In terms of sales, the major European companies in the Stoxx 600 (around 492 excluding financial companies) recovered from the pandemic year 2020 (fiscal 2021: +12%). However, estimates for the next two years have been revised downward in recent months. Current projections indicate that revenue estimates for 2022 and 2023 are still above those of 2019 (pre-pandemic year), but lower than last June (for 2022: -1% and 2023: -2%).

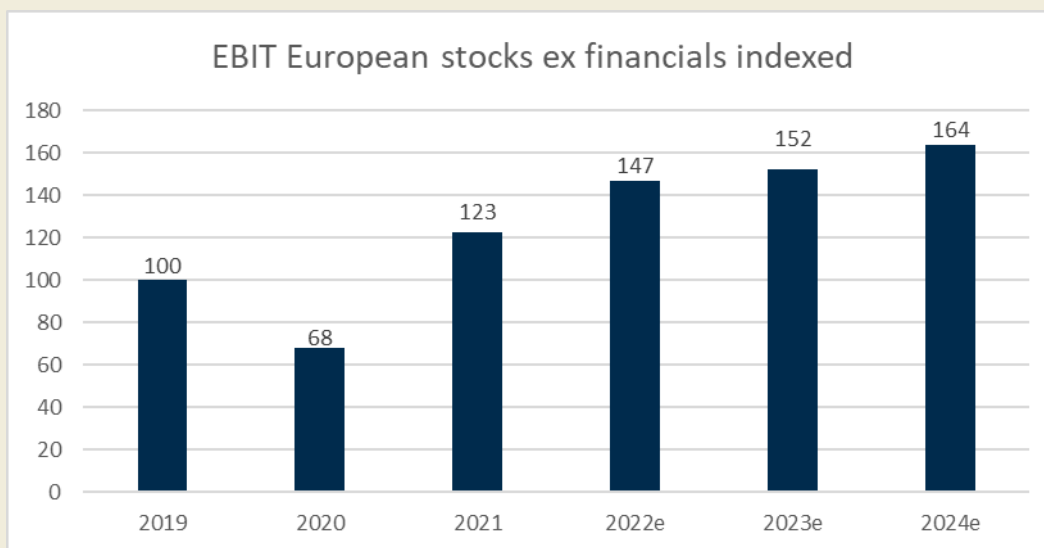
Figure 1: Sales development 2019 to 2024e indexed



Source: LeanVal Research, 2022 to 2024 are expected or preliminary values (e = expected).

In terms of profitability (EBIT), the recovery from the Corona crisis is also evident (EBIT margin 13% in 2021 versus 8% in 2020). Compared to previous forecasts, operating profit estimates have been revised downwards (2022: -1% and 2023: -3%). The EBIT margin is expected to remain stable in the region of 14% over the next two years.

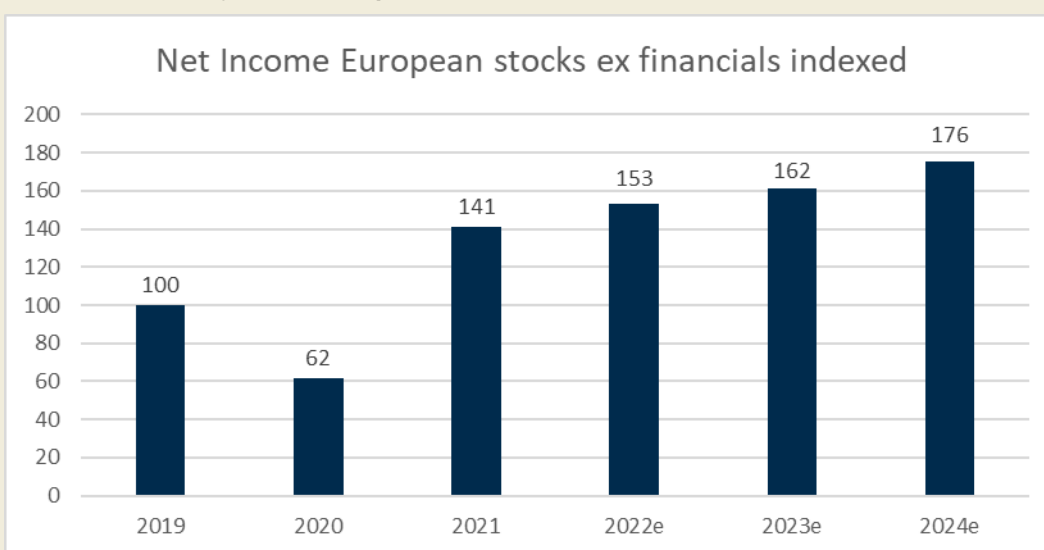
Figure 2: Development of operating profit 2019 to 2024e indexed



Source: LeanVal Research, 2022 to 2024 are expected or preliminary values (e = expected).

The revision of net income showed an upward trend of 3.7% for 2022, while a moderate increase of 0.5% was recorded for 2023.

Figure 3: Development of net income 2019 to 2024e indexed



Source: LeanVal Research, 2022 to 2024 are expected or preliminary values (e = expected).

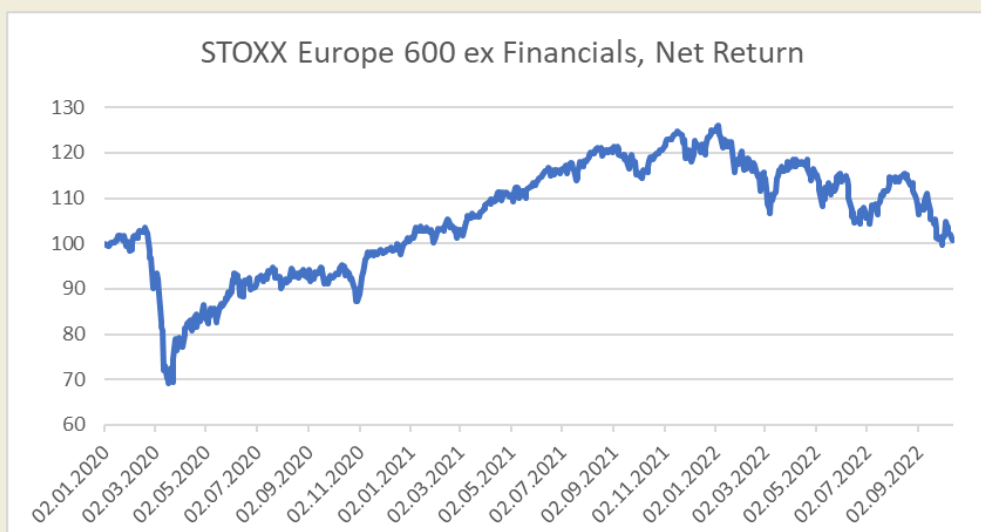
Equity Market Review October 2022

A quantitative view on the valuation of the European stock market

Page 3

In view of the uncertain situation regarding economic growth and events related to the Ukraine crisis, the Stoxx Europe 600 (excluding financials) has recently lost ground. A comparison with the pre-pandemic level (January 2020) shows a significant price decline in recent months.

Figure 4: Performance of the Stoxx Europe 600 excluding financials indexed



Source: Stoxx

The estimates of the financial ratios (relative valuation) for the companies included in the index show a clear downward trend, which is a clear signal of the economic expectations in the coming quarters. Comparing the estimates of 2021 with those of 2023, there is a decline in the price-to-book ratio (P/B) and even more clearly in the price/earnings ratio (P/E) as well as the ratio of enterprise value to operating income (EV/EBIT).

Figure 5: Comparison of valuation multiples estimates for fiscal 2021 vs. 2023

Benchmark	base year	Adj. P/B	Adj. P/E	EV/EBIT
Stoxx Europe 600 NR	2023	3.8	17.3	12.7
	2021	5.5	26.8	18.0

Source: LeanVal Research

The following table provides an overview of the performance and estimates of the different sectors. The energy sector shows a remarkable performance of around 53% in the reference period, but with reduced multiples in the 2023 estimate compared to those of 2021 (i.e. lower P/E, EV/EBIT). The consumer staples sector achieved an overall performance of just under 6% with slightly lower estimates. The worst performing sector was real estate (-27%), with one of the lowest P/B ratios for 2023. Technology followed as the second biggest loser with declines of -25% and an improvement in attractiveness, e.g. P/E ratio.

Figure 6: Valuation multiples of the sub-indices based on earnings expectations

Industry	Performance (Today / HistoMonth)	base year	Adj. P/B	Adj. P/E	EV/EBIT
EU Consumer Cyclical	-16.8%	2023	4.7	19.2	15.2
		2021	6.8	28.4	20.6
EU Energy	53.3%	2023	1.3	7.6	5.6
		2021	1.4	13.0	10.5
EU Financial Services	-4.7%	2023	1.0	9.6	1.2
		2021	2.2	15.9	2.9
EU Healthcare	-1.2%	2023	6.6	21.8	17.5
		2021	8.0	33.2	24.1
EU Real Estate	-26.6%	2023	0.7	12.9	20.6
		2021	1.2	19.2	21.4
EU Industrials	-15.3%	2023	3.4	17.8	14.8
		2021	6.0	26.2	19.1
EU Technology	-25.0%	2023	7.9	25.5	18.6
		2021	11.1	50.8	36.7
EU Basic Materials	-10.0%	2023	2.6	15.0	11.4
		2021	3.7	21.1	16.6
EU Consumer Defensive	5.9%	2023	4.5	20.7	17.9
		2021	5.5	28.1	22.2
EU Communication Services	-10.9%	2023	3.1	17.5	3.2
		2021	5.1	25.6	2.9
EU Utilities	2.0%	2023	2.4	16.8	16.7
		2021	2.4	23.3	21.2

Source: LeanVal Research

Valuations on the stock markets will continue to be influenced by inflation growth data in the coming months. This will be an important indicator for interest rate decisions of the European Central Bank and thus potentially weigh on the stock markets. The absolute valuation methods discount the future value based on a discount rate linked to the reference interest rate of the central banks. On an annual basis, the increase in material and energy costs could reduce the profitability of European companies in 2022 and thus slow down the post-pandemic recovery (an example is the profit warning of Kion Group). Another negative factor could be short-term debt-based sales. For example, higher consumer credit costs could mean lower end-user demand for certain goods (e.g., consumer goods, cars, or real estate). However, lower corporate valuations could lead to extraordinary mergers and acquisitions, reviving the stock market. The low cost of financing in recent years has generated a significant amount of liquidity on the balance sheet of many publicly traded companies that could be used for financing. This is consistent with what has been stated recently by the management of several European corporations.

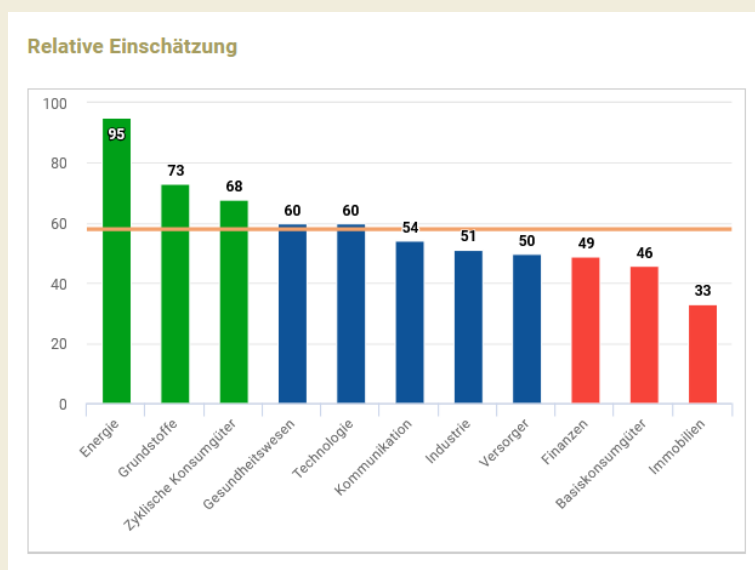
The war in Ukraine and trade tensions with China (including the Taiwan conflict) remain issues that need to be further addressed in the short term. Employment and wage dynamics within the Eurozone also need to be considered. For example, the aforementioned inflation rate is well above the Eurozone's wage growth (+4.4% in Q2 2022), which could further impact corporate profitability. Negative economic expectations for the Eurozone are also one of the reasons for the unfavorable exchange rate of the Euro against the US-Dollar.

In this scenario, passive investment instruments could be very risky. By replicating the performance of the benchmark indices, they could lead to short/medium-term lows (drawdowns) driven both by short positions of professional investors and by the emotional behavior of less experienced traders. A selective approach could avoid costly portfolio mistakes. The stocks to keep an eye on at the moment tend to be found in more defensive sectors according to value investing criteria. High-dividend stocks are good investment

ideas as long as they are analyzed while weighing the possibility of a dividend cut. In this sense, the pharmaceutical sector, for example, is one of those that guarantee a stable and growing dividend over time.

Based on LeanVal Research's multifactor model, the sectors energy (Energie), basic materials (Grundstoffe) and consumer cyclical (Zyklische Konsumgüter) currently appear to be of interest.

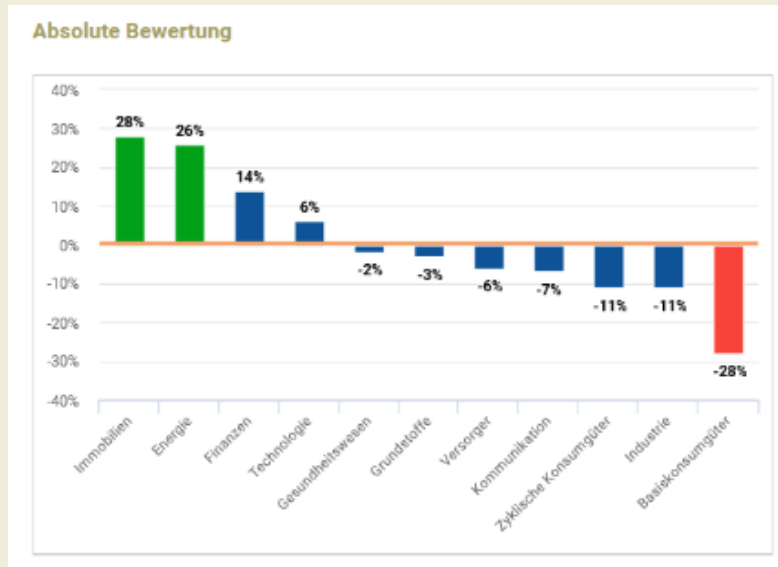
Figure 7: Relative attractiveness based on the multifactor approach (October 2022)



Source: LeanVal Research

Based on absolute valuation, the energy sector appears equally attractive. Here, however, the real estate sector (Immobilien) is taking the lead because of falling share prices. Interest rate hikes clearly have a negative impact on the real estate sector. This applies both to real estate valuations and to lending (e.g. due to higher mortgage costs). With an improvement in the macroeconomic environment and a faster recovery, the sector could become interesting.

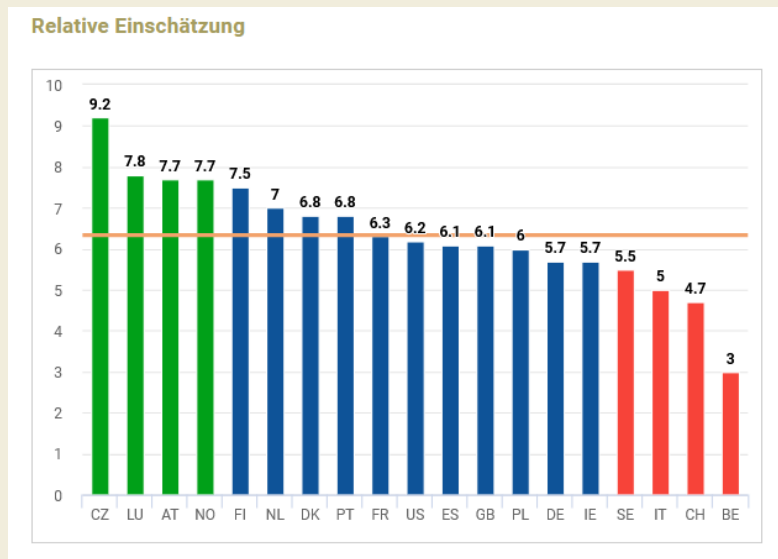
Figure 8: Absolute attractiveness based on the multifactor approach (October 2022)



Source: LeanVal Research

At the beginning of the fourth quarter, the Czech Republic, Luxembourg, Austria, and Norway were still among the most attractive countries with high market depth, according to LeanVal Score. Most countries have a score close to the average. At the bottom of the list are Sweden, Switzerland, Italy, and Belgium.

Figure 9: Relative attractiveness of countries (October 2022)



Source: LeanVal Research

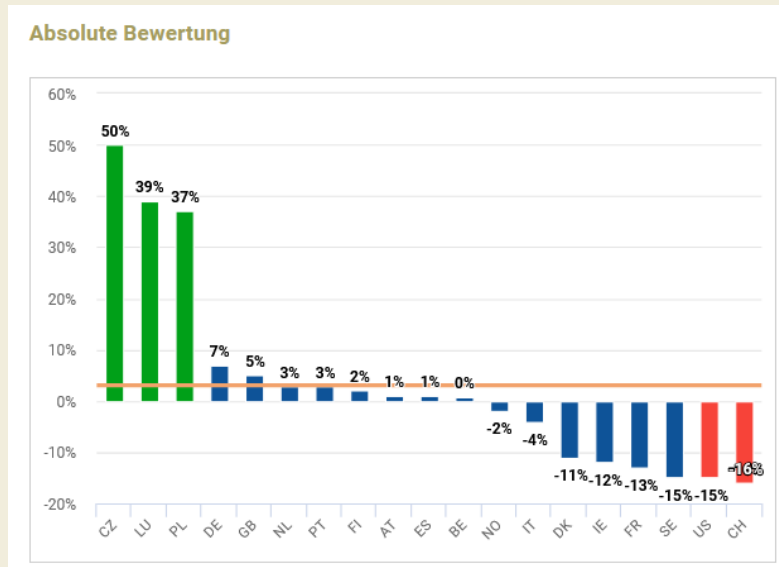
Equity Market Review October 2022

A quantitative view on the valuation of the European stock market

Page 7

In absolute terms, only the Czech Republic, Luxembourg, and Poland stand out with positive ratings. However, these countries tend to play a less significant role in terms of market capitalization and the number of companies. Some eleven countries have below-average ratings. Switzerland, the United States of America, and Sweden appear less attractive.

Figure 10: Absolute attractiveness of countries (October 2022)



Source: LeanVal Research

In conclusion, the stock markets are currently characterized by high volatility caused by the Ukraine war, high inflation rates, and a possible recession. The multifactor approach could benefit from this environment as a conservative alternative to passive investment strategies.

Notes on investment strategy - investment recommendation pursuant to Section 85 of the German Securities Trading Act (WpHG) in conjunction with the German Securities Trading Act (WpHG). VO (EU) No. 596/2014

General

The investment strategy and/or investment recommendations (hereinafter referred to as "analyses") are prepared by LeanVal Research GmbH for information purposes only.

Neither LeanVal Research GmbH nor its employees assume any liability for damages arising from the use of the analyses or their contents or in any other way in connection with them. The analyses do not constitute an offer or invitation to subscribe to or purchase any security, nor do they or the information contained therein form the basis for any contractual or other obligation of any kind. An investment decision should be made on the basis of a duly approved prospectus or information memorandum and in no case on the basis of the analyses. Investors should seek the advice of an investment adviser in making their investment decision. In this respect, the analyses cannot assume an advisory function. The opinions, estimates and forecasts contained in the analyses are solely those of the respective authors. They are date-related, not necessarily the opinion of LeanVal Research GmbH and may change at any time without prior notice.

The information and evaluations ("Information") reproduced here are primarily intended for clients of LeanVal Research GmbH in Germany. Should the original recipient forward the analysis, he/she is obliged to do so in compliance with existing regulations and laws and no obligation of LeanVal Research GmbH towards a third party arises from this. In particular, the information is not intended for clients or other persons domiciled or resident in the United Kingdom, the United States or Canada and may not be passed on to such persons or imported into or distributed in these countries. Distribution of the Analytics in other jurisdictions may be restricted by law and persons into whose possession the Analytics come should inform themselves about and comply with any restrictions. Any failure to comply with these restrictions may constitute a violation of applicable securities laws. Reprinting, redistribution, and publication of the analyses and their contents in whole or in part are permitted only with the prior written consent of LeanVal Research GmbH.

Information sources

All analyses are prepared on the basis of data from a data provider as well as from generally accessible sources ("information") that LeanVal Research GmbH considers to be reliable. However, LeanVal Research GmbH has not verified the accuracy or completeness of the Information and assumes no liability for the accuracy or completeness of the Information. Possible incomplete or incorrect information does not justify any liability of LeanVal Research GmbH for damages of any kind, and LeanVal Research GmbH is not liable for indirect and/or direct damages and/or consequential damages. In particular, LeanVal Research GmbH assumes no liability for statements, plans or other details contained in these analyses with regard to the investigated companies. Although the analyses are compiled with all due care, errors or incompleteness cannot be excluded. LeanVal Research GmbH, its shareholders, corporate bodies and employees assume no liability for the accuracy or completeness of the statements, assessments, recommendations derived from the information contained in the analyses. Data source for all historical prices is Morningstar and LeanVal Research.

Summary of the valuation fundamentals

The valuations underlying the investment recommendations for stocks analyzed by LeanVal Research GmbH are based on generally accepted and widely used methods of fundamental analysis, such as the DCF model, peer group comparisons, NAV valuations and - where possible - a sum-of-the-parts model. The calculated scores (Value, Quality, Stability, and Growth) are the result of a proprietary model of LeanVal Research GmbH. They result from the comparison of fundamental key figures of the quantitatively analyzed company in relation to comparable companies within a sector (or region). Information on the general approach can be found at www.leanval.investments. The absolute target price and the associated absolute assessment (undervalued, neutrally overvalued) are determined using a forward-looking DCF or ROIC (return on invested capital) method. Estimates of future earnings serve as the basis for this. The earnings estimates are either based on a consensus or are made by LeanVal Research GmbH itself.

Updates

The recipients are not entitled to the publication of updated analyses. LeanVal Research GmbH reserves the right to update analyses without prior notice. A regular update of this document is not intended.

Compliance

LeanVal Research GmbH has taken internal organizational and regulatory precautions to avoid conflicts of interest in the preparation and dissemination of financial analyses. In particular, there are internal information barriers that prevent analysts from accessing insider information. Compliance is monitored by the Compliance Officer.

Explanation of the recommendation system

The relative assessment is based on the various scores of the individual companies in the areas of Value, Quality, Stability, Growth and Momentum which are compared with the average scores of the overall market and/or also with the respective sectors. The companies are ranked on a scale from 0 to 100. From this, the three ratings "unattractive" (0 to 30 on the scale), "neutral" (31 to 70 on the scale) and "attractive" (71 to 100 on the scale) are derived. The relative assessment can change at short notice due to the high complexity of the scores and the multiple interdependencies between the companies analyzed.

LeanVal Research GmbH's rating system for absolute valuation comprises the ratings "Buy", "Hold" and "Sell". The rating of a share is based on the expected return for the next six to twelve months. The expected return is composed of the prognostic change in the share price and the expected dividend yield. Changes in the discount factor or projected cash flows can lead to significant changes in the target price.

Rating system of the absolute valuation:

Buy	Potential > +15%
Hold	Low upside and downside potential
Sell	Potential < -15%

Conflicts of Interest

In the financial analyses, circumstances or relationships that could give rise to conflicts of interest because they could jeopardize the impartiality - of the employees of LeanVal Research GmbH who prepared the analysis, - of LeanVal Research GmbH as the company responsible for the preparation or of companies affiliated with it, or - of other persons or companies working for LeanVal Research GmbH and contributing to the preparation, must be disclosed. Information on interests or conflicts of interest that must be disclosed exists in particular if

1. significant shareholdings (= shareholding > 5 % of the share capital) exist between the above-mentioned persons or companies and the issuers who are themselves or whose financial instruments are the subject of the financial analysis,
2. the above-mentioned persons or companies manage financial instruments which themselves or their issuers are the subject of the financial analysis on a market by placing buy or sell orders (market making/designated sponsoring),
3. the above-mentioned persons or companies have been involved in the management of a consortium for an issue by way of a public offering of such financial instruments which are themselves or whose issuers are the subject of the financial analysis within the previous twelve months,
4. the above-mentioned persons or companies have been bound by an agreement on services in connection with investment banking transactions with issuers who are themselves or whose financial instruments are the subject of the financial analysis within the previous twelve months or have received a service or a promise of service from such an agreement within this period, insofar as no confidential business information is affected by the disclosure of this information,
5. the above-mentioned persons or companies have entered into an agreement with issuers, who themselves or whose financial instruments are the subject of the financial analysis, for the preparation of the financial analysis,
6. the above-mentioned persons hold management or supervisory board mandates with issuers whose financial instruments are the subject of the financial analysis, or
7. the above-mentioned persons or companies have any other significant financial interests in relation to the issuers whose financial instruments are the subject of the financial analysis.

LeanVal Research GmbH
Bleichstraße 52
60313 Frankfurt am Main
Phone: +49 69 9494 88 050
Email: research@leanval.investments