

Buy EUR 150.00 (EUR 170.00) Price EUR 106.20 Upside 41.2 %	Value Indicators: EUR DCF: 150.02 FCF-Value Potential 24e: 69.06 Peer group: 118.45	Warburg ESG Risk Score: 2.7 ESG Score (MSCI based): 3.0 Balance Sheet Score: 4.0 Market Liquidity Score: 1.0	Description: B2B digital cameras for applications such as factory, medical, traffic or retail.
	Market Snapshot: EUR m Market cap: 1,055.9 No. of shares (m): 9.9 EV: 1,069.6 Freefloat MC: 401.2 Ø Trad. Vol. (30d): 742.13 th	Shareholders: Freefloat 38.00 % Norbert Basler 53.00 % Treasury shares 5.00 % Dr. Ley (CEO) 4.00 % Invesco 6.00 %	Key Figures (WRe): 2022e Beta: 1.1 Price / Book: 7.2 x Equity Ratio: 64 % Net Fin. Debt / EBITDA: 0.2 x Net Debt / EBITDA: 0.3 x

A far-sighted vision for the future

Basler is a manufacturer of industrial cameras with a wide customer base in the fields of electronic and semiconductor, automotive, factory automation, infrastructure, medical technology, and logistics. With far-sighted and well-executed strategies, the company has developed from a niche player for high-end vision systems to a global leader in the mainstream market and is currently transforming to a full-range supplier of vision systems, which offers significant cross-selling potential within the existing customer base.

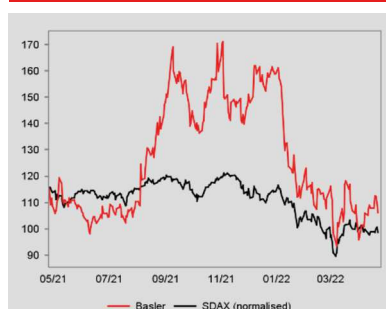
Despite the strong mid-term prospect, the development of the share price has mainly been determined by short-term crisis management during the pandemic, the chip shortage, and war in Europe. Basler has responded well to the challenges and has continued to outperform the market, which resulted in an all-time-high for the share price (EUR 174) in November. However, as the bottlenecks worsened and the global sentiment towards tech stocks deteriorated, the share price dropped significantly. In this environment, the mid-term targets, which were updated in March and hold out the prospect of almost doubling revenues by 2025, were not adequately reflected by the market.

We expect the company to slightly exceed its top-line target range of EUR 235-265m (WRe EUR 270.5m) driven by the strong growth in order intake last year (EUR 322.5m, +78% yoy). Until 2025, cross-selling from the transformation to a full-range supplier should drive sales from EUR 215m in 2021 to EUR 425m. While we estimate that only 15% of the cameras were sold as a bundle with other components last year, we expect this figure reach 30-40% by 2025, which should increase the ASP by almost 75%.

Despite the increase in third-party products sold, we expect the gross margin to remain stable, based on Basler's strategy of selling pre-configured and scalable bundles, which reduce the development costs and shorten the time-to-market for its customers. In its mid-term outlook, Basler has confirmed its goal to earn an average EBT margin of 12% over the cycle. Additional profitability gains from economies of scale and increasing cost efficiency will be used to expand R&D and marketing efforts to accelerate growth. Over the last five years, however, Basler has outperformed that target with an average EBT margin of 14.3%. Considering the strong demand, driven by structural factors such as the electrification of the automotive industry and the associated increase in semi and electronics demand, we expect Basler to continue to beat its target with an average EBT margin of 13.4% between 2022 and 2025.

Considering the anticipated prime rate hikes, we increase the risk-free rate for our coverage. As a result, our DCF model yields a fair value of EUR 150, which indicates significant upside to the current market valuation. The Furthermore, we expect the outlook for the full year to become more optimistic as the visibility improves in relation to shortages, as the pandemic becomes endemic, and the consequences of the war become quantifiable in H2. This should trigger a revaluation that also takes Basler's strong mid-term prospects into account in terms of the current transformation and the significant disruptive potential of the deeply embedded camera technology, neither of which are currently reflected in the share price.

Against this background, we consider the current market valuation an attractive investment opportunity. After a detailed analysis of Basler's mid-term prospect, we confirm our positive view and reiterate our Buy recommendation with a target price of EUR 150.

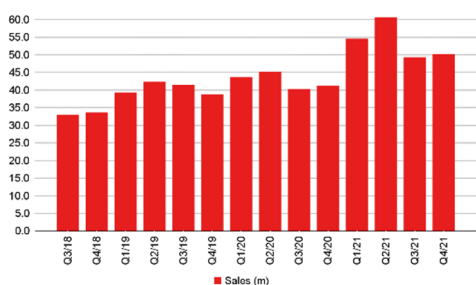


Rel. Performance vs SDAX:	
1 month:	0.7 %
6 months:	-16.1 %
Year to date:	-19.6 %
Trailing 12 months:	8.7 %

Company events:	
04.05.22	Q1
23.05.22	AGM
23.06.22	Warburgh Highlights
03.08.22	Q2

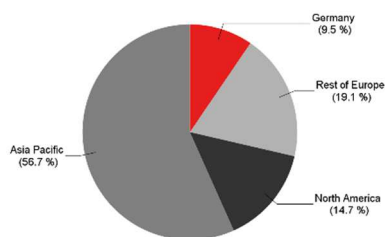
FY End: 31.12. in EUR m	CAGR (21-24e)	2018	2019	2020	2021	2022e	2023e	2024e
Sales	19.5 %	150.0	162.0	170.5	214.7	270.5	313.4	366.2
Change Sales yoy		-0.1 %	8.0 %	5.2 %	26.0 %	26.0 %	15.9 %	16.8 %
Gross profit margin		53.3 %	50.9 %	52.0 %	52.4 %	51.2 %	51.5 %	51.3 %
EBITDA	19.1 %	36.0	30.0	34.6	44.5	52.8	63.5	75.2
Margin		24.0 %	18.5 %	20.3 %	20.7 %	19.5 %	20.3 %	20.5 %
EBIT	22.3 %	24.8	17.0	20.1	28.4	34.4	43.4	51.9
Margin		16.6 %	10.5 %	11.8 %	13.2 %	12.7 %	13.9 %	14.2 %
EBT		24.5	16.9	20.4	28.0	33.6	42.6	51.1
Margin		16.3 %	10.4 %	12.0 %	13.0 %	12.4 %	13.6 %	13.9 %
Net income	21.0 %	17.0	12.9	15.1	20.8	24.2	30.7	36.8
EPS	21.1 %	1.76	1.29	1.51	2.08	2.43	3.08	3.69
DPS	21.3 %	0.53	0.26	0.58	0.62	0.73	0.92	1.11
Dividend Yield		0.9 %	0.6 %	1.1 %	0.5 %	0.7 %	0.9 %	1.0 %
FCFPS		0.93	-0.97	1.38	0.96	1.75	2.13	2.41
FCF / Market cap		1.6 %	-2.1 %	2.6 %	0.8 %	1.6 %	2.0 %	2.3 %
EV / Sales		3.8 x	3.0 x	3.2 x	5.5 x	4.0 x	3.4 x	2.9 x
EV / EBITDA		15.7 x	16.1 x	15.6 x	26.6 x	20.4 x	16.7 x	14.0 x
EV / EBIT		22.8 x	28.4 x	26.9 x	41.7 x	31.3 x	24.5 x	20.2 x
P / E		32.7 x	36.4 x	35.8 x	57.0 x	43.7 x	34.5 x	28.8 x
FCF Potential Yield		4.5 %	4.3 %	4.6 %	2.5 %	3.3 %	4.0 %	4.8 %
ROE		24.1 %	14.4 %	13.9 %	17.0 %	17.6 %	19.4 %	20.1 %
ROCE (NOPAT)		23.8 %	12.7 %	12.8 %	17.3 %	17.1 %	18.9 %	21.1 %
Guidance:		Sales EUR 235-265m, EBT margin 9-12%						

Sales development
in EUR m



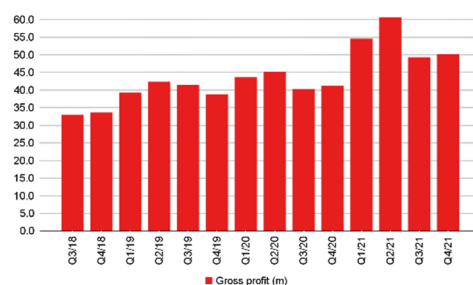
Source: Basler

Sales by regions
2021; in %



Source: Basler

Gross profit development
in EUR m



Source: Basler

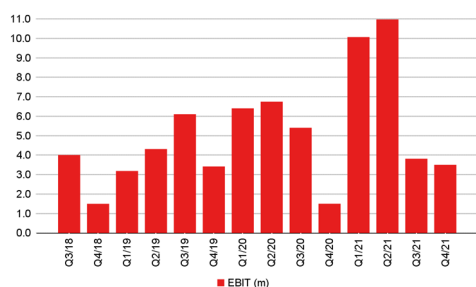
Company Background

- Basler is a provider of digital cameras for production, medical applications, traffic control or retail.
- Basler focuses on the mainstream and entry-level market segments.
- Customers are mainly OEMs. The customer base is well diversified and no single customer accounts for more than 10% of revenue. More than 60% of revenues are direct sales.

Competitive Quality

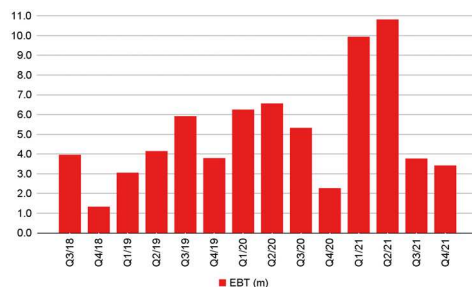
- In terms of units Basler is the world's largest developer and manufacturer of digital cameras in a fragmented, but consolidating, market for digital cameras for B2B-applications.
- High level of vision technology expertise: Basler has one of the largest developer pools in the sector and differentiates itself with camera software competence, which accounts for more than 50% of the value creation.
- State-of-the-art product portfolio: Basler is among the first movers in digital cameras based on GigE Vision and the USB3 Vision standard. It is also an early adopter of new sensor technology.
- High service and consulting quality through direct sales and Basler's network of specialised distributors.
- Basler is present in the most important markets for vision technology in South East Asia, Europe and the US.

EBIT development
in EUR m



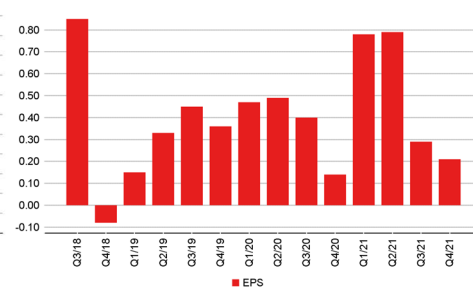
Source: Basler

EBT development
in EUR m



Source: Basler

EPS development
in EUR



Source: Basler

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Summary of Investment Case

Investment triggers

- Although the chip shortage burdened Basler's operative development in the second half of last year, the company was able to gain market share and is still enjoying extraordinarily high demand
- We expect the supply bottlenecks to ease during the year, which should lead to an acceleration of the growth momentum and margin improvements for Basler on a qoq basis
- Increasing visibility could lead to the specification of the current guidance towards the upper end of the target ranges (sales EUR 235-265m, EBT margin 9-12%) in the second half of the year
- The recently updated mid-term targets for 2025 (sales EUR 400m, EBT margin 12%), which imply a CAGR of 21-25e of 17% (WRe 18.6%) was overshadowed by general slump in the sentiment towards the tech sector since the beginning of the year and negative news-flow from the war in Ukraine and was thus not reflected by the market
- We expect that an improvement in the visibility of an end to the chip shortage will trigger a revaluation that takes the strong mid-term growth prospect into account

Valuation

- Our target price is based on a DCF model, which reflects the attractive the mid to long-term growth prospect from Basler's transformation to a full-range supplier
- The DCF model indicates a fair value of EUR 150, significantly above the current market valuation. The reduction from our former target price of EUR 170 is the result of an increased risk-free rate
- Additional sales and margin potential from Basler's disruptive deeply embedded camera technology are not included and could justify additional upside
- Our peer-group analysis indicates that Basler is trading at a discount despite the historic and projected outperformance of the market


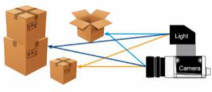


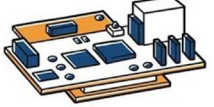



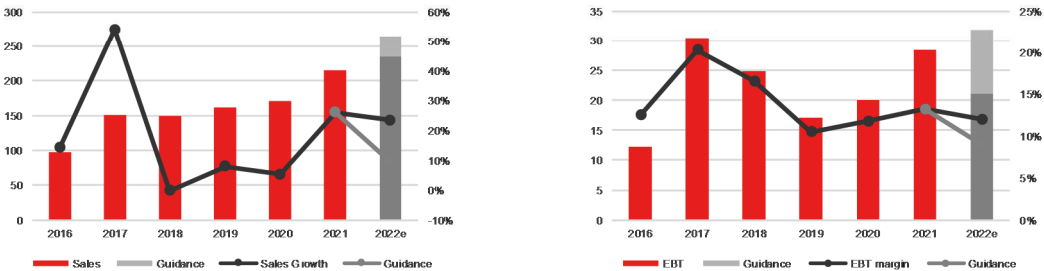
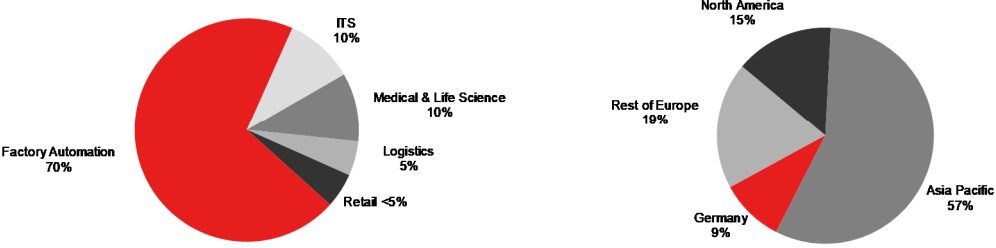
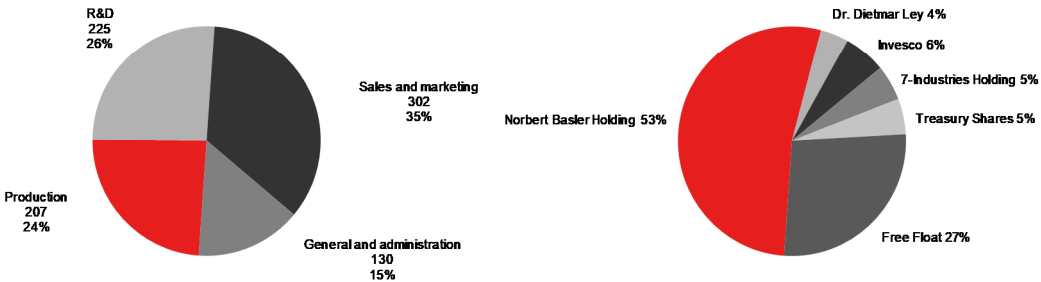
Growth

- High demand from all customer segments, as reflected in last year's strong order intake growth of 78% to EUR 322.5m (book-to-bill 1.5), should drive short-term growth
- With an easing of the component bottlenecks, expected in H2, sales growth should catch up with the strong growth in demand and enable Basler to exceed its revenue target range of EUR 235-265m (WRe EUR 270.5m)
- Basler increased its prices at the beginning of the year, which should lead to a notable margin improvement in the second half of the year, when the order backlog from last year is fully delivered in H1
- In the medium term, the transformation to a full-range supplier offers significant cross-selling potential and should allow the company to almost double its top line by 2025 (WRe sales 2025 EUR 425m)
- With a scalable marketing approach and preconfigured vision bundles, the company should be able to prevent a margin dilution from the increase in sales of third-party components

Competitive quality

- Strong management track record in the implementation of far-sighted and well executed mid to long-term strategies
- Focused R&D efforts yield innovative and cost-efficient camera designs and make Basler a first mover in disruptive technology trends such as deeply embedded cameras
- Solid visibility from long-standing customer relationships and a design-in process into its customers' products with a multi-year life cycle increases cost of change
- Basler's Pylon software and the Pylon SDK (Software Development Kit) has a broad installed base and has been widely adopted in the development departments of Basler's customers, making Basler the natural choice
- The transformation to a full-range supplier offers significant cross-selling potential within the existing customer base

Company Overview

Basler					
	Cameras	3D Cameras	Frame Grabbers	Components	Development Kits
Products					
Market position	With a market share of approx. 20% Basler is the worldwide market leader. Cameras for B2B customers for applications in industry, medical technology and traffic technology.				
Customers	Focus on OEM customers, several hundred active customers, no customer with a revenue share of more than 10%.				
Sales	35% direct; 65% indirect (distributors and partners)				
Competitors	  				
Sales / EBT Development					
Targets 2022	Sales EUR 235-65m, EBT margin 9-12%				
Outlook 2025	Sales EUR 400m, avg. EBT margin 12%, FCF/EAT (excl. M&A) 70%				
Markets					
Employee / Shareholder structure					

Source: Warburg Research

Competitive Quality

- Strong track record in devising and executing mid-term strategies
- Long-standing customer relationships and design-ins into products with a multi-year life cycle increases cost of change and creates barriers to entry
- Basler’s Pylon software and the Pylon SDK (Software Development Kit) has a broad installed base and has been widely adopted by the development departments of Basler’s customers, making Basler the natural choice
- The transformation to a full-range supplier offers significant cross-selling potential within the existing customer base

Looking back

Basler has an outstanding track record in strategic decision-making and execution. Since it was founded over 30 years ago, the company has developed from an engineering company focused on optical inspection systems to a globally leading producer of industrial cameras. Over the last years, Basler has continually outperformed the market (CAGR 2009-2021 16.7%) and has grown its market share compared to competitors in Europe and Asia while increasing its market share from an estimated 5% in 2004 to more than 20% today. Currently, Basler is expanding its portfolio to become a full range supplier for vision components and systems.

The strong track record is based on a deep understanding of long-term market trends, a far-sighted strategic vision for the company and consistent execution of the strategy. The commitment to the long term is also reflected in the management. CEO Dietmar Ley has been serving the company since 1993 and joined the management board in 1996. CFO Hardy Mehl has been with the company since 1999 and was appointed CFO in 2014. Founder Norbert Basler is still the main shareholder (53% of shares) and continues to serve the company as chairman of the supervisory board.

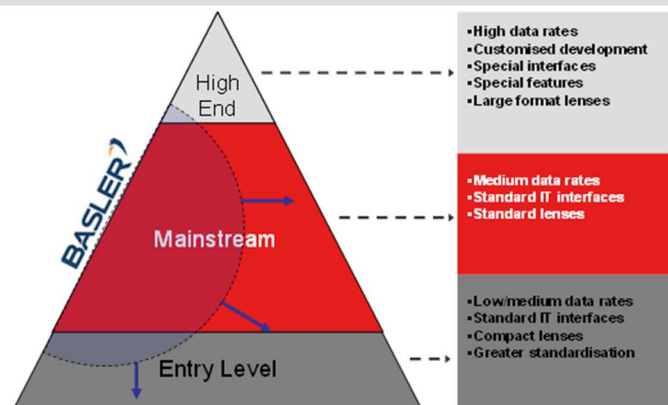
From a German niche player to a global leader

In 1988, the company started as a manufacturer of optical inspection systems focused on development and final assembly of its systems, a setup common for German engineering companies. After successfully entering the North American market in 1994 and the Asian market in 1995, Basler increased its value-add with its own high-end industrial camera production in 1997.

After the financial crisis in 2008, the company realigned its strategy and expanded its portfolio to address not only the premium segment but also the significantly larger mainstream market and, in part, even entry-level applications.

Historic outperformance of the market with a CAGR 09-21 of 17%

Basler expands market focus in 2009



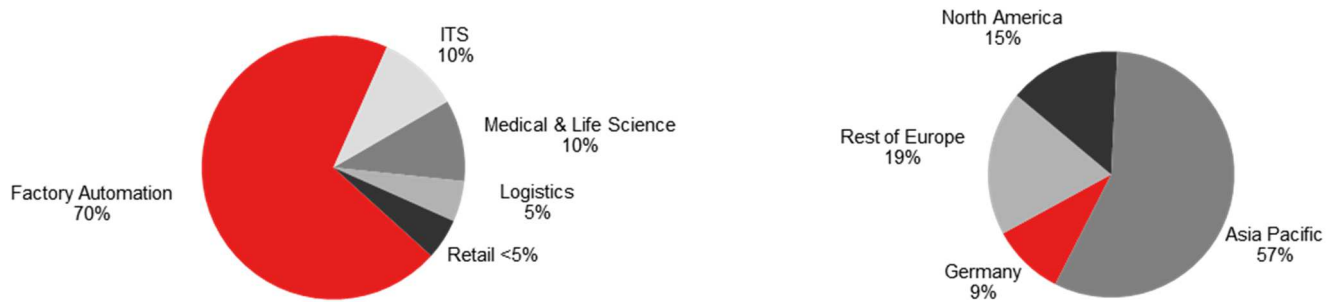
Source: Basler

Considering the price pressure in those segments from the growing Chinese electronic components industry, the ambition to compete as a German producer was met with scepticism by the capital market.

Cost-efficient design gained Basler a significant market share in Asia

With a lean design strategy that reduced system costs and leading in innovations such as Gigabit Ethernet cameras, Basler was more than able to compete against the aggressive pricing of Asian competitors. Moreover, the company benefitted significantly from the growing semiconductor and electronics industry in Asia, which has become the largest customer industry for Basler. Today, 56.7% of the group’s revenue is generated in the Asia-Pacific region.

Revenue share by customer industry and region



Source: Basler, Warburg Research

Long-standing customer relationships create barriers to entry

The market for digital cameras for industrial and medical applications as well as for traffic technology is built on long-term relationships between the camera producer and its customers. This is a result of the design-in process for customer products with long life-cycles but also of a mutual understanding of each other’s technology and requirements built over the years.

Designed-in products with long life-cycles

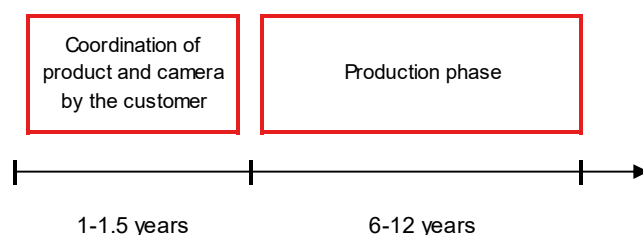
Basler’s OEM customers typically sell their solutions mostly unchanged over time periods of six to 12 years and require availability of the camera for the corresponding time period. Consumer cameras in contrast have a short product life-cycle of about two years.

Becoming a supplier usually starts with a design-in process of 12-18 months in which the customer integrates the camera and its product. While the lead is often generated through the company’s well-organized e-commerce platform, winning the design-in requires Basler’s deep understanding of its customers’ needs and a customer support that is able to quickly respond to technologically sophisticated enquiries.

When the design is won, Basler ultimately participates in the customer’s revenue development and growth over a time period of 6-12 years, which provides a solid foundation for good medium-term revenue visibility.

Long customer product life-cycles yield visibility

Design-in process results in customer loyalty



Source: Basler

Software generates customer loyalty beyond the product life-cycles

An essential element of Basler's competitive quality lies in the software. The Pylon software suite includes hardware drivers for all relevant operating systems, configuration tools, a software development kit (SDK) and application programming interfaces (API). The SDK and APIs are the main tools with which Basler's customers develop their specific vision applications.

High installed base of Basler's Pylon software

In the current market environment, software is a basic requirement for vision components rather than a revenue-generating product. However, as a result of Basler's powerful software suite and its strong market position, Pylon has a large installed base in most target industries. Most developers in these industries are well-versed in Pylon and the development of most applications is based on, or at least compatible with, Pylon. As a result, changing to a competitor could cause additional development costs and thus increases customer loyalty beyond the life-cycle of a single product life-cycle.

Scalable Pylon apps offer additional untapped sales potential

Moreover, the high installed base creates an opportunity for Basler to develop scalable applications. While the software platform itself offers little revenue potential, applications can generate additional income. Consistent with Basler's full-range supplier strategy, the company can offer optional functionality and applications as part of its pre-configured bundles, again decreasing development costs and time for the customer.

A disruptive vision

Basler's mid and long-term strategy is not only anticipating developments in the market but also, in part, actively disrupting and changing the market. After successfully moving from the premium to the mainstream segment of the market and establishing itself as a leading camera manufacturer, Basler is currently becoming a full range supplier, further increasing the share of wallet with its customers.

Strong value proposition for Basler's preconfigured bundles

Basler anticipated the decline in demand and willingness to pay for distribution services as OEMs built up significant in-house vision expertise. At the same time, demand for services that decrease development costs and shorten time-to-market should remain. Basler can meet this demand by pre-configuring bundles built around its Pylon platform.

Anticipating and shaping the global supply chain

Basler has long anticipated that the role of the distributor in the market will have to change. Historically, the value-add a distributor provided was its technological expertise and support in the development and supply of vision systems. As vision became an integral part of several mega trends like machine vision or industry 4.0, most customers, especially larger OEMs in fields such as factory automation, semiconductor and electronics, developed significant in-house capabilities regarding optical systems. As a result, distribution services were limited to smaller players that still require external expertise or benefit from the distributor's aggregated purchasing power. This would put considerable pressure on the gross margin of approx. 25-30% currently earned in the distribution of optical components.

Strategic expansion of the direct sales channels

In anticipation of this development, Basler increased the revenue share from direct sales with both organic and inorganic measures. In China, the company acquired its largest distributor MVLZ in 2018. At the end of last year, Basler announced the acquisition of DATVISION and IOVIS, two distributors of vision components in South Korea, which is one of the most important markets for Basler's strong business with the semiconductor and electronics industry. Moreover, with the increased number of local operations, Basler will be able to better develop, source and service its customers locally. Thus, we expect Basler to further expand the acquired operations in the region.

In Europe and the US, the e-commerce platform was extended, which allows customers with in-house expertise to find the required components online, without consulting a distributor.

Accelerating time-to-market while decreasing development costs

Besides the vertical integration of the distributor, Basler’s strategy also extends horizontally. With its goal of becoming a full-range supplier, Basler offers its customers all major components that make up a vision system, i.e. the camera, software, the frame grabber, cables, lenses and lighting.

With the acquisition of Silicon Software in 2018, Basler added frame grabbers to its product line, complementing its camera and software portfolio. All three components can be easily bundled with Basler’s new boost platform and completed with preconfigured third-party cables, lenses and lighting.

The value-add of the full-range supplier approach is not distribution, for which willingness to pay should decline further as customers develop in-house expertise and become able to source the components from the manufacturer directly, but pre-configuration. The customer can choose between different components that are already integrated into a system with Basler’s proprietary Pylon software. This decreases the development costs for the customer and accelerate time-to-market for the product.

Basler enables lower development costs and faster time-to-market

Deeply embedded vision of the future

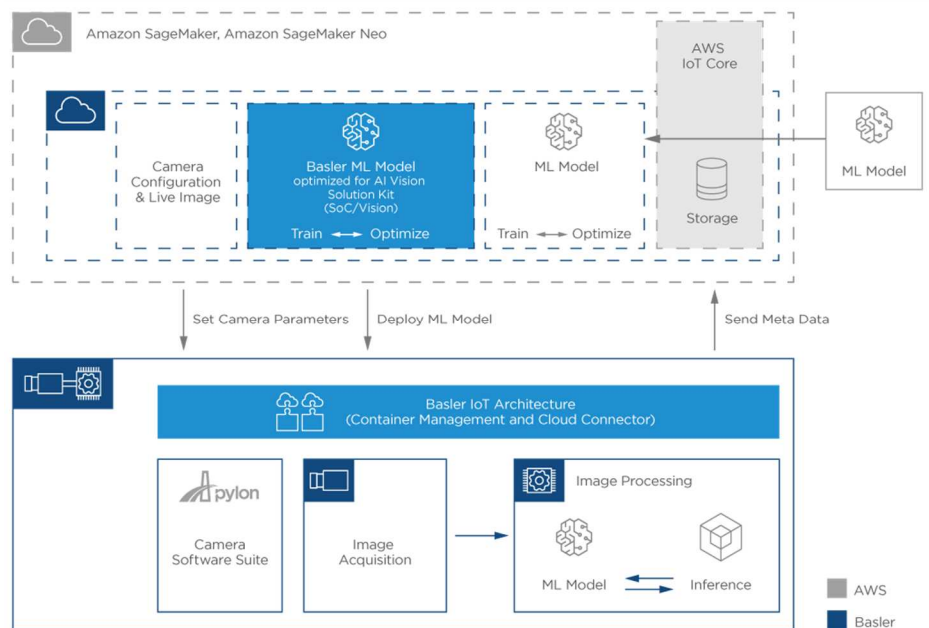
While the current transformation from a leading camera producer to a full-range supplier, begun in 2018, is now starting to show a tangible impact on the P&L, Basler is already preparing the next big step to become the leading producer of deeply embedded vision systems. At Basler, embedding goes far beyond putting a bundle in a branded casing. Similar to smartphone cameras, the frame grabber and the optical sensor are combined into one device, which aims to reduce the system complexity and thus the system costs significantly.

With the acquisition of Silicon Software, a manufacturer of frame grabbers, Basler has the expertise to develop an embedded camera and already launched a development kit built around its new Dart product-line. In cooperation with NVIDIA, the Dart BACON was combined with NVIDIA’s Jetson platform for AI on edge devices. Basler also became a selected partner to AWS for its machine-learning services AWS Panorama, an imaging SDK, and AWS Lookout, an inspection solution with cloud connectivity.

First mover in a disruptive camera design

Cooperation with leading innovators

AI Vision Solution Kit with Cloud Connectivity



Source: Basler

**Leading-edge solutions
for cloud and AI applications**

This would be a significant step in Basler's lean design approach and would give the company a significant cost advantage for high volume applications. Moreover, it would enable new cloud-based applications that could better utilise artificial intelligence and machine learning algorithms.

Although we estimate that deeply embedded vision has a strong growth prospect and significant disruption potential for the vision industry, especially considering Basler's strong track record in anticipating the mid to long-term market development, we have not included it in our estimates. We are not expecting a significant revenue contribution from this technology before 2025 and even beyond that point, the visibility is still low.

At the same time, this deep embedding should have significant disruption potential for the industrial imaging industry as a whole and should benefit Basler as a first mover, already in cooperation with leading drivers of that disruption such as Amazon and NVIDIA. As a result of this conservative approach, there should be additional upside to our current target price, which should lead to further upgrades as the visibility increases.

Growth / Financials

- High demand driven by the chip shortage reflected in a record high order backlog
- Bottlenecks will temporarily impede Basler's ability to transform the significant order growth into sales
- Mid-term strategy to become a full-range supplier offers notable cross-selling potential and should allow Basler to almost double its top line by 2024

Solid structural market growth

The ever-progressing automation of processes and inspection has expanded beyond the scope of industrial production. New applications in fields such as logistics, traffic, retail and medical technology are driving the demand for industrial imaging and cameras.

The global machine vision market was estimated at a volume of USD 13.3bn in 2021 and is expected to grow at an average annual rate of 7% until 2028 (source: Grand View Research). More than 60% of the annual sales volume can be attributed to hardware such as cameras, frame grabbers, optics/lenses, LED lightings, and processors, with cameras accounting for the largest share.

Industrial cameras differ from consumer cameras in that they are designed specifically for repeatable performance and robustness, to withstand the demands of industrial environments. Similar to cameras, that already saw significant price pressure, improvements in production efficiency and a reduction in system complexity, we expect a reduction in prices and production costs for frame grabbers.

While in the past, images were processed with industrial computers, smaller specialised frame grabbers have taken over and should see a further reduction in system complexity as they merge with the camera into an embedded system. As a result, we expect camera revenues to grow faster than the vision market as a whole. In 2021, the market for industrial cameras was valued at USD 2.2bn and is expected to reach USD 4.0bn by 2026 (source: Market Watch), implying a CAGR of 12.3%.

Double-digit growth in industrial camera market expected to continue

COVID and the chip shortage boosted camera demand

The COVID pandemic increased the need for digitalisation and automation in a variety of industries and accelerated the transition to industry 4.0. Moreover, the shift in retail from stationary to e-commerce required significant investments in modern and automated logistics.

While in 2020, lockdowns and the resulting cash-flow impact delayed some project rollouts, demand for vision technology increased significantly in 2021. The chip shortage created additional demand since the highly automated semiconductor and electronics industry relies heavily on optical inspection systems. After order intake in the German imaging sector declined by 10% in 2020, the sector saw an increase of 28% last year, according to the German industry association VDMA.

At the same time, bottlenecks for some components impeded the ability to transform the high order momentum into sales and thus revenues across the sector only increased by 17% in 2021. As a result, the imaging industry went into the new year with an exceptionally high order backlog and should be able to transform the high demand into sales growth as the effects of the chip shortage ease, which we are expecting in the second half of the year.

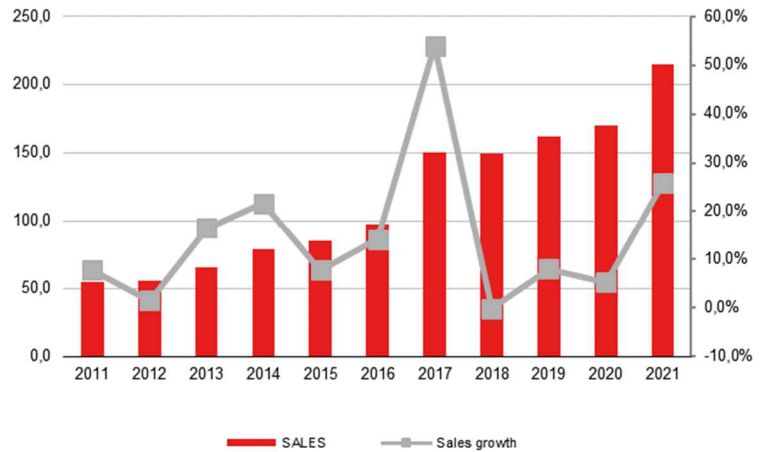
Bottlenecks limit growth despite record high demand

Strong historic growth at an average annual rate of 15%

Successful history

Basler has a strong track record regarding its past growth development with a CAGR 2011-2021 of 14.6%. The company has gained significant market share in the past decade, not only based on its product quality but also on the successful execution of a long-term strategy, which anticipated market developments well ahead of time.

Historic sales development



Source: Basler, Warburg Research

Successful in competition with Western and Asian players

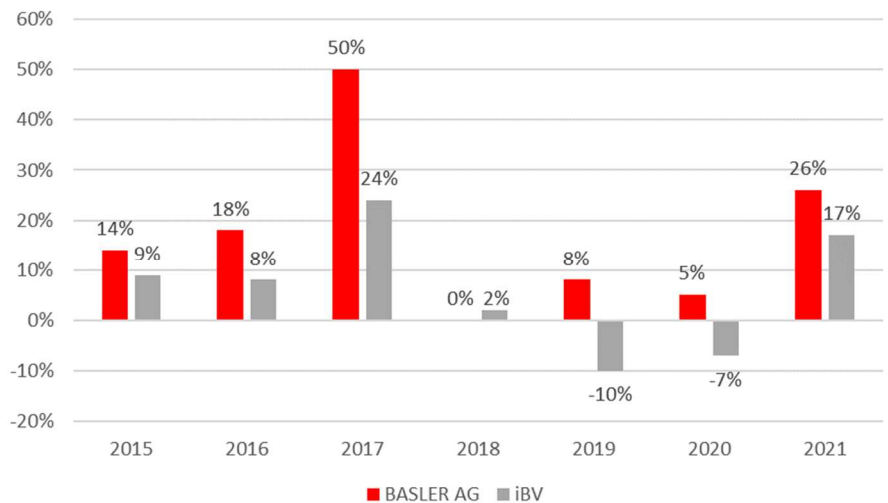
As vision technology matured, Basler expanded from the shrinking premium segment into the mainstream segment and focused on cost competitiveness with lean camera design. With this, Basler was able to compete successfully against Western competitors such as FLIR/Teledyne or TKH Group/Allied Vision as well as Asian suppliers like HIK Vision.

Basler also anticipated that with the growing vision expertise of OEM customers and machine builders, the demand for consulting services from distributors, which still earn gross margins above 30%, will diminish. Basler reacted with an expansion of its direct sales channels and a scalable e-commerce platform to serve larger customers without an intermediate distributor.

Continued outperformance of the German industrial imaging sector

As a result of its far-sighted vision and the successful execution of its mid-term strategies, Basler has continuously outperformed the German industrial imaging sector (iBV).

Sales growth: Basler vs. German industrial imaging sector



Source: Basler, VDMA

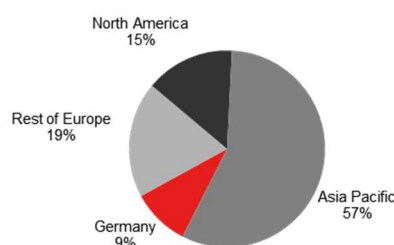
Perfectly positioned in the current market environment

In the short term, Basler is well-positioned to benefit from the current market environment. The demand from the semiconductor and electronics sector remains high as the capacity expansion in the industry reacts to the ongoing shortages. While the shortages are, in part, driven by temporary effects such as the pandemic, i.e. high demand for computers due to the increasing number of employees working from home and cautious pre-orders from the automotive industry, which underestimates the demand for electric vehicles in 2021, the structural growth of the EV market should lead to an accolated increase in demand for semiconductors and electronic components.

For Basler, Asia is the most important customer region with a revenue share of 56.7% in 2021. Customers in this region are, to a large extent, supplied directly by the company's own distributor MVLZ in China, acquired in 2018. Starting this year, customers will also be supplied by Basler's recently acquired South Korean distributors DATVISION and IOVIS. Due to the significant size of the local operations, Basler was in a better position than competitors to secure supplies during shortages and logistical bottlenecks.

Recent acquisitions strengthen the footprint in Asia

Regional sales split, 2021



Source: Basler,

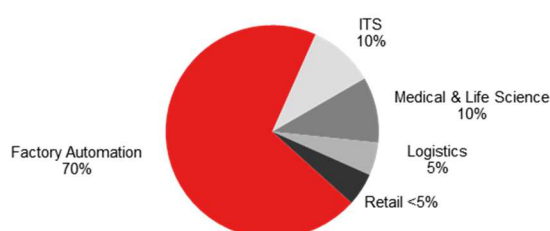
Strong market position in the semi and electronics industry

With the high Asia exposure, the semiconductor and electronics industries are Basler's largest customer segment, contributing more than 30% of the group's top line. While the semi and electronics business is usually particularly strong in the first half of the year, order momentum remained high throughout 2021. Demand from automotive and general industry, which make up the remaining part of the Industry customer segment, saw a significant recovery during the second half of 2021. However, because of the shortages, delivery had to be shifted, in part, to 2022. As a result, Basler had a record order backlog of approx. EUR 140m by the end of last year.

Med-tech and logistics business accelerated by the pandemic

The other large customer industries, medical & life science and logistics, also contribute to the group's growth. Logistics benefitted from the acceleration in the transition from stationary retail to e-commerce during the pandemic, which led to increasing investments in warehouse automation. In medical & life science, Basler has gained market share since the expansion of its MED ace product line in 2019 and benefitted from the automation of lab applications and pharmaceutical production during the pandemic.

Sales split by customer industry, 2021



Source: Basler

Order intake increased by 78%

Based on last year's 78%-increase in order intake (EUR 322.5m), Basler should be able to further accelerate its 2021 growth rate of 26.0%. In addition to organic growth, the recent acquisitions of DATVISION and IOVIS should contribute EUR 15-20m to the group's top line. However, despite the high demand, the component bottlenecks should continue to be a limiting factor, especially in the first half of the year. Against this background, the company is targeting sales of only EUR 235-265m for the current year.

2022 targets appear too conservative

This implies organic growth of 0-2% at the lower end, and 14-16% at the upper end, which we consider conservative. Although visibility regarding the shortages remains low and the current war in Ukraine has increased the global economic uncertainties, we estimate a top line of EUR 270.5m for the full year (+26.0%, organically +17-19%) based on the strong order backlog, ongoing high demand and an easing of the component bottlenecks in H2.

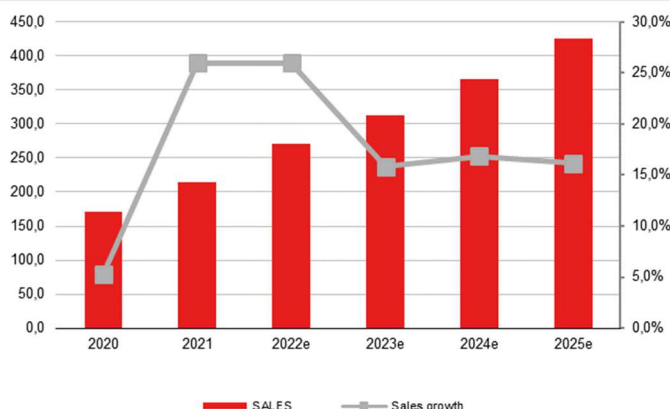
Cross-selling should enable Basler to grow faster than the market

Significant growth potential in the share of wallet

With the last mid-term target for 2023 of EUR 250m in sales well in reach this year, Basler updated its goals earlier this year. By 2025, the company is aiming for a top line of EUR 400m (CAGR 21-25 16.8%).

We believe that the current strategy of leveraging the direct sales channels and well-established software solution by offering vision bundles should enable Basler to increase the share of its customers' wallets significantly. As a result, we estimate sales will reach EUR 425m by 2025, slightly ahead of the company's goal.

Sales development WRe



Source: Basler, Warburg Research

Preconfigured bundles offer cost advantages to customers

Bundles offer significant value for Basler's customers

With the acquisition of MVLZ and Silicon Software, Basler has become a full-range supplier of vision technology. Besides its own cameras and frame grabbers, the company offers a wide range of third-party cables, lighting and lenses often rebranded under the name Basler. However, since the company anticipates that the demand for pure distribution services will decline, the value proposition relies on pre-configured bundles, which allow the customer to lower development costs and shorten the time-to-market. Basler's boost camera line for example comes with updated firmware and matching frame grabber. Other components can be added in an easy-to-use online configurator to suit the customer's individual requirements.

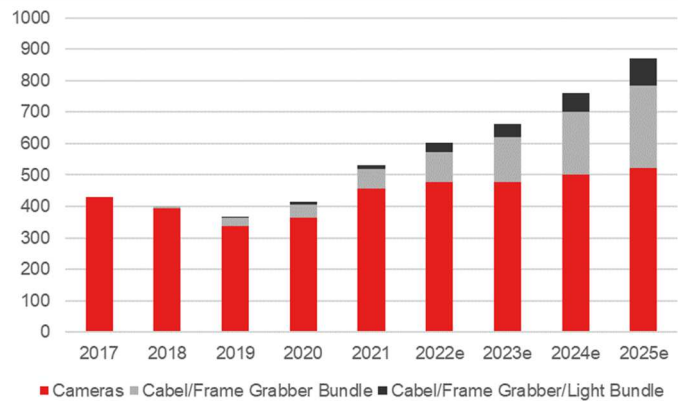
The proprietary Pylon Software acts as a connective tissue between all components. Due to the high installed base of Basler cameras, most customers are already familiar with the Pylon SDK, making it easy for them to integrate the Basler bundle into their application. This also creates an opportunity for Basler to develop scalable applications in-house, saving its customers even more in development costs and accelerating time-to-market even further.

We consider this a strong value proposition and expect significant cross-selling over the next couple of years. In 2021, non-camera sales contributed EUR 31m to group sales (15%). With the acquisition of DATVISION and IOVIS and the organic sales efforts of the company, we estimate that this figure should increase to approx. 20% this year.

We expect that the share of cameras sold without other components in terms of units will decrease from approx. 86% in 2021 (WRe) to 60% by 2025. The share of camera/frame grabber/cable bundles in terms of units should increase from 12% to 30% in the same period, with an ASP 80-90% above the ASP of camera alone. Bundles that include lighting together with the aforementioned components should increase the share in terms of units from 2% to 10% with an ASP 180-190% above the camera ASP. Since lighting is often very application-specific, we assume that a scalable bundle will only be possible for a limited number of applications.

Bundles should increase ASP significantly

Camera unit sales development (in k units)



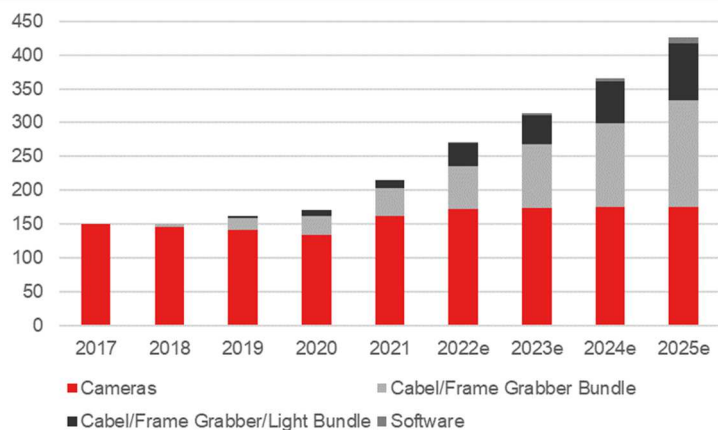
Source: Basler

Overall, we estimate average annual growth in camera units of 13.2% in the period from 2021 until 2025, which should be front-end heavy, driven by the current high demand and the sales delayed from 2021 into 2022. Since bundles come at a higher ASP, the average ASP should increase significantly, even considering average annual price pressure on cameras of 2%. In addition, we estimate software revenues from the aforementioned scalable application, which are not yet contributing to the company's top line, to reach a high single-digit million sales volume by 2025.

ASP and unit growth should yield a CAGR 21-25e of 19%

Across all product categories, we expect an average annual ASP increase of 14.7% based on the growing share of bundles. The growing units, the increasing ASP and the additional software revenues should result in a revenue CAGR 21-25e of 18.6%.

Sales development by product category



Source: Basler

Profitability should remain stable

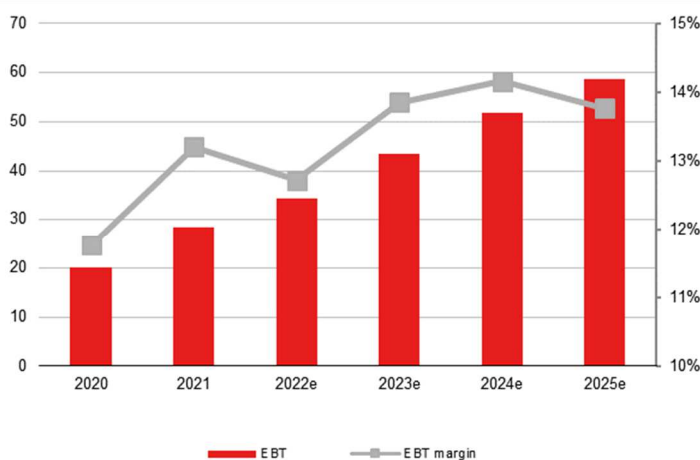
Currently, Basler benefits from high demand and moderate pricing pressure and even managed to increase pricing at the beginning of the year. However, as a result of the shortages, some components were unavailable or only available on the spot market at significantly higher prices, in some instances with price increases of up to 100%. Basler decided not to pass on these temporary effects to its customers, which resulted in a significant drop in the gross margin from 54.6% in H1 2021 to 49.8% in H2. The EBT margin declined from 18.0% to 7.2%. As a result, the EBT margin of 13% for the full year reached only the lower end of the target range of 13-15%.

Although Basler increased prices at the beginning of this year, these increases, for the most part, do not apply to the large order backlog of EUR 140m. As a result, margins should remain burdened in the first half of the year. Against this background, Basler expects an EBT margin of 9-12% for the current year. We consider this outlook conservative. Consistent with our top-line projections, we expect the bottlenecks to ease in the second half of the year, which should enable Basler to make up for the more challenging H1, especially with regard to the price increases, which should take full effect in H2. For the full year, we expect an EBT margin of 12.4%, slightly above the target range.

Mid term, Basler is aiming for an average EBT margin of 12% over the cycle. We consider this goal to be conservative, since we are not expecting significant pricing pressure on the components or distribution services in the current market environment. We expect the demand to remain high from both semi and electronics as well as the automotive industry as the production capacities for EVs are expanded.

Bottlenecks expected to curb gross profits in H1

EBT development



Source: Basler, Warburg Research

Basler's strategy will change its product-mix with both positive and negative effects on the profitability, which should broadly balance out. Against this background, we expect profitability to remain roughly stable. We estimate a slight decrease in the EBT margin in the current year, driven by higher material costs in H1 due to the shortages.

For 2023, we expect the negative impact of the shortages to have ceased and thus an increase in the EBT margin of 13.6%. Going forward, Basler will increase its OPEX to accelerate growth and advance its strategy to an extent that is in line with its 12% EBT-margin target. However, with the growth momentum expected to remain high and the capacities not yet fully utilised, profitability should expand further until at least 2024.

Margin should improve slightly until at least 2024

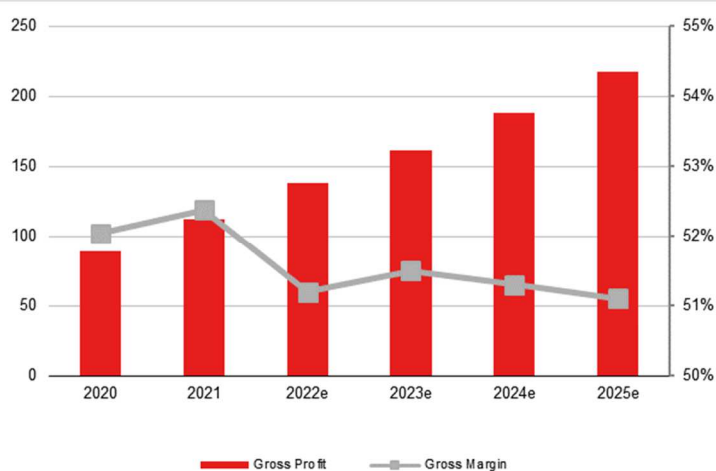
Stable gross margin expected

Basler's strategy should lead to an increasing revenue share from the sale of third-party components. For plain distribution services, we estimate a gross margin of approx. 30%, which is significantly lower than the average group margin of 51.6% over the last five years. The willingness to pay for distribution should currently be higher due to the shortages, but should face pressure over the mid to long term as more manufacturers adopt a direct sales approach to larger customers with in-house vision expertise.

However, we expect that the share of plain distribution service from the acquisitions of MVLZ, DATVISION and IOVIS, will decline and be substituted by Basler-branded bundles. With a clear value proposition to reduce development costs and accelerate time-to-market for the customer and scalable development and design costs for Basler, the company should be able to maintain a gross margin of approx. 51%.

Branded bundles should compensate for lower distribution margins

Gross profit development



Source: Basler, Warburg Research

In the short term, the higher procurement costs due to the shortages will curb the group's gross margin, especially in H1. Although the price increases should take effect in H2 and improve the gross margin over the course of the year, we expect the gross margin to decline from 52.4% in 2021 to 51.4% for the full year 2022. After a recovery in 2023 and as the negative impact of the shortages ease, the margin should increase again to 51.5%. With the price pressure expected on components as well as distribution services, we expect a slight decline to 51.1% by 2025.

Gross margin expected to remain slightly above 50%

Scalability gains used for corporate development

Basler's strategic expansion of its direct sales channel should lead to an increase in its sales and marketing costs. After the acquisition of the distributor MVLZ, which was first consolidated on a full-year basis in 2019, the sales and marketing costs increased to 19.5%, which was considerably above the five-year average of 16.4%. Since then however, the ratio declined again and reached 16.2% in 2021.

We believe this to be the result of Basler's marketing approach. Smaller customers or customers with applications that are less complex are addressed by a digital marketing approach and Basler's online sales platform and only require a light touch from sales professionals. Even more complex demands can be met with an online configurator for Basler's Boost camera bundles. The highly skilled sales team focuses on larger customers and takes a light-touch approach to online customers to identify up-selling potential. Moreover, as a result of the pre-configured bundles, the design-in process becomes more scalable and therefore more cost-efficient.

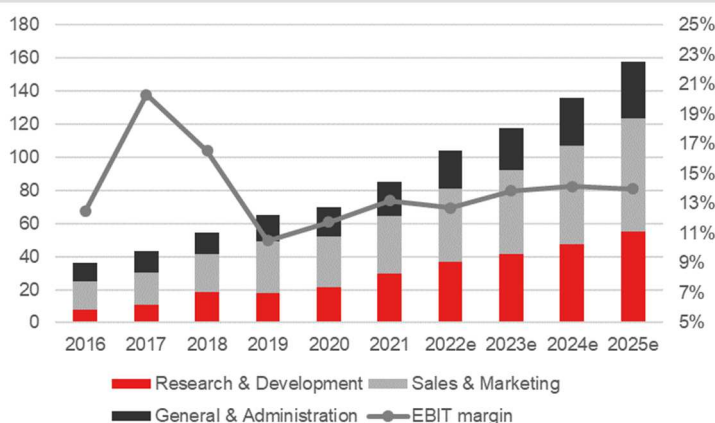
The low marketing costs in 2021 should in part be attributable to travel restrictions during the pandemic, but considering the scalability of Basler’s marketing strategy, we expect sales and marketing costs just above 16% in terms of sales going forward.

The general and administration costs should scale as the top line grows. Within the last five years, Basler spent an average of 9.3% of sales on general and administration costs. We expect this figure to decline to 8.0% by 2024. Other operating income and expenses have been slightly positive on balance over the last five years (+0.1% of sales) and we estimate a slight negative on balance going forward (-0.1%).

While the R&D efforts required to maintain the market position should be notably below the five-year average of 11.5%. Basler’s success story relies to a large extent on its development efforts. The lean and cost-efficient camera design enabled the company to gain a significant market share in the price-sensitive mainstream market segment and should allow the company to sell vision bundles, efficiently pre-configured and connected with Basler’s proprietary Pylon software. Moreover, the deeply embedded vision solutions, currently being developed by Basler, should offer significant growth potential going forward. Thus, we expect Basler to increase its R&D efforts to an extent that does not compromise its mid-term 12% EBT margin goal. We estimate an R&D cost ratio close to 13% over the next four years.

Profitability gains from economies of scale will be used to accelerate growth

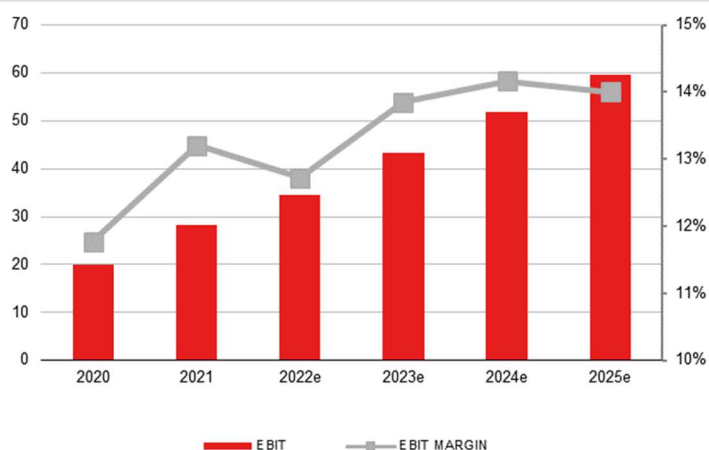
OPEX development



Source: Basler, Warburg Research

These assumptions result in an EBIT margin increase to 14.0% by 2025 after a short dip in the current year, due to the negative effects of the chip shortage, especially during the first half of the year.

EBIT development



Source: Basler, Warburg Research

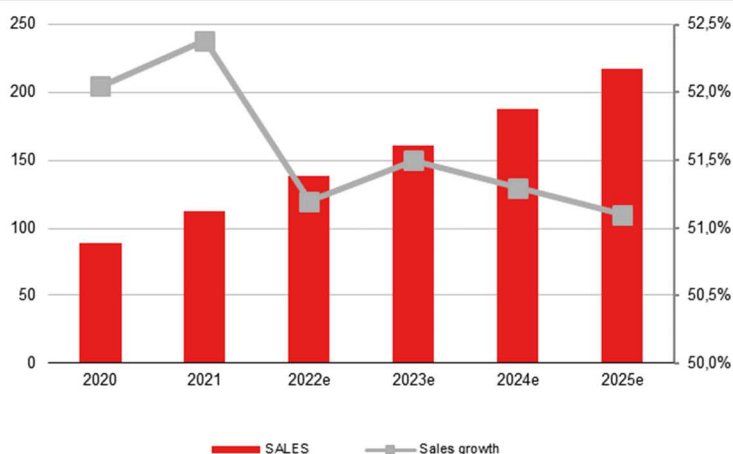
Average EBT margin expected to exceed the 12% target

The financial result amounted to EUR -0.2m on average for the last five years. Considering uncertainties regarding interest rates and the recent acquisitions, which should increase the company's net debt position slightly, we assume a financial result of EUR -0.8m going forward. This yields an EBT margin of 12.4% in 2022 and a subsequent increase in the EBT margin to 13.8% by 2025, which exceeds the 12%, Basler aims to earn over the cycle. While we do expect a decline in the currently extraordinarily high order momentum, the demand should remain high enough for double-digit top-line growth within the next four years. Moreover, even in the period between 2017 and 2021, which saw some downturn (CAGR 9.3%), the average EBT margin of 14.3% was still above the 12% target.

Solid EPS and dividend growth expected

Over the last five years, Basler has paid a tax rate of 26.7% on average. The low tax burden is a result of its second production site in Singapore. Going forward, we assume a tax rate of 28%. The resulting net income margin is 8.9% for 2022 and increases to 10.0% until 2024.

EPS and dividend development



Source: Basler, Warburg Research

With the estimated top-line growth, the EPS should grow at a CAGR 21-24e of 21.1% from EUR 2.08 in 2021 to EUR 3.69 in 2024. Basler is aiming for a pay-out ratio of approx. 30%, which would increase the dividend from the proposed EUR 0.62 for last year to EUR 1.11 for 2024.

Analysis of Return on Capital

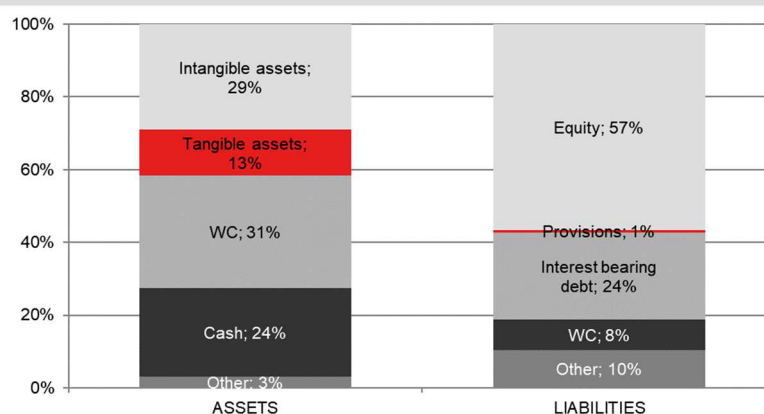
- Solid balance sheet with an equity ratio of 57% and net debt of EUR 1.2m
- Assembly-focused production and leased headquarters limit investment requirement
- After a temporary increase due to the chip shortage, working capital should normalize this year and return to the target NWC/sales of 17%
- Avg. ROCE above 20% expected

Solid balance sheet

High equity ratio of 57%

By the end of 2021, Basler's equity (EUR 128.7m) makes up 56.6% of the balance sheet and covers 136% of its long-term assets. Liquid assets increased slightly from EUR 47.9m at the end of 2020 to EUR 54.8m in 2021. As a result of the shortages, Basler increased its inventories in 2021 EUR 20.0m to EUR 37.1m.

Balance sheet – 2021



Sources: Basler, Warburg Research

In 2021, capitalised R&D (EUR 32.1m) accounts for the most significant portion of the intangible assets (EUR 66.0m). At approx. 14% of the balance sheet total, this shows the significance of development activities for Basler. However, capitalised R&D was slightly below amortisation which led to a net decline of EUR 1.5m in 2021. Goodwill stood at EUR 27.5m (12.1% of total assets) and was mainly a result of the acquisitions of MVLZ and Silicon Software.

Low investment requirements

The company building, which is accounted for as a financial lease, made up around EUR 16.1m or 56% of the tangible assets (property, plant and equipment) at the end of 2021. Adjusted for the leased headquarters, property, plant and equipment only accounts for 5.5% of the balance sheet total, which underpins the limited capital requirements of Basler's production facilities.

More than a quarter of the financial debt is also attributable to the rental obligations on the building in Ahrensburg, which qualifies as a leasing. This item is counterbalanced by the relevant asset position. The net debt position was EUR 1.2m at the end of 2021. Adjusted for long-term lease obligations, Basler held a net cash position of EUR 14.9m.

Target NWC/sales of 17%

At the end of 2021, the net working capital stood at EUR 51.6m (NWC/sales 24.0%) , which is a significant increase compared to the EUR 28.4m at the end of 2020 (NWC/sales 16.9%) and was driven by higher inventories as a result of the shortages. We expect the currently high levels to normalise by the end of 2023 (WRe 17.4%) and estimate a stable mid- to long-term NWC/sales of approx. 17.0%.

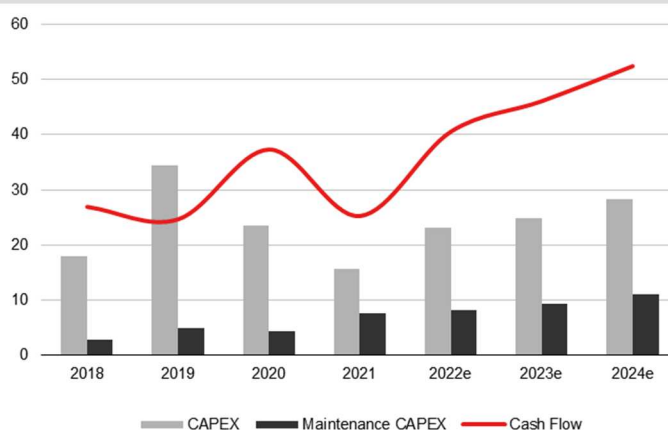
Capex requirement is manageable

Basler's business model is not capex intensive. The investments in property, plant and equipment are manageable at approx. 2% of revenue. The R&D expenses in terms of revenue should decline as third-party products included in vision bundles will contribute to the top line without significant development effort. In 2021, capitalised R&D in terms of sales dropped significantly 8.2% to 3.8%, mainly driven by the high top-line growth. Going forward, we estimate this figure to average at approx. 6%.

Capex-driven investments in future growth opportunities

Thus, the expected cash flow from investment activities will account for a revenue share of roughly 8% to serve future growth. In a steady-state scenario, Basler's free cash flow would thus clearly be higher.

Capex exceeds maintenance investment



Source: Basler (historical data), Warburg Research (estimates)

In addition to the organic capex, the acquisitions of DATVISION and IOVIS should result in a cash outflow from investment activities of approx. EUR 23m in the current year.

Temporary increase in working capital

Temporary increase in NWC due to shortages

Working capital increased in 2021 from EUR 28.4m (16.7% of sales) to EUR 51.6m (24.0% of sales) because of the shortages. As a result of bottlenecks in (the supply of?) some components, production took longer, which led to (an increase in) unfinished goods and raw materials on the balance sheet.

Inventories increased from EUR 20.0m to EUR 37.1m and the inventory turnover decreased from 8.5x in 2020 to 6.5x. However, as shortages ease, inventory turnover should recover. Even taking higher inventory requirements into account as Basler distributes complementary third-party components and further expands its direct sales channel, we estimate the turnover will reach 7.6x in the current year and 7.8x in 2024.

Trade receivables increased from EUR 19.5m to EUR 33.3m and trade payables increased from EUR 11.1m to EUR 18.8m in 2021, mainly driven by the high demand. On average during the last three years, Basler collected its receivables after 43 days and paid its suppliers after 22 days. We expect these figures to remain stable going forward. This is consistent with Basler's target working capital ratio of 17%.

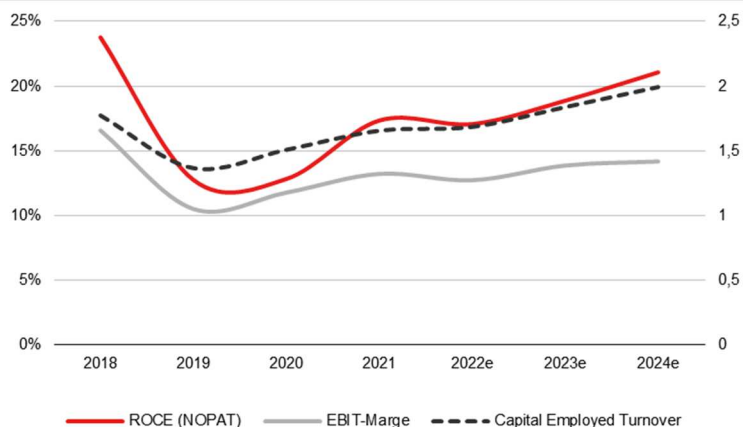
Capital returns reflect efficiency gains

Basler’s product platform strategy contributes to a high level of efficiency in production and working capital. A glance at the company’s capital returns shows the value-accretive character of Basler’s strategy. Basler’s thorough focus on the optimal use of working capital should have a positive impact on the cash-flow development and should continue to provide positive impetus for its capital returns.

Avg. ROCE expected to exceed 20%

Since 2017, the company has yielded an average ROCE of 21%. Although the chip shortage and the associated increase in working capital resulted in a lower figure in 2021 (17.3%) Basler should be able to maintain an average of more than 20% going forward.

Lower capital commitment leads to higher returns



Source: Basler (historical data), Warburg Research (estimates)

Valuation

- We based our target price on a DCF analysis, because this approach reflects the mid to long-term growth prospect from Basler's transformation to a full-range supplier
- The DCF model indicates a fair value of EUR 150, significantly higher than the current market valuation
- In addition, we conducted a peer group analysis and calculated the FCF Value Potential
- Despite the historic and projected outperformance of the market, Basler trades at a discount to its peers
- Without accounting for the strong mid-term growth prospect, the FCF Value Potential analysis, indicates a fair value below the current market valuation

Growth prospects and track record justify valuation premium

We based our target price on a DCF model that indicates a fair value per share of EUR 150, which reflects the attractive prospect based on Basler's strong market position, the structural market growth, and the cross-selling potential of Basler's transformation strategy as well as an increased risk-free rate

In addition, we compared Basler's current market valuation to a peer group and calculated the free cash flow value potential. The peer group analysis, based on EV/EBIT multiples for 2022 to 2024 suggest a fair value per share of EUR 118. Considering the sales potential from Basler's transformation and the company's strong track record, a premium to its peers' valuation seems justified. The discount, at which Basler is currently priced, indicates that the market is currently not fully reflecting the strong growth prospect.

The FCF potential indicates a fair value of EUR 69 based on our estimates for 2024, which is below the current market valuation, as growth beyond 2024 is not reflected.

In conclusion, the growth prospect reflected in the current valuation is below the average prospect for the peer group, while we anticipate that the company's strategy should enable Basler to continue its outperformance of the market. This outperformance is reflected in our DCF valuation and indicates notable upside to the current share price.

Peer group comparison

For a peer group comparison, various companies operating in the vision technology market have been taken into account. The comparison includes companies with a competing product offering as well as potential customers, i.e. suppliers of vision technology systems.

Within the comparison, we fundamentally attach the greatest significance to the EV/EBIT multiple. The PER is compromised by variations in the companies' financing structures, the EV/EBITDA by the different methods of capitalising own work, such as in development, and EV/revenue by the margins of the companies.

On the basis of the EV/EBIT, Cognex, as in the past, shows the highest valuation multiples. This goes hand in hand with its higher market capitalisation and liquidity of its shares. Additionally, Cognex has a high share of software revenue, which explains the high profitability with EBIT margins of almost 30%.

Stemmer Imaging shows the lowest valuation multiple, which should reflect the expected margin pressure on the company's distribution business as well as the comparably low market capitalization and free float.

Overall, the EV/EBIT multiples point to values between EUR 113 and EUR 122 with an average of EUR 118. The consideration of all multiples yields an average valuation of EUR 138. While this indicates upside to the current market valuation, we still consider the indicated values to be conservative, since they do not reflect Basler's strong track record and historical outperformance of the market.

Avg. EV/EBIT multiple indicates a fair value of EUR 118

Peergroup - Key Figures

Company	LC	Price in LC	MC in LC m	EV in LC m	EPS			Sales			EBITDA			EBIT		
					22e	23e	24e	22e	23e	24e	22e	23e	24e	22e	23e	24e
<i>Closest peers</i>																
Cognex Corporation	USD	69.18	12,029.8	12,148.6	1.76	2.10	2.41	1,178.8	1,324.7	1,483.7	392.0	462.0	541.0	374.0	440.0	512.0
Hangzhou Hikvision Digital Technolo	CNY	40.80	384,875.0	361,276.5	2.07	2.48	2.96	95,945.3	113,687.0	136,674.1	20,715.8	25,037.0	30,033.0	21,413.2	25,591.5	29,882.2
Keyence Corporation	JPY	53,440.00	12960,619.0	12060,307.1	1,385.08	1,516.12	1,714.05	830,350.0	917,000.0	1018,000.0	466,750.0	511,800.0	602,200.0	462,500.0	502,800.0	592,000.0
STEMMER IMAGING AG	EUR	32.70	212.6	185.7	1.79	2.07	2.37	149.6	167.1	186.4	20.8	23.4	26.4	16.5	18.8	21.8
TKH Group N.V. Cert	EUR	49.30	2,030.1	2,319.5	3.19	3.64	4.02	1,645.4	1,754.0	1,889.0	263.3	302.0	325.0	182.0	208.1	234.0
Basler AG	EUR	106.20	1,058.9	615.1	2.43	3.08	3.69	270.5	313.4	366.2	52.8	63.5	75.2	34.4	43.4	51.9

Peergroup - Valuation Multiples

Company	LC	Price in LC	MC in LC m	EV in LC m	P / E			EV / Sales			EV / EBITDA			EV / EBIT		
					22e	23e	24e	22e	23e	24e	22e	23e	24e	22e	23e	24e
<i>Closest peers</i>																
Cognex Corporation	USD	69.18	12,029.8	12,148.6	39.3 x	32.9 x	28.7 x	10.3 x	9.2 x	8.2 x	31.0 x	26.3 x	22.5 x	32.5 x	27.6 x	23.7 x
Hangzhou Hikvision Digital Technolo	CNY	40.80	384,875.0	361,276.5	19.7 x	16.5 x	13.8 x	3.8 x	3.2 x	2.6 x	17.4 x	14.4 x	12.0 x	16.9 x	14.1 x	12.1 x
Keyence Corporation	JPY	53,440.00	12960,619.0	12060,307.1	38.6 x	35.2 x	31.2 x	14.5 x	13.2 x	11.8 x	25.8 x	23.6 x	20.0 x	26.1 x	24.0 x	20.4 x
STEMMER IMAGING AG	EUR	32.70	212.6	185.7	18.3 x	15.8 x	13.8 x	1.2 x	1.1 x	1.0 x	8.9 x	7.9 x	7.0 x	11.3 x	9.9 x	8.5 x
TKH Group N.V. Cert	EUR	49.30	2,030.1	2,319.5	15.5 x	13.5 x	12.3 x	1.4 x	1.3 x	1.2 x	8.8 x	7.7 x	7.1 x	12.7 x	11.1 x	9.9 x
Average					26.3 x	22.8 x	19.9 x	6.2 x	5.6 x	5.0 x	18.4 x	16.0 x	13.7 x	19.9 x	17.4 x	14.9 x
Median					19.7 x	16.5 x	13.8 x	3.8 x	3.2 x	2.6 x	17.4 x	14.4 x	12.0 x	16.9 x	14.1 x	12.1 x
Basler AG	EUR	106.20	1,058.9	615.1	43.7 x	34.5 x	28.8 x	2.3 x	2.0 x	1.7 x	11.6 x	9.7 x	8.2 x	17.9 x	14.2 x	11.9 x
Valuation difference to Average					-40%	-34%	-31%	175%	185%	197%	58%	65%	68%	11%	22%	26%
Fair value per share based on Average					63.83	70.24	73.60	214.06	220.12	227.42	141.97	146.30	148.05	113.16	120.06	122.13

Sources: FactSet; Warburg Research

Peer profiles**Cognex (USA)**

Employees: 2,257

Cognex is a world-leading supplier of vision systems, vision software and vision sensors for production automation. With this focus, the company is a potential customer of Basler.

Hikvision (CN)

Employees: 42,685

Hangzhou Hikvision Digital Technology develops and manufactures solutions in the area of video surveillance. The products include network cameras, among others. About half of the employees are involved in development.

Keyence (JP)

Employees: 8,380

Keyence is a global supplier of sensors, measuring systems, laser markers, microscopes, and machine vision systems. Keyence specialises in factory automation, which is also a key area for Basler.

Stemmer Imaging (GER)

Employees: 333

The machine vision technology provider offers products for science and industry. Like Basler, Stemmer Imaging offers area scan, line scan, and 3D cameras and the accessories needed to operate those cameras.

TKH Group (NL)

Employees: 5,784

The company focuses on high-end technology solutions within the three business segments Telecom, Building and Industrial Solutions. The products of the business segment Building Solutions, which accounted for approximately 44% of the company's turnover in 2018 and primarily include vision & security (Allied Vision) and connectivity systems, are direct competitors of Basler's products.

Discounted Cash Flow Model

Our DCF model reflects the growing demand for industrial imaging and the cross-selling opportunities that arise from Basler's transformation to a full-range supplier for vision components. Additional growth potential from deeply embedded camera solutions was excluded from our estimates because of the limited visibility and could accelerate the top-line development compared to our forecast.

Assumptions

Our DCF model estimates and assumptions can be summarised as follows:

- In 2022, we expect an easing of the supply bottlenecks, which should lead to accelerated growth rates in H2 based on the currently high demand, reflected in the 78% increase in order backlog last year (WRe sales growth 26.0%)
- Thereafter, an increasing attachment rate of other components to Basler's camera sales should compensate for declining growth momentum for camera units sold. By 2025, we expect Basler to slightly exceed its EUR 400m mid-term target with an estimated revenue of EUR 425m (CAGR 21-25e 18.6%)
- In the transactional period we assume slightly declining growth rates, slightly below the historical growth rates (CAGR 11-21 14.6%)
- We assume a perpetual growth rate in the terminal value of 2.5%.
- The EBIT margin should decline slightly to 12.7% this year as material prices should be inflated by shortages, especially in H1, while the recent price increases will come into full effect in H2
- In 2022 and 2023, we expect an EBIT margin improvement to 14.2% as the shortages ease
- Thereafter, we assume a slight gradual margin decline to 13.0% in the terminal value
- For the assumed revenue growth, we estimate capex/sales of just 7-8% and NWC/sales of 17% to be sufficient. For the perpetual growth rate 2.5% we reduced the required capex/sales to 6.5%.
- The cash outflow in the "Others" line account for payments for the acquisition of the South Korean distributors DATVISION and IOVIS
- The applied beta of 1.1 reflects Basler's strong track record and the high equity ratio 56.6% as well as the cyclical nature of the market, in which the company operates.
- In anticipation of prime rate hikes in Europe and the US, we have increased our risk-free rate by 50bps to 2.0%
- The beta, the increased risk-free rate and the assumed long-term debt ratio of 8% yield WACC of 7.4%

DCF-based fair value of EUR 150

Our DCF analysis yields a fair value of EUR 150.02 for Basler's share price

DCF model

Figures in EUR m	Detailed forecast period			Transitional period										Term. Value
	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e	2034e	
Sales	270.5	313.4	366.2	425.4	492.8	569.4	656.1	753.9	864.1	987.9	1,126.6	1,281.7	1,458.0	
Sales change	26.0 %	15.9 %	16.8 %	16.2 %	15.8 %	15.5 %	15.2 %	14.9 %	14.6 %	14.3 %	14.0 %	13.8 %	13.8 %	2.5 %
EBIT	34.4	43.4	51.9	59.6	68.5	78.6	89.9	102.5	116.7	132.4	149.8	169.2	191.0	
EBIT-margin	12.7 %	13.9 %	14.2 %	14.0 %	13.9 %	13.8 %	13.7 %	13.6 %	13.5 %	13.4 %	13.3 %	13.2 %	13.1 %	
Tax rate (EBT)	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	
NOPAT	24.8	31.3	37.3	42.9	49.3	56.6	64.7	73.8	84.0	95.3	107.9	121.8	137.5	
Depreciation	18.4	20.1	23.3	27.7	32.0	37.0	42.6	49.0	56.2	64.2	73.2	83.3	94.8	
in % of Sales	6.8 %	6.4 %	6.4 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	
Changes in provisions	0.3	0.0	0.0	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	
Change in Liquidity from														
- Working Capital	-2.7	5.5	8.5	9.4	11.5	13.0	14.7	16.6	18.7	21.0	23.6	26.4	30.0	
- Capex	23.1	24.8	28.3	33.2	38.9	44.7	50.0	55.7	61.9	68.7	75.9	83.8	94.8	
Capex in % of Sales	8.5 %	7.9 %	7.7 %	7.8 %	7.9 %	7.9 %	7.6 %	7.4 %	7.2 %	6.9 %	6.7 %	6.5 %	6.5 %	
- Other	23.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Free Cash Flow (WACC Model)	0.1	20.0	22.8	27.2	31.3	36.3	43.1	51.0	60.1	70.5	82.3	95.8	108.5	134
PV of FCF	0.1	18.1	19.2	21.4	22.9	24.7	27.3	30.1	33.0	36.1	39.2	42.5	44.8	1,136
share of PVs	2.50 %			21.53 %										75.97 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	8.00 %	Financial Strength	0.90
Cost of debt (after tax)	2.1 %	Liquidity (share)	1.20
Market return	7.50 %	Cyclicality	1.30
Risk free rate	2.00 %	Transparency	1.00
		Others	0.90
WACC	7.37 %	Beta	1.06

Valuation (m)

Present values 2034e	359		
Terminal Value	1,136		
Financial liabilities	54		
Pension liabilities	2		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	0		
Liquidity	52	No. of shares (m)	9.9
Equity Value	1,491	Value per share (EUR)	150.02

Sensitivity Value per Share (EUR)

Beta	WACC	Terminal Growth							Delta EBIT-margin								
		1.75 %	2.00 %	2.25 %	2.50 %	2.75 %	3.00 %	3.25 %	-1.5 pp	-1.0 pp	-0.5 pp	+0.0 pp	+0.5 pp	+1.0 pp	+1.5 pp		
1.26	8.4 %	108.13	111.07	114.25	117.70	121.46	125.57	130.07	1.26	8.4 %	101.94	107.19	112.45	117.70	122.95	128.20	133.46
1.16	7.9 %	120.28	123.93	127.91	132.27	137.04	142.31	148.14	1.16	7.9 %	114.71	120.56	126.41	132.27	138.12	143.97	149.82
1.11	7.6 %	127.19	131.29	135.77	140.68	146.10	152.11	158.80	1.11	7.6 %	122.09	128.29	134.49	140.68	146.88	153.08	159.27
1.06	7.4 %	134.77	139.38	144.44	150.02	156.20	163.09	170.81	1.06	7.4 %	130.28	136.86	143.44	150.02	156.59	163.17	169.75
1.01	7.1 %	143.10	148.30	154.05	160.41	167.50	175.45	184.43	1.01	7.1 %	139.40	146.40	153.41	160.41	167.41	174.42	181.42
0.96	6.9 %	152.29	158.20	164.75	172.05	180.24	189.48	200.00	0.96	6.9 %	149.61	157.09	164.57	172.05	179.53	187.01	194.49
0.86	6.4 %	173.84	181.58	190.25	200.05	211.20	224.01	238.86	0.86	6.4 %	174.19	182.81	191.43	200.05	208.67	217.29	225.91

- Financial liabilities are also related to the lease of the company building.
- The beta takes into consideration Basler's strong track record, the high equity ratio and the cyclicality
- The structural growth of the vision technology market forms the basis of Basler's revenue increases.
- Payment for the acquisitions of DATVISION and IOVIS are accounted for in the "others" line

Free Cash Flow Value Potential

Warburg Research's valuation tool "FCF Value Potential" reflects the ability of the company to generate sustainable free cash flows. It is based on the "FCF potential" – a FCF "ex growth" figure - which assumes unchanged working capital and pure maintenance capex. A value indication is derived from the perpetuity of a given year's "FCF potential" with consideration of the weighted costs of capital.

Hence, we can derive the value of a free cash flow, adjusted for the exceptionally high capex needed for future growth. The deviation from the fair value derived from our DCF model reflects value added by the growth we estimate beyond the period for which the FCF potential is calculated.

Assumptions

Our FCF Value Potential assumptions can be summarised as follows:

- The assumptions for the operating performance and for the WACC are consistent with the DCF model
- We estimate the maintenance capex to be stable at around 3.0% of the top line, mainly reflecting investment in property, plant and equipment
- The R&D costs reflected in the EBIT margin should be more than sufficient to maintain the business
- IFRS 16 effects on the cash flow and the enterprise value were adjusted in the respective "Other" lines

We calculated a free cash flow value potential of EUR 69.06 per share for 2024

Free Cash Flow Value Potential

Warburg Research's valuation tool "FCF Value Potential" reflects the ability of the company to generate sustainable free cash flows. It is based on the "FCF potential" - a FCF "ex growth" figure - which assumes unchanged working capital and pure maintenance capex. A value indication is derived via the perpetuity of a given year's "FCF potential" with consideration of the weighted costs of capital. The fluctuating value indications over time add a timing element to the DCF model (our preferred valuation tool).

in EUR m	2018	2019	2020	2021	2022e	2023e	2024e	
Net Income before minorities	17.0	12.9	15.1	20.8	24.2	30.7	36.8	
+ Depreciation + Amortisation	11.1	12.9	14.5	16.2	18.4	20.1	23.3	
- Net Interest Income	-0.3	-0.1	0.4	-0.4	-0.8	-0.8	-0.8	
- Maintenance Capex	2.9	5.0	4.4	7.5	8.1	9.4	11.0	
+ Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
= Free Cash Flow Potential	25.6	20.9	24.9	29.8	35.3	42.2	49.9	
FCF Potential Yield (on market EV)	4.5 %	4.3 %	4.6 %	2.5 %	3.3 %	4.0 %	4.8 %	
WACC	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	
= Enterprise Value (EV)	564.9	482.6	539.5	1,183.5	1,075.7	1,063.3	1,050.0	
= Fair Enterprise Value	346.7	283.8	337.8	404.4	478.6	572.2	676.6	
- Net Debt (Cash)	-0.4	-0.4	-0.4	-0.4	11.8	-0.6	-13.9	
- Pension Liabilities	1.6	1.6	1.6	1.6	1.9	1.9	1.9	
- Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
- Market value of minorities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
+ Market value of investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
= Fair Market Capitalisation	345.5	282.6	336.6	403.2	464.9	570.8	688.6	
Number of shares, average	9.6	9.9	10.0	10.0	10.0	10.0	10.0	
= Fair value per share (EUR)	35.83	28.42	33.64	40.43	46.62	57.25	69.06	
premium (-) / discount (+) in %					-56.1 %	-46.1 %	-35.0 %	
Sensitivity Fair value per Share (EUR)								
	10.37 %	24.67	20.16	24.03	28.79	32.83	40.77	49.57
	9.37 %	27.31	22.33	26.61	31.87	36.49	45.13	54.74
	8.37 %	30.59	25.01	29.80	35.69	41.01	50.54	61.13
WACC	7.37 %	35.83	28.42	33.64	40.43	46.62	57.25	69.06
	6.37 %	40.23	32.90	39.19	46.93	54.32	66.45	79.94
	5.37 %	47.74	39.05	46.51	55.69	64.69	78.84	94.60
	4.37 %	58.69	48.01	57.17	68.46	79.80	96.91	115.96

- Assumptions on the beta and the wacc are consistent with indicators used in our DCF model
- The capex requirements for machinery and plant are low.

Company & Products

Basler was founded in 1988 and is headquartered in Ahrensburg near Hamburg. The company's development and production facilities are also located here. In Singapore, a final assembly facility was set up in order to better serve the Asian market. The products are geared towards producers of inspection systems as well as OEMs and, in part, end-users in the areas of industry, medical technology, traffic systems or retail systems.

Company history

- Basler was founded in 1988 by Norbert Basler and Stefan Berendsen. Norbert Basler is currently Chairman of the Supervisory Board.
- From 1991 onwards, inspection solutions for optical media were offered. In the following years, further industries were addressed.
- International expansion began in 1994 with the founding of Basler Inc. in the US. From 1994 onwards, Basler also offered inspection systems for the rubber and elastomer industry.
- In 1997, Basler entered the components business for industrial cameras. This area is Basler's core business today.
- In 1999 the company was listed on the stock exchange. The funds primarily served to expand the production capacities.
- In mid-2009 its activities were realigned. As of this point, Basler focused on the business with digital cameras.
- In 2010, Basler sold the fields inspection systems business for the rubber industry and inspection systems for the solar industry. At the same time, the capacities for camera production were doubled. At this point, 80% of the revenue was generated with cameras.
- In 2013, Basler celebrated its 25th anniversary. The company is now a pure supplier of digital cameras for industrial and medical applications, traffic technology and non-factory applications. Since 2013, the company has had only one "reporting segment".
- In 2016, Basler responded to the demand on the market and introduced its first 3D camera, the Time-of-Flight (ToF) camera. In the same year, Basler became the world market leader in digital industrial cameras.
- The year 2017 marked another milestone in the history of the company. With the acquisition of mycable GmbH, Basler expanded its product universe and now offers embedded vision solutions. The embedded vision solutions consist of camera modules, software and accessories to offer the customers a holistic solution.
- In 2018, Basler celebrated its 30th anniversary. The acquisition of Silicon Software GmbH enabled Basler to expand its product portfolio with computer vision applications. In the same year, the company founded a joint venture with the Chinese distributor Beijing Sanbao Xingye (MVLZ) to strengthen its presence in the Chinese market.
- In 2021, Basler acquired the Korean distributors DATVISION and IOVIS, expanding the direct sales channel further in one of the leading markets for semiconductors and electronics.

Product portfolio

















With approximately 300 models, Basler is among the suppliers offering the widest range of digital cameras. Its data-transfer interfaces include Gigabit Ethernet (GigE), FireWire, Camera Link, Fast Ethernet, USB 3.0, BCON for MIPI and BCON for LVDS. Depending on image resolution, bandwidth, interface, available cable length or dimension, the cameras address very different applications. Basler's product offering includes area scan cameras, line scan cameras, network cameras, 3D cameras, cameras for medical & life sciences, embedded vision cameras & kits and accessories.




Basler's proprietary software solution Pylon acts as the connective tissue between the components. The Pylon Software Development Kit (SDK) enables Basler's customers to integrate the vision hardware into their specific application. Although the software does not generate additional revenue, the high installed base has familiarized the large customer base with the Pylon SDK and made it an integral part of customers' development and design processes.

Basler's products can be divided into the following categories:

- **Area scan cameras** include a two-dimensional area sensor and are suitable for the imaging of flat objects. The area scan camera market is far bigger than the line scan camera market.
- **Line scan cameras** have a one-dimensional line-shaped sensor. The individual lines captured are then, like a scanner, combined to provide a two-dimensional image. In this way, these cameras have advantages for especially wide or fast-moving objects (e.g. sheet products like paper, film or tin), for which a high resolution is important. Overall, the number of applications is however lower than those of area scan cameras.
- **Network cameras** are mainly used in outdoor and indoor surveillance. As well as the camera components, they normally also include a high-performance embedded processor which takes over the digitalisation, compression and transmission of the visual data.
- **3D cameras** are particularly useful for applications in logistics, factory automation, robotics and autonomous vehicles and are designed to provide a cost-efficient option to fulfil the requirements of the mass market.
- **Cameras for medical & life sciences** are used for the production of medical products, components and equipment for medical technology. Moreover, the cameras can be used for lab automation, ophthalmology and microscopy.
- **Embedded vision** combines the cameras offered by Basler with evaluation and development kits and accessories for cost-efficient vision integration into embedded vision systems.
- **Accessories and software** include supplementary products such as lenses, cables and software to integrate and set up the cameras and embedded vision products. With the introduction of the boost platform, Basler combined a camera line with a matching line of frame grabber and a variety of cables, lenses and lighting solutions, which can be configured easily in accordance with customer requirements.

Product examples

	Product line	Model	Picture	Resolution	Frame rate	Interfaces	Comment	
Area Scan Cameras	Ace	Classic		0.3 (VGA) – 14 MP	7 – 340 fps	USB 3.0, GigE, Camera Link		
	Ace	U		0.3 (VGA) – 20 MP	5 – 751 fps	GigE, USB 3.0		
	Ace	L		9 – 12 MP	8 – 42 fps	GigE, USB 3.0		
	Ace 2	Basic		2.3 MP	51 – 160 fps	GigE, USB 3.0	Second generation of Ace models, series production from Q4/2019	
	Ace 2	Pro		2.3 MP	51 – 170 fps	GigE, USB 3.0		
		Aviator			1 – 4 MP	31 – 120 fps	GigE, Camera Link	
		Beat			12 MP	62 fps	Camera Link	
		Boost			9 – 12 MP	68 – 93 fps	CoaXPress	Baslers first camera series with CoaXPress 2.0 interface, which provide high bandwidth of up to 12.5 Gbps and cable lengths up to 40 m Series Production: Q4/2019
		Dart			1.2 – 5 MP	14 – 60 fps	BCON for MIPI, BCON for LVDS, USB 3.0	Starting at €49
		Pilot			VGA – 2 MP	35 – 210 fps	GigE	
	Scout			VGA – 2 MP	14 – 70 fps	GigE		
	Pulse			1.2 – 5 MP	14 – 60 fps	USB 3.0		
Line Scan Cameras		Racer		2K	8 kHz – 80 kHz	GigE, Camera Link		
Medical & Life Sciences		MED ace		2.3 – 20 MP	17 – 164 fps	GigE, USB 3.0	Usable for lab automation, ophthalmology or microscopy.	
		PowerPack for Microscopy	Pulse	1.2 – 5 MP	14 – 54 fps	USB 3.0	Includes cameras, accessories and cables to set up a microscopy system – value for money system	
		PowerPack for Microscopy	Ace	1.3 – 12.2 MP	35 – 200 fps	USB 3.0	Includes cameras, accessories and cables to set up a microscopy system – high performance	
3D Camera		Time-of-Flight (ToF)		VGA	20 fps	GigE		
IP		IP Fixed Box Model		XGA – 5 MP	9 – 30 fps	Ethernet		

	Model	Picture	Resolution	Frame rate	Camera Interface	Board Interface	Comment
Embedded Vision Kits	daA2500-60mc-SD820-DB8		5 MP	60 fps	BCON for MIPI	GigE, Wi-Fi, Bluetooth, CSI-2, USB 2.0, USB 3.0, HDMI, PCIe, SPI, I2C	Snapdragon 820 processor, 3GB LPDDR4 RAM, 5V DC (via BCON for MIPI interface), 18W, 100V – 240V for the power supply
	daA2500-14uc-EVA		5 MP	14 fps	USB 3.0		Power via USB 3.0, 1.3W
	daA2500-14lc-MZ7010		5 MP	14 fps	BCON for LVDS	GigE, USB Host 2.0, USB-UART, Xilinx Zynq®-7010 processor, PC4 JTAG configuration port	15W, 100V – 240V for the power supply

Source: Basler

Wide customer base mitigates revenue fluctuation

Basler’s cameras are used in very diverse applications and in different target markets. This moderates the fluctuations of individual markets. At the same time, the revenue base is distributed over several hundred active customers which, in turn, serve various target markets. Dependency on a single customer or industry is therefore very low.

Examples of applications

Factory Automation		Medical & Life Science Applications		Retail		Traffic (IST)		Others	
Revenue share	60%	Revenue share	10-15%	Revenue share	<5%	Revenue share	10-15%	Revenue share	5-10%
Grow th	+	Grow th	++	Grow th	>15%	Grow th	++		
Automotive		Dentistry		People Counting, Tracking & Profiling		In-Vehicle		Sports	
Robotics		Biomedical Microscopy		Check-Out-Systems		Enforcement		Security & Surveillance	
Electronics and Semiconductors		Ophthalmology		Recognition		Tolling			
Solar		Laboratory Equipment & Automation		ATMs / VTMs		Number plate recognition			

Source: Basler

Strong international footprint

Basler has a strong international footprint, with subsidiaries in the US, Singapore, Taiwan, China, Japan, and Korea. In addition, offices in Poland, the UK, Finland, France, Malaysia and the Netherlands provide sales services to local customers. The company’s largest production site is at the headquarters in Ahrensburg, Germany, from where the company supplies the European and US market. The Asian market is supplied by the secondary production facility in Singapore. A development team in Taiwan supports Asian clients with customer-specific designs.

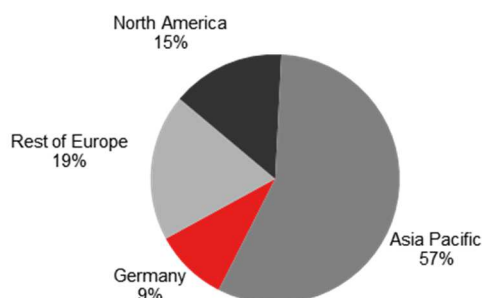
International presence



Source: Basler

The strong global presence is also reflected in the company's revenue split. The revenue share generated in Asia has increased notably during the last five years from 34.5% in 2016 to 56.7% in 2021. Europe is the second-largest region and contributes 28.6% to the group's top line. The remaining 14.7% are generated in North America.

International presence



Source: Basler

Management

Management Board



Dr. Dietmar Ley (CEO) is responsible for the business areas of Research & Development, Personnel and Organisational Development. Dr. Ley completed a doctorate in the area of vision technology and has been with Basler since 1993. He has been CEO since the year 2000. In addition, he is a member of the board of the Machine Vision division of the German industry federation, VDMA e.V. Dr. Ley holds ca. 3.6% of the shares in the company.



Hardy Mehl (CFO/COO) was appointed to Basler's management board on January 1, 2014 and is responsible for the newly-created division, Finance & Operations. He oversees the areas of finance, controlling, SAP & IT, legal & patents, investor relations as well as production and supply chain management. Hardy Mehl holds university qualifications in business and economics. Since joining Basler in 1999, he held various leadership positions within the company, such as in product management, business development and general management.



Alexander Temme (CCO) is responsible for product distribution (sales, communications, service), solutions business management and worldwide Basler subsidiaries. He was appointed to the board on January 1, 2021. Mr. Temme studied chemical engineering at the Ingolstadt Fachhochschule. Before joining Basler AG in 2021, Alexander Temme held various positions in sales for number of companies.



Arndt Bake (CMO) was appointed to Basler's management board on January 1, 2011 and was last responsible for the areas of product management, production, and supply-chain management. Since January 1, 2014 he has been Chief Marketing Officer and responsible for strategic marketing and product management.

Arndt Bake holds a degree in electronics and engineering economics. Before joining the company in 2001, he held various product marketing positions in the electronics industry (NEC and Still-Linde). From 2004 to 2009, he headed up the components division and later Basler AG's entire operating business.

Supervisory Board

Norbert Basler (Chairman) is the founder of today's Basler AG. Its predecessor company, Basler und Berendsen GmbH, was founded by Mr Basler during his engineering studies, together with a fellow student. In Spring 2000 Norbert Basler, who was born in 1963, switched from the management board to the supervisory board and has been the chairman since 2003. He is also the company's main shareholder. The Basler family holds the majority of the shares.

Prof. Dr. Eckart Kottkamp (vice chairman) studied control engineering and communications in the TU in Aachen. Among other roles, he was CEO of Hako-Werke GmbH, Claas Landmaschinen AG and Jungheinrich AG. The Hamburg University of Applied Sciences conferred him with an honorary professorship in 1996.

Horst W. Garbrecht is the CEO of the electric power tools manufacturer Metabo. After his engineering training and studies, he held several positions in the tools industry, e.g. Festool, Atlas Copco or AEG-Milwaukee. In 2015, Horst W. Garbrecht was elected to the supervisory board of Basler AG.

Prof. Dr. Mirja Steinkamp (WP, StB) previously held the position of Auditing Manager at Ernst & Young GmbH and authorised signatory at Neumann Group GmbH, where she spent 13.5 years. In April 2017, she was appointed as a professor for auditing and Corporate accounting at NORDAKADEMIE, and was appointed to the supervisory board of Basler AG.

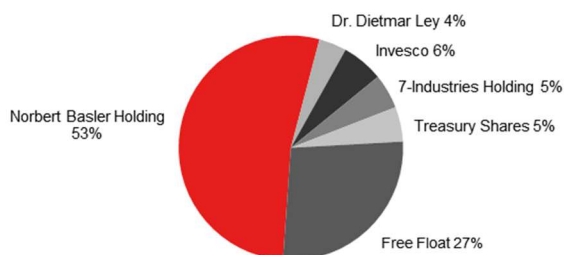
Dorothea Brandes studied japanology, sinology and folklore studies at Tübingen University, Saitama University and Hamburg University and graduated in 1996 with a Master's degree. She currently works as organization developer focusing on communications at Basler and previously worked as the Head of the Works Council for 12 years.

Dr. Marco Grimm studied electrical engineering at the Hamburg University of Technology and received his doctorate in 2007. He started working at Basler AG in 2005 as a software developer and since 2006 he has been the Basler AG representative to the international EMVA 1288 standardization committee. He currently works as team leader of the software development team for quality assurance at Basler.

Shareholder structure

Basler's ownership is divided into 10,500,000 shares listed on the Frankfurt Stock Exchange and in the German SDax and CDax. The largest shareholder is the company's founder and Supervisory Board Chairman, Norbert Basler, who holds 53% of the shares. CEO Dr. Dietmar Ley owns a 4%-stake in the company. The largest institutional shareholders are Invesco (6%) and 7-Industries Holding (5%). The company currently holds 5% of its own shares. The remaining 27% are attributable to the free float.

Shareholder structure



Source: Basler

DCF model

Figures in EUR m	Detailed forecast period			Transitional period										Term. Value
	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e	2034e	
Sales	270.5	313.4	366.2	425.4	492.8	569.4	656.1	753.9	864.1	987.9	1,126.6	1,281.7	1,458.0	
Sales change	26.0 %	15.9 %	16.8 %	16.2 %	15.8 %	15.5 %	15.2 %	14.9 %	14.6 %	14.3 %	14.0 %	13.8 %	13.8 %	2.5 %
EBIT	34.4	43.4	51.9	59.6	68.5	78.6	89.9	102.5	116.7	132.4	149.8	169.2	191.0	
EBIT-margin	12.7 %	13.9 %	14.2 %	14.0 %	13.9 %	13.8 %	13.7 %	13.6 %	13.5 %	13.4 %	13.3 %	13.2 %	13.1 %	
Tax rate (EBT)	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %	
NOPAT	24.8	31.3	37.3	42.9	49.3	56.6	64.7	73.8	84.0	95.3	107.9	121.8	137.5	
Depreciation	18.4	20.1	23.3	27.7	32.0	37.0	42.6	49.0	56.2	64.2	73.2	83.3	94.8	
in % of Sales	6.8 %	6.4 %	6.4 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	6.5 %	
Changes in provisions	0.3	0.0	0.0	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	
Change in Liquidity from														
- Working Capital	-2.7	5.5	8.5	9.4	11.5	13.0	14.7	16.6	18.7	21.0	23.6	26.4	30.0	
- Capex	23.1	24.8	28.3	33.2	38.9	44.7	50.0	55.7	61.9	68.7	75.9	83.8	94.8	
Capex in % of Sales	8.5 %	7.9 %	7.7 %	7.8 %	7.9 %	7.9 %	7.6 %	7.4 %	7.2 %	6.9 %	6.7 %	6.5 %	6.5 %	
- Other	23.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Free Cash Flow (WACC Model)	0.1	20.0	22.8	27.2	31.3	36.3	43.1	51.0	60.1	70.5	82.3	95.8	108.5	134
PV of FCF	0.1	18.1	19.2	21.4	22.9	24.7	27.3	30.1	33.0	36.1	39.2	42.5	44.8	1,136
share of PVs	2.50 %			21.53 %										75.97 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	8.00 %	Financial Strength	0.90
Cost of debt (after tax)	2.1 %	Liquidity (share)	1.20
Market return	7.50 %	Cyclicality	1.30
Risk free rate	2.00 %	Transparency	1.00
		Others	0.90
WACC	7.37 %	Beta	1.06

Valuation (m)

Present values 2034e	359		
Terminal Value	1,136		
Financial liabilities	54		
Pension liabilities	2		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	0		
Liquidity	52	No. of shares (m)	9.9
Equity Value	1,491	Value per share (EUR)	150.02

Sensitivity Value per Share (EUR)

Beta	WACC	Terminal Growth							Beta	WACC	Delta EBIT-margin						
		1.75 %	2.00 %	2.25 %	2.50 %	2.75 %	3.00 %	3.25 %			-1.5 pp	-1.0 pp	-0.5 pp	+0.0 pp	+0.5 pp	+1.0 pp	+1.5 pp
1.26	8.4 %	108.13	111.07	114.25	117.70	121.46	125.57	130.07	1.26	8.4 %	101.94	107.19	112.45	117.70	122.95	128.20	133.46
1.16	7.9 %	120.28	123.93	127.91	132.27	137.04	142.31	148.14	1.16	7.9 %	114.71	120.56	126.41	132.27	138.12	143.97	149.82
1.11	7.6 %	127.19	131.29	135.77	140.68	146.10	152.11	158.80	1.11	7.6 %	122.09	128.29	134.49	140.68	146.88	153.08	159.27
1.06	7.4 %	134.77	139.38	144.44	150.02	156.20	163.09	170.81	1.06	7.4 %	130.28	136.86	143.44	150.02	156.59	163.17	169.75
1.01	7.1 %	143.10	148.30	154.05	160.41	167.50	175.45	184.43	1.01	7.1 %	139.40	146.40	153.41	160.41	167.41	174.42	181.42
0.96	6.9 %	152.29	158.20	164.75	172.05	180.24	189.48	200.00	0.96	6.9 %	149.61	157.09	164.57	172.05	179.53	187.01	194.49
0.86	6.4 %	173.84	181.58	190.25	200.05	211.20	224.01	238.86	0.86	6.4 %	174.19	182.81	191.43	200.05	208.67	217.29	225.91

- Financial liabilities are also related to the lease of the company building.
- The beta takes into consideration Basler's strong track record, the high equity ratio and the cyclicality
- The structural growth of the vision technology market forms the basis of Basler's revenue increases.
- Payment for the acquisitions of DATVISION and IOVIS are accounted for in the "others" line

Free Cash Flow Value Potential

Warburg Research's valuation tool "FCF Value Potential" reflects the ability of the company to generate sustainable free cash flows. It is based on the "FCF potential" - a FCF "ex growth" figure - which assumes unchanged working capital and pure maintenance capex. A value indication is derived via the perpetuity of a given year's "FCF potential" with consideration of the weighted costs of capital. The fluctuating value indications over time add a timing element to the DCF model (our preferred valuation tool).

in EUR m	2018	2019	2020	2021	2022e	2023e	2024e	
Net Income before minorities	17.0	12.9	15.1	20.8	24.2	30.7	36.8	
+ Depreciation + Amortisation	11.1	12.9	14.5	16.2	18.4	20.1	23.3	
- Net Interest Income	-0.3	-0.1	0.4	-0.4	-0.8	-0.8	-0.8	
- Maintenance Capex	2.9	5.0	4.4	7.5	8.1	9.4	11.0	
+ Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
= Free Cash Flow Potential	25.6	20.9	24.9	29.8	35.3	42.2	49.9	
FCF Potential Yield (on market EV)	4.5 %	4.3 %	4.6 %	2.5 %	3.3 %	4.0 %	4.8 %	
WACC	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	7.37 %	
= Enterprise Value (EV)	564.9	482.6	539.5	1,183.5	1,075.7	1,063.3	1,050.0	
= Fair Enterprise Value	346.7	283.8	337.8	404.4	478.6	572.2	676.6	
- Net Debt (Cash)	-0.4	-0.4	-0.4	-0.4	11.8	-0.6	-13.9	
- Pension Liabilities	1.6	1.6	1.6	1.6	1.9	1.9	1.9	
- Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
- Market value of minorities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
+ Market value of investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
= Fair Market Capitalisation	345.5	282.6	336.6	403.2	464.9	570.8	688.6	
Number of shares, average	9.6	9.9	10.0	10.0	10.0	10.0	10.0	
= Fair value per share (EUR)	35.83	28.42	33.64	40.43	46.62	57.25	69.06	
premium (-) / discount (+) in %					-56.1 %	-46.1 %	-35.0 %	
Sensitivity Fair value per Share (EUR)								
	10.37 %	24.67	20.16	24.03	28.79	32.83	40.77	49.57
	9.37 %	27.31	22.33	26.61	31.87	36.49	45.13	54.74
	8.37 %	30.59	25.01	29.80	35.69	41.01	50.54	61.13
WACC	7.37 %	35.83	28.42	33.64	40.43	46.62	57.25	69.06
	6.37 %	40.23	32.90	39.19	46.93	54.32	66.45	79.94
	5.37 %	47.74	39.05	46.51	55.69	64.69	78.84	94.60
	4.37 %	58.69	48.01	57.17	68.46	79.80	96.91	115.96

- Assumptions on the beta and the wacc are consistent with indicators used in our DCF model
- The capex requirements for machinery and plant are low.

Valuation	2018	2019	2020	2021	2022e	2023e	2024e
Price / Book	7.4 x	4.5 x	4.7 x	9.2 x	7.2 x	6.3 x	5.4 x
Book value per share ex intangibles	3.57	4.10	5.00	6.28	5.64	7.29	9.39
EV / Sales	3.8 x	3.0 x	3.2 x	5.5 x	4.0 x	3.4 x	2.9 x
EV / EBITDA	15.7 x	16.1 x	15.6 x	26.6 x	20.4 x	16.7 x	14.0 x
EV / EBIT	22.8 x	28.4 x	26.9 x	41.7 x	31.3 x	24.5 x	20.2 x
EV / EBIT adj.*	22.8 x	28.4 x	26.9 x	41.7 x	31.3 x	24.5 x	20.2 x
P / FCF	61.9 x	n.a.	39.1 x	123.1 x	60.7 x	49.9 x	44.0 x
P / E	32.7 x	36.4 x	35.8 x	57.0 x	43.7 x	34.5 x	28.8 x
P / E adj.*	32.7 x	36.4 x	37.0 x	57.0 x	43.7 x	34.5 x	28.8 x
Dividend Yield	0.9 %	0.6 %	1.1 %	0.5 %	0.7 %	0.9 %	1.0 %
FCF Potential Yield (on market EV)	4.5 %	4.3 %	4.6 %	2.5 %	3.3 %	4.0 %	4.8 %

*Adjustments made for: -

Consolidated profit and loss

In EUR m	2018	2019	2020	2021	2022e	2023e	2024e
Sales	150.0	162.0	170.5	214.7	270.5	313.4	366.2
Change Sales yoy	-0.1 %	8.0 %	5.2 %	26.0 %	26.0 %	15.9 %	16.8 %
COGS	70.1	79.5	81.7	102.2	132.0	152.0	178.3
Gross profit	79.9	82.4	88.7	112.5	138.5	161.4	187.9
<i>Gross margin</i>	<i>53.3 %</i>	<i>50.9 %</i>	<i>52.0 %</i>	<i>52.4 %</i>	<i>51.2 %</i>	<i>51.5 %</i>	<i>51.3 %</i>
Research and development	18.8	17.9	21.7	29.9	36.7	41.6	47.7
Sales and marketing	23.0	31.5	30.6	34.9	44.1	50.8	59.0
Administration expenses	12.7	15.8	17.4	20.4	23.2	25.4	29.2
Other operating expenses	1.4	1.0	0.2	0.3	1.0	1.2	1.2
Other operating income	0.8	0.8	1.1	1.3	0.9	1.0	1.1
Unfrequent items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBITDA	36.0	30.0	34.6	44.5	52.8	63.5	75.2
<i>Margin</i>	<i>24.0 %</i>	<i>18.5 %</i>	<i>20.3 %</i>	<i>20.7 %</i>	<i>19.5 %</i>	<i>20.3 %</i>	<i>20.5 %</i>
Depreciation of fixed assets	3.2	5.0	6.3	6.3	6.4	6.5	7.2
EBITA	32.8	25.0	28.3	38.2	46.4	57.0	68.0
Amortisation of intangible assets	7.9	8.0	8.2	9.8	12.0	13.6	16.1
Goodwill amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT	24.8	17.0	20.1	28.4	34.4	43.4	51.9
<i>Margin</i>	<i>16.6 %</i>	<i>10.5 %</i>	<i>11.8 %</i>	<i>13.2 %</i>	<i>12.7 %</i>	<i>13.9 %</i>	<i>14.2 %</i>
EBIT adj.	24.8	17.0	20.1	28.4	34.4	43.4	51.9
Interest income	0.2	1.0	1.1	0.2	0.2	0.2	0.2
Interest expenses	0.5	1.1	0.8	0.6	1.0	1.0	1.0
Other financial income (loss)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBT	24.5	16.9	20.4	28.0	33.6	42.6	51.1
<i>Margin</i>	<i>16.3 %</i>	<i>10.4 %</i>	<i>12.0 %</i>	<i>13.0 %</i>	<i>12.4 %</i>	<i>13.6 %</i>	<i>13.9 %</i>
Total taxes	7.5	4.0	5.3	7.2	9.4	11.9	14.3
Net income from continuing operations	17.0	12.9	15.1	20.8	24.2	30.7	36.8
Income from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income before minorities	17.0	12.9	15.1	20.8	24.2	30.7	36.8
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income	17.0	12.9	15.1	20.8	24.2	30.7	36.8
<i>Margin</i>	<i>11.3 %</i>	<i>7.9 %</i>	<i>8.9 %</i>	<i>9.7 %</i>	<i>8.9 %</i>	<i>9.8 %</i>	<i>10.0 %</i>
Number of shares, average	9.6	9.9	10.0	10.0	10.0	10.0	10.0
EPS	1.76	1.29	1.51	2.08	2.43	3.08	3.69
EPS adj.	1.76	1.29	1.46	2.08	2.43	3.08	3.69

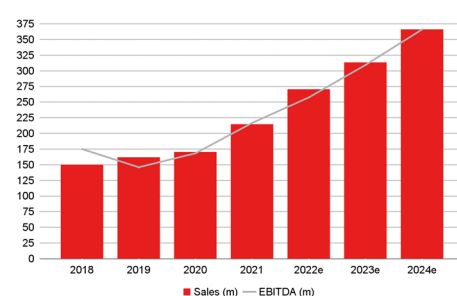
*Adjustments made for:

Guidance: Sales EUR 235-265m, EBT margin 9-12%

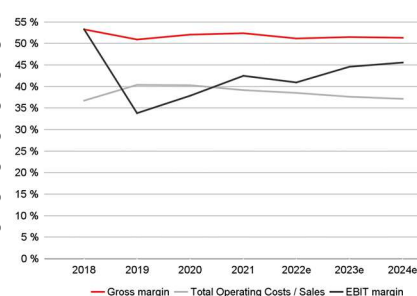
Financial Ratios

	2018	2019	2020	2021	2022e	2023e	2024e
Total Operating Costs / Sales	36.7 %	40.4 %	40.3 %	39.2 %	38.5 %	37.6 %	37.1 %
Operating Leverage	140.8 x	-3.9 x	3.4 x	1.6 x	0.8 x	1.6 x	1.2 x
EBITDA / Interest expenses	78.2 x	28.3 x	45.0 x	75.4 x	52.8 x	63.5 x	75.2 x
Tax rate (EBT)	30.6 %	23.9 %	26.0 %	25.8 %	28.0 %	28.0 %	28.0 %
Dividend Payout Ratio	30.0 %	20.1 %	38.4 %	29.8 %	30.0 %	30.0 %	30.0 %
Sales per Employee	249,589	200,944	210,964	248,528	281,802	326,483	381,458

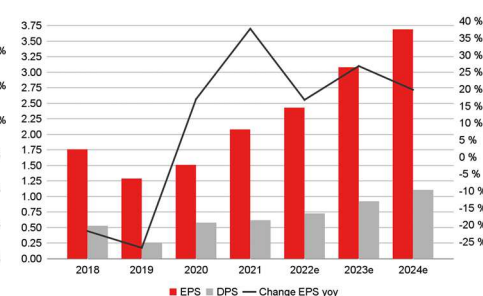
Sales, EBITDA
in EUR m



Operating Performance
in %



Performance per Share



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research

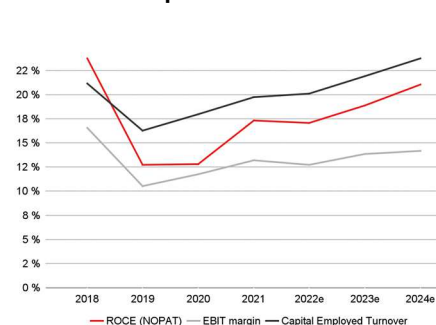
Consolidated balance sheet

In EUR m	2018	2019	2020	2021	2022e	2023e	2024e
Assets							
Goodwill and other intangible assets	40.8	62.0	64.8	66.0	90.5	96.4	102.0
thereof other intangible assets	6.5	3.0	3.7	6.5	8.6	10.8	13.2
thereof Goodwill	12.7	27.5	27.5	27.5	45.5	45.5	45.5
Property, plant and equipment	22.5	30.6	29.3	28.7	31.9	30.7	30.1
Financial assets	1.7	4.6	2.2	0.0	0.0	0.0	0.0
Other long-term assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fixed assets	65.1	97.2	96.3	94.7	122.4	127.2	132.2
Inventories	21.0	20.9	20.0	37.1	35.6	40.7	46.9
Accounts receivable	18.2	19.4	19.5	33.3	31.1	34.3	40.1
Liquid assets	31.8	35.2	47.9	54.8	33.3	45.7	59.0
Other short-term assets	2.8	8.5	6.5	7.3	7.3	7.3	7.3
Current assets	73.9	84.0	93.8	132.5	107.2	128.0	153.3
Total Assets	139.0	181.2	190.1	227.3	229.7	255.1	285.4
Liabilities and shareholders' equity							
Subscribed capital	3.2	10.0	10.0	10.0	10.0	10.0	10.0
Capital reserve	5.3	22.4	22.6	26.8	26.8	26.8	26.8
Retained earnings	66.5	74.8	87.1	94.2	118.4	149.1	185.9
Other equity components	0.5	-4.2	-4.8	-2.4	-8.3	-16.5	-26.8
Shareholders' equity	75.5	103.0	114.9	128.7	147.0	169.4	195.9
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total equity	75.5	103.0	114.9	128.7	147.0	169.4	195.9
Provisions	8.3	8.2	9.4	16.0	10.4	10.6	10.9
thereof provisions for pensions and similar obligations	1.2	0.9	1.1	1.6	1.9	1.9	1.9
Financial liabilities (total)	39.8	50.0	45.1	54.4	45.1	45.1	45.1
Short-term financial liabilities	1.8	5.3	4.1	4.1	4.1	4.1	4.1
Accounts payable	7.4	10.6	11.1	18.8	17.8	20.6	24.1
Other liabilities	7.9	9.4	9.7	9.4	9.4	9.4	9.4
Liabilities	63.4	78.2	75.2	98.6	82.7	85.8	89.5
Total liabilities and shareholders' equity	139.0	181.2	190.1	227.3	229.7	255.1	285.4

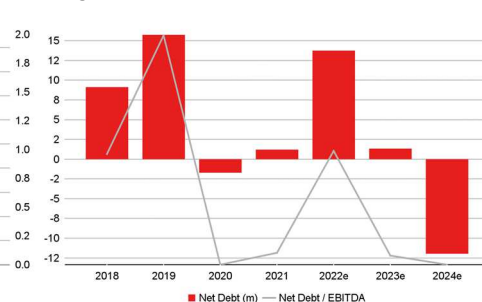
Financial Ratios

	2018	2019	2020	2021	2022e	2023e	2024e
Efficiency of Capital Employment							
Operating Assets Turnover	2.8 x	2.7 x	3.0 x	2.7 x	3.3 x	3.7 x	3.9 x
Capital Employed Turnover	1.8 x	1.4 x	1.5 x	1.7 x	1.7 x	1.8 x	2.0 x
ROA	26.1 %	13.2 %	15.7 %	21.9 %	19.8 %	24.1 %	27.8 %
Return on Capital							
ROCE (NOPAT)	23.8 %	12.7 %	12.8 %	17.3 %	17.1 %	18.9 %	21.1 %
ROE	24.1 %	14.4 %	13.9 %	17.0 %	17.6 %	19.4 %	20.1 %
Adj. ROE	24.1 %	14.4 %	13.4 %	17.0 %	17.6 %	19.4 %	20.1 %
Balance sheet quality							
Net Debt	9.1	15.7	-1.7	1.2	13.7	1.3	-12.0
Net Financial Debt	8.0	14.9	-2.8	-0.4	11.8	-0.6	-13.9
Net Gearing	12.1 %	15.3 %	-1.5 %	0.9 %	9.4 %	0.8 %	-6.1 %
Net Fin. Debt / EBITDA	22.2 %	49.6 %	n.a.	n.a.	22.4 %	n.a.	n.a.
Book Value / Share	7.8	10.3	11.5	12.9	14.7	16.9	19.6
Book value per share ex intangibles	3.6	4.1	5.0	6.3	5.6	7.3	9.4

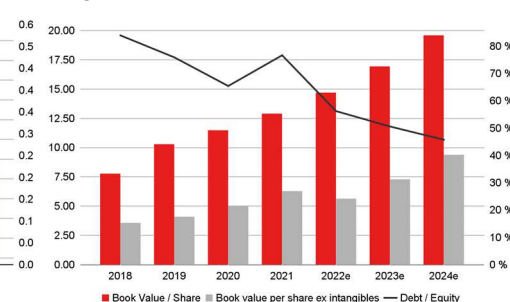
ROCE Development



Net debt in EUR m



Book Value per Share in EUR



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research

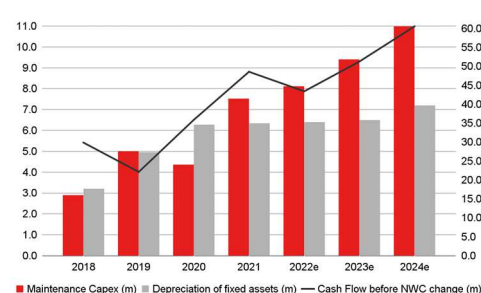
Consolidated cash flow statement

In EUR m	2018	2019	2020	2021	2022e	2023e	2024e
Net income	17.0	12.9	15.1	20.8	24.2	30.7	36.8
Depreciation of fixed assets	3.2	5.0	6.3	6.3	6.4	6.5	7.2
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	7.9	8.0	8.2	9.8	12.0	13.6	16.1
Increase/decrease in long-term provisions	0.0	-0.1	1.1	6.6	0.3	0.0	0.0
Other non-cash income and expenses	1.7	-3.7	5.1	5.1	0.5	0.5	0.5
Cash Flow before NWC change	29.9	22.1	35.9	48.6	43.4	51.3	60.6
Increase / decrease in inventory	2.2	0.1	0.9	-17.1	1.5	-5.1	-6.2
Increase / decrease in accounts receivable	-6.4	-1.1	-0.1	-13.8	2.2	-3.2	-5.8
Increase / decrease in accounts payable	-4.5	3.2	0.5	7.8	-1.0	2.8	3.5
Increase / decrease in other working capital positions	5.8	0.5	0.1	-0.1	-5.6	0.2	0.3
Increase / decrease in working capital (total)	-2.9	2.7	1.5	-23.2	-2.9	-5.3	-8.2
Net cash provided by operating activities [1]	27.0	24.7	37.3	25.3	40.5	46.0	52.3
Investments in intangible assets	-13.6	-29.3	-20.6	-11.8	-18.5	-19.5	-21.7
Investments in property, plant and equipment	-4.5	-5.1	-2.7	-3.9	-4.6	-5.3	-6.6
Payments for acquisitions	-7.7	0.0	0.0	0.0	-23.0	-1.0	-1.0
Financial investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Income from asset disposals	0.1	0.1	0.2	0.4	0.1	0.1	0.1
Net cash provided by investing activities [2]	-25.7	-34.2	-23.3	-15.3	-46.0	-25.7	-29.2
Change in financial liabilities	4.8	-1.8	2.3	10.4	-9.3	0.0	0.0
Dividends paid	-6.5	-5.1	-2.6	-5.8	-6.2	-7.3	-9.2
Purchase of own shares	-3.3	20.8	-0.2	-3.9	0.0	0.0	0.0
Capital measures	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	-0.5	-1.0	-0.8	0.1	-0.6	-0.6	-0.6
Net cash provided by financing activities [3]	-5.5	13.0	-1.3	-3.1	-16.1	-7.9	-9.8
Change in liquid funds [1]+[2]+[3]	-4.2	3.5	12.7	7.0	-21.6	12.4	13.3
Effects of exchange-rate changes on cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash and cash equivalent at end of period	31.8	35.3	47.9	54.8	33.3	45.7	59.0

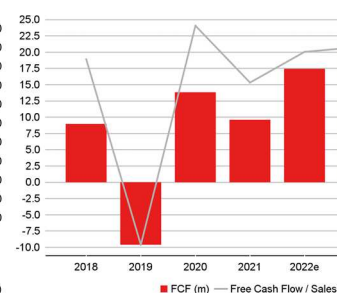
Financial Ratios

	2018	2019	2020	2021	2022e	2023e	2024e
Cash Flow							
FCF	9.0	-9.6	13.8	9.6	17.4	21.2	24.0
Free Cash Flow / Sales	6.0 %	-5.9 %	8.1 %	4.5 %	6.4 %	6.8 %	6.6 %
Free Cash Flow Potential	25.6	20.9	24.9	29.8	35.3	42.2	49.9
Free Cash Flow / Net Profit	52.7 %	-74.6 %	91.6 %	46.3 %	72.1 %	69.1 %	65.4 %
Interest Received / Avg. Cash	0.5 %	2.9 %	2.7 %	0.4 %	0.5 %	0.5 %	0.4 %
Interest Paid / Avg. Debt	1.3 %	2.4 %	1.6 %	1.2 %	2.0 %	2.2 %	2.2 %
Management of Funds							
Investment ratio	12.0 %	21.2 %	13.7 %	7.3 %	8.5 %	7.9 %	7.7 %
Maint. Capex / Sales	1.9 %	3.1 %	2.6 %	3.5 %	3.0 %	3.0 %	3.0 %
Capex / Dep	161.8 %	265.4 %	160.6 %	97.2 %	125.5 %	123.5 %	121.4 %
Avg. Working Capital / Sales	17.9 %	19.0 %	17.1 %	18.6 %	18.6 %	16.5 %	16.0 %
Trade Debtors / Trade Creditors	246.9 %	183.1 %	175.9 %	176.9 %	174.7 %	166.5 %	166.4 %
Inventory Turnover	3.3 x	3.8 x	4.1 x	2.8 x	3.7 x	3.7 x	3.8 x
Receivables collection period (days)	44	44	42	57	42	40	40
Payables payment period (days)	39	49	49	67	49	49	49
Cash conversion cycle (Days)	115	91	82	122	91	88	87

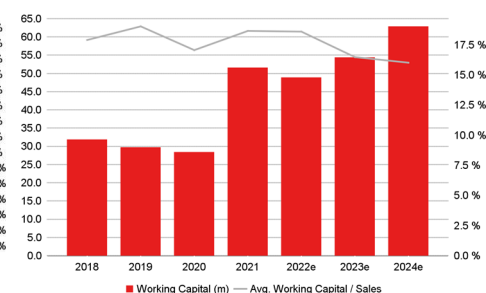
CAPEX and Cash Flow
in EUR m



Free Cash Flow Generation



Working Capital



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research

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Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
Basler	3, 5	http://www.mmwarburg.com/disclaimer/disclaimer_en/DE0005102008.htm

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Investment recommendation: expected direction of the share price development of the financial instrument up to the given price target in the opinion of the analyst who covers this financial instrument.

-B-	Buy:	The price of the analysed financial instrument is expected to rise over the next 12 months.
-H-	Hold:	The price of the analysed financial instrument is expected to remain mostly flat over the next 12 months.
-S-	Sell:	The price of the analysed financial instrument is expected to fall over the next 12 months.
“-“	Rating suspended:	The available information currently does not permit an evaluation of the company.

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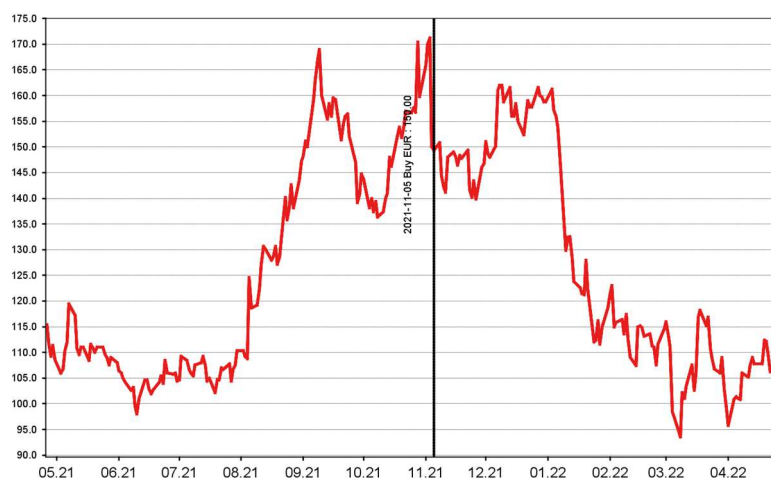
Rating	Number of stocks	% of Universe
Buy	172	81
Hold	35	16
Sell	4	2
Rating suspended	2	1
Total	213	100

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING ...

... taking into account only those companies which were provided with major investment services in the last twelve months.

Rating	Number of stocks	% of Universe
Buy	52	87
Hold	5	8
Sell	1	2
Rating suspended	2	3
Total	60	100

PRICE AND RATING HISTORY BASLER AS OF 25.04.2022



Markings in the chart show rating changes by Warburg Research GmbH in the last 12 months. Every marking details the date and closing price on the day of the rating change.

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