Vectron Systems AG

(Scale All Share, Technology)

WARBURG RESEARCH

Buy	
EUR 31.50	(EUR 30.00)
Price	EUR 19.60
Upside	**60.7 %**

Value Indicators:	EUR
DCF Core:	7.50
FCF-Value Potential DCard:	18.20
SotP:	31.50

Share data:	
Bloomberg:	V3S GR
Reuters:	V3SG
ISIN:	DE000A0KEXC7

Description:
Leading point-of-sale systems with a focus on the gastronomy and bakery sector

Market Snapshot:	EUR m
Market cap:	129.4
No. of shares (m):	6.6
EV:	126.0
Freefloat MC:	56.7
Ø Trad. Vol. (30d):	225.87 th

Shareholders:	
Freefloat	43.8 %
Jens Reckendorf	28.1 %
Thomas Stümmler	28.1 %
TBF Global Asset Management	*7.3 %*

Risk Profile (WRe):	2018e
Beta:	1.2
Price / Book:	9.9 x
Equity Ratio:	66 %

Loyalty scheme and Cloud Services provide major earnings potential

Vectron has **announced a partnership with DeutschlandCard** (loyalty scheme such as Payback in Germany or Nectar in the UK) to **establish the planned bonus scheme for the German hospitality sector**. The **concept replaces original plans for the GetHappy loyalty platform** (in cooperation with Coca-Cola). While there was some uncertainty as to whether GetHappy could attract a sufficient number of consumers to reach market acceptance, the **partnership with DeutschlandCard comes with significant advantages such as ~15m active users collecting and redeeming bonus points** (e.g. Germany's largest supermarket chain Edeka) **and an established technical platform**.

Vectron's vast reseller network will begin marketing the scheme in Q4 2018 with attractive incentives. Vectron's >25% market share in the German hospitality market (with ~200k outlets) should provide a good starting position to bring on board a high number of restaurants, bars and cafes. The feature is expected to go live in Q1 2019. Our **base-case scenario reflects ~20% penetration in the German gastronomy sector which should add ~EUR 20m at EBIT level in the medium term**. We are valuing this scenario at EUR 18.20 per share.

Beyond the loyalty platform, **Vectron could evolve as the leading data play in the German hospitality market**. Each **cash register is an entry point to a digitally underdeveloped industry and generates valuable, and so far unused, data.** Vectron also announced the start of a trial with German Metro AG, with the aim of developing e.g. new business models (WRe automated logistics), which should also be interesting for others (e.g. from the beverage, other supplier or payment industry). Hence, the establishment of the loyalty scheme via Vectron's cash registers might only be the initial step towards the holy grail of monetarization of existing data. This is where firms such as **Coca-Cola come into play again**. Near-time information directly at the point of sale would be preferable to "guestimating" market performance with retrospective external research and data from wholesalers. Such information would provide e.g. immediate feedback on marketing campaigns or support for its large field organisation. Vectron is believed to be in advanced talks with 1-2 additional potential third-party customers. A base-case yields a value contribution of ~EUR 6 per share, but significant upside exists. High penetration (which could reshape the POS industry long term) and/or a high number of customers could easily lead to further upside of EUR 10-30 per share in this high-margin business. As expected, **operating performance is hitting a trough in FY 2018**, owing to a transition period in German cash register regulation. As the next deadline nears (cash registers must be tamper-proof by January 2020), **the upgrade business is expected to gather pace again by mid-2019** and to yield significant EBIT growth in the next years. The **PT is slightly increased to EUR 31.50 based on a new SotP calculation**. The estimates below do not yet reflect the expected DC or cloud contributions. **Pro-forma EBIT (including all activities) is expected to surge from 2020 onwards**. **Buy**.

Changes in Estimates:

FY End: 31.12. in EUR m	2018e (old)	+ / -	2019e (old)	+ / -	2020e (old)	+ / -
Sales	28.0	-3.5 %	35.6	12.7 %	n.a.	n.m.
EBIT	-0.8	n.m.	2.6	96.1 %	n.a.	n.m.

Comment on Changes:

- Slight revision of 2018 assumptions
- 2019 estimates increased due to higher expectation for regulation-driven demand
- Further surge expected in 2020

Rel. Performance vs Scale All	
1 month:	4.9 %
6 months:	-22.1 %
Year to date:	-1.5 %
Trailing 12 months:	-20.0 %

Company events:	
26.10.18	Q3

FY End: 31.12. in EUR m	CAGR (17-20e)	2014	2015	2016	2017	2018e	2019e	2020e
Sales	14.7 %	22.4	25.2	36.2	34.5	27.0	40.1	52.1
Change Sales yoy		4.7 %	12.5 %	43.7 %	-4.8 %	-21.7 %	48.7 %	29.8 %
Gross profit margin		*56.1 %*	*58.5 %*	*57.6 %*	*59.3 %*	*55.1 %*	*55.0 %*	*55.0 %*
EBITDA	32.3 %	1.6	2.6	6.1	4.4	-0.7	5.7	10.1
Margin		*7.0 %*	*10.5 %*	*16.9 %*	*12.6 %*	*-2.7 %*	*14.1 %*	*19.4 %*
EBIT	35.0 %	1.0	2.1	5.6	3.9	-1.3	5.0	9.5
Margin		*4.6 %*	*8.2 %*	*15.4 %*	*11.2 %*	*-4.9 %*	*12.6 %*	*18.2 %*
Net income	26.1 %	0.5	1.2	4.5	3.2	-1.0	3.3	6.4
EPS	26.0 %	0.35	0.79	2.79	0.48	-0.15	0.50	0.96
EPS adj.	26.0 %	0.35	0.79	2.79	0.48	-0.15	0.50	0.96
DPS	81.7 %	0.30	0.30	1.00	0.05	0.05	0.10	0.30
Dividend Yield		13.1 %	6.6 %	9.0 %	0.2 %	0.3 %	0.5 %	1.5 %
FCFPS		1.03	0.72	0.23	-0.46	0.30	0.04	0.55
FCF / Market cap		45.1 %	16.0 %	2.1 %	-1.8 %	1.5 %	0.2 %	2.8 %
EV / Sales		0.1 x	0.2 x	0.3 x	4.7 x	4.7 x	3.1 x	2.4 x
EV / EBITDA		1.7 x	1.9 x	1.7 x	37.0 x	n.a.	22.3 x	12.2 x
EV / EBIT		2.5 x	2.5 x	1.9 x	41.9 x	n.a.	25.0 x	13.0 x
P / E		6.6 x	5.7 x	4.0 x	51.5 x	n.a.	39.2 x	20.4 x
P / E adj.		6.6 x	5.7 x	4.0 x	51.5 x	n.a.	39.2 x	20.4 x
FCF Potential Yield		36.2 %	33.2 %	45.3 %	2.2 %	-0.5 %	3.0 %	5.5 %
Net Debt		-0.9	-1.7	-7.2	-1.7	-3.4	-3.3	-6.3
ROCE (NOPAT)		10.9 %	23.2 %	66.6 %	32.1 %	n.a.	31.2 %	46.5 %
Guidance:	2018: Revenue decline							

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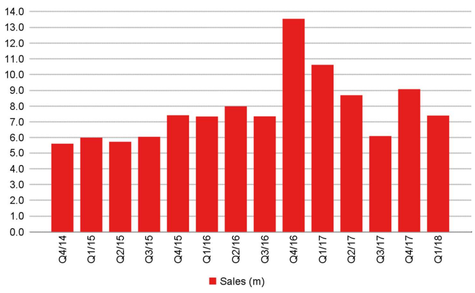
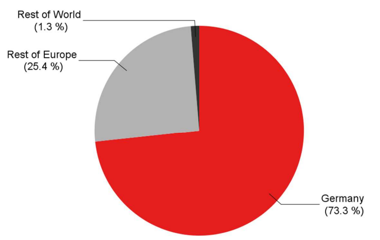
Sales development
in EUR m



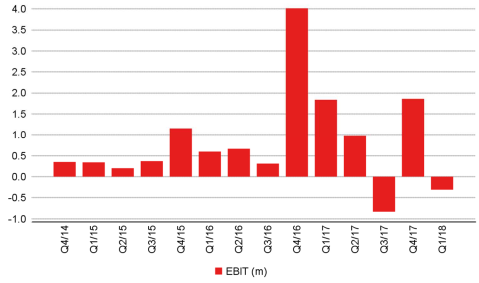
Source: Warburg Research

Sales by regions
2017; in %



Source: Warburg Research

EBIT development
in EUR m



Source: Warburg Research

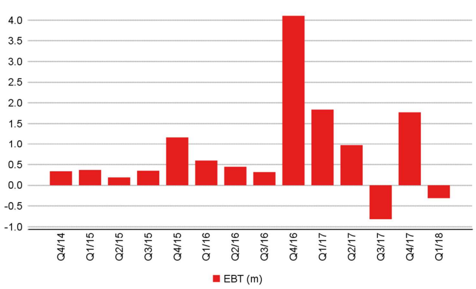
Company Background

- Vectron is a leading provider of POS systems. The products are positioned in the medium to premium segment. With its high degree of functionality, Vectron is one of the technology and innovation leaders.
- Vectron focuses on the market for proprietary POS systems (30% of the overall market). PC-based systems (bulk of the market) usually require higher maintenance and are primarily used by large chain stores.
- Vectron's market share is particularly high in the food service and bakery industries, where the company is market leader for proprietary systems in the German-speaking area with a market share of ca. 25%.
- Vectron has some 170 employees. About one-third are employed in development and product management as the company aims to maintain its position as technology leader.
- Since end of 2013, Vectron addresses non-premium market segments and new markets abroad with a second trademark (Duratec) and simpler systems

Competitive Quality

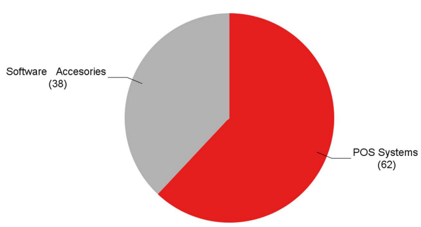
- Factors such as high reliability, ease of operation and low follow-up costs (maintenance/support) are required in the food service and bakery target sectors which are characterised by an atomistic customer structure.
- This explains the high penetration rate of the proprietary POS systems. Given that the large producers of POS systems mainly offer PC-based systems Vectron mainly has to face smaller competitors.
- Vectron differentiates itself from the mainly smaller competitors by rigorously pursuing the further development of the POS systems and thanks to the high additional use offered by wide functionality.
- By focusing on the premium segment, Vectron avoids the typical problems in the lower segment: solely differentiating on price. This is underpinned by gross margins of ca. 55% and ROCEs of well above 10%.
- Growth opportunities presently arise from the establishment of the cooperation with DeutschlandCard and potentially further partners.

EBT development
in EUR m



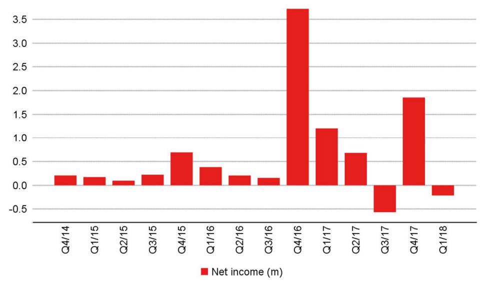
Source: Warburg Research

Sales by segments
2017; in %



Source: Warburg Research

Net income development
in EUR m



Source: Warburg Research

Summary of Investment Case

Investment triggers

- The approaching regulation deadline (January 2020) should trigger strong growth in the POS business in FYs 2019 and 2020
- Collaboration with DeutschlandCard to establish the loyalty scheme in the German hospitality sector has high earnings potential
- There is significant earnings potential in the marketing of transaction data, which has been unused to date, to data customers such as Metro or Coca-Cola

Valuation

- The core POS business is valued at EUR 7.50 per share
- A base case for the DeutschlandCard cooperation adds EUR 18.20 per share
- A base case for the cloud / data services provides a value contribution of EUR 5.70 per share, but comes with significant upside as a high case (EUR 12) and bull case (EUR 35) valuation indicates

Growth

- The sales decrease in FY 2018, as expected, is a result of a temporary regulation-driven weaker demand
- As the next regulation deadline nears (January 2020), strong growth in the POS business can be expected for 2019 and 2020
- Pro-forma sales (including the non-consolidated activities, DeutschlandCard collaboration and cloud services) should more than double to > EUR 70m in the 2018-20 period

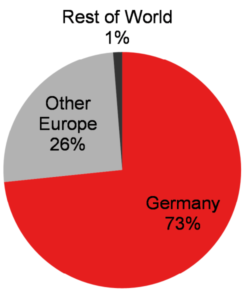
Competitive quality

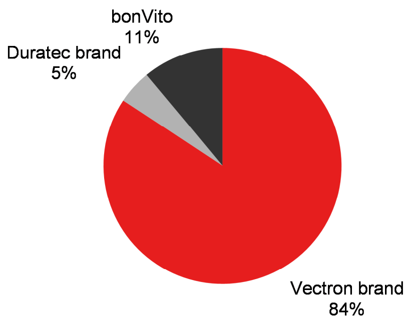
- Premium positioning and market leadership in the core markets should allow for defensible high EBIT margin
- Vectron's largest installed base (market share > 25%) and broad market coverage coupled with DeutschlandCard's ~15 million active users makes it the prime candidate to introduce the loyalty scheme to the Germany hospitality sector
- Successful establishment of cloud / data services could lead to market share gains and might reshape the POS market in the long run

Company Overview

Segments	Germany	Other Europe	Rest of World
Sales in EUR m	23,7	8,2	0,4
in % of total	*73,4%*	*25,4%*	*1,2%*
	POS / cash registers		**Loyalty scheme / data**
Products			
Applications	**Premium Vectron brand**	**2nd brand Durate**	**Digital Platform for hospitality customers**
Market positions (market share)	Approx. 25-30% market share in core markets (DACH / BeNeLux)	Newly established	Cooperation with DeutschlandCard just started to extend the loyalty scheme in the hospitality sector
Competitors	Schultes, Casio, Indatec		(Book-a-table, OpenTable, Lieferando, Groupon)
Customers	Restaurants, Bakeries, Cafes etc		Restaurants, Bakeries, Cafes etc.
Sales in EUR m	30,6	1,7	4,0
% of Total Sales	84,3%	4,7%	11,0%

Sales split by region and by application





* All numbers relate to 2017; bonVito not consolidated in group figures

Source: Warburg Research

Investment Case

- Vectron and DeutschlandCard enter partnership to establish a leading loyalty platform
- DeutschlandCard's existing base of 15 million active users and the established technical platform are clear advantages in comparison to the earlier concept with Coca-Cola
- The monetarization of so far unused data generated by Vectron's POS fleet yields major upside in the medium term. Metro and Coca-Cola could be the first data customers

The DeutschlandCard cooperation

Vectron announced DeutschlandCard (loyalty scheme such as Payback or Nectar and member of the Bertelsmann group) as a **partner for the establishment of a loyalty platform in the German hospitality market**. This replaces earlier plans for the GetHappy-platform, but is quite comparable as a bonus scheme.

This **move comes with clear advantages in comparison to the earlier concept with Coca-Cola**. DeutschlandCard has an **existing customer base of ~15m active users**, who earn bonus points at retailers such as Germany's largest supermarket chain Edeka but not yet in the fragmented hospitality sector (restaurants, bars, cafes etc.). Secondly, the concept is based on DeutschlandCard's established technical platform and Vectron does not have to supply a technical solution (which would have come with higher costs).

The following chart shows a selection of DeutschlandCard's local and online partners.

Selected partner DeutschlandCard

Source: DeutschlandCard; Warburg Research

The loyalty scheme is comparable with the initial GetHappy platform und should **yield monthly sales of ~EUR 100 per participating restaurant in 2-3 years** (see p. 6). Benefits for the gastronomy customer include

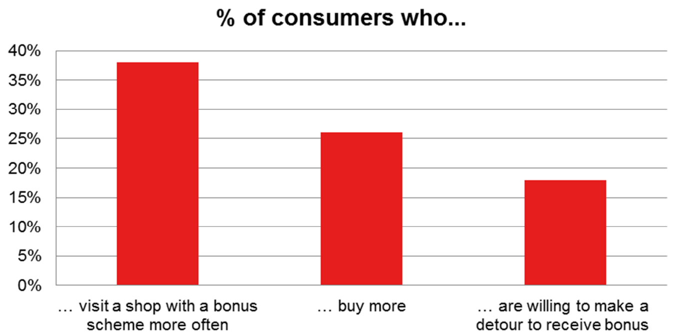
- Higher customer loyalty: Loyalty schemes have been proven to influence consumer behaviour. Participation in the scheme boosts customer loyalty and leads to a potential increase in revenues.
- Differentiation from the competition: The bonus system allows for differentiation in the local hospitality sector in the first instance and also facilitates customer acquisition. This is supported by the opportunity to redeem bonus points in the restaurant
- Digital visibility via the DeutschlandCard app

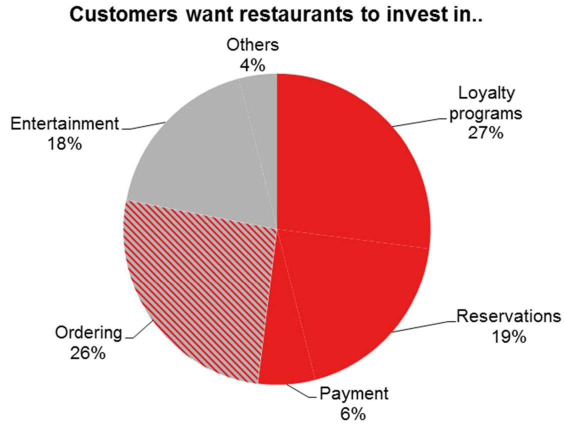
The relatively new regulatory framework for tamper-proof cash registers aims to reduce tax evasion in the hospitality sector and reduces the incentive to avoid recordings of transactions.

Loyalty schemes change customer behaviour

Market research has shown that bonus schemes have a noticeably positive effect on consumer behaviour and are increasingly requested by consumers:

Loyalty schemes attract customers and are a consumer's top priority





Source: EY, National Restaurant Association, Phocus Wright, Recruit, Warburg Research

The holy grail: monetarization of data

Vectron's cloud / data services

The **DC platform is an initial step to access a potentially even more important market**. Each **cash register generates a vast amount of real-time data at the point of sale**, which **remains unused today**. Instead, corporations such as Coca-Cola, breweries and others engage in costly external market research, to acquire data from wholesalers and employ field staff, to gain a rather incomplete and delayed view of the products that have been sold.

The anonymised data can be aggregated and Vectron could provide its data customers with near-time statistics on e.g. consumption, out- or underperformance at individual point of sales which can be addressed by the field staff etc.

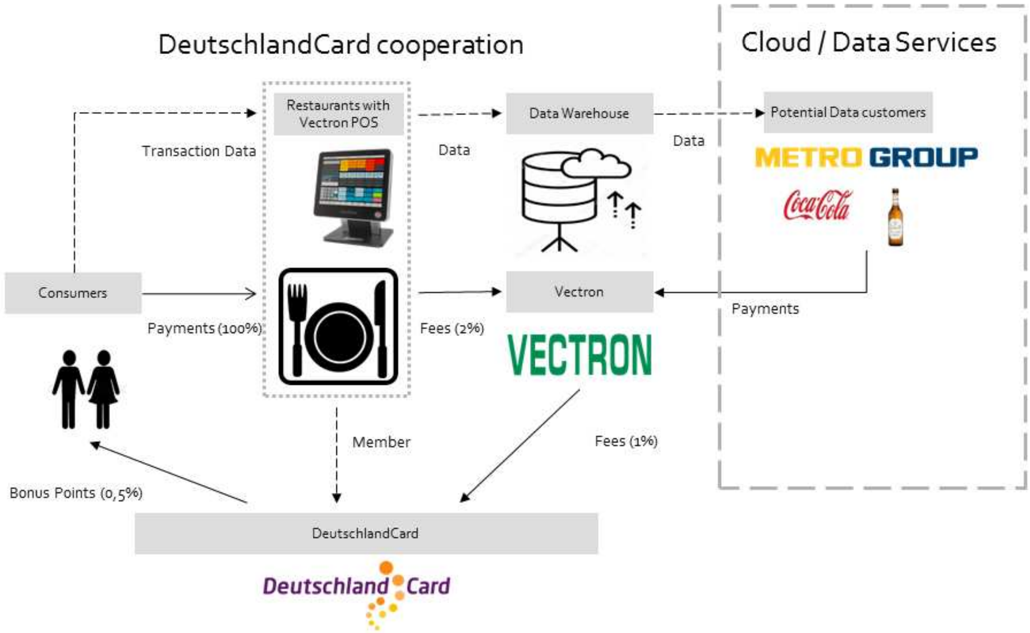
According to the former CEO, **Vectron has identified dozens of data streams for different end uses**. Customers could include the restaurant owner (statistics on regional competition), obvious candidates from the beverage industry (e.g. Coca-Cola, which is highly interested in acquiring such information) but also clients from other sectors, as the data could also enable the establishment of new business models (e.g. logistic optimisation / automation) or as the cash registers enable access to the hospitality sector (e.g. for alternative payment solutions).

In this respect, Vectron additionally announced a **collaboration with Metro's digital unit**. A pilot trial with more than 100 restaurants will start soon, with the aim of supporting customers with the installation and data storage and, above all, to develop new business models. In our opinion, this might be targeting automated supply logistics. It is worth mentioning, that Metro is already a shareholder in competitor Orderbird (iPad based POS). The cooperation with Vectron indicates that Orderbird's performance might not be living up to Metro's expectations and that a cooperation with the market leader is seen as more valuable. This is reasonable considering Vectron's large installed base, which is an important asset in introducing data driven value-add services.

Established suppliers to the hospitality sector have realised that the digitalisation has just begun and are tryin to secure market access. This is e.g. reflected in Radebeger's (brewery) funding of tablet-based competitor Gastrofix and the acquisition of Gastronovi (hospitality software) by food logistic company Transgourmet.

The following chart shows the structure of the DeutschlandCard collaboration and possible integration of data customers such as e.g. Coca-Cola.

Structure DeutschlandCard + Cloud Services



Source: Warburg Research

Why is Vectron the prime candidate?

Vectron's **main asset is the huge installed base of >100k cash registers in Germany**, which translates into a market share of ~25-30% (non-PC space). The closest competitor has a market share of <10%. As a result, Vectron is in a prime position to become established as the leading data provider in the German hospitality sector. **No other company has such a strong position in this highly fragmented industry**, which makes Vectron the candidate of choice for large customers interested in a broad reach. In the long run, Vectron is thus likely to turn from a hardware-business to a data-driven business model.

DC platform to generate an EBIT of >EUR 20m

The key assumptions are:

- 15% of all consumers (8% in year 1) will use DeutschlandCard in restaurants (and bars, cafes etc.) based on ~ EUR 15m actively used bonus cards (= ~20% of Germany's population older than 15 years or ~35% of all households)
- Average fee of 2.5% on the sales registered with DeutschlandCard.
- = Revenues of just above EUR 100 per restaurant (see table below)

Sales with hospitality customers

Sales per restaurant / bar / cafe	Year 1	Year 2	Year 3	Year 4
Avg. annual sales / restaurant	350.000	350.000	350.000	350.000
= Sales / month	29.167	29.167	29.167	29.167
Share of sales with DeutschlandCard	8%	10%	12%	15%
Sales qualified for DeutschlandCard	2.333	2.917	3.500	4.375
Monthly fees (2,5%) on qualified sales	58	73	88	109

Source: Dehoga; Vectron; Warburg Research

Further assumptions are:

- A 20% penetration in the German hospitality industry, which equates to ~40,000 participating gastronomy businesses.
- Customer acquisition costs of on average EUR 400 per restaurant as incentive for reseller (e.g. discounted POS system), which leads to acquisition costs of ~ EUR 5m in the ramp-up phase

Acquisition costs

DeutschlandCard	2018e	2019e	2020e	2021e	Steady State
German hospitality market	202.000	201.500	201.000	200.500	200.000
Penetration		6%	12%	18%	20%
Customers end of year		12.090	24.120	36.090	40.000
Customer adds		12.090	12.030	11.970	2.000
Acquisition costs per restaurant		400	400	400	400
Total acquisition costs		**4.836**	**4.812**	**4.788**	**800**

Source: Vectron; Warburg Research

- Other platform services might be added at a later stage, as a restaurant could easily add additional functions such as online ordering, table reservation, couponing etc., which are not yet included in the model.
- Further cost items are a revenue share for DeutschlandCard and recurring sales as an alternative incentive for resellers and some fixed costs for support, marketing etc.

In the steady state (significantly reduced customer acquisition costs after onboarding-phase, assumed churn: 5%), the **DC platform is expected to yield sales of ~EUR 50m and an EBIT of ~EUR 22m** (41% margin) p.a. Significant upside exists if market share is higher.

Base case

DeutschlandCard	2018e	2019e	2020e	2021e	Steady State
German hospitality market (restaurants, bars, cafes)	202.000	201.500	201.000	200.500	200.000
Penetration	0%	6%	12%	18%	20%
Restaurants etc. end of year	0	12.090	24.120	36.090	40.000
Restaurants etc. average	0	6.045	18.105	30.105	40.000
Monthly revenues / restaurant	0	58	73	88	109
Net revenues	**0**	**4.232**	**15.842**	**31.610**	**52.500**
- acquisition costs	0	4.836	4.812	4.788	1.000
- variable costs (sales share of DC + resellers)	0	2.116	7.921	15.805	26.250
- other fixed costs	0	1.500	2.500	3.000	3.500
EBIT	**0**	**-4.220**	**609**	**8.017**	**21.750**
margin on gross revenues		-99,7%	3,8%	25,4%	41,4%

Source: Warburg Research

Cloud services sales

In addition to the DC collaboration comes the cloud / data services opportunity. We expect monthly revenues for data provision to vary between EUR 5–30. We deem it highly likely that Vectron will gain its first cloud service customer within the next 12 months, as it is in advanced talks with 2-3 potential clients including the recently-started collaboration with Metro.

A base case reflects the same market penetration of ~20% in the German hospitality sector (~40k restaurants, bars, cafes etc.). In the base case scenario, Vectron is expected to gain two data customers (e.g. Metro, Coca-Cola) paying a monthly fee of EUR 10 each. Costs of ~15% of the sales reflect the high-margin nature of this revenue stream. No material additional fixed costs are expected as the infrastructure is already in place with the establishment of the DeutschlandCard loyalty scheme. A **base case would yield an additional EBIT of ~ EUR 8m p.a. in the medium term**.

The table reflects that this **business model offers significant upside**, as EBIT contributions could come close to EUR 20m in a high or EUR 50m in a bull case.

Cloud services opportunity

Cloud services / Data revenues (medium term targets)	Low case	Base case	High Case	Bull case
Restaurants average	20.000	40.000	40.000	80.000
Monthly average revenues per data customer	10	10	15	15
# of data customers	1	2	3	4
= revenues per restaurant / month	10	20	45	60
Revenues p.a. (EUR k)	**2.400**	**9.600**	**21.600**	**57.600**
Costs (EUR k)	360	1.440	3.240	8.640
EBIT (EUR k)	**2.040**	**8.160**	**18.360**	**48.960**
margin		85,0%	85,0%	85,0%

Source: Vectron; Warburg Research

A successful establishment of digital cloud services in the hospitality sector presumably comes with long-term implications. Owing to the high-margin nature of this business, it would be logical to buy market share. Hence, Vectron could give away its hardware for an extremely competitive price (or use its POSMATIC solution for tablets) to broaden the installed base, which could lead to a significant rise in market share in the medium term. Here again, today's market share of 25-30% provides an excellent starting position and raises major hurdles for the competition.

Fiscal POS regulation in Germany

At the end of 2016, the German Bundestag passed a bill making tamper-proof POS systems compulsory, as expected. The rationale behind the new law is that undeclared revenues results in an estimate loss to the German exchequer of several billion euros in taxes.

A softer first deadline expired at the end of 2016. Since January 2017, all POS systems have to comply with a so called "Cash Register Guideline". This, however, is not a law. This calls for the complete electronic storage of all tax-relevant data. Vectron recorded additional sales of ~5,000 POS systems in Germany around this date, which however remained below expectations. According to the assessment of tax authorities, 40% of the installed POS base does not comply with the guideline today and needs to be upgraded.

The next deadline is for the end of 2019 and, this time, POS systems need to be tamper-proof by law. Newer POS systems can be retrofitted with a technical security device but all non-compliant systems need to be replaced. If the restaurant owner is not able to prove (via a compliant POS system) that his data has not been manipulated, tax authorities can (and will based on experience) apply a higher income estimation.

The implications for Vectron are significantly higher sales in the 2019-21 period, as the replacement / upgrade cycle is expected to last for at least three years (80% complete by 2021; 20% laggards for later replacement/upgrade). A strong uptake in demand is expected in H2 2019. The expectation is that this represents an opportunity for almost EUR 100m in additional sales, based on Vectron's installed POS base of >100k systems. It is assumed that 45% needs to be replaced (roughly in line with the experience of the 2016/17 and the Austrian cycle) and 55% need a technical upgrade.

Fiscal regulation

Fiscal regulation	**Total**	**2019e**	**2020e**	**2021e**	**>2021e**
Existing base	100.000				
Hardware replacement units (45% of total)	45.000	7.200	14.400	14.400	9.000
Software upgrade units (55% of total)	55.000	8.800	17.600	17.600	11.000
ASP hardware (EUR)	1.800				
ASP software (EUR)	250				
Additional sales (EUR k)	**94.750**	**15.160**	**30.320**	**30.320**	**18.950**

Source: Vectron; Warburg Research

There is no clear evidence on the exact number of installed units. Vectron thinks that more than 100k units (e.g. rather 120k) need to be replaced or upgraded. This might result in some upside in comparison to the WR estimates.

Conclusion

The digitalisation of the hospitality market has just begun with a handful of selected services such as online table reservation or food delivery. The cooperation with DeutschlandCard will bring a loyalty scheme and customer retention services to the hospitality sector and reflects Vectron's leading market position in this field. The exploitation of so far unused data should be valuable for a diverse set of adjacent sectors and offers high potential for additional high-margin revenue streams. The cooperation with Metro is a first move in this direction.

It is expected that the DC cooperation should lead to EBIT contributions of ~EUR 20m in the medium term with similar or even higher potential in the field of digital cloud services.

In the near term, Vectron should register a strong growth regulation driven demand from the nearing deadline at the end of 2019.

Growth / Financials

- Revenue / earnings trough in 2018 as expected
- Surge in regulation-driven demand from 2019 onwards…
- …should lead to significant EBIT increase
- Contributions from DeutschlandCard and Cloud services come on top from 2019/20 onwards

Regulation affects POS business; pro-forma EBIT to surge from 2020 onwards

Current sales and earnings forecasts reflect the expectations for the core business with Vectron and Duratec POS systems and the implementation of fiscal regulation in Germany. In accordance with Section 293 of the German HGB (exemption due to company size), the bonVito and Posmatic (iPad-based POS software) subsidiaries are not included in the consolidated financial statements.

After an expected sales decline in FY 2018 due to lower regulation driven demand, the **nearing deadline in 2020 should trigger another strong revenue increase in the FYs 2019 and 2020**.

The **following chart shows the expected development for the hardware business as well as a pro-forma sales composition including the expected contributions** from the DeutschlandCard cooperation as well as initial cloud services / data sales. The **pro-forma sales are expected to more than double to >EUR 70m in the 2018-20e period**.

EBIT to surge in 2019

At EBIT-level, Vectron should post a small loss in FY 2018 as, the P&L includes a negative one-off resulting from the change in CEO (WRe EUR -0.5m) and the development expensed for the platform / cloud services. The **strong sales growth in the next two years should boost the reported EBIT to EUR 5m in 2019 and EUR 10m by 2020**.

The **pro-forma EBIT is impacted by the high customer acquisition costs expected for the initial ramp of the DeutschlandCard scheme** in the hospitality sector and thus expected to be only slightly positive in FY 2019. A breakeven situation here and first more substantial contributions from the cloud / data services should result in a significant rise in EBIT from FY 2020 onwards (20% pro-forma margin expected).

Vectron's P&L is expected to currently include development expenses of about EUR 2–2.5m for all development activities which burdens the profitability of the POS business.

Reported / pro-forma sales + EBIT forecasts

Revenues (in EUR m)	2015	2016	2017	2018e	2019e	2020e	2021e
Vectron / others	24,1	25,2	22,6	23,2	22,0	18,0	18,0
Duratec	0,6	1,0	1,7	2,3	3,0	3,8	5,3
Fiscalisation Germany + Austria	0,5	7,5	8,0	1,5	15,2	30,3	30,3
Fiscalisation Austria	0,5	2,5	2,5				
Reported sales	**24,7**	**36,2**	**34,9**	**27,0**	**40,1**	**52,1**	**53,6**
bonVito	1,7	3,0	3,5	4,0	4,5	5,0	5,5
DC platform					4,2	15,8	31,6
Cloud / data services					0,4	3,6	6,1
Pro-forma sales	**26,4**	**39,2**	**38,4**	**31,0**	**49,3**	**76,5**	**96,8**
Pro-forma EBIT							
Reported EBIT Vectron	2,1	5,6	3,9	-1,3	5,0	10,4	10,9
EBIT bonVito (WRe)	-0,2	-0,1	0	0,2	0,4	0,6	0,8
EBIT DC cooperation (WRe)					-4,2	0,4	5,6
EBIT cloud services (WRe)					0,4	3,6	6,1
Pro-forma EBIT	**1,9**	**5,5**	**3,9**	**-1,1**	**1,7**	**15,0**	**23,4**
pro-forma margin	7,1%	14,0%	10,0%	-3,7%	3,3%	19,6%	24,2%

Source: Warburg Research

Valuation

- Sum of the parts valuation results in a PT of EUR 31.50
- DCF model for core POS business including fiscal regulation yields EUR 7.60
- DeutschlandCard cooperation valued at EUR 18.20
- Base case of cloud / data services yields value contribution of EUR 5.70, but comes with significant further upside in a high or bull case

Sum of the parts

A sum of the parts model has been used for the valuation. A DCF model has been applied to the POS system core business, which yields EUR 7.60 per share.

A simplified NOPAT discounting has been used for both cooperation with DeutschlandCard and a base-case scenario for cloud / data services (see table below).

This results in a **PT of EUR 31.50** (slightly up from EUR 30 so far). Significant upside exists in the cloud / data services business as a high / bull case would add EUR 7-30 per share.

Sum of the parts

	Value (EUR m)	per share (EUR)
Core POS / fiscalisation	**50,3**	**7,6**
DeutschlandCard cooperation	**119,8**	**18,2**
Cloud / data services base case	**37,9**	**5,7**
Cloud / data services high case	85,4	12,9
Cloud / data services bull case	227,7	34,5
Value indication base case	**208,0**	**31,5**
Value indication high case	255,5	38,7
Value indication bull case	397,8	60,3

Source: Warburg Research

DCF model

A DCF model has been applied to the core business, including the fiscal POS system regulation in Germany. Performance is expected to be volatile over the coming years as a result of the regulatory landscape. Exact timing of demand is hard to quantify and might also depend on pressure from local tax authorities on local businesses. Reduced development costs and better operating leverage should make an EBIT margin just above the 12%-mark achievable in the long run.

Other assumptions are a beta of nearly 1.2 and a relatively high cost of debt at 6%. The latter demonstrates the unfavourable tax structure (interest not chargeable) and the interest on outstanding debt (profit participation rights). The WACC therefore equates to just above 7.5%.

The **DCF model indicates a FV of EUR 7.60 per share for the core POS business**.

DCF model

Figures in EUR m	Detailed forecast period 2018e	2019e	2020e	Transitional period 2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	Term. Value
Sales	27.0	40.1	52.1	53.6	22.0	23.1	24.2	29.1	33.4	36.8	40.4	42.5	43.2	
Sales change	*-21.7 %*	*48.7 %*	*29.8 %*	*2.9 %*	*-59.0 %*	*5.0 %*	*5.0 %*	*20.0 %*	*15.0 %*	*10.0 %*	*10.0 %*	*5.0 %*	*1.8 %*	*1.8 %*
EBIT	-1.3	5.0	9.5	10.2	-4.4	-3.5	-1.2	2.9	4.2	4.6	5.1	5.3	5.4	
EBIT-margin	*-4.9 %*	*12.6 %*	*18.2 %*	*19.0 %*	*-20.0 %*	*-15.0 %*	*-5.0 %*	*10.0 %*	*12.5 %*	*12.5 %*	*12.5 %*	*12.5 %*	*12.5 %*	
Tax rate (EBT)	*31.0 %*	*31.0 %*	*31.0 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	
NOPAT	-0.9	3.5	6.5	7.1	-3.1	-2.4	-0.8	2.0	2.9	3.2	3.5	3.7	3.8	
Depreciation	0.6	0.6	0.6	0.9	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	
in % of Sales	*2.2 %*	*1.5 %*	*1.2 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	
Changes in provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Change in Liquidity from														
- Working Capital	-3.0	3.1	2.8	-0.2	-7.6	0.1	0.0	1.0	0.9	0.7	0.8	0.4	0.2	
- Capex	0.6	0.6	0.6	0.9	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	
Capex in % of Sales	*2.1 %*	*1.4 %*	*1.1 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Free Cash Flow (WACC Model)	2.1	0.4	3.8	7.3	4.6	-2.5	-0.9	1.0	2.0	2.5	2.7	3.3	3.6	4
PV of FCF	2.1	0.4	3.3	5.9	3.4	-1.8	-0.6	0.6	1.1	1.3	1.3	1.5	1.5	26
share of PVs	12.31 %			30.76 %										56.93 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	8.00 %	Financial Strength	1.10
Cost of debt (after tax)	4.2 %	Liquidity (share)	1.50
Market return	7.00 %	Cyclicality	1.00
Risk free rate	1.50 %	Transparency	1.15
		Others	1.00
WACC	**7.54 %**	**Beta**	**1.15**

Valuation (m)

Present values 2030e	20		
Terminal Value	26		
Financial liabilities	4		
Pension liabilities	0		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	2		
Liquidity	6	No. of shares (m)	6.6
Equity Value	**50**	**Value per share (EUR)**	**7.53**

Sensitivity Value per Share (EUR)

		Terminal Growth						
Beta	WACC	1.00 %	1.25 %	1.50 %	**1.75 %**	2.00 %	2.25 %	2.50 %
1.35	8.5 %	6.15	6.24	6.34	6.45	6.57	6.69	6.83
1.25	8.0 %	6.57	6.69	6.81	6.95	7.09	7.25	7.42
1.20	7.8 %	6.81	6.94	7.08	7.23	7.39	7.57	7.76
1.15	7.5 %	7.07	7.21	7.37	**7.53**	7.71	7.91	8.13
1.10	7.3 %	7.35	7.51	7.68	7.87	8.07	8.30	8.54
1.05	7.0 %	7.66	7.83	8.03	8.24	8.47	8.72	9.00
0.95	6.5 %	8.36	8.58	8.82	9.09	9.39	9.72	10.10

		Delta EBIT-margin						
Beta	WACC	-1.5 pp	-1.0 pp	-0.5 pp	**+0.0 pp**	+0.5 pp	+1.0 pp	+1.5 pp
1.35	8.5 %	5.60	5.88	6.17	6.45	6.73	7.02	7.30
1.25	8.0 %	6.03	6.33	6.64	6.95	7.25	7.56	7.87
1.20	7.8 %	6.27	6.59	6.91	7.23	7.55	7.86	8.18
1.15	7.5 %	6.54	6.87	7.20	**7.53**	7.87	8.20	8.53
1.10	7.3 %	6.83	7.18	7.52	7.87	8.21	8.56	8.91
1.05	7.0 %	7.15	7.51	7.87	8.24	8.60	8.96	9.32
0.95	6.5 %	7.90	8.29	8.69	9.09	9.49	9.89	10.29

- Model does not reflect contributions from DeutschlandCard + cloud services
- Earnings quality should be defendable owing to premium positioning
- Model reflects fiscal regulation
- 30% sales decline in 2023 result of phase out of fiscal regulation

Valuation DeutschlandCard cooperation

The following table shows a simplified NOPAT discounting as valuation approach for the cooperation with DeutschlandCard. The cash flow should come close to the expected NOPAT, as the potentially required hardware investments are reflected in the customer acquisition costs and no material working capital is required. A somewhat higher WACC of 12% has been applied, to reflect the remaining uncertainty at the current stage but could yield additional valuation upside at a later stage.

The **model yields a value indication of EUR 120m or EUR 18.20 per share**.

Valuation DeutschlandCard loyalty scheme

DeutschlandCard NOPAT discounting		2018e	2019e	2020e	2021e	Steady State
in EUR k						
EBIT		0	-4.220	609	8.017	21.750
NOPAT		0	-2.954	426	5.612	15.225
PV at 12% discount rate		0	-2.564	340	3.995	9.676
Terminal value	108.369					
Sum of PVs	**119.815**					
per share	**18,2**					

Source: Warburg Research

Valuation cloud / data services

A similar approach has been used to value the cloud / data services, as there is no material CAPEX / working capital demand. The WACC amounts to 12% as well.

The number of services that can be sold to third-party customers is of high relevance for this business. As Vectron is in advanced talks with 2-3 players including Metro, we deem it as very likely that the company will gain a first contract within the next 6-12 months.

A **base-case scenario yields a FV contribution of close to EUR 6 per share**. Significant upside exists, as the high and bull case reflect, which could add a further EUR 10–30 at a later stage.

Valuation cloud / data services

Cloud services / Data revenues	Low case	Base case	High Case	Bull case
Customers average	20.000	40.000	40.000	80.000
Monthly average revenues per data customer	10	10	15	15
# of data customers	1	2	3	4
= revenues per hospitality customer / month	10	20	45	60
Revenues p.a. (EUR k)	**2.400**	**9.600**	**21.600**	**57.600**
Costs (EUR k)	360	1.440	3.240	8.640
EBIT (EUR k)	**2.040**	**8.160**	**18.360**	**48.960**
margin		85,0%	85,0%	85,0%
NOPAT (EUR k)	**1.428**	**5.712**	**12.852**	**34.272**
Present value of NOPAT discounting (12% WACC)	**9.487**	**37.946**	**85.379**	**227.679**
PV per share	**1,4**	**5,7**	**12,9**	**34,5**

Source: Warburg Research

Background, Company & Products

Leader in premium POS market

With a focus on the premium segment, Vectron is the leading supplier of proprietary POS systems especially for gastronomy and bakery customers in the core markets of Germany, Austria, Switzerland and BeNeLux, where it holds a good 25% market share.

Following a period of less dynamic growth since the financial crisis (revenue CAGR 2008-2015: 0.5%), the company finds itself at a turning point. There are three main drivers behind the significant improvement in the operational performance, which promise a considerable valuation premium:

- Introduction of the second brand Duratec is gathering pace. The medium-term revenue potential is >EUR 10m, as its simpler systems are particularly suitable for foreign markets where Vectron currently has a relatively small market share (pan-European POS market exceeds Vectron's core markets by a factor of 5-6x).
- The introduction of tamper-proof POS systems in Germany has already had a positive impact on operational performance. We can expect an even more marked positive effect in the years from 2019 onwards.
- The collaboration with DeutschlandCard will introduce a broad-based loyalty scheme to the German hospitality sector, which should yield significant sales and EBIT contributions in the medium term. This move should be followed by the introduction of cloud / data services based on the use of data generated at the point of sale with each transaction. This data is expected to be valuable for a range of third-party customers and might also help to establish new business models.

Fiscal regulation

At the end of 2016, the German Bundestag passed a bill making tamper-proof POS systems compulsory, as expected. The new law aims to end the loss to the German exchequer of an estimated several billion euros in taxes from undeclared revenues.

The new law provides for relatively long transition periods (deadlines are 01. 01. 2020/22), but the so-called Cash Register Guideline (BMF Letter of 2010) still applies in the meantime. It demands complete electronic storage of all tax-relevant data. This means that there are, in theory, three relevant changeover dates:

- 2017 deadline: POS systems that do not comply with the "Cash Register Guideline" had to be replaced in 2016/17. This yielded additional revenues in the FYs 2016 and 2017. However, this deadline had a softer character and triggered the replacement of only ~5.000 POS (in comparison to Vectron's installed base of >100k systems).
- 2020 deadline: POS systems that comply with the "Cash Register Guideline" and can be retrofitted with a technical security device must be upgraded by the end of 2019. This deadline is expected to lead to a significant replacement/upgrade business in Vectron's installed base of 100k POS.
- 2023 deadline: POS systems that comply with the "Cash Register Guideline" but cannot be upgraded must be replaced by the end of 2022, which should have only minor implications for Vectron as all POS are upgradable.

In practice however, demand will probably not reflect the changeover deadlines as clearly as that. It is unlikely that a well-functioning POS system is a high priority issue for restaurateurs and they are likely to act only when prompted to do so by their accountant, or possibly a tax inspection.

Since the next relevant changeover deadline is not until the end of 2019, the decline in demand in 2018 did not come as a surprise. Revenues are expected to start rising again in 2019.

A significant number of cash registers are assumed to have failed to comply with the 2017 deadline (hence, do not meet the requirements of the "Cash Register Guideline"). In this case, the restaurant owner is not able to prove his income via electronic journals and risks an increased earnings estimation by tax authorities. According to press articles, tax authorities estimate that up to 40% of the cash registers do not comply with the guideline, which provides scope for a significant upgrade business in the coming years.

DeutschlandCard

DeutschlandCard (belongs to the Bertelsmann group) is Germany's second-largest loyalty scheme (after market leader Payback) and was launched in 2008. Its 20 million users (active presumably ~15m) can earn and redeem bonus points in stationary retail (such as Germany's largest supermarket chain Edeka or Esso gas stations) and some online retailers.

The introduction of a broad-based loyalty scheme to the hospitality sector is a first in Germany (with the exception of Burger King's participation with Payback).

Selected partner DeutschlandCard

Source: DeutschlandCard

DCF model

Figures in EUR m	Detailed forecast period 2018e	2019e	2020e	Transitional period 2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	Term. Value
Sales	27.0	40.1	52.1	53.6	22.0	23.1	24.2	29.1	33.4	36.8	40.4	42.5	43.2	
Sales change	*-21.7 %*	*48.7 %*	*29.8 %*	*2.9 %*	*-59.0 %*	*5.0 %*	*5.0 %*	*20.0 %*	*15.0 %*	*10.0 %*	*10.0 %*	*5.0 %*	*1.8 %*	*1.8 %*
EBIT	-1.3	5.0	9.5	10.2	-4.4	-3.5	-1.2	2.9	4.2	4.6	5.1	5.3	5.4	
EBIT-margin	*-4.9 %*	*12.6 %*	*18.2 %*	*19.0 %*	*-20.0 %*	*-15.0 %*	*-5.0 %*	*10.0 %*	*12.5 %*	*12.5 %*	*12.5 %*	*12.5 %*	*12.5 %*	
Tax rate (EBT)	*31.0 %*	*31.0 %*	*31.0 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	*30.5 %*	
NOPAT	-0.9	3.5	6.5	7.1	-3.1	-2.4	-0.8	2.0	2.9	3.2	3.5	3.7	3.8	
Depreciation	0.6	0.6	0.6	0.9	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	
in % of Sales	*2.2 %*	*1.5 %*	*1.2 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	
Changes in provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Change in Liquidity from														
- Working Capital	-3.0	3.1	2.8	-0.2	-7.6	0.1	0.0	1.0	0.9	0.7	0.8	0.4	0.2	
- Capex	0.6	0.6	0.6	0.9	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	
Capex in % of Sales	*2.1 %*	*1.4 %*	*1.1 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	*1.6 %*	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Free Cash Flow (WACC Model)	2.1	0.4	3.8	7.3	4.6	-2.5	-0.9	1.0	2.0	2.5	2.7	3.3	3.6	4
PV of FCF	2.1	0.4	3.3	5.9	3.4	-1.8	-0.6	0.6	1.1	1.3	1.3	1.5	1.5	26
share of PVs	12.31 %			30.76 %										56.93 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	8.00 %	Financial Strength	1.10
Cost of debt (after tax)	4.2 %	Liquidity (share)	1.50
Market return	7.00 %	Cyclicality	1.00
Risk free rate	1.50 %	Transparency	1.15
		Others	1.00
WACC	**7.54 %**	**Beta**	**1.15**

Valuation (m)

Present values 2030e	20		
Terminal Value	26		
Financial liabilities	4		
Pension liabilities	0		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	2		
Liquidity	6	No. of shares (m)	6.6
Equity Value	**50**	**Value per share (EUR)**	**7.53**

Sensitivity Value per Share (EUR)

		Terminal Growth						
Beta	WACC	1.00 %	1.25 %	1.50 %	**1.75 %**	2.00 %	2.25 %	2.50 %
1.35	8.5 %	6.15	6.24	6.34	6.45	6.57	6.69	6.83
1.25	8.0 %	6.57	6.69	6.81	6.95	7.09	7.25	7.42
1.20	7.8 %	6.81	6.94	7.08	7.23	7.39	7.57	7.76
1.15	7.5 %	7.07	7.21	7.37	**7.53**	7.71	7.91	8.13
1.10	7.3 %	7.35	7.51	7.68	7.87	8.07	8.30	8.54
1.05	7.0 %	7.66	7.83	8.03	8.24	8.47	8.72	9.00
0.95	6.5 %	8.36	8.58	8.82	9.09	9.39	9.72	10.10

		Delta EBIT-margin						
Beta	WACC	-1.5 pp	-1.0 pp	-0.5 pp	**+0.0 pp**	+0.5 pp	+1.0 pp	+1.5 pp
1.35	8.5 %	5.60	5.88	6.17	6.45	6.73	7.02	7.30
1.25	8.0 %	6.03	6.33	6.64	6.95	7.25	7.56	7.87
1.20	7.8 %	6.27	6.59	6.91	7.23	7.55	7.86	8.18
1.15	7.5 %	6.54	6.87	7.20	**7.53**	7.87	8.20	8.53
1.10	7.3 %	6.83	7.18	7.52	7.87	8.21	8.56	8.91
1.05	7.0 %	7.15	7.51	7.87	8.24	8.60	8.96	9.32
0.95	6.5 %	7.90	8.29	8.69	9.09	9.49	9.89	10.29

- Model does not reflect contributions from DeutschlandCard + cloud services
- Earnings quality should be defendable owing to premium positioning
- Model reflects fiscal regulation
- 30% sales decline in 2023 result of phase out of fiscal regulation

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	2014	2015	2016	2017	2018e	2019e	2020e
Net Income before minorities	0.8	1.4	4.5	3.2	-0.9	3.5	6.6
+ Depreciation + Amortisation	0.5	0.6	0.5	0.5	0.6	0.6	0.6
- Net Interest Income	0.1	0.0	-0.1	-0.1	0.1	0.1	0.1
- Maintenance Capex	0.3	0.3	0.3	0.3	0.3	0.3	0.3
+ Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
= Free Cash Flow Potential	**0.9**	**1.7**	**4.8**	**3.5**	**-0.6**	**3.8**	**6.8**
FCF Potential Yield (on market EV)	36.2 %	33.2 %	45.3 %	2.2 %	-0.5 %	3.0 %	5.5 %
WACC	7.54 %	7.54 %	7.54 %	7.54 %	7.54 %	7.54 %	7.54 %
= Enterprise Value (EV)	**2.6**	**5.1**	**10.6**	**161.4**	**126.0**	**126.0**	**123.1**
= Fair Enterprise Value	**12.5**	**22.4**	**63.9**	**46.1**	**n.a.**	**50.1**	**90.7**
- Net Debt (Cash)	-1.7	-1.7	-1.7	-1.7	-3.4	-3.3	-6.3
- Pension Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- 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	**14.2**	**24.2**	**65.6**	**47.8**	**n.a.**	**53.4**	**96.9**
Aktienanzahl (Mio.)	1.5	1.5	1.6	6.6	6.6	6.6	6.6
= Fair value per share (EUR)	**9.46**	**16.11**	**41.00**	**7.25**	**n.a.**	**8.10**	**14.68**
premium (-) / discount (+) in %						-58.7 %	-25.1 %

Sensitivity Fair value per Share (EUR)

	10.54 %	1.61	2.69	7.18	5.26	n.a.	5.93	10.77
	9.54 %	1.75	2.95	7.91	5.78	n.a.	6.50	11.80
	8.54 %	1.93	3.26	8.81	6.43	n.a.	7.21	13.07
WACC	**7.54 %**	**2.15**	**3.66**	**9.94**	**7.25**	**n.a.**	**8.10**	**14.68**
	6.54 %	2.44	4.18	11.42	8.32	n.a.	9.26	16.79
	5.53 %	2.83	4.89	13.44	9.77	n.a.	10.84	19.65
	4.54 %	3.40	5.91	16.34	11.87	n.a.	13.12	23.77

- Rising value indication with higher business volume…
- …this is due to a high operating leverage given gross margins of >50%

Valuation

	2014	2015	2016	2017	2018e	2019e	2020e
Price / Book	0.5 x	0.9 x	1.2 x	11.4 x	9.9 x	8.1 x	6.0 x
Book value per share ex intangibles	4.24	4.84	8.75	1.94	1.74	2.19	3.05
EV / Sales	0.1 x	0.2 x	0.3 x	4.7 x	4.7 x	3.1 x	2.4 x
EV / EBITDA	1.7 x	1.9 x	1.7 x	37.0 x	n.a.	22.3 x	12.2 x
EV / EBIT	2.5 x	2.5 x	1.9 x	41.9 x	n.a.	25.0 x	13.0 x
EV / EBIT adj.*	2.5 x	2.5 x	1.9 x	41.9 x	n.a.	25.0 x	13.0 x
P / FCF	2.2 x	6.3 x	48.7 x	n.a.	64.7 x	522.8 x	35.9 x
P / E	6.6 x	5.7 x	4.0 x	51.5 x	n.a.	39.2 x	20.4 x
P / E adj.*	6.6 x	5.7 x	4.0 x	51.5 x	n.a.	39.2 x	20.4 x
Dividend Yield	13.1 %	6.6 %	9.0 %	0.2 %	0.3 %	0.5 %	1.5 %
FCF Potential Yield (on market EV)	36.2 %	33.2 %	45.3 %	2.2 %	-0.5 %	3.0 %	5.5 %

*Adjustments made for: -

Consolidated profit & loss

In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Sales	**22.4**	**25.2**	**36.2**	**34.5**	**27.0**	**40.1**	**52.1**
Change Sales yoy	4.7 %	12.5 %	43.7 %	-4.8 %	-21.7 %	48.7 %	29.8 %
Increase / decrease in inventory	0.2	0.1	0.0	0.6	0.0	0.0	0.0
Own work capitalised	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Sales	**22.6**	**25.3**	**36.2**	**35.1**	**27.0**	**40.1**	**52.1**
Material expenses	10.0	10.5	15.4	14.6	12.1	18.1	23.4
Gross profit	**12.6**	**14.7**	**20.9**	**20.5**	**14.9**	**22.1**	**28.6**
Gross profit margin	*56.1 %*	*58.5 %*	*57.6 %*	*59.3 %*	*55.1 %*	*55.0 %*	*55.0 %*
Personnel expenses	6.3	7.0	8.6	9.7	9.9	10.2	11.2
Other operating income	0.9	1.7	0.4	0.6	0.9	1.0	0.9
Other operating expenses	5.6	6.8	6.6	7.0	6.6	7.2	8.3
Unfrequent items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBITDA	**1.6**	**2.6**	**6.1**	**4.4**	**-0.7**	**5.7**	**10.1**
Margin	*7.0 %*	*10.5 %*	*16.9 %*	*12.6 %*	*-2.7 %*	*14.1 %*	*19.4 %*
Depreciation of fixed assets	0.3	0.3	0.3	0.3	0.4	0.4	0.4
EBITA	**1.2**	**2.3**	**5.8**	**4.0**	**-1.1**	**5.2**	**9.7**
Amortisation of intangible assets	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Goodwill amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT	**1.0**	**2.1**	**5.6**	**3.9**	**-1.3**	**5.0**	**9.5**
Margin	*4.6 %*	*8.2 %*	*15.4 %*	*11.2 %*	*-4.9 %*	*12.6 %*	*18.2 %*
EBIT adj.	**1.0**	**2.1**	**5.6**	**3.9**	**-1.3**	**5.0**	**9.5**
Interest income	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Interest expenses	0.0	0.0	0.1	0.2	0.0	0.0	0.0
Other financial income (loss)	0.0	0.0	-0.1	0.0	0.0	0.0	0.0
EBT	**1.1**	**2.1**	**5.5**	**3.8**	**-1.3**	**5.1**	**9.6**
Margin	*4.8 %*	*8.2 %*	*15.1 %*	*10.9 %*	*-4.6 %*	*12.8 %*	*18.3 %*
Total taxes	0.3	0.7	1.0	0.6	-0.4	1.6	3.0
Net income from continuing operations	**0.8**	**1.4**	**4.5**	**3.2**	**-0.9**	**3.5**	**6.6**
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	**0.8**	**1.4**	**4.5**	**3.2**	**-0.9**	**3.5**	**6.6**
Minority interest	0.2	0.2	0.0	0.0	0.1	0.2	0.2
Net income	**0.5**	**1.2**	**4.5**	**3.2**	**-1.0**	**3.3**	**6.4**
Margin	*2.3 %*	*4.7 %*	*12.3 %*	*9.2 %*	*-3.7 %*	*8.2 %*	*12.2 %*
Number of shares, average	1.5	1.5	1.6	6.6	6.6	6.6	6.6
EPS	**0.35**	**0.79**	**2.79**	**0.48**	**-0.15**	**0.50**	**0.96**
EPS adj.	0.35	0.79	2.79	0.48	-0.15	0.50	0.96

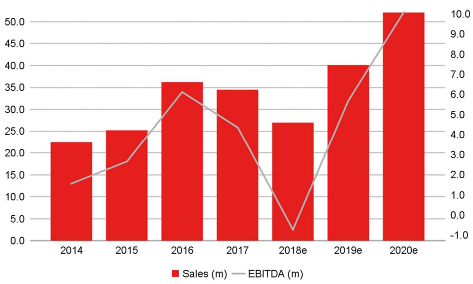
*Adjustments made for:

Guidance: 2018: Revenue decline

Financial Ratios

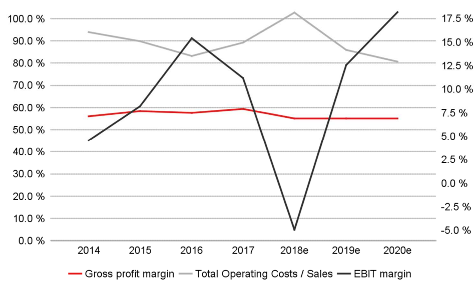
	2014	2015	2016	2017	2018e	2019e	2020e
Total Operating Costs / Sales	93.9 %	89.8 %	83.2 %	89.2 %	102.7 %	85.9 %	80.6 %
Operating Leverage	1.4 x	8.2 x	3.9 x	6.5 x	n.a.	n.a.	2.9 x
EBITDA / Interest expenses	91.8 x	62.9 x	63.0 x	28.7 x	n.a.	n.a.	n.a.
Tax rate (EBT)	29.7 %	31.5 %	18.3 %	15.6 %	31.0 %	31.0 %	31.0 %
Dividend Payout Ratio	59.0 %	31.6 %	35.8 %	10.4 %	n.m.	18.7 %	30.0 %
Sales per Employee	179,344	201,688	253,268	216,874	207,567	308,600	400,692

Sales, EBITDA
in EUR m



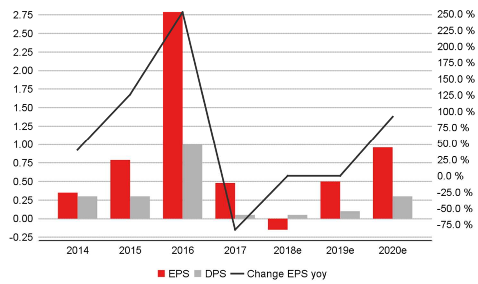
Source: Warburg Research

Operating Performance
in %



Source: Warburg Research

Performance per Share



Source: Warburg Research

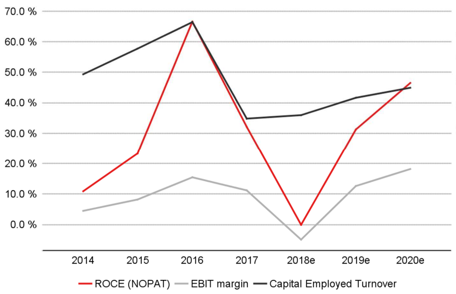
Consolidated balance sheet

In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Assets							
Goodwill and other intangible assets	0.6	0.5	0.4	1.5	1.5	1.5	1.5
thereof other intangible assets	0.6	0.5	0.4	1.5	1.5	1.5	1.5
thereof Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Property, plant and equipment	0.8	0.8	0.7	0.6	0.6	0.6	0.5
Financial assets	0.9	0.9	0.9	1.8	1.8	1.8	1.8
Other long-term assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fixed assets	**2.3**	**2.2**	**2.1**	**4.0**	**3.9**	**3.9**	**3.9**
Inventories	2.9	3.8	4.8	7.6	3.9	5.7	7.4
Accounts receivable	2.9	3.4	4.9	3.3	3.7	5.5	7.1
Liquid assets	5.1	9.5	11.7	5.5	7.2	7.1	10.1
Other short-term assets	0.3	0.6	1.2	1.1	1.1	1.1	1.1
Current assets	**11.2**	**17.2**	**22.5**	**17.5**	**15.9**	**19.4**	**25.6**
Total Assets	**13.5**	**19.4**	**24.6**	**21.5**	**19.8**	**23.3**	**29.5**
Liabilities and shareholders' equity							
Subscribed capital	1.5	1.5	1.6	6.6	6.6	6.6	6.6
Capital reserve	4.5	4.5	10.3	5.4	5.4	5.4	5.4
Retained earnings	0.0	0.0	0.0	0.0	-1.3	1.7	7.4
Other equity components	1.0	1.7	2.9	2.3	2.3	2.3	2.3
Shareholders' equity	7.0	7.7	14.9	14.3	13.0	16.0	21.7
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total equity	**7.0**	**7.7**	**14.9**	**14.3**	**13.0**	**16.0**	**21.7**
Provisions	0.9	2.0	3.2	1.7	1.7	1.7	1.7
thereof provisions for pensions and similar obligations	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial liabilities (total)	4.3	7.8	4.4	3.8	3.8	3.8	3.8
thereof short-term financial liabilities	0.0	0.0	0.8	1.1	1.1	1.1	1.1
Accounts payable	0.9	1.5	1.5	1.4	1.1	1.6	2.1
Other liabilities	0.5	0.5	0.6	0.2	0.2	0.2	0.2
Liabilities	**6.5**	**11.7**	**9.7**	**7.2**	**6.8**	**7.3**	**7.8**
Total liabilities and shareholders' equity	**13.5**	**19.4**	**24.6**	**21.5**	**19.8**	**23.3**	**29.5**

Financial Ratios

	2014	2015	2016	2017	2018e	2019e	2020e
Efficiency of Capital Employment							
Operating Assets Turnover	3.9 x	3.9 x	4.1 x	3.4 x	3.8 x	4.0 x	4.0 x
Capital Employed Turnover	3.7 x	4.2 x	4.7 x	2.7 x	2.8 x	3.2 x	3.4 x
ROA	22.5 %	55.0 %	217.0 %	80.2 %	-25.1 %	84.8 %	164.8 %
Return on Capital							
ROCE (NOPAT)	10.9 %	23.2 %	66.6 %	32.1 %	n.a.	31.2 %	46.5 %
ROE	7.5 %	16.1 %	39.5 %	21.7 %	-7.2 %	22.8 %	33.8 %
Adj. ROE	7.5 %	16.1 %	39.5 %	21.7 %	-7.2 %	22.8 %	33.8 %
Balance sheet quality							
Net Debt	-0.9	-1.7	-7.2	-1.7	-3.4	-3.3	-6.3
Net Financial Debt	-0.9	-1.7	-7.2	-1.7	-3.4	-3.3	-6.3
Net Gearing	-12.2 %	-21.9 %	-48.5 %	-12.1 %	-26.1 %	-20.7 %	-28.8 %
Net Fin. Debt / EBITDA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Book Value / Share	4.7	5.2	9.0	2.2	2.0	2.4	3.3
Book value per share ex intangibles	4.2	4.8	8.8	1.9	1.7	2.2	3.1

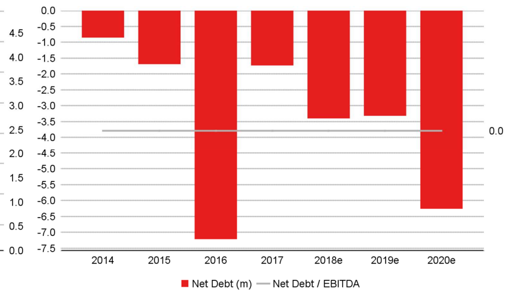
ROCE Development



Source: Warburg Research

Net debt

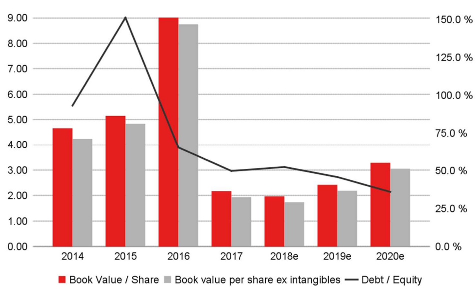
in EUR m



Source: Warburg Research

Book Value per Share

in EUR



Source: Warburg Research

Consolidated cash flow statement

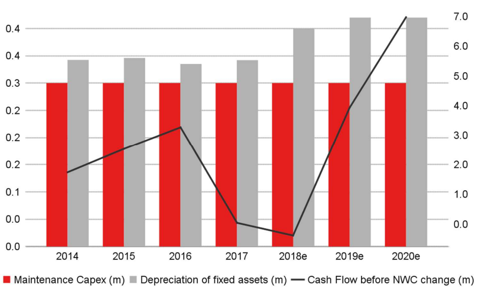
In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Net income	0.3	1.2	4.5	3.2	-1.0	3.3	6.4
Depreciation of fixed assets	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Increase/decrease in long-term provisions	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Other non-cash income and expenses	0.4	0.8	-1.7	-3.7	0.0	0.0	0.0
Cash Flow before NWC change	**1.7**	**2.5**	**3.3**	**0.0**	**-0.4**	**3.9**	**7.0**
Increase / decrease in inventory	0.0	-0.9	-1.0	-2.9	3.7	-1.8	-1.7
Increase / decrease in accounts receivable	0.2	-0.5	-1.5	1.6	-0.4	-1.8	-1.6
Increase / decrease in accounts payable	-0.2	0.6	0.0	0.0	-0.3	0.5	0.5
Increase / decrease in other working capital positions	0.0	-0.2	0.0	-0.3	0.0	0.0	0.0
Increase / decrease in working capital (total)	0.1	-1.0	-2.5	-1.5	3.0	-3.1	-2.8
Net cash provided by operating activities [1]	**1.8**	**1.5**	**0.8**	**-1.5**	**2.6**	**0.8**	**4.2**
Investments in intangible assets	-0.1	-0.1	-0.2	-1.3	-0.2	-0.2	-0.2
Investments in property, plant and equipment	-0.2	-0.4	-0.3	-0.2	-0.4	-0.4	-0.4
Payments for acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial investments	0.0	0.0	0.0	-0.9	0.0	0.0	0.0
Income from asset disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash provided by investing activities [2]	**-0.3**	**-0.4**	**-0.4**	**-2.4**	**-0.6**	**-0.6**	**-0.6**
Change in financial liabilities	-0.1	3.7	-3.3	-0.6	0.0	0.0	0.0
Dividends paid	-0.5	-0.5	-0.7	-1.6	-0.3	-0.3	-0.7
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	0.0	0.0	5.9	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash provided by financing activities [3]	**-0.6**	**3.2**	**1.9**	**-2.2**	**-0.3**	**-0.3**	**-0.7**
Change in liquid funds [1]+[2]+[3]	**1.0**	**4.3**	**2.2**	**-6.1**	**1.7**	**-0.1**	**2.9**
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	**5.1**	**9.5**	**11.7**	**5.5**	**7.2**	**7.1**	**10.1**

Financial Ratios

	2014	2015	2016	2017	2018e	2019e	2020e
Cash Flow							
FCF	1.5	1.1	0.4	-3.0	2.0	0.2	3.6
Free Cash Flow / Sales	6.9 %	4.3 %	1.0 %	-8.7 %	7.4 %	0.6 %	6.9 %
Free Cash Flow Potential	0.9	1.7	4.8	3.5	-0.6	3.8	6.8
Free Cash Flow / Net Profit	297.2 %	91.7 %	8.2 %	-94.7 %	-202.3 %	7.5 %	56.6 %
Interest Received / Avg. Cash	1.8 %	0.7 %	0.7 %	0.7 %	1.3 %	1.1 %	0.9 %
Interest Paid / Avg. Debt	0.4 %	0.7 %	1.6 %	3.7 %	0.0 %	0.0 %	0.0 %
Management of Funds							
Investment ratio	1.3 %	1.7 %	1.1 %	4.4 %	2.1 %	1.4 %	1.1 %
Maint. Capex / Sales	1.3 %	1.2 %	0.8 %	0.9 %	1.1 %	0.7 %	0.6 %
Capex / Dep	54.6 %	72.8 %	78.6 %	300.2 %	96.7 %	93.5 %	93.5 %
Avg. Working Capital / Sales	22.1 %	21.1 %	19.2 %	25.6 %	29.6 %	20.1 %	21.1 %
Trade Debtors / Trade Creditors	334.3 %	228.4 %	336.9 %	228.8 %	336.4 %	343.8 %	338.1 %
Inventory Turnover	3.5 x	2.8 x	3.2 x	1.9 x	3.1 x	3.2 x	3.2 x
Receivables collection period (days)	47	49	49	35	50	50	50
Payables payment period (days)	31	52	34	36	33	32	33
Cash conversion cycle (Days)	87	98	94	172	100	99	98

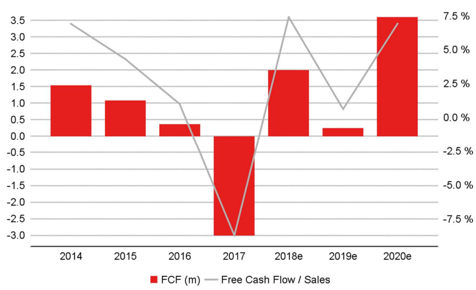
CAPEX and Cash Flow

in EUR m



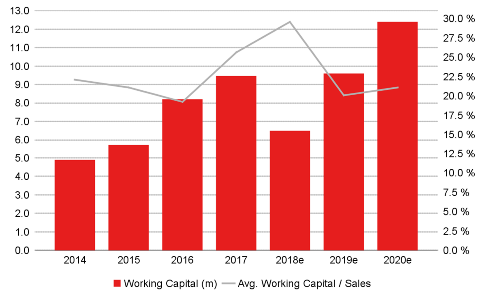
Source: Warburg Research

Free Cash Flow Generation



Source: Warburg Research

Working Capital



Source: Warburg Research

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The valuation underlying the investment recommendation for the company analysed here is based on generally accepted and widely used methods of fundamental analysis, such as e.g. DCF Model, Free Cash Flow Potential, Peer Group Comparison or Sum of the Parts Model (see also http://www.mmwarburg.de/disclaimer/disclaimer.htm#Valuation). The result of this fundamental valuation is modified to take into consideration the analyst’s assessment as regards the expected development of investor sentiment and its impact on the share price.

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Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
Vectron Systems AG	3, 5, 6	http://www.mmwarburg.com/disclaimer/disclaimer_en/DE000A0KEXC7.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.
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-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.

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING

Rating	Number of stocks	% of Universe
Buy	113	55
Hold	89	43
Sell	4	2
Rating suspended	0	0
Total	**206**	**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	32	67
Hold	16	33
Sell	0	0
Rating suspended	0	0
Total	**48**	**100**

PRICE AND RATING HISTORY VECTRON SYSTEMS AG AS OF 03.09.2018

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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