Vectron Systems AG
Germany - Engineering

HAUCK & AUFHÄUSER
PRIVATBANKIERS SEIT 1796

Buy (old: Buy)

Price target: EUR 31.00 (old: EUR 23.75)

Price:	EUR 16.56	**Next result:**	Q3: tba
Bloomberg:	V3S@GR	**Market cap:**	EUR 109.5 m
Reuters:	V3SG.DE	**Enterprise Value:**	EUR 104.3 m

08-October-18

Tim Wunderlich, CFA
Alina Köhler
Analysts
tim.wunderlich@ha-ib.de
Tel.: +49 40 4143885 81

On track to monetise its installed base; chg.

Vectron is sitting on a gold mine: Its 120,000 cash register installations in Germany (e.g. restaurants) provide real-time access to the POS AND each day generate **masses of valuable transaction data** – a unique asset just waiting to be monetised.

Cashing in on this asset is Vectron's **key strategic focus**. Two main thrusts:

- **DeutschlandCard co-operation** – Leveraging one of Germany's leading customer loyalty systems to its installed base, Vectron looks set to grab a high-margin share of every transaction.
- **Big Data monetisation** – Vectron is seen to establish itself as the dominant platform for data services allowing clients to gather, analyse and act upon Big Data from the fragmented hospitality sector.

Both of this is an appealing value proposition not only for restaurants which may boost revenues by raising visitor frequency, identifying trends, and gaining client insights. Rather, global brands and wholesale distributors should be **licking their chops for Big Data** to help them optimise merchandise and marketing management through unique insights (e.g. beer consumption per region and brand).

Strategy execution looks ready to start as the DeutschlandCard roll-out should begin by October. Meanwhile, we expect **positive news flow in the coming months** as Vectron should announce contracts with major brands for its cloud data services (e.g. Metro) – a proof of concept for the new strategy and **likely share price catalyst**.

Regulation in Germany is the **icing on the cake** forcing the hospitality sector to replace outdated cash registers to comply with legal requirements. This should not only drive **windfall profits** in 2019 / 2020 / 2021 BUT allow Vectron to **expand its Big Data quality and breadth** through market share gains.

In consequence, we see Vectron emerging as the **centre of gravity for Big Data and loyalty systems** in the German hospitality sector yielding profitable and recurring revenues: We expect sales to rise at 21% p.a. to € 57m and EBIT to soar at 68% to € 8m between 2017 and 2020E.

Make the cash tills ring: valuation looks unambitious considering the various growth and margin catalysts. **Re-initiate with BUY** and a € 31.00 PT based on DCF.

Y/E 31.12 (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
Sales	22.4	25.9	33.7	32.4	25.5	38.0	57.2
Sales growth	5 %	15 %	30 %	-4 %	-21 %	49 %	51 %
EBITDA	1.6	2.6	3.6	2.3	-1.8	4.1	9.7
EBIT	1.0	2.1	3.1	1.7	-2.5	3.1	8.3
Net income	0.5	1.2	2.0	1.1	-1.7	1.8	5.2
Net debt	-3.6	-4.2	-7.2	-1.7	-0.2	2.4	4.2
Net gearing	-37.0 %	-54.0 %	-48.5 %	-12.1 %	-2.3 %	19.8 %	24.5 %
Net Debt/EBITDA	0.0	0.0	0.0	0.0	0.0	0.6	0.4
EPS pro forma	0.09	0.20	0.30	0.16	-0.26	0.27	0.79
CPS	0.26	0.18	0.05	-0.45	0.03	-0.25	-0.02
DPS	0.08	0.11	0.25	0.06	0.06	0.06	0.08
Dividend yield	0.5 %	0.7 %	1.5 %	0.4 %	0.4 %	0.4 %	0.5 %
Gross profit margin	55.6 %	54.9 %	54.4 %	55.6 %	54.0 %	57.0 %	58.0 %
EBITDA margin	7.0 %	10.2 %	10.7 %	7.0 %	-7.1 %	10.9 %	17.0 %
EBIT margin	4.6 %	8.0 %	9.2 %	5.4 %	-9.7 %	8.1 %	14.5 %
ROCE	8.5 %	15.2 %	16.5 %	8.3 %	-12.0 %	13.9 %	33.8 %
EV/sales	4.3	3.7	3.1	3.4	4.3	3.0	2.0
EV/EBITDA	61.8	36.6	28.9	48.4	-61.1	27.5	11.9
EV/EBIT	94.6	46.8	33.8	62.5	-44.8	36.8	13.9
PER	190.7	84.0	55.6	101.8	-63.5	60.6	21.1
Adjusted FCF yield	0.7 %	1.6 %	2.1 %	0.1 %	-1.9 %	1.9 %	4.9 %

Source: Company data, Hauck & Aufhäuser Close price as of: 05.10.2018

Source: Company data, Hauck & Aufhäuser

High/low 52 weeks:	28.15 / 14.44
Price/Book Ratio:	7.8
Relative performance (SDAX):	
3 months	-
6 months	-
12 months	-

Changes in estimates

		Sales	EBIT	EPS
2018	*old:*	56.5	19.0	8.07
	Δ	-54.9%	-113.0%	na

Key share data:

Number of shares: (in m pcs)	6.6
Authorised capital: (in € m)	3.3
Book value per share: (in €)	2.2
Ø trading volume: (12 months)	10,500

Major shareholders:

Free Float	44.0 %
Jens Reckendorf	28.1 %
Thomas Stümmler	28.0 %

Company description:
German market leader for POS systems looking to monetise its installed base

Investment case in a nutshell

Key asset: Installed base of 120,000 cash registers in the German hospitality sector providing direct and real-time access to the POS

Strategic focus: **Monetise this asset**. Three major growth and margin catalysts:

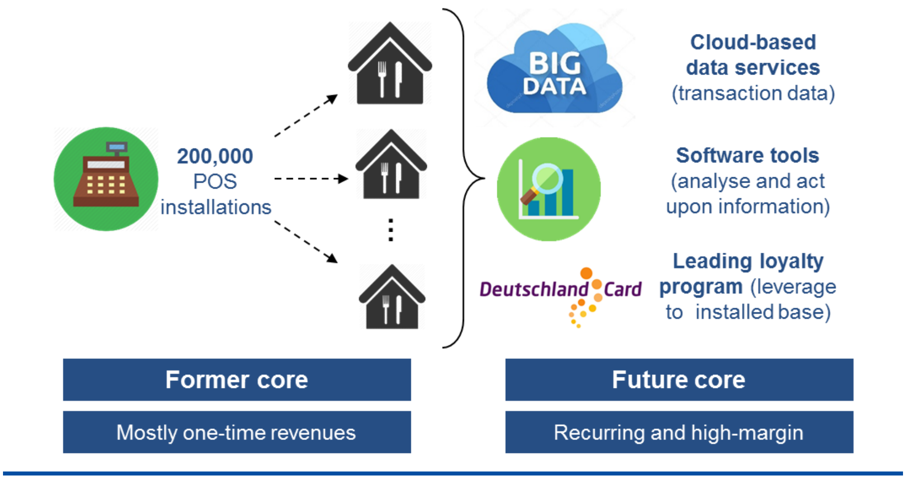
- Leverage leading loyalty program to the installed base
- Big Data monetisation
- Capitalise on replacement demand driven by German cash register regulation

Growth and margin upside not adequately reflected in valuation: **Re-initiate with BUY**, € 31.00 PT (DCF)

As the technology leader for cash registers, Vectron has **captured a dominant 25-30% share** in its core regional markets Germany, Austria, Switzerland and Benelux, translating into an **installed base of some 200,000 cash registers in total** of which 120,000 are located in Germany.

This installed base is Vectron's core asset which not only yields direct and "real-time" access to the point of sale (POS) BUT also generates masses of valuable transaction data every day (e.g. beer consumption per region and brand).

Key strategic focus: Monetise the installed base



Source: Company data, Hauck & Aufhäuser

Monetising this asset is the key strategic focus – and Vectron has set the course to do just that in the coming years. There are **three major growth and margin drivers**:

- **DeutschlandCard co-operation** – Leveraging the leading customer loyalty system to the installed base of restaurants and bakeries, Vectron looks set to bite off a high-margin slice of every transaction.
- **Big Data monetisation –** Vectron is seen to establish itself as the dominant platform for cloud-based software tools and data services allowing clients to gather, analyse and act upon Big Data from the fragmented hospitality sector.

- **Cash register regulation** – German law requires all cash registers to be tamper-proof by 2020E, implying that Vectron will see massive replacement demand from its installed base in the coming years.

As a result, operating performance should hit a trough this year and **growth and margins looks set to improve significantly going forward**. As such, the times looks right to take a fresh look at Vectron: **we re-initiate with BUY and a € 31 PT** based on a sum of the parts analysis.

Company Background

	CASH REGISTERS	NEW VENTURES	Group
		Deutschland Card	
Products	Vectron sells mobile, touch and regular stationary cash registers as well as the underlying software. The company has an unmatched 200,000 cash register installations in its core markets providing real-time access to POS - **its key asset**	**Key strategy**: Monetise the installed base of 200,000 POS installations. The installed base in Germany is 120,000 cash registers. Note: As a rule of thumb, one merchant typically uses 1.5 cash regitser per POS on average. Hence, 120,000 installations imply Vectron has 80,000 restaurateurs as customers.	
Sales 20E (€ m)	42.8	14.4	**57.2**
Sales share	75%	25%	**100%**
Explanation	**Vectron is the technology leader for high-end cash systems and the underlying software** in core markets Germany, Austria, Switzerland and Benelux. Customers can buy or lease the product. The high functionality and stability of its cash registers coupled with the tight integration between hardware and software is a **key differentiator**. While its core brand "Vectron" has a strong position in the high-end, its more standardised Duratec solution targets the mid-market.	How Vectron should monetise its installed base: * **Leverage the leading customer loyalty system** of DeutschlandCard to the installed base * **Offer Big Data and data analytics services** based on the real-time transaction data supplied by the POS installations As such, Vectron looks set to **support the digital transformation of the hospitality sector** which today still does business like it did 30 years ago (e.g. ordering by fax etc.)	
Market position & customers	Leader in selected verticals including hair salons, bakeries and restaurants. **The market share is c. 25% in regional core markets**. Selected customers include Dunkin' Donuts, Häagen-Dasz, Kentucky Fried Chicken, Lavazza, and Coffee Fellows.	The only player in the market **offering comprehensive access to the German hospitality sector** through 200,000 POS cash register installations. Vectron hence looks strongly positioned to monetise this asset.	
Competitors	Key rivals are small software companies (Hypersoft, Samuelson, PC-Cash), integrated hardware & software providers (Casio, Sharp, Schultes) and low-end iPad-based software providers (Orderbird, Gastrofix).	Competition exists for certain parts of the new ventures e.g. for online reservations rivals include OpenTable or bookatable.com. Big Data provisioning is also offered by GEDAT - but its data is not real-time and incomplete.	
Raw Materials, Production, Suppliers	Production is exclusively assembly and Vectron has several Taiwanese partners. Key raw materials are the LCD / touch display as well as the embedded cash system computer module.		
Sales by region	Vectron has a **strong distribution network** comprising >220 resellers in all of its regional markets for its high-end product (thereof 120 partners in Germany) and >75 partners for Duratec which also take care of service for the end-customer. **73% of sales are generated in Germany**, 25% in the rest of the EU and 2% in RoW. Key European markets are Germany, Austria, Switzerland, and Benelux.		
EBIT 20E (€ m)	6.9	1.4	**8.3**
EBIT-margin	16%	10%	**15%**

Source: Company data, Hauck & Aufhäuser

Investment highlights

1 Leverage leading loyalty program to the installed base

- **Key thrust**: leverage a leading loyalty program with 20m customers to its installed base of 120,000 POS in the German hospitality sector
- Vectron will **grab a high-margin share** of every transaction, driving growth and profitability
- **Base case scenario**: € 24m sales and € 6m EBIT by 2021E

While a Letter of Intent has already been signed, Vectron should shortly enter into a **comprehensive cooperation agreement** with DeutschlandCard, a wholly-owned subsidiary of Bertelsmann.

The aim is to leverage DeutschlandCard's **leading customer loyalty program to the German hospitality sector**. The business model is comparable to Nectar in the UK: customers can collect points and receive prizes when shopping in participating POS.

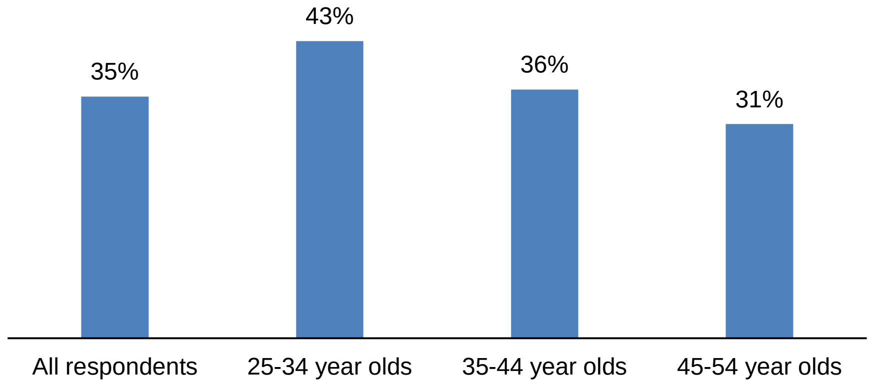
DeutschlandCard has **20m retail clients and 10,000 POS** including well-known companies like EDEKA, Esso, and Hertz. It trails only PAYBACK, which has 30m clients in Germany.

What DeutschlandCard lacks, however, is a presence in the fragmented German hospitality sector including restaurants and bakeries. **That is just what Vectron brings to the table**, explaining the strong fit.

Benefits are self-evident for all sides:

- Restaurants can **increase visitor frequency and revenues** by joining DeutschlandCard's prominent and proven loyalty program. According to research firms, visitor frequency can rise by 35% due to loyalty programs (*see below*).

Estimated visit increase from a restaurant rewards program



Source: LOYALOGY

- DeutschlandCard can **further improve the appeal of its loyalty program**, thus winning additional retail customers.

- **Vectron can generate high-margin revenues**: it will receive a fee on every purchase done in connection with the DeutschlandCard in restaurants ranking amongst its installed base.

The related revenue and margin potential **looks highly attractive and visibility on a successful roll-out is high** considering that DeutschlandCard is a leading and proven loyalty program in Germany.

Base Case

In a first step, we calculate the expected average number of participating restaurants (*see below*) assuming **16% of Vectron's installed base** will join the loyalty program by 2021E and 20% by 2022E.

BASE CASE: Revenue & EBIT from DeutschlandCard		2019E	2020E	2021E	2022E
(a)	Installed base in Germany (units)	120,000	120,000	120,000	120,000
(b)	**Number of restaurants / bakeries[1]**	**80,000**	**80,000**	**80,000**	**80,000**
I.	Deriving the average number of participating POS				
(c)	Participating POS in % of (b)	3.0%	12.0%	16.0%	20.0%
	[b x c] Participating POS (units)	2,400	9,600	12,800	16,000
	Average number of participating POS (units)	**1,200**	**6,000**	**11,200**	**14,400**
II.	Deriving the relevant turnover per participating POS				
(d)	Average turnover per POS / month (€)	60,000	60,000	60,000	60,000
(e)	Turnover indemnified through DeutschlandCard (%)	15%	15%	15%	15%
	[d x e] Turnover per POS / month (€)	**9,000**	**9,000**	**9,000**	**9,000**
III.	Deriving Vectron's revenue				
(f)	Average number of participating POS (units)	1200	6,000	11200	14400
(g)	Turnover indemnified through DeutschlandCard per POS / month (€)	9,000	9,000	9,000	9,000
(h)	**Fee charged by Vectron**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
1.	**[f x g x h] Revenue per year (€ m)**	**2.6**	**13.0**	**24.2**	**31.1**

Source: Company data, Hauck & Aufhäuser. [1]Assuming 1.5 cash register installations per POS

In a second step, **we derive the average turnover per POS and month** which should be generated in connection with the DeutschlandCard (*see above*).

We expect Vectron to generate a 2.0% fee on this turnover, resulting in our revenue expectation for the coming years. **Sales are seen to rise to € 24m by 2021E**.

Vectron is expected to **kick-off sales & marketing** for the loyalty program in Q4'18, supported by its strong distribution network (c. 200 partners in Germany).

In a final step, **we calculate the EBIT impact** (*see below*). Key assumptions: Vectron will have to spend € 400 to acquire one customer and share its 2.0% turnover fee with its partners, **keeping roughly 40% of the fee for itself**:

- DeutschlandCard is expected to receive 40% of the fee.

- Distribution partners should receive 20% of the fee.

Related expenses are shown in other variable costs (*see below*). Other fixed costs to support the loyalty program should come on top.

		2019E	2020E	2021E	2022E
IV.	Deriving operating expenses				
(i)	Acquisition costs per restaurant (€)	400	400	400	400
(k)	Net customer adds	2,400	7,200	3,200	3,200
(l)	**[i x k] Total acquisition costs (€ m)**	**1.0**	**2.9**	**1.3**	**1.3**
(m)	Other variable costs[2] (€ m)	1.6	7.8	14.5	18.7
(n)	Other fixed costs (€ m)	0.8	1.9	2.4	2.8
2.	**[l + m + n] Total operating expenses (€ m)**	**3.3**	**12.6**	**18.2**	**22.7**
3.	**[1. - 2.] EBIT per year [€ m)**	**-0.7**	**0.4**	**6.0**	**8.4**
	EBIT margin	na	3%	25%	27%

Source: Company data, Hauck & Aufhäuser. [2] Assuming Vectron will have to pass on 40% of the fee to DC and 20% to the distribution partner

As a result, we expect **EBIT to amount to € 6m by 2021E** implying a c. 25% EBIT margin which should gradually move up for further to a sustainable 30% (eH&A).

Bull Case

We have conducted a scenario analysis to show potential upside and downside to the Base Case, which is included in our estimates.

Even the Bear Case yields a 22% EBIT margin by 2022E, **underpinning the scalability and the attractive risk / reward profile** of the loyalty program.

BULL CASE: 40% adoption by 2022E / 20% of turnover indemnified through DeutschlandCard				
	2019E	2020E	2021E	2022E
Participating POS in %	3.0%	20.0%	35.0%	40.0%
Average number of participating POS (units)	**1,200**	**9,200**	**22,000**	**30,000**
Turnover indemnified through DeutschlandCard (%)	20%	20%	20%	20%
Turnover per POS / month (€)	**12,000**	**12,000**	**12,000**	**12,000**
Fee charged by Vectron	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Revenue per year (€ m)	**3.5**	**26.5**	**63.4**	**86.4**
Total operating expenses (€ m)	**3.8**	**23.3**	**45.2**	**56.2**
EBIT per year [€ m)	**-0.4**	**3.2**	**18.1**	**30.2**
EBIT margin	na	12%	29%	35%

Source: Company data, Hauck & Aufhäuser

Bear Case

BEAR CASE: 10% adoption by 2022E / 10% of turnover indemnified through DeutschlandCard				
	2019E	**2020E**	**2021E**	**2022E**
Participating POS in %	3.0%	8.0%	9.0%	10.0%
Average number of participating POS (units)	**1,200**	**4,400**	**6,800**	**7,600**
Turnover indemnified through DeutschlandCard (%)	10%	10%	10%	10%
Turnover per POS / month (€)	**6,000**	**6,000**	**6,000**	**6,000**
Fee charged by Vectron	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Revenue per year (€ m)	**1.7**	**6.3**	**9.8**	**10.9**
Total operating expenses (€ m)	**2.5**	**6.7**	**7.8**	**8.5**
EBIT per year [€ m)	**-0.8**	**-0.3**	**2.0**	**2.4**
EBIT margin	na	-5%	21%	22%

Source: Company data, Hauck & Aufhäuser

2 Big Data monetisation

Strong potential demand for Big Data in the food services industry:

- Food services industry largely not yet digitised – **market players thus lack valuable insights**
- Wholesale distributors and global brands can use Big Data to **optimise merchandise and marketing management**
- **First project with Metro has kicked off** – more are likely to come
- We model € 7m revenues and € 5m EBIT by 2021E

Vectron's installed base not only yields direct and "real-time" access to the point of sale (POS) BUT also generates **masses of valuable transaction data** every day (e.g. beer consumption per region and brand).

Monetising this Big Data is another key strategic thrust. Vectron is looking to establish itself as the dominant platform for cloud-based software tools and data services allowing clients to gather, analyse and act upon Big Data from the food services industry **for a recurring monthly fee**.

The relevant portfolio is seen to include:

- **Big Data services**. Restaurateurs, OEMs and distributors may access Big Data collected from thousands of local restaurants to understand latest industry trends including industry revenues, pricing, menu preferences etc.
- **Software tools to analyse proprietary data**. Analytical tools can help restaurateurs scrutinise visitor numbers, the development of own sales, input costs etc.
- **Software tools to act upon data**. Restaurateurs can use Vectron's software for loyalty and sales campaigns (e.g. coupons, discounts, digital stamps) as well as to access features such as table reservations, online ordering etc.

VECTRON's software and data portfolio

Data Services to access Big Data
e.g. industry trends

Software tools to analyse own data
e.g. revenues and reservations

Software tools to act upon information
e.g. offer discounts, digital stamps, coupons

Source: Company data, Hauck & Aufhäuser

Strong appetite for Big Data across the entire POS ecosystem

Interest in Vectron's Big Data offering should be strong. Selected restaurants and especially the bigger chains (e.g. McDonald's) already today rely on "social media chatter" and other forms of Big Data (e.g. OpenTable's GuestCenter) to prepare food, decide where to open up a new branch etc.

However, by and large, **the food services industry is not yet digitised**. It thus misses out on valuable insights which **could help boost profits** in an industry characterised by thin margins and widespread bankruptcies (i.e. most restaurants do not survive year one).

Notably, inefficiencies and a lack of real-time data force the food services industry **to trash 30% of perishable goods** at the end of each day – a costly affair.

Vectron is thus seen to face a whole ecosystem **licking its chops for relevant transaction data**:

- **Wholesale distributors and major brands** may rely on Big Data to optimise marketing and merchandise management ("the right product at the right place and time") by helping them understand where and by whom their products are consumed.

- **Restaurants**, **bakeries** etc. can use Big Data to boost visitor frequency, raise client loyalty and receive real-time industry insights. For instance, during a lull in demand, Big Data may help a restaurateur determine whether it is a home-made problem or an industry-wide phenomenon and spur demand via selected promotions or menu changes using software tools.

Appetite for data is underpinned by wholesale data models operated by the likes of Gedat Datentechnik GmbH. Gedat collects data from wholesale organisations and sells these to companies like Coca-Cola which should pay tens of millions per year for this (eH&A).

This data, however, is **inferior to the breadth and quality of Vectron's data sets**, in our view. Two reasons: First, Gedat relies on wholesale data rather than POS data. Second, Gedat's data is not real-time.

Given its large installed POS base and real-time access, we expect Vectron to be well-positioned to become the **dominant transaction data platform** in its core markets which should be welcomed by the entire eco-system.

How to monetise: First projects have already started

We expect **initial projects to involve OEMs** which are looking to get their hands on transaction data from the fragmented hospitality sector to optimise merchandise management.

Above all, this should include **Metro Cash & Carry** (i.e. Metro's wholesale business) – a pilot project which Vectron has recently disclosed. We expect Metro to have **the goal of automating wholesale supply logistics** – notably, as of today, restaurateurs still place wholesale orders via fax or telephone.

Next to this, Vectron should be in **discussions with several additional OEMs** (e.g. beer breweries) which are eager to get their hands on industry insights.

Monetisation should be simple. Vectron is expected to sell data sets from the hospitality sector at a fixed price per month. OEMs will then have to pay a monthly fee depending on the size of their data sets.

Revenue & EBIT from Big Data monetisation				
	2019E	**2020E**	**2021E**	**2022E**
POS in Germany (units)	80,000	80,000	80,000	80,000
Number of POS sharing data (units)	**4,000**	**12,000**	**24,000**	**32,000**
in %	5%	15%	30%	40%
OEM data customers (e.g. Metro)	1	2	5	10
Revenue p.a. for Vectron (€ m)	**0.2**	**1.4**	**7.2**	**19.2**
Related operating expenses (€ m)	0.1	0.4	1.8	4.8
EBIT p.a. for Vectron (€ m)	**0.2**	**1.1**	**5.4**	**14.4**
EBIT margin	75%	75%	75%	75%

Source: Company data, Hauck & Aufhäuser

Our model makes the following assumptions: (1) 30% of Vectron's installed POS base (i.e. 32,000 POS) will join the data program by 2021E (i.e. by agreeing to anonymously share transaction data); (2) Vectron wins 5 OEM data customers by 2021E such as Coca-Cola or Metro.

This yields roughly € 7m sales by 2021E. EBIT should amount to c. € 5m, implying a 75% EBIT margin, as there should be little incremental expenses.

Upside to our estimates could come from **further monetisation at the POS level** e.g. penetrating the German hospitality sector with bonVito functionality including table reservation, data analytics etc. Conservatively, we have not included this into our estimates.

3 German regulation – a major windfall starting 2019E

- German regulation will require all cash registers to become "tamper-proof" by 2020E, **driving strong replacement demand**
- We derive a **total revenue opportunity of € 72m for Vectron** which should be realised from 2019-21E

German legislation requiring cash systems to be tamper-proof **will come into effect at the beginning of 2020**. This means that existing, outdated POS installations will need to be replaced with systems fulfilling legal requirements. Non-compliant restaurateurs will face significant penalties.

The potential windfall for Vectron should be huge and amount to € 72m, in our view (*see below*), given its large installed base of c. 120,000 registers in Germany which will have to be updated. Two options:

- **A technical software upgrade** should suffice to make newer cash registers compliant with legislation. We expect **60% of the installed base** to fall into this category.
- Older POS installations will have to be replaced altogether. This should be the case for **40% of the installed base**, in our view.

On top of this, Vectron should be able to **snap up market share** from rivals. To explain: There is still a substantial base of cash registers in Germany from the likes of Indatec, Casio and Sharp which have since left the market or cut investments - meaning these customers are "up for the taking" as their existing systems largely do not satisfy the new legislation.

We expect the **replacement cycle to stretch over the three years** 2019 (30% of replacement demand), 2020 (40%) and 2021 (30%) as there are typically some early movers as well as laggards.

The table below provides a calculation of the sales potential assuming Vectron will charge € 100 for a software upgrade and € 1,350 for a new cash register (i.e. including a 10% volume discount).

Total revenue potential German regulation		
	Installed base	**120,000**
	Softw are upgrade (60%)	72,000
	Price per unit (€)	100
I.	**Revenue software upgrade (€ m)**	**7**
	New cash register (40%)	48,000
	Price per unit (€)	1,350
II.	**Revenue new cash register (€ m)**	**65**
	[I. + II.] Total revenue potential (€ m)	**72**

Source: Company data, Hauck & Aufhäuser

In total, Vectron is expected to reap **one-time sales of € 72m** which we expect to be split 30% / 40% / 30% between 2019E, 2020E and 2021E, as mentioned before.

	2019E	2020E	2021E
Demand split according to year (in % of total)	30%	40%	30%
Revenue from German regulation (€ m)	**22**	**29**	**22**
thereof software (€ m)	2.2	2.9	2.2
thereof new cash register (€ m)	19	26	19

Source: Company data, Hauck & Aufhäuser

Note that we do not expect Vectron to gain market share which is a **conservative assumption** given the exit / de-focusing of competitors. For instance, Indatec alone held a 4% market share in Germany prior to its exit. A 5pp market share gain would equal 20,000 machines **implying an additional c. € 12m revenue opportunity for Vectron**.

Putting it all together – our revenue model for Vectron

Vectron's new revenue model is based on three pillars:

- **The "old" business** (75% of sales in 2020E), i.e. the sale of cash registers, software and services which should largely be driven by German legislation forcing the hospitality sector to replace outdated cash registers. Also, there will be "additional" demand referring to countries outside Germany.

- The **DeutschlandCard loyalty program** (23% of sales in 2020E): Vectron is expected grab a high-margin share of each transaction indemnified through the DeutschlandCard.

- **Big Data services** (2% of sales in 2020E): Vectron is expected to generate subscription-based revenues by making valuable hospitality POS transaction data available to OEMs such as Metro and Coca-Cola.

The rising share of revenues stemming from new ventures i.e. the DeutschlandCard program and Big Data (c. 70% of sales in the long term) should **strongly benefit Vectron's bottom line** as these are margin-rich:

- We expect the DeutschlandCard program to yield **sustainable 30% EBIT margins** for Vectron in the mid- to long term.

- Vectron's Big Data business is highly scalable as it should require only little incremental costs explaining the modelled **75% EBIT margin**.

At the same time, Vectron has established **high levels of competitive quality** given its large installed base of more than 120,000 cash registers in Germany and a dominant market share of 25-30% in its core region.

Thanks to all of this, we see Vectron capable of **securing and sustaining EBIT margins of 30% in the long term**.

Vectron: Sales trend 2015-21E

	2015	2016	2017	2018E	2019E	2020E	2021E
Sales	**25.9**	**33.7**	**32.4**	**25.5**	**38.0**	**57.2**	**67.1**
yoy	15%	30%	-4%	-21%	49%	51%	17%
I Vectron cash registers	**19.3**	**22.5**	**20.2**	**15.0**	**23.6**	**30.1**	**23.6**
in % of sales	75%	67%	62%	59%	62%	53%	35%
a Regulation Germany	-	-	-	-	19.4	25.9	19.4
b Additional cash register demand	-	-	-	-	4.2	4.2	4.2
II Software	**2.6**	**2.3**	**2.7**	**2.0**	**3.2**	**3.9**	**3.2**
in % of sales	10%	7%	8%	8%	8%	7%	5%
a Fiscal regulation Germany	-	-	-	-	2.2	2.9	2.2
b Additional softw are demand	-	-	-	-	1.0	1.0	1.0
III Service	**4.0**	**8.9**	**9.4**	**8.5**	**8.6**	**8.8**	**8.9**
in % of sales	15%	26%	29%	33%	23%	15%	13%
IV New ventures	**-**	**-**	**-**	**-**	**2.6**	**14.4**	**31.4**
in % of sales	-	-	-	-	7%	25%	47%
a DeutschlandCard loyalty program	-	-	-	-	2.6	13.0	24.2
b Big Data services	-	-	-	-	-	1.4	7.2

Source: Company data, Hauck & Aufhäuser

Vectron: Bottom-line trend 2015-21E	2015	2016	2017	2018E	2019E	2020E	2021E
Material expenses	**11.6**	**15.4**	**14.0**	**11.5**	**16.0**	**23.7**	**24.7**
in % of sales	45%	46%	43%	45%	42%	41%	37%
Gross Profit	**14.2**	**18.4**	**18.4**	**14.0**	**22.0**	**33.5**	**42.4**
Gross Margin	55%	54%	57%	55%	58%	59%	63%
Personnel expenses	**7.1**	**8.6**	**9.7**	**9.6**	**11.2**	**15.3**	**15.6**
in % of sales	27%	26%	30%	38%	29%	27%	23%
Other operating expenses	**5.6**	**6.6**	**7.0**	**6.7**	**7.4**	**9.5**	**9.8**
in % of sales	22%	19%	21%	26%	20%	17%	15%
Other operating income	**1.1**	**0.4**	**0.6**	**0.5**	**0.8**	**1.0**	**1.2**
in % of sales	4%	1%	2%	2%	2%	2%	2%
EBITDA	**2.6**	**3.6**	**2.3**	**-1.8**	**4.1**	**9.7**	**18.2**
EBITDA margin	10%	11%	7%	-7%	11%	17%	27%
D&A	**0.6**	**0.5**	**0.5**	**0.7**	**1.1**	**1.4**	**2.5**
in % of sales	2%	2%	2%	3%	3%	2%	4%
EBIT	**2.1**	**3.1**	**1.7**	**-2.5**	**3.1**	**8.3**	**15.7**
EBIT margin	8.0%	9.2%	5.4%	-9.7%	8.1%	14.5%	23.3%
Financial result	**-0.2**	**-0.1**	**-0.1**	**-0.2**	**-0.3**	**-0.3**	**-0.2**
Taxes	**0.7**	**1.0**	**0.6**	**-0.9**	**1.0**	**2.8**	**5.4**
Tax rate	36%	34%	35%	35%	35%	35%	35%
Net income	**1.2**	**2.0**	**1.1**	**-1.7**	**1.8**	**5.2**	**10.0**
in % of sales	5%	6%	3%	-7%	5%	9%	15%

Source: Company data, Hauck & Aufhäuser

Valuation: DCF

- A DCF model yields a **price target of € 31 per share** for Vectron
- **DCF best reflects Vectron's expected transformation** towards margin-rich new ventures

We chose a DCF model to value Vectron as it seems best suited to account for Vectron's transformation towards the margin-rich new ventures.

In the long term, we expect Vectron's revenue mix to incorporate:

- € 30m from the cash register, software and services business p.a. at a 5% EBIT margin
- € 50m from the DeutschlandCard business p.a. at a 30% EBIT margin
- € 20m from the Big Data services business p.a. at a 75% EBIT margin

This explains our long-term DCF assumptions of a **terminal year EBIT margin of 30%**. The mid-term growth rate is set at 10% in light of the transformation towards the new ventures and the cash register replacement demand arising from German legislation. The terminal growth rate is set at 2.0% and the WACC of 8.0% is made up of a 1.5% risk-free rate, beta of 1.2 and a risk premium of 5.5%.

The DCF model results in a price target of € 31.00 per share.

Vectron DCF (EUR m) (except per share data and beta)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	Terminal value
NOPAT	-1.6	2.0	5.4	10.2	10.0	13.5	15.3	18.4	18.6
Depreciation	0.7	1.1	1.4	3.2	3.5	4.8	5.8	5.6	5.7
Increase/decrease in working capital	2.4	-3.5	-5.4	-3.1	0.3	-0.8	0.6	-1.4	-1.2
Increase/decrease in long-term provisions and accruals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capex	-1.1	-1.7	-2.6	-3.2	-3.4	-4.8	-5.1	-5.6	-5.7
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital increase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow	**0.3**	**-2.1**	**-1.2**	**7.0**	**10.4**	**12.7**	**16.6**	**17.0**	**17.4**
Present value	0.3	-1.9	-1.0	5.5	7.5	8.5	10.2	9.7	166.3
WACC	8.1%	8.0%	7.9%	8.1%	8.1%	8.1%	8.1%	8.1%	8.0%

DCF per share derived from	
Total present value	205
thereof terminal value	81%
Net debt (net cash) at start of year	-2
Financial assets	2
Provisions and off balance sheet debt	2
Equity value	207
No. of shares outstanding	6.6
Discounted cash flow per share	**31**
upside/(downside)	**89%**
Share price	**16.6**

DCF avg. growth and earnings assumptions	
Short term growth (2017-2020)	21%
Medium term growth (2020 - 2025)	10%
Long term growth (2025 - infinity)	2.0%
Terminal year EBIT margin	30%

WACC derived from	
Cost of borrowings before taxes	5.0%
Tax rate	35.0%
Cost of borrowings after taxes	3.2%
Required return on invested capital	8.1%
Risk premium	5.5%
Risk-free rate	1.5%
Beta	1.2

Sensitivity analysis DCF

WACC \ Long term growth	0.0%	1.0%	2.0%	3.0%	4.0%
10.0%	19	21	23	25	28
9.0%	22	24	26	30	34
8.0%	25	28	31	36	44
7.0%	29	33	38	46	60
6.0%	35	41	49	64	92

Sensitivity analysis DCF

WACC \ EBIT margin terminal year	25%	28%	30%	33%	35%
10.0%	20	21	23	24	26
9.0%	23	24	26	28	30
8.0%	27	29	31	34	36
7.0%	33	36	38	41	44
6.0%	42	45	49	53	57

Source: Company data, Hauck & Aufhäuser

Financials

Profit and loss (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
Net sales	**22.4**	**25.9**	**33.7**	**32.4**	**25.5**	**38.0**	**57.2**
Sales growth	*4.7 %*	*15.4 %*	*30.4 %*	*-4.0 %*	*-21.3 %*	*49.0 %*	*50.5 %*
Increase/decrease in finished goods and work-in-process	0.2	0.1	0.0	0.6	0.4	0.6	0.6
Total sales	**22.6**	**25.9**	**33.7**	**33.0**	**25.9**	**38.6**	**57.8**
Other operating income	0.9	1.1	0.4	0.6	0.5	0.8	1.0
Material expenses	10.0	11.7	15.4	14.6	11.9	16.6	24.3
Personnel expenses	6.3	7.1	8.6	9.7	9.6	11.2	15.3
Other operating expenses	5.6	5.6	6.6	7.0	6.7	7.4	9.5
Total operating expenses	21.0	23.3	30.1	30.7	27.7	34.4	48.1
EBITDA	**1.6**	**2.6**	**3.6**	**2.3**	**-1.8**	**4.1**	**9.7**
Depreciation	0.3	0.3	0.3	0.3	0.4	0.5	0.5
EBITA	**1.2**	**2.3**	**3.3**	**1.9**	**-2.2**	**3.7**	**9.2**
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	0.3	0.6	0.9
Impairment charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT (inc revaluation net)	**1.0**	**2.1**	**3.1**	**1.7**	**-2.5**	**3.1**	**8.3**
Interest income	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Interest expenses	0.0	0.3	0.2	0.2	0.3	0.4	0.4
Other financial result	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial result	0.1	-0.2	-0.1	-0.1	-0.2	-0.3	-0.3
Recurring pretax income from continuing operations	**1.1**	**1.8**	**3.0**	**1.7**	**-2.7**	**2.8**	**8.0**
Extraordinary income/loss	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings before taxes	**1.1**	**1.8**	**3.0**	**1.7**	**-2.7**	**2.8**	**8.0**
Taxes	0.3	0.7	1.0	0.6	-0.9	1.0	2.8
Net income from continuing operations	**0.8**	**1.2**	**2.0**	**1.1**	**-1.7**	**1.8**	**5.2**
Result from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income	**0.8**	**1.2**	**2.0**	**1.1**	**-1.7**	**1.8**	**5.2**
Minority interest	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Net profit (reported)	**0.5**	**1.2**	**2.0**	**1.1**	**-1.7**	**1.8**	**5.2**
Average number of shares	6.0	6.0	6.6	6.6	6.6	6.6	6.6
EPS reported	**0.09**	**0.20**	**0.30**	**0.16**	**-0.26**	**0.27**	**0.79**

Profit and loss (common size)	2014	2015	2016	2017	2018E	2019E	2020E
Net sales	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**
Increase/decrease in finished goods and work-in-process	0.9 %	0.3 %	0.1 %	1.9 %	1.5 %	1.5 %	1.0 %
Total sales	**100.9 %**	**100.3 %**	**100.1 %**	**101.9 %**	**101.5 %**	**101.5 %**	**101.0 %**
Other operating income	3.9 %	4.1 %	1.3 %	1.7 %	2.0 %	2.0 %	1.8 %
Material expenses	44.8 %	45.2 %	45.6 %	45.2 %	46.7 %	43.6 %	42.4 %
Personnel expenses	28.2 %	27.3 %	25.6 %	30.0 %	37.6 %	29.4 %	26.8 %
Other operating expenses	24.8 %	21.7 %	19.5 %	21.5 %	26.4 %	19.6 %	16.7 %
Total operating expenses	93.9 %	90.1 %	89.4 %	95.0 %	108.6 %	90.6 %	84.0 %
EBITDA	**7.0 %**	**10.2 %**	**10.7 %**	**7.0 %**	**neg.**	**10.9 %**	**17.0 %**
Depreciation	1.5 %	1.3 %	1.0 %	1.1 %	1.4 %	1.2 %	0.9 %
EBITA	**5.4 %**	**8.9 %**	**9.7 %**	**5.9 %**	**neg.**	**9.7 %**	**16.1 %**
Amortisation of goodwill	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Amortisation of intangible assets	0.9 %	0.9 %	0.6 %	0.5 %	1.2 %	1.6 %	1.6 %
Impairment charges	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
EBIT (inc revaluation net)	**4.6 %**	**8.0 %**	**9.2 %**	**5.4 %**	**neg.**	**8.1 %**	**14.5 %**
Interest income	0.4 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %	0.1 %
Interest expenses	0.1 %	1.1 %	0.6 %	0.5 %	1.0 %	0.9 %	0.6 %
Other financial result	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Financial result	0.3 %	neg.	neg.	neg.	neg.	neg.	neg.
Recurring pretax income from continuing operations	**4.8 %**	**7.1 %**	**8.8 %**	**5.1 %**	**neg.**	**7.3 %**	**14.0 %**
Extraordinary income/loss	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Earnings before taxes	**4.8 %**	**7.1 %**	**8.8 %**	**5.1 %**	**neg.**	**7.3 %**	**14.0 %**
Tax rate	29.7 %	35.6 %	33.7 %	35.2 %	35.2 %	35.2 %	35.2 %
Net income from continuing operations	**3.4 %**	**4.6 %**	**5.8 %**	**3.3 %**	**neg.**	**4.8 %**	**9.1 %**
Income from discontinued operations (net of tax)	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Net income	**3.4 %**	**4.6 %**	**5.8 %**	**3.3 %**	**neg.**	**4.8 %**	**9.1 %**
Minority interest	1.1 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Net profit (reported)	**2.3 %**	**4.6 %**	**5.8 %**	**3.3 %**	**neg.**	**4.8 %**	**9.1 %**

Source: Company data, Hauck & Aufhäuser

Balance sheet (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
Intangible assets	**0.6**	**0.5**	**0.4**	**1.5**	**2.1**	**2.9**	**4.1**
Property, plant and equipment	0.8	0.8	0.7	0.6	0.5	0.4	0.4
Financial assets	0.9	0.9	0.9	1.8	1.8	1.8	1.8
FIXED ASSETS	**2.3**	**2.2**	**2.1**	**4.0**	**4.4**	**5.0**	**6.3**
Inventories	2.9	3.8	4.8	7.6	5.1	7.6	11.4
Accounts receivable	2.9	3.4	4.9	3.3	3.1	4.7	7.1
Other current assets	0.1	0.4	1.0	0.8	0.8	0.8	0.8
Liquid assets	5.1	9.5	11.7	5.5	9.1	6.4	4.6
Deferred taxes	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Deferred charges and prepaid expenses	0.1	0.1	0.1	0.2	0.2	0.2	0.2
CURRENT ASSETS	11.2	17.2	22.5	17.5	18.4	19.7	24.2
TOTAL ASSETS	**13.5**	**19.4**	**24.6**	**21.5**	**22.8**	**24.8**	**30.4**
SHAREHOLDERS EQUITY	9.8	7.7	14.9	14.3	11.0	12.4	17.2
MINORITY INTEREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long-term debt	1.5	5.3	4.4	3.8	3.8	3.8	3.8
Provisions for pensions and similar obligations	0.8	1.5	2.1	1.4	1.4	1.4	1.4
Other provisions	0.1	0.5	1.1	0.2	0.2	0.2	0.2
Non-current liabilities	**2.4**	**7.2**	**7.6**	**5.5**	**5.5**	**5.5**	**5.5**
short-term liabilities to banks	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Accounts payable	0.9	1.5	1.5	1.4	1.1	1.7	2.5
Advance payments received on orders	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities (incl. from lease and rental contracts)	0.5	2.9	0.6	0.2	0.2	0.2	0.2
Deferred taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred income	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current liabilities	**1.3**	**4.4**	**2.0**	**1.7**	**6.4**	**6.9**	**7.8**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**13.5**	**19.4**	**24.6**	**21.5**	**22.8**	**24.8**	**30.4**

Balance sheet (common size)	2014	2015	2016	2017	2018E	2019E	2020E
Intangible assets	**4.7 %**	**2.4 %**	**1.8 %**	**7.2 %**	**9.4 %**	**11.6 %**	**13.4 %**
Property, plant and equipment	5.9 %	4.0 %	2.9 %	2.8 %	2.1 %	1.5 %	1.3 %
Financial assets	6.7 %	4.6 %	3.7 %	8.4 %	7.9 %	7.3 %	5.9 %
FIXED ASSETS	**17.2 %**	**11.1 %**	**8.4 %**	**18.4 %**	**19.4 %**	**20.4 %**	**20.6 %**
Inventories	21.3 %	19.6 %	19.4 %	35.4 %	22.4 %	30.7 %	37.6 %
Accounts receivable	21.4 %	17.6 %	19.9 %	15.3 %	13.8 %	18.9 %	23.2 %
Other current assets	0.7 %	1.9 %	3.9 %	3.5 %	3.3 %	3.1 %	2.5 %
Liquid assets	37.8 %	48.8 %	47.5 %	25.8 %	39.8 %	25.7 %	15.1 %
Deferred taxes	1.0 %	0.7 %	0.5 %	0.5 %	0.4 %	0.4 %	0.3 %
Deferred charges and prepaid expenses	0.5 %	0.3 %	0.4 %	1.0 %	0.9 %	0.9 %	0.7 %
CURRENT ASSETS	82.7 %	88.9 %	91.6 %	81.6 %	80.6 %	79.6 %	79.4 %
TOTAL ASSETS	**99.9 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.1 %**
SHAREHOLDERS EQUITY	72.2 %	39.8 %	60.6 %	66.8 %	48.1 %	50.0 %	56.5 %
MINORITY INTEREST	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Long-term debt	11.1 %	27.3 %	18.1 %	17.8 %	16.7 %	15.4 %	12.5 %
Provisions for pensions and similar obligations	6.2 %	7.6 %	8.4 %	6.6 %	6.3 %	5.8 %	4.7 %
Other provisions	0.6 %	2.4 %	4.6 %	1.0 %	1.0 %	0.9 %	0.7 %
Non-current liabilities	**17.9 %**	**37.3 %**	**31.1 %**	**25.5 %**	**24.0 %**	**22.1 %**	**18.0 %**
short-term liabilities to banks	0.0 %	0.0 %	0.0 %	0.0 %	21.9 %	20.2 %	16.4 %
Accounts payable	6.4 %	7.7 %	5.9 %	6.7 %	5.0 %	6.8 %	8.4 %
Advance payments received on orders	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Other liabilities (incl. from lease and rental contracts)	3.4 %	15.1 %	2.4 %	1.1 %	1.0 %	0.9 %	0.8 %
Deferred taxes	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Deferred income	0.1 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Current liabilities	**9.9 %**	**22.8 %**	**8.3 %**	**7.8 %**	**27.9 %**	**27.9 %**	**25.6 %**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**

Source: Company data, Hauck & Aufhäuser

Cash flow statement (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
Net profit/loss	0.8	1.2	2.0	1.1	-1.7	1.8	5.2
Depreciation of fixed assets (incl. leases)	0.5	0.3	0.3	0.3	0.4	0.5	0.5
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.0	0.2	0.2	0.2	0.3	0.6	0.9
Others	0.4	0.6	0.8	-1.8	0.0	0.0	0.0
Cash flow from operations before changes in w/c	1.7	2.3	3.3	-0.2	-1.1	2.9	6.6
Increase/decrease in inventory	0.0	-0.9	-1.0	-2.8	2.5	-2.5	-3.8
Increase/decrease in accounts receivable	0.2	-0.5	-1.5	1.6	0.2	-1.5	-2.4
Increase/decrease in accounts payable	-0.2	0.6	0.0	0.0	-0.3	0.6	0.9
Increase/decrease in other working capital positions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Increase/decrease in working capital	0.1	-0.8	-2.5	-1.3	2.4	-3.5	-5.4
Cash flow from operating activities	**1.8**	**1.5**	**0.8**	**-1.5**	**1.3**	**-0.6**	**1.2**
CAPEX	0.3	0.4	0.4	1.5	1.1	1.7	2.6
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
Cash flow from investing activities	**-0.3**	**-0.4**	**-0.4**	**-2.4**	**-1.1**	**-1.7**	**-2.6**
Cash flow before financing	1.5	1.1	0.3	-3.9	0.2	-2.3	-1.4
Increase/decrease in debt position	-0.1	3.7	-3.3	-0.6	5.0	0.0	0.0
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
Dividends paid	0.5	0.5	0.7	1.6	1.6	0.4	0.4
Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Effects of exchange rate changes on cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow from financing activities	**-0.6**	**3.2**	**1.9**	**-2.2**	**3.4**	**-0.4**	**-0.4**
Increase/decrease in liquid assets	1.0	4.3	2.2	-6.1	3.5	-2.7	-1.8
Liquid assets at end of period	**5.1**	**9.5**	**11.7**	**5.5**	**9.1**	**6.4**	**4.6**

Source: Company data, Hauck & Aufhäuser

Regional split (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
Domestic	15.5	18.0	25.9	23.7	18.7	29.6	46.9
yoy change	3.1 %	16.0 %	43.7 %	-8.2 %	-21.2 %	58.6 %	58.2 %
Rest of Europe	6.4	6.6	7.4	8.2	6.5	8.0	9.8
yoy change	14.2 %	3.8 %	11.6 %	11.3 %	-21.0 %	22.7 %	23.3 %
NAFTA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
yoy change	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Asia Pacific	n/a	n/a	n/a	n/a	n/a	n/a	n/a
yoy change	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Rest of world	0.5	0.6	0.5	0.4	0.3	0.4	0.5
yoy change	-33.3 %	14.3 %	-20.9 %	-8.2 %	-27.8 %	24.2 %	20.4 %
TTL	**22.4**	**25.9**	**33.7**	**32.4**	**25.5**	**38.0**	**57.2**
yoy change	4.7 %	15.4 %	30.4 %	-4.0 %	-21.3 %	49.0 %	50.5 %

Source: Company data, Hauck & Aufhäuser

Key ratios (EUR m)	2014	2015	2016	2017	2018E	2019E	2020E
P&L growth analysis							
Sales growth	4.7 %	15.4 %	30.4 %	-4.0 %	-21.3 %	49.0 %	50.5 %
EBITDA growth	3.1 %	69.3 %	36.7 %	-37.5 %	-180.3 %	-327.8 %	-635.7 %
EBIT growth	6.3 %	102.3 %	49.3 %	-43.4 %	-241.5 %	-224.5 %	-436.0 %
EPS growth	39.2 %	127.1 %	51.0 %	-45.4 %	-260.4 %	-204.7 %	-401.2 %
Efficiency							
Total operating costs / sales	93.9 %	90.1 %	89.4 %	95.0 %	108.6 %	90.6 %	84.0 %
Sales per employee	172.4	192.3	221.1	186.6	135.6	185.8	266.0
EBITDA per employee	12.0	19.7	23.7	13.0	-9.6	20.2	45.1
Balance sheet analysis							
Avg. working capital / sales	23.1 %	21.1 %	22.1 %	29.0 %	34.1 %	24.4 %	20.9 %
Inventory turnover (sales/inventory)	7.8	6.8	7.1	4.3	5.0	5.0	5.0
Trade debtors in days of sales	47.0	48.1	53.0	37.1	45.0	45.0	45.0
A/P turnover [(A/P*365)/sales]	14.1	21.1	15.8	16.2	16.2	16.2	16.2
Cash conversion cycle (days)	120.1	120.4	131.5	190.9	166.6	175.1	178.8
Cash flow analysis							
Free cash flow	1.5	1.1	0.3	-3.0	0.2	-2.3	-1.4
Free cash flow/sales	6.8 %	4.2 %	1.0 %	-9.2 %	0.7 %	-6.1 %	-2.4 %
FCF / net profit	294.0 %	92.2 %	17.6 %	neg.	neg.	neg.	neg.
Capex / depn	56.9 %	72.9 %	82.4 %	473.6 %	170.0 %	159.2 %	187.9 %
Capex / maintenance capex	64.0 %	83.3 %	59.9 %	16.1 %	20.5 %	32.6 %	36.8 %
Capex / sales	1.4 %	1.6 %	1.3 %	7.4 %	4.4 %	4.4 %	4.6 %
Security							
Net debt	-3.6	-4.2	-7.2	-1.7	-0.2	2.4	4.2
Net Debt/EBITDA	0.0	0.0	0.0	0.0	0.0	0.6	0.4
Net debt / equity	neg.	neg.	neg.	neg.	neg.	0.2	0.2
Interest cover	60.1	7.3	16.0	11.5	0.0	8.7	23.6
Dividend payout ratio	92.1 %	55.8 %	84.0 %	153.4 %	100.0 %	22.0 %	10.2 %
Asset utilisation							
Capital employed turnover	1.8	1.7	1.5	1.6	1.2	1.7	2.1
Operating assets turnover	3.9	4.0	3.8	3.2	3.4	3.5	3.5
Plant turnover	28.2	33.1	47.7	53.1	53.2	102.3	148.1
Inventory turnover (sales/inventory)	7.8	6.8	7.1	4.3	5.0	5.0	5.0
Returns							
ROCE	8.5 %	15.2 %	16.5 %	8.3 %	-12.0 %	13.9 %	33.8 %
ROE	5.3 %	15.3 %	13.2 %	7.5 %	-15.7 %	14.6 %	30.3 %
Other							
Interest paid / avg. debt	1.1 %	8.3 %	4.0 %	3.7 %	4.0 %	4.0 %	4.0 %
No. employees (average)	130	135	153	174	188	205	215
Number of shares	6.0	6.0	6.6	6.6	6.6	6.6	6.6
DPS	0.1	0.1	0.3	0.1	0.1	0.1	0.1
EPS reported	0.09	0.20	0.30	0.16	-0.26	0.27	0.79
Valuation ratios							
P/BV	10.2	12.9	7.4	7.6	10.0	8.8	6.4
EV/sales	4.3	3.7	3.1	3.4	4.3	3.0	2.0
EV/EBITDA	61.8	36.6	28.9	48.4	-61.1	27.5	11.9
EV/EBITA	79.2	42.1	31.8	57.1	-51.0	30.8	12.5
EV/EBIT	94.6	46.8	33.8	62.5	-44.8	36.8	13.9
EV/FCF	63.1	88.6	301.4	-36.5	653.9	-49.3	-83.0
Adjusted FCF yield	0.7 %	1.6 %	2.1 %	0.1 %	-1.9 %	1.9 %	4.9 %
Dividend yield	0.5 %	0.7 %	1.5 %	0.4 %	0.4 %	0.4 %	0.5 %

Source: Company data, Hauck & Aufhäuser

Disclosures regarding research publications of Hauck & Aufhäuser Privatbankiers AG pursuant to section 85 of the German Securities Trading Act (WpHG) and distributed in the UK under an EEA branch passport, subject to the FCA requirements on research recommendation disclosures

It is essential that any research recommendation is fairly presented and discloses interests of indicates relevant conflicts of interest. Pursuant to section 85 of the German Securities Trading Act (WpHG) a research report has to point out possible conflicts of interest in connection with the analysed company. Further to this, under the FCA's rules on research recommendations, any conflicts of interest in connection with the recommendation must be disclosed. A conflict of interest is presumed to exist in particular if Hauck & Aufhäuser Privatbankiers AG

(1) or its affiliate(s) (either in its own right or as part of a consortium) within the past twelve months, acquired the financial instruments of the analysed company,

(2) has entered into an agreement on the production of the research report with the analysed company,

(3) or its affiliate(s) has, within the past twelve months, been party to an agreement on the provision of investment banking services with the analysed company or have received services or a promise of services under the term of such an agreement,

(4) or its affiliate(s) holds a) 5% or more of the share capital of the analysed company, or b) the analysed company holds 5% or more of the share capital of Hauck & Aufhäuser Privatbankiers AG or its affiliate(s),

(5) or its affiliate(s) holds a net long (a) or a net short (b) position of 0.5% of the outstanding share capital of the analysed company or derivatives thereof,

(6) or its affiliate(s) is a market maker or liquidity provider in the financial instruments of the issuer,

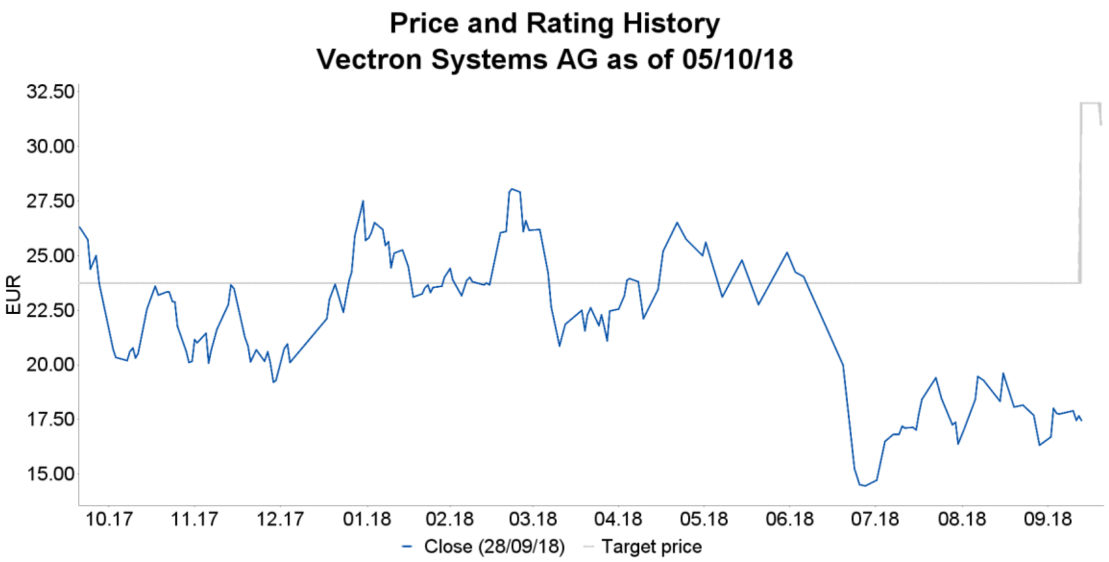
(7) or the analyst has any other significant financial interests relating to the analysed company such as, for example, exercising mandates in the interest of the analysed company or a significant conflict of interest with respect to the issuer,

(8) The research report has been made available to the company prior to its publication. Thereafter, only factual changes have been made to the report.

Conflicts of interest that existed at the time when this research report was published:

Company	Disclosure
Vectron Systems AG	8

Historical target price and rating changes for Vectron Systems AG in the last 12 months



Initiation coverage

27-January-16

Company	Date	Analyst	Rating	Target price	Close

Hauck & Aufhäuser distribution of ratings and in proportion to investment banking services

Buy	64.29 %	95.00 %
Sell	11.31 %	0.00 %
Hold	24.40 %	5.00 %

Date of publication creation: 08/10/2018 02:44 PM

Date of publication dissemination: 08/10/2018 02:58 PM

1. General Information/Liabilities
This research report has been produced for the information purposes of institutional investors only, and is not in any way a personal recommendation, offer or solicitation to buy or sell the financial instruments mentioned herein. The document is confidential and is made available by Hauck & Aufhäuser Privatbankiers AG, exclusively to selected recipients [in DE, GB, FR, CH, US, UK, Scandinavia, and Benelux or, in individual cases, also in other countries]. A distribution to private investors in the sense of the German Securities Trading Act (WpHG) is excluded. It is not allowed to pass the research report on to persons other than the intended recipient without the permission of Hauck & Aufhäuser Privatbankiers AG. Reproduction of this document, in whole or in part, is not permitted without prior permission Hauck & Aufhäuser Privatbankiers AG. All rights reserved.

Under no circumstances shall Hauck & Aufhäuser Privatbankiers AG, any of its employees involved in the preparation, have any liability for possible errors or incompleteness of the information included in this research report – neither in relation to indirect or direct nor consequential damages. Liability for damages arising either directly or as a consequence of the use of information, opinions and estimates is also excluded. Past performance of a financial instrument is not necessarily indicative of future performance.

2. Responsibilities
This research report was prepared by the research analyst named on the front page (the "Producer"). The Producer is solely responsible for the views and estimates expressed in this report. The report has been prepared independently. The content of the research report was not influenced by the issuer of the analysed financial instrument at any time. It may be possible that parts of the research report were handed out to the issuer for information purposes prior to the publication without any major amendments being made thereafter.

3. Organisational Requirements
Hauck & Aufhäuser Privatbankiers AG took internal organisational and regulative precautions to avoid or accordingly disclose possible conflicts of interest in connection with the preparation and distribution of the research report. All members of Hauck & Aufhäuser Privatbankiers AG involved in the preparation of the research report are subject to internal compliance regulations. No part of the Producer's compensation is directly or indirectly related to the preparation of this financial analysis. In case a research analyst or a closely related person is confronted with a conflict of interest, the research analyst is restricted from covering this company.

4. Information Concerning the Methods of Valuation/Update
The determination of the fair value per share, i.e. the price target, and the resultant rating is done on the basis of the adjusted free cash flow (adj. FCF) method and on the basis of the discounted cash flow – DCF model. Furthermore, a peer group comparison is made.

The adj. FCF method is based on the assumption that investors purchase assets only at a price (enterprise value) at which the operating cash flow return after taxes on this investment exceeds their opportunity costs in the form of a hurdle rate of 7.5%. The operating cash flow is calculated as EBITDA less maintenance capex and taxes.

Within the framework of the DCF approach, the future free cash flows are calculated initially on the basis of a fictitious capital structure of 100% equity, i.e. interest and repayments on debt capital are not factored in initially. The adjustment towards the actual capital structure is done by discounting the calculated free cash flows with the weighted average cost of capital (WACC), which takes into account both the cost of equity capital and the cost of debt. After discounting, the calculated total enterprise value is reduced by the interest-bearing debt capital in order to arrive at the equity value.

Hauck & Aufhäuser Privatbankiers AG uses the following three-step rating system for the analysed companies:

Buy: Sustainable upside potential of more than 10% within 12 months
Sell: Sustainable downside potential of more than 10% within 12 months.
Hold: Upside/downside potential is limited. No immediate catalyst visible.

NB: The ratings of Hauck & Aufhäuser Privatbankiers AG are not based on a performance that is expected to be "relative" to the market.

The decision on the choice of the financial instruments analysed in this document was solely made by Hauck & Aufhäuser Privatbankiers AG. The opinions and estimates in this research report are subject to change without notice. It is within the discretion of Hauck & Aufhäuser Privatbankiers AG whether and when it publishes an update to this research report, but in general updates are created on a regular basis, after 6 months at the latest. A sensitivity analysis is included and published in company's initial studies.

5. Major Sources of Information
Part of the information required for this research report was made available by the issuer of the financial instrument. Furthermore, this report is based on publicly available sources (such as, for example, Bloomberg, Reuters, VWD-Trader and the relevant daily press) believed to be reliable. Hauck & Aufhäuser Privatbankiers AG has checked the information for plausibility but not for accuracy or completeness.

6. Competent Supervisory Authority
Hauck & Aufhäuser Privatbankiers AG are under supervision of the BaFin – German Federal Financial Supervisory Authority Bundesanstalt für Finanzdienstleistungsaufsicht), Graurheindorfer Straße 108, 53117 Bonn and Marie-Curie-Straße 24 – 28, 60439 Frankfurt a.M.

This document is distributed in the UK under a MiFID EEA branch passport and in compliance with the applicable FCA requirements.

7. Specific Comments for Recipients Outside of Germany
This research report is subject to the law of the Federal Republic of Germany. The distribution of this information to other states in particular to the USA, Canada, Australia and Japan may be restricted or prohibited by the laws applicable within this state.

8. Miscellaneous
According to Article 4(1) No. i of the delegated regulation 2016/958 supplementing regulation 596/2014 of the European Parliament, further information regarding investment recommendations of the last 12 months are published under:
https://www.hauck-aufhaeuser.de/page/UVV_InstitutResearch

Contacts: Hauck&Aufhäuser Privatbankiers AG

Hauck & Aufhäuser Research

Hauck & Aufhäuser
Privatbankiers AG
Mittelweg 16/17
20148 Hamburg
Germany

Tel.: +49 (0) 40 414 3885 93
Fax: +49 (0) 40 414 3885 71
Email: research@ha-ib.de
www.ha-research.de

Tim Wunderlich, CFA
Head of Research
Tel.: +49 40 414 3885 81
E-Mail: tim.wunderlich@ha-ib.de

Henning Breiter
Head of Research
Tel.: +49 40 414 3885 73
E-Mail: henning.breiter@ha-ib.de

Carlos Becke
Analyst
Tel.: +49 40 414 3885 74
E-Mail: carlos.becke@ha-ib.de

Simon Bentlage
Analyst
Tel.: +49 40 4506342 3096
E-Mail: simon.bentlage@ha-ib.de

Frederik Bitter
Analyst
Tel.: +44 203 9473 247
E-Mail: frederik.bitter@ha-ib.de

Robin Brass, CFA
Analyst
Tel.: +49 40 414 3885 76
E-Mail: robin.brass@ha-ib.de

Christian Glowa
Analyst
Tel.: +49 40 414 3885 95
E-Mail: christian.glowa@ha-ib.de

Pierre Gröning
Analyst
Tel.: +49 40 450 6342 30 92
E-Mail: pierre.groening@ha-ib.de

Aliaksandr Halitsa
Analyst
Tel.: +49 40 414 3885 83
E-Mail: aliaksandr.halitsa@ha-ib.de

Alina Köhler
Analyst
Tel.: +49 40 4506342 3095
E-Mail: alina.koehler@ha-ib.de

Christian Salis
Analyst
Tel.: +49 40 414 3885 96
E-Mail: christian.salis@ha-ib.de

Christian Sandherr
Analyst
Tel.: +49 40 414 3885 79
E-Mail: christian.sandherr@ha-ib.de

Julius Stinauer
Analyst
Tel.: +49 40 414 3885 84
E-Mail: julius.stinauer@ha-ib.de

Hauck & Aufhäuser Sales

Toby Woods
Sales
Tel.: +44 203 9473 245
E-Mail: toby.woods@ha-ib.de

Christian Alisch
Sales
Tel.: +49 40 414 3885 99
E-Mail: christian.alisch@ha-ib.de

Vincent Bischoff
Sales
Tel.: +49 40 414 3885 88
E-Mail: vincent.bischoff@ha-ib.de

Alexander Lachmann
Sales
Tel.: +41 43 497 30 23
E-Mail: alexander.lachmann@ha-ib.de

Hugues Madelin
Sales
Tel.: +33 1 78 41 40 62
E-Mail: hugues.madelin@ha-ib.de

Jan Neynaber
Sales
Tel.: +49 69 2161 1268
E-Mail: jan.neynaber@hauck-aufhaeuser.com

Marco Schumann
Sales
Tel.: +49 69 2161 1250
E-Mail: marco.schumann@hauck-aufhaeuser.com

Christian Schwenkenbecher
Sales
Tel.: +44 203 9473 246
E-Mail: christian.schwenkenbecher@ha-ib.de

Hauck & Aufhäuser Sales Trading

Hauck & Aufhäuser
Privatbankiers AG
Mittelweg 16/17
20148 Hamburg
Germany

Tel.: +49 40 414 3885 75
Fax: +49 40 414 3885 71
Email: info@hauck-aufhaeuser.com
www.hauck-aufhaeuser.com

Mirko Brueggemann
Trading
Tel.: +49 40 414 3885 75
E.Mail: mirko.brueggemann@hauck-aufhaeuser.com

Christian von Schuler
Trading
Tel.: +49 40 414 3885 77
E.Mail: christian.schuler@hauck-aufhaeuser.com

Fin Schaffer
Trading
Tel.: +49 40 414 3885 98
E.Mail: fin.schaffer@hauck-aufhaeuser.com

Kathleen Jonas
Middle-Office
Tel.: +49 40 414 3885 97
E.Mail: kathleen.jonas@hauck-aufhaeuser.com

Carolin Weber
Middle-Office
Tel.: +49 40 414 3885 87
E.Mail: carolin.weber@hauck-aufhaeuser.com