A Work Project, presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

EQUITY RESEARCH – WACKER NEUSON SE: CONSTRUCTING THE FUTURE

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Abstract

This equity research report covers the global German compact and light equipment manufacturer Wacker Neuson SE on the basis of a discounted cash flow analysis and a relative valuation. It includes a detailed examination of the business segments, strategic initiatives and a sector analysis on which the valuation is based. The valuation implies a “Buy” recommendation with potential upside of 11.3% compared with the opening quote of the 2nd January 2020.

Keywords

Wacker Neuson SE, construction equipment market, discounted cash flow model, relative valuation, peer group

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"WACKER NEUSON SE"

COMPANY REPORT

"INDUSTRIALS"

03 JANUARY 2020

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Constructing the Future

A sustainable, high-quality symbiosis of compact and light equipment accelerating future growth

High growth and further tailwind

Wacker has delivered a sales CAGR of 8% from FY-13 to FY-18. Going forward we expect global megatrends such as urbanization and sustainability, as well as construction industry specific needs for more productivity will provide a runway for future growth resulting in a CAGR of 6% from FY-18 to FY-23.

Operational headaches remain

Even though headline growth was impressive, Wacker struggled to channel those increases equally into profit and free cash flow (FCF). Working capital (WC) management has been weak, seeing WC in percentage of sales going up to 46% in H1 2019 versus a long-term target of 30%. Restructuring charges for plant closures and openings have weighed on margins.

Valuation yields a buy rating

Wacker is valued on two different methods: DCF and relative valuation. Both methods give a blended price target of EUR 19.25. The DCF arrives at EUR 20.9 while relative valuation delivers a lower target of EUR 17.6. Within an attractive industry, we believe Wacker is an outstanding pick as the market has turned too negative on the company following a series of bad news over the last 2 years. The current stock price implies a dividend yield at ca. 4.0% representing a bargain in the current low-yield world.

Company Description

Wacker is a leading German manufacturer of high-quality light and compact equipment used worldwide primarily in the construction and agricultural sectors, as well as by municipal bodies and companies in sectors such as recycling, energy and rail transport.

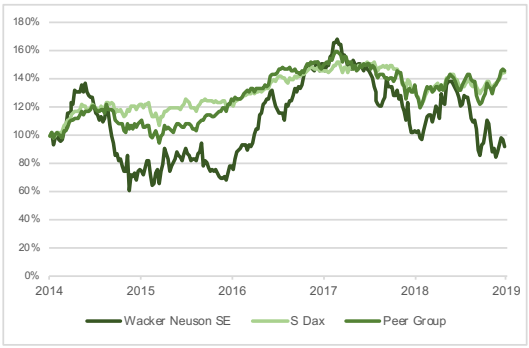
Recommendation:	**Buy**
Vs Previous Recommendation	*Not rated*
Price Target FY20:	**19.25 €**
Vs Previous Price Target	*na*
Price (as of 2-Jan-20)	**17,29 €**

Source: Bloomberg

52-week range (€)	14.12-25.58
Market Cap (€m)	1,213
Outstanding Shares (m)	70,14

Source: Bloomberg

Figure 1: Share Price Performance



Source: Bloomberg

(Values in € millions, except per share data)	2018	2019E	2020F
Revenues	1707	1864	1991
Gross profit	474	483	519
EBITDA	229	233	249
NOPAT	106	98	104
EPS	2.09	1.31	1.39
Dividend	1.10	0.70	0.74
Operating Free Cash Flow	-46	-169	63
OFCF per share	-0.66	-2.41	0.89
EV/Sales	1.0	0.9	0.8
EV/EBITDA	7.3	7.1	6.7
Price/Earnings	7.3	11.6	11.0

Source: Company Reports / Estimates

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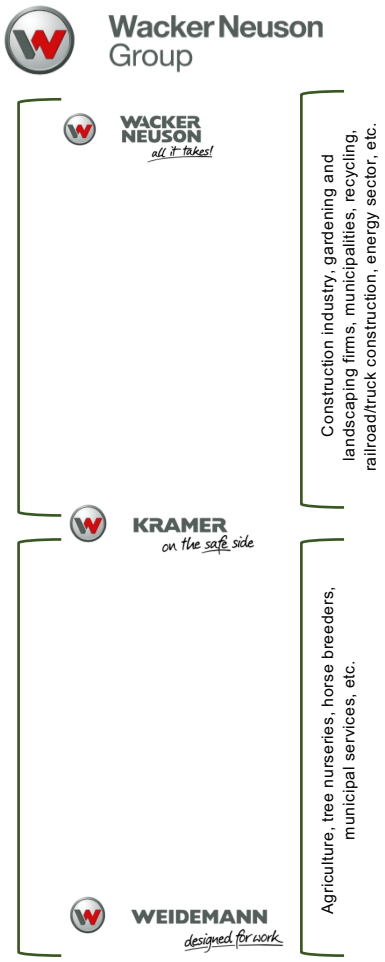
Company Overview

Wacker is a global manufacturer of light and compact equipment headquartered in Munich, Germany. The Group was formed by several mergers, but mainly by the merger of Wacker Construction Equipment and Neuson Kramer Baumaschinen AG on October 31, 2007.[1] The Group operates seven production and development sites worldwide. With more than 6000 employees, it manufactures more than 300 product groups under three different product brands. Its broad product portfolio is used primarily in the construction, gardening, landscaping and agricultural sectors as well as by municipalities and companies in areas such as recycling, energy and rail transport. It also offers rental, spare parts and repair services via its own global sales and service network. Since 2007, the Group is listed on the SDAX of the Frankfurt Stock Exchange.

Figure 2: Brand Overview



Source: Company Report 2018

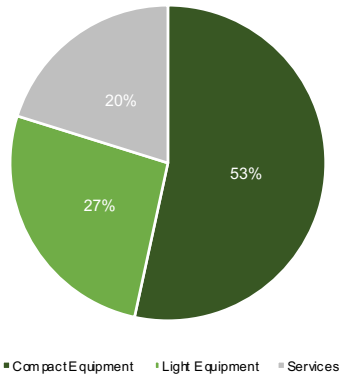
Products, brands & end markets

The broad product portfolio can be divided into the three segments: Compact Equipment, Light Equipment and Services and is marketed under the three different brands: Wacker Neuson, Kramer and Weidemann (see Figure 2 and 3).

Compact Equipment:

The compact equipment segment is the group's core business, accounting for 53.4% of sales and comprising machines from over 40 different product groups weighing up to 15 tons (see Figure 4). The portfolio includes wheel loaders, tele wheel loaders, telescopic handlers, backhoe loaders, skid steer loaders[2], wheel and track dumpers and wheel and track excavators. The average price of compact machinery amounts to EUR 30,000 but ranges up to EUR 100,000. The company's products are generally not used for heavy infrastructure construction (e.g. roads or tunnels) but can be found on many construction sites for light infrastructure (pipelines, supply lines, cabling, maintenance, etc.) in urban areas. The group markets compact equipment for the construction industry under the Wacker Neuson brand and for agriculture under the Weidemann brand. Under the Kramer brand, compact equipment is marketed for both construction and agricultural applications. The compact equipment market is dominated by major global competitors such as Caterpillar and Volvo, who are aggressively penetrating the market and leveraging economies of scale, as well as by low-priced Chinese manufacturers offering low-end machines. As a result, Wacker is less strongly positioned in the compact segment than in the light segment, acts as a price follower and is more dependent on margins in spare parts and after-sales service. However, in the agricultural equipment market, Wacker competes with several local manufacturers in a highly fragmented market and is better positioned. The agricultural

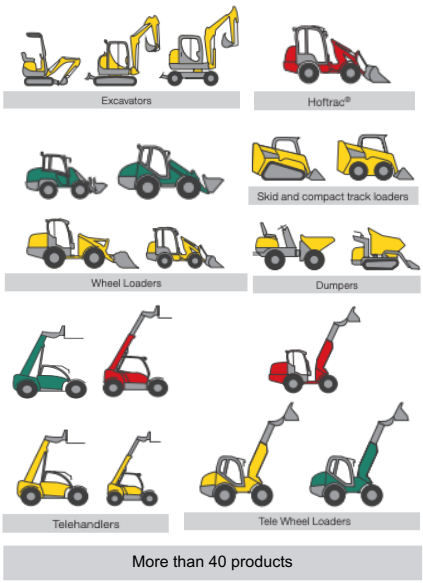
Figure 3: Revenue Split by Product



Source: Company Report 2018

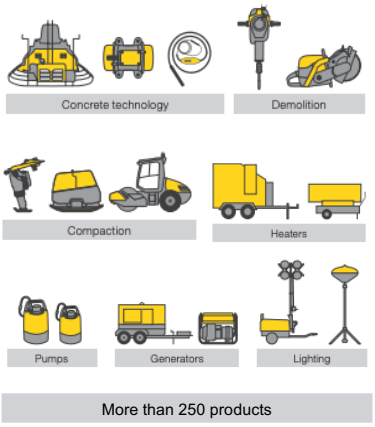
[1] The company's history goes back to 1848, when Wacker was founded as a blacksmith in Dresden
[2] Especially in the US market

Figure 4: Compact Equipment



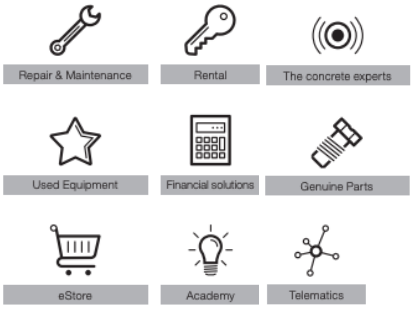
Source: Company Report 2018

Figure 5: Light Equipment



Source: Company Report 2018

Figure 6: Services



Source: Company Report 2018

segment is therefore particularly important, because higher and solid margins can be achieved.

Light Equipment:

The light equipment business comprises activities in the strategic business fields of concrete technology, compaction, demolition and construction site technology. The segment generates 26.4% of group sales. The group offers more than 250 products weighing up to 3 tons at an average price of EUR 1,500 in a range from EUR 500 to EUR 30,000 (see Figure 5). The group has one of the most comprehensive product portfolios and is the market leader in several sub-segments such as compaction. This enables the company to meet a majority of customer needs in the most common application areas such as road construction and maintenance, residential construction or demolition. Since production is synchronized with demand, delivery times are short, and orders are delivered within a short timeframe. Products are marketed exclusively under the Wacker Neuson brand. The market for light equipment is fragmented and characterized by many smaller niche suppliers. Wacker is strongly positioned thanks to the high level of brand awareness and the very extensive product offering compared to most competitors. As prices are less volatile, Wacker is also able to generate solid margins on new equipment sales. This segment is highly relevant to Wacker and will be further expanded in Americas and Asia-Pacific.

Services:

Wacker complements the sale of new equipment with a broad range of customer-oriented services and individual customer support to strengthen customer relationships (see Figure 6). The services segment comprises the business fields repair, service and spare parts, used equipment, financing, telematics solutions, e-business and flexible rental solutions in Central Europe and accounts for 20.2% of Group sales. In our view, a distinctive service organization and an expanding rental business are a key success factor, as they capitalize on the growing customer trend towards outsourcing services, as well as avoiding capital expenditure (capex), increasing flexibility and the ability to have technologically advanced and well-maintained machines on site at the customer's premises.

Business Model

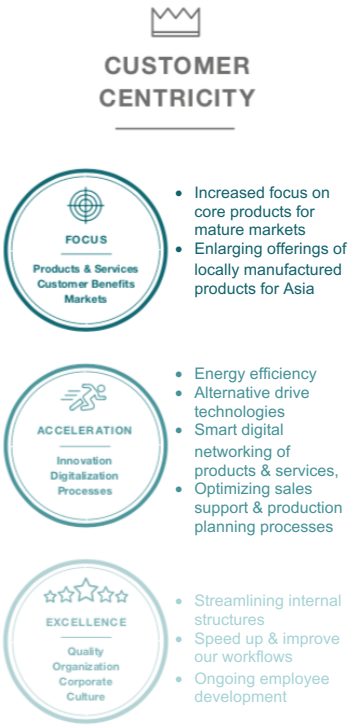
The Group's business model focuses on the manufacturing and sale of high-quality light and compact equipment and tailored services for professional customers. Wacker manufactures locally and uses strategic alliances and partnerships to gain a better and faster understanding of regional customer needs, tasks and application sites, enabling it to offer a customized portfolio of innovative, high-quality products and services and thus create cross-selling synergies. Wacker is

currently refining and restructuring its business model as part of its 2022 strategy by focusing on core products and optimizing its product portfolio.

Strategy 2022:

The "Strategy 2022" announced in March 2018 represents the strategic leitmotif of the group, which is intended to ensure a strong focus on customer needs, streamlined and more agile processes. It is based on the three strategic pillars *Focus*, *Acceleration* and *Excellence* (see Figure 7). The initiatives are central to the group's efforts to strengthen its market position while increasing growth and profitability. The group's ambitious goal is to be recognized as the industry's most innovative trendsetter, to be among the top 3 in the industry within each of its core products, to grow twice as fast as the market, to achieve a sales target of well over EUR 2 bn and an EBIT margin of ideally more than 11%, and to achieve net WC in relation to sales of less than 30%. While growth ambitions seem realistic, our forecasts indicate a substantially lower operating profit margin of only 7.1% as we see depressed gross profits to remain. Additionally, a WC level of around 30% of sales seems too ambitious. According to our estimates, a reduction to a level of 40% seems more realistic, as the high inventory levels are still inflating the WC.

Figure 7: Strategy 2022



Source: Company Report 2018

Global Production, Distribution & Service Network:

The Group reduced its global production and development sites from ten to seven (see Figure 8) to achieve economies of scale, cost savings and thus higher productivity.[3] The products manufactured at the closed sites were transferred to existing production sites in the USA and to the plant in China. In addition, the Group has more than 50 subsidiaries worldwide and over 140 of own sales and service bases. The majority of Wacker's own sales and service network naturally focuses on the core region of Europe, which accounts for 70% of sales. As internationalization progressed, however, the company also began to expand its own sales and service network in the USA and several emerging markets. Further investments in production and logistics are expected in 2020. The global production, sales and service network sets Wacker apart from its smaller and even many equally large competitors. In our view, this is a key asset that helps to increase customer proximity, gain a better understanding of local market needs, promote service business and thus raise the barriers to entry for new competitors.

Figure 8: Production Sites

Source: Company Report 2018

Strategic Alliances & Partnerships:

The Group enters into strategic alliances with industry-leading companies in order to expand its market presence more quickly, particularly in non-core markets, by accessing established distribution networks or to selectively expand its product portfolio by concluding contracts with original equipment manufacturers (OEMs).

[3] Closed factories in Norton Shores, USA and Manila, Philippines, in the second half of 2018, and in Itatiba, Brazil

Figure 9: Overview Strategic Alliances for Production and Distribution

	Partner	Initiation	Type of Alliance	Covered Products	Region
Production Alliances	RANDON	2017	Partner produces for Wacker, distributed via the Wacker's sales network under Wacker Neuson sales network and brand.	Backhoe loaders (6- to 7-tons)	South America
	HAMM	2015	Partner produces for Wacker, distributed via the Wacker's sales network under Wacker Neuson sales network and brand.	Tandem rollers (1.8- to 4.5-tons) and compactors (up to 12 tons)	Global
	Trackunit	2018	Wacker participates in the development of digital offers and uses these in its own products.	Telematics systems and mobile apps for compact equipment	Europe
	CATERPILLAR	2010	Wacker produces for partner, distributed via the CAT sales network under the CAT brand, CAT decided in 2018 to phase out from 2019 as CAT manufactures own mini excavators; selected Wacker models will be provided in lower volumes until end 2020	Mini excavators (up to 3 tons)	Global (ex. Japan)
Sales Alliances	JOHN DEERE	2010	Wacker sells through the partner's dealer network, distributed through the Deere distribution network under the Kramer brand.	Mini-excavators and compact excavators; telescopic handlers and wheel loaders (agricultural sector)	Start in Europe, expansion to China, Australia, select Asian countries
	mhe DEMAG	2017	Wacker sells through partner's dealer network, distributed via MHE's sales networl under the Wacker Neuson brand.	Compact Equipment such as track excavators, telescopic handlers, wheel loaders and wheel dumpers	ASEAN region
	ISEKI	2017	Wacker sells through partner's dealer network, distributed via Iseki sales network under the Weidemann brand.	Wheel loaders and telescopic handlers	Japan

Source: Company Report, Analyst Input

Figure 10: Service Network

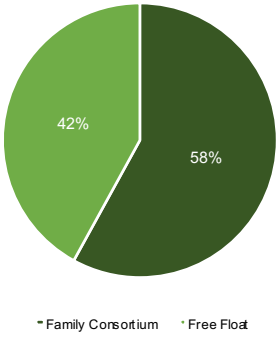
Source: Company Report 2018

This enables customers to receive local and timely product support and meets growing customer demand for "one-stop-shop" offerings.[4] Wacker works with around 5,200 dealers at over 12,400 locations worldwide (see Figure 10). Since many dealers have established long-standing and trustworthy relationships with customers, it is essential for manufacturers to collaborate and complement each other's product portfolios. In this way, the group benefits from increased utilization due to higher unit numbers without costs for marketing and an own sales network.

Shareholder structure

Wacker's shareholder structure is characterized by its history as a family-owned company (see Figure 11). Until July 2019, the Wacker and Neunteufel families, who bundle their interests in a consortium, held 63%. This resulted in a rather low free float of only 37%. The sale of shares held by family members of Wacker and Neunteufel in the amount of EUR 76 million to institutional investors[5] reduced the share of the family consortium to 58% and the free float rose accordingly to 42%. The reason for the sale was a diversification of assets and early estate planning. However, the families do not want to reduce their stakes below 50% in the long term. The regional distribution of the family consortium is limited to Germany and Austria, where the majority of the free float is also held.

Figure 11: Shareholder Structure



Source: Company Report 2018

The Sector

Wacker's core markets are construction and agriculture (see Figure 12). Geographically, Wacker is most present in the DACH[6] region and has a strong foothold in many other European countries as well. Europe accounts for 72% of sales in 2019E, while America accounts for 24% and Asia-Pacific for only 4% (see Fig-

[4] Including financing, spare parts and warranties
[5] Investors paid EUR 20 each for the 3.8 million shares
[6] Germany, Austria & Switzerland

ure 13). On a global perspective, however, China is the most important construction equipment market in the world with 23% of global unit sales, followed by USA and Europe with 21% and 18%, respectively according to construction research specialist Off-Highway Research. In general, the construction equipment market is highly fragmented with many regional or niche players. Only for heavy equipment (>15 tons), a few large OEMs (Caterpillar, Hitachi, Komatsu) have a more dominant market position. The high fragmentation is due to the very specific needs of different environments and industries. As a result, customers demand a high degree of customization which reduces economies of scale in the production process and allows smaller companies to stay in the market. As Wacker itself does not count towards the big players in the industry, they are one of the beneficiaries of the market structure. However, the fragmentation and high number of local competitors prevents companies in the industry from widen their margins substantially. In terms of cyclicality, the compact equipment part of the business is highly cyclical as these products are primarily used at new construction sites. To increase resilience against cyclical fluctuations, the Wacker has expanded its rental business and counts many equipment rental companies as clients. This line of business can serve as a buffer, as capital allocators in companies can be expected to opt for renting equipment instead of buying in times of an economic downturn. In addition, the light equipment business is in general less sensitive to economic cycles as the products are on average significantly cheaper and also mainly used for maintenance and repair of infrastructure which need to be carried out either way. As a result of its positioning, we see Wacker as a favorable pick within the industry against the backdrop of concerns about the global economic environment.

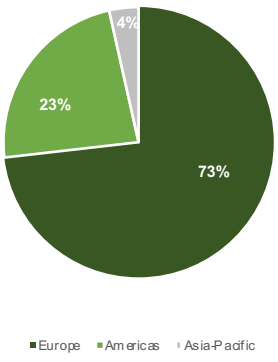
Figure 12: End-Markets

End-Markets	Target Group	
	Light Equipment	Compact Equipment
Agriculture		■
Renovation/ Rehabilitation	■	■
Development	■	■
Infrastructure (bridge, road, highway construction)	■	■
Gardening & landscaping	■	■
Handling logistics/port logistics		■
Residential construction	■	■
Demolition	■	■
Maintenance/repairs	■	■
Industry & Recycling	■	■
Underground construction	■	■
Oil & gas/energy industry	■	■
Events	■	■
Municipalities	■	■

Source: Company Report 2018

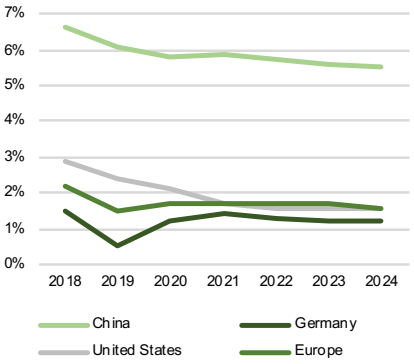
The overall construction market has developed rather heterogeneously over the last years. In Europe, nearly all countries saw an expansion, but the degree differed substantially. The UK, Hungary, Spain, Netherlands and Poland experienced strong growth and are expected to grow well above GDP for the 2022 according to Euroconstruct. Other large markets like Germany, France or Italy had more sluggish growth that has been below GDP numbers for several periods. While the market is maturing and growth rates should converge to GDP growth over the longer term (see Figure 14), Wacker is looking to increase market share in Europe. Besides geographical penetration, new product offerings and distribution strategies are levers for future growth. UK and France are two markets in focus for Wacker and the rental business line. As opposed to Europe where roughly 60% of sales are from compact equipment, the US business of Wacker has been more focused on light equipment which accounts for more than half of the revenues overseas. However, Wacker has already undertaken steps to increase recognition for its compact business. Additionally, Wacker is very active in the US to expand the dealer network for compact products and to tighten bonds with rental equip-

Figure 13: Revenue Split by Region



Source: Company Report 2018

Figure 14: GDP Main Markets



Source: IMF DataMapper 2019

ment companies. The overall backdrop of the industry is still favorable, as the US construction sector has seen solid growth over the last years, mainly driven by residential buildings. While the Oil & Gas industry has been a major contributor to revenues for the years after the fracking boom started, management has decreased the exposure to the industry after sales vanished in 2015 and 2016 when oil prices tanked.

Demand Drivers in the Construction Industry

The construction and construction equipment industry will be affected by several global megatrends over the next years and even decades. In general, we see those developments beneficial for Wacker. However, major changes always carry some risk for incumbents of the market and offer opportunities for others to enter.

Urbanization

According to the World Economic Forum, 200,000 people are moving each day from the countryside into an urban area. The number of megacities (population >10m) is projected to increase to 43 in 2030 (vs. 33 in 2018) and more than 60% of the world population will live in urban areas (>500,000 inhabitants) versus 55% today (Figure 15). This development is highly challenging for cities as these people need housing, transportation and utility infrastructure. As space is limited, density in cities is increasing which makes it harder to build the necessary infrastructure. In developed countries, a large part of the infrastructure within cities is ageing as it has been in use for several decades now. It needs to be maintained, repaired or replaced. Wacker's product portfolio with light and compact equipment is tailored for both situations as it requires little space to operate efficiently. While the trend towards urbanization should be beneficial for all manufacturers of construction equipment, we see Wacker to increase market share as they already serve the needs of urban construction.

Figure 15: Urbanization

	2018	2030
	World Population (%)	World Population (%)
Urban	55.3	60.4
>10m	6.9	8.8
5-10m	4.3	5.2
1-5m	12.1	13.8
0.5-1m	5.4	5.8
<0.5m	26.5	26.8

Source: United Nations 2018, The World's Cities in 2018

Productivity

Productivity has stagnated in the construction sector for nearly 50 years (Figure 16). However, there is significant potential that is ready to be unlocked in the future. "Lean" production methods are enabled by digitalization and equipment becomes connected while new technologies like autonomous machines and augmented reality have the ability to transform the sector and speed up construction time. With predictive maintenance, downtimes of machinery that can hold up the whole process can be prevented. Real-time data analysis enables machinery to forecast the required time needed for a specific task and allows contractors to deploy "lean" construction methods which can cut delays by 30% and costs by 15% according to Boston Consulting Group[7]. Wacker's "EquipCare" product suite al-

Figure 16: Productivity

Source: World Economic Forum 2016, Shaping the Future of Construction

[7] The Boston Consulting Group. (2015a). 2015 ECS Value Creators Report: Opportunities amid Uncertainty. Boston: Boston Consulting Group.

lows clients to have real-time transparency about all their products and check if they are used efficiently. We see Wacker on equal terms compared to their competitors with regard to enhancing productivity.

Sustainability

After focusing on constructed objects themselves, the focus of governmental regulation moves towards the production process with regards to sustainability. The construction industry is the number one consumer of global raw materials and also the producer of vast amounts of waste. More important for Wacker, excavators, telehandlers and wheel loaders are mostly powered by diesel-engines and emit CO2. Especially, within cities this has negative implications for air quality and the health of workers and local residents. Cities and governments are acting on this to protect inhabitants and move towards meeting their climate goals. Reducing climate gas emissions on construction sites, especially within urban areas, will be a tailwind for Wacker as it has already invested heavily in Research and Development (R&D) of climate neutral products (Figure 17). Its "zero-emission" line now comprises not only light equipment but also compact equipment.

Figure 17: Zero Emission Line

Safety
- Ensuring rigorous occupational safety standards
- Maintaining operator safety and protection for our customers
- Guaranteeing quality across all processes (ISO 9001, ISO 14001, ISO 50001)

Ecology
- Developing environmentally friendly products and solutions for our customers
- Conserving energy and resources in production, sales and administration processes

Society
- Taking a responsible approach to our employees
- Providing social benefits
- Supporting emergency assistance and disaster relief programs

Economy
- Driving sustainability throughout our value chain
- Ensuring legal compliance and implementing anti-corruption measures
- Reducing operating costs with energyefficient products

Source: Company Brochure 2019

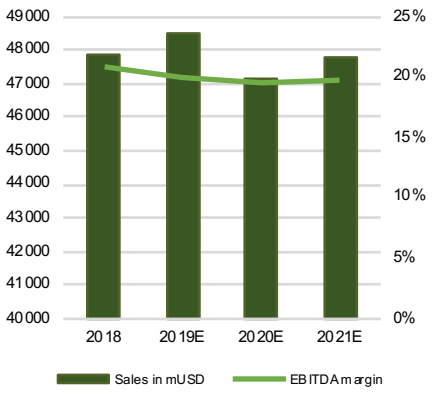
Demand Driver for Agriculture

Wacker operates with its brands Kramer and Weidemann in the market for cattle and dairy farmers. One major trend affecting farmers around the world is the growing world population and with that the increasing demand for food. However, even though demand is growing, prices for agricultural products have been under pressure for many years in Europe, where Wacker sells the majority of its agricultural products. Prices have direct impact on income and willingness to invest into equipment for farmers. For the most part of 2019, prices for dairy and the business index have been falling which should have negative impact on demand in the short term. In the longer term, demand from emerging markets where machines are not that commonly used in cattle farming yet, should be a growth driver for agricultural equipment.

Competitive Environment

Although the market for construction equipment is fragmented with no players having significant market share for the whole industry, it is possible to identify some important competitors. For the compact equipment business, the likes of Caterpillar, Kubota, Manitou and Volvo Construction represent main competitors, while companies like Ammann, Bomag and Husqvarna are located in the light equipment business. Due to the high degree of fragmentation in the light equipment business, intercompany effects between players in the market are less pronounced than in the compact equipment business.

Figure 18: Caterpillar

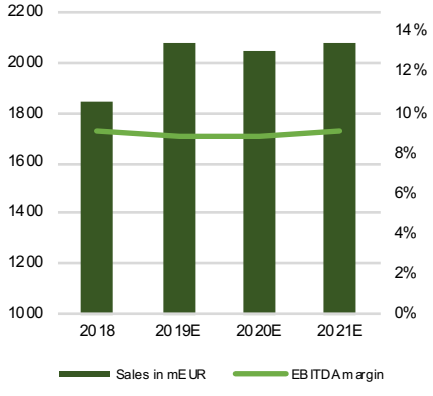


Source: Bloomberg

Caterpillar is probably the most recognized producer of construction equipment which is the largest segment of the US company. In 2018, Caterpillar was able to increase sales by 21% to USD 23.2 bn in the construction equipment segment (see Figure 18) and with that slightly outperformed Wacker who realized 17% sales growth in North America (currency adjusted). Its operating profit margin of 18.0% is industry wide at the top and due to its comparably large scale. While Wacker is still a partner of Caterpillar, the agreement ends in 2020. Wacker produced mini excavators sold under the CAT brand. Caterpillar will start to produce those themselves becoming a direct competitor in this product. We are concerned that this represents the beginning of a stronger focus on compact equipment for Caterpillar which would increase challenges for Wacker especially in the US where the brand enjoys strong recognition.

Kubota is a Japanese producer of heavy/compact equipment and of agricultural equipment. In its construction equipment segment it has achieved ca. EUR 13.2 bn sales in 2018, an increase of 6.3%. Kubota's main markets are Asia, especially Japan, and North America. Its operating margin stood at 13.2% for 2018 and has gradually declined since 2015 (16.5%). The company blames this on higher fixed costs, mainly in form of workers compensation which follows from tight labor markets in Japan and North America. As Wacker has growth ambitions in a lot of Kubota's markets, it will become a more prominent competitor over time. Like Wacker, Kubota has invested into R&D, driving it up to 2.9% of revenue (vs around 2% historically). It focuses its efforts on its agricultural business, with that cementing their position as the leading manufacturer of agricultural equipment in Asia and making it harder for Wacker to enter that particular market. In consequence, we did not expect any future revenues from agricultural equipment sales in Asia by Wacker.

Figure 19: Manitou



Source: Bloomberg

Manitou is a French equipment producer that has a fairly similar profile as Wacker. With EUR 1.9 bn revenue, of which 71% in Europe, it is comparable in size and main target market. Sales grew by 18% in 2018 and with that even more dynamic than Wacker's (see Figure 19). However, the operating margin in 2018 was 6.9% and with that in line with historic observations of a comparably lower margin than Wacker. Manitou's long-term goal is achieving an operating margin of 8%. For 2019 it expects revenue to come in 10% higher than in 2018 which is in line with our expectations for Wacker's revenue growth (9.2%). Manitou and Wacker follow very similar strategies in terms of target market, i.e. Manitou also focuses on the skid steer market in Northern America as a way to gain traction in the US. However, Manitou's products come at a lower price with inferior quality. As the challenges increase, we see Wacker better positioned to capture demand in European urban regions.

Volvo Construction is accountable for 22% of Volvo's total sales. The segment reported revenues of ca. EUR 7.9 bn for 2018, 24% higher than in 2017 (currency adjusted). Compared to Wacker, Volvo Construction has a much more pronounced focus on Asia which represents 40% of sales. Volvo's operating margin came in at 13.4% (vs. 11.9% in 2017) which is due to a near perfect utilization of existing production facilities according to management. Volvo is outstandingly well prepared for the future as it levers the electric and autonomous driving know-how from its truck segment. Especially in Asia, Volvo will try to fend off other (Western) players including Wacker and with that increasing the challenge for Wacker to turn the growth in Asia into profitable growth.

Ammann is a Swiss producer of a broad product portfolio of light equipment. It focuses on transport infrastructure and road building where it competes with Wacker's rammers, rollers and vibratory plates. As the company is private, there is little financial data available, but it had sales of around EUR 820 m in 2016. Today it has 3000 employees (vs. 6190 at Wacker) and sells its products globally.

Bomag is a private German manufacturer that is wholly owned by the Fayat Group. Its light equipment portfolio is very similar to Wacker's with a more pronounced focus on road building. In 2017 Bomag had revenues of EUR 667 m and an operating profit margin of 5.7%.

Husqvarna, the Swedish manufacturer of robotic lawn mowers has grown rapidly on the back of acquisitions in the light construction equipment over the last years. In 2018 sales were already at EUR 541 m, 15% higher than in 2017. The operating margin has been very stable at or above 12% for the last years, with 2018 at 12.4%. Its main target markets are North America and Europe. In October 2019 Husqvarna acquired Wacker's US based concrete power trowel business which generated roughly EUR 13.5 m in sales in 2018. The product line has not been in focus of Wacker's Strategy 2022 but adds to Husqvarna's growing offering what makes the deal beneficial to both parties. However, we see Husqvarna as one of the winning players in the market as they leverage their know-how from robotics and electric engines.

Differentiation

Wacker's positioning offers valuable cross-selling potential as its products are fairly complementary (see Figure 20). A customer that needs an excavator now is likely to need rollers or vibratory plates later in the project cycle. Buying all machines from the same supplier has advantages for the buyer in form of easier financing, services, spare parts and further support from a "one-stop-shop".

Precondition for the strategy to play out is a perfect record for product quality and aftermarket services. Outages of equipment are costly for constructors which means that customers are likely to be repeat buyers as soon as they have built

Figure 20: Differentiation Strategy

Efforts:

- Industry-leading engineering skills
- Top-of-class reliability and functionality
- Dense service network in case client does need help
- Cross-selling between light and compact equipment

Source: Analysts input

trust. On the reverse, when customers have made bad experiences it will be difficult to retain them. Wacker has been able to build a strong reputation for quality and reliability. Through its global network of own field offices and partners, Wacker is able to support customers around the globe without delay. Its products are known for "German engineering" quality and the high customer focus. Today, Wacker develops ideas for new and upgraded products in workshops with customer which guarantees to really cater to the needs of end users.

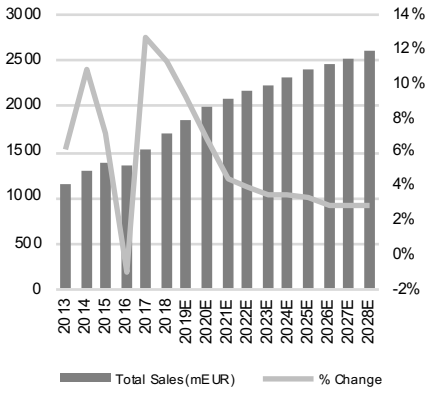
Financials

The following section includes a detailed analysis of the Wacker's historical financial performance, and a forecast of future performance.

Revenue:

On a consolidated basis, Wacker's historic sales show very solid growth, reflected in a CAGR of 8% from FY-13 to FY-18. Over the past five fiscal years, Wacker has posted only once in 2016 a slightly negative sales growth of -1% (see Figure 21).[8] Wacker's solid sales performance is based on broad diversification of customers and end markets. As a result, Wacker's sales are less sensitive to the business conditions of individual customers. The expansion of strategic alliances and Wacker's internationalization had a sustained positive impact on group sales. Wacker's uniqueness in combining light and compact equipment under one roof further increased sales and made them less cyclical in times of economic downturn compared to more specialized competitors.

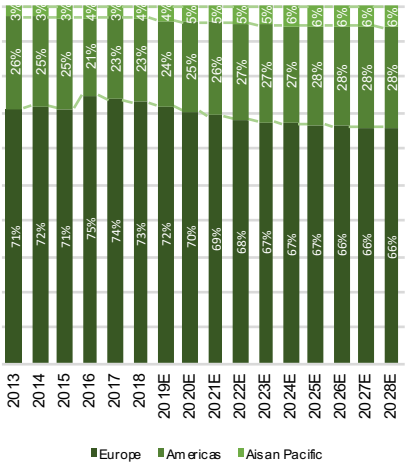
Figure 21: Total Sales



Source: Company Reports 2012-2018, Analysts Estimates

The sales forecast is based on a top-down approach, taking into account developments in the respective regional markets, Wacker's market share and pricing power in the respective region (see Figure 22). In order to verify the reliability of the forecasting approach, historical data was examined on the basis of the reported figures. The sales forecast is currency-neutral as we do not forecast currency movements.

Figure 22: Sales Share by Region



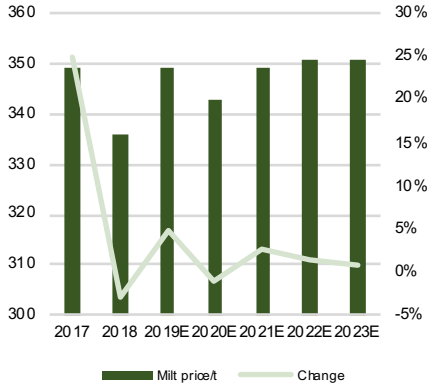
Source: Company Reports 2012-2018, Analysts Estimates

Europe:

Europe is Wacker's core market and accounts for over 70% of total sales. Over the past five years, sales have increased despite economic downturns in construction in FY-15 and FY-16 with a CAGR of 8.6% driven by a successful cross-selling approach and Wacker's diversification into other industries such as agriculture[9], gardening and landscaping outside the cyclical construction sector. The strategically positioned rental business in the DACH region and Wacker's dense sales and service network as well as its brand awareness and R&D expertise amplified Wacker's pricing power and had a positive impact on sales.

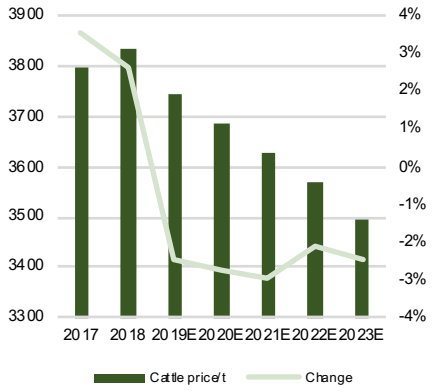
[8] This negative development was driven by sharp declines in Americas sales (see Americas section for details)
[9] Accounting for 15% of revenues

Figure 23: Milk Prices



Source: European Commission, EU Agricultural Outlook 2019

Figure 24: Cattle Prices



Source: European Commission, EU Agricultural Outlook 2019

The sales forecast for Europe was performed on a weighted basis to account for the different market developments prevailing on the agricultural and construction markets. The revenue contribution of the agricultural sector amounts to 15% and has been forecast at an aggregated European level, as it is less influenced by national factors and is governed at European scale in many aspects. Since many of Wacker's agricultural customers are dairy farmers or cattle breeders, the development of raw milk and livestock prices was used as an indicator for forecasting the agricultural market.[10] The high correlation between the prices for agricultural products and the resulting increasing demand for agricultural machinery is reflected in the development of the business climate index for the agricultural machinery industry[11]. The growth of the construction industry was projected at country level in order to take sufficient account of country-specific economic conditions and demand. Subsequently, the consolidated growth rate was calculated on the basis of the weighted estimated sales contribution to Wacker's European sales from the individual countries.

Milk and cattle prices are expected to remain fairly stable over the forecast period and to move less intensively than in the last five years (growth fluctuations between -5.7% and 14.3%) (see Figure 24 & 25). However, a slightly negative growth of around -0.4% is expected FY-19 to FY-23 before a stable increase of on average 1% is expected for the FY-24 to FY-28. The construction market shows quite stable, but only low growth opportunities of on average 1.4% for the forecast period. In particular, the slowdown in economic expansion and the stagnating construction market in Wacker's key markets, the DACH region, which is showing negative or weak growth, will keep growth prospects at a lower level. However, Wacker's continued expansion in the UK is having a positive impact on sales growth, as the UK market is expected to grow steadily from 0.2% by 2018 to 3.4% in 2028 despite Brexit uncertainties.[12] Additionally, average annual growth of more than 3%[13] is expected in the European infrastructure sector, from which Wacker benefits thanks to its machinery, which is suitable for infrastructure projects in densely populated areas.

In view of the continuing expansion of market share in the UK and France, rising demand for Wacker's zero-emission lines and rental business, and the Group's strong sales and service network, the Group's market share is expected to rise from 6.1% in 2013 to 6.5% by FY-20 and to remain at this level.[14] The increase in market share in the UK is being driven by the country's huge infrastructure and housing deficit after decades of underinvestment, forcing the British government to

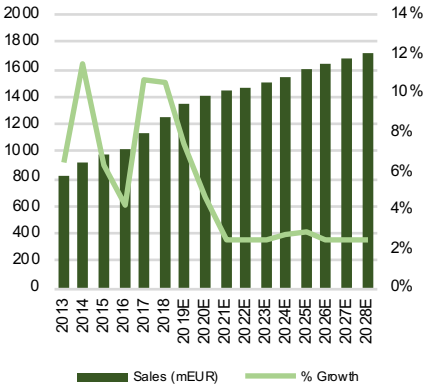
[10] Based on estimates of the EU Agricultural Outlook 2019 of the European Commission forecast of milk and cattle prices for 2019-2030 using a recursive-dynamic partial stochastic analysis tool
[11] Observes the development of agricultural prices and published by CEMA in 2018
[12] 87th EUROCONSTRUCT Conference 2019 & GDP Outlook European Union
[13] 87th EUROCONSTRUCT Conference 2019
[14] Historical market share growth figures based on approximate figures provided during a call with Wacker's Investor Relations.

spend $6.2 trillion over the next 15 years to build 3.3 million new homes to meet the needs of a growing population.[15] The gain in market share in France will be driven by a 5.7%[16] increase in the rental business and short-term demand for infrastructure machines through the Grand Paris Express project which will likely be captured by larger players and not smaller suppliers[17]. Wacker's zero-emissions line is also driving market share growth. This is due to increased demand for sustainable machinery as a result of the new EU Stage V emissions standard and Wacker's strong positioning, brand awareness and innovative strength in this field in the European market. From FY20 onwards, market share is expected to remain stable as short-term demand from France is likely to be saturated, the unclear Brexit outcome could reduce future demand in the UK from non-British producers and the higher market shares from emissions-neutral machines are expected to be offset by an expected decline in congruent traditional machines.

Since Wacker enjoys a high level of brand awareness in its core region, stands for high-quality machinery and services, and strong R&D capacities, it possesses pricing power that has a positive impact on growth.

On a consolidated basis, after stronger years of growth, driven by infrastructure and residential construction projects and demand for zero-emission equipment, in FY-19 (7.4%) and FY-20 (4.7%), this leads to a stable growth forecast of around 2.5%, which is also the final growth rate for the European region (see Figure 25).

Figure 25: Sales Europe



Source: Company Reports 2012-2018, Analysts Estimates

Americas:

Americas comprises North America (mainly USA) and South America and accounts for 23% of Group sales. Sales grew quite steadily with a CAGR of 6% from FY-13 to FY-18. Only in 2016 did sales decline by -16.2% yoy due to a decrease in oil and gas demand in the USA and Canada, quality problems at suppliers and uncertainties in South America. Historically, Wacker was already a serious player in the US light equipment industry but was still sub-scaled in terms of market share and dealer representation for its compact equipment range. In 2016, the Group succeeded in gaining market share in the compact equipment market by relocating the production of skid-steer loaders from Austria to the USA[18]. The success of this initiative was immediately visible in 2017 with a sales increase of +23% yoy.

The construction market in North and Latin America are expected to grow substantially with an average short-term growth rate of 6.8% for FY-19 to FY-23 and a long-term growth rate of 2.8% for FY-24 to FY-28, reflecting the region's large catch-up potential. The US housing market is still 20% below pre-crisis levels, alt-

[15] Oxford Economics, Global Construction 2030 – A global forecast for the construction industry to 2030
[16] CECE Annual Economic Report 2019
[17] Automated transit network, is the new metro of the Capital Region
[18] North America accounts for 70% of the global skid-steer loader market

hough the economy and GDP returned to pre-crisis levels in 2011.[19] Residential construction output is still down 35% and is still below 50% of pre-crisis peak levels. Double-digit growth rates are expected for residential construction in the short term. In the longer term, the US housing market is expected to become the fourth most important housing market in the world by 2030, mainly due to the recovery in Florida and California, which has reached less than half of the pre-crisis level of 2006.[20] In addition, the New York metropolitan area will show the strongest construction growth of all major US cities, partly due to the enormous task of modernizing the infrastructure. In total, the USA is expected to spend a cumulative USD 30.0 trillion on construction by 2030.[21]

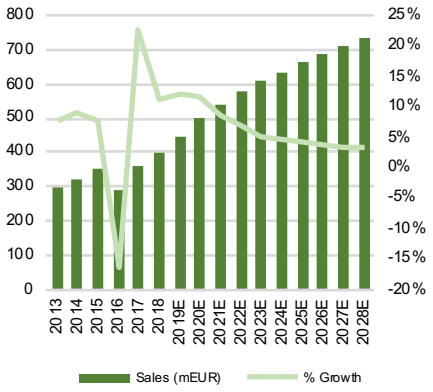
In Latin America, higher population growth and economic recovery are contributing to market growth in Latin America, with Brazil, Colombia, Chile and Peru in particular. Overall, the population of Latin America is expected to grow by 9% until FY-28.[22] The economic recovery is also being driven by a stabilization of political turbulences, which can be measured by the development of the BMI Country Risk Reward Index. This indicates that higher expected values for the main growth driving countries are reflected in business-friendly policies that provide strong access to private investment and large infrastructure investments, which fosters market growth.

Combined with Wacker's strong position in the US light equipment market, restructuring measures to improve its position in the U.S. compact equipment market, and efforts to further expand its dealer network, Wacker's market share is expected to grow by 5% from FY-20 to FY-23 and to remain at a constant 1.7% level from that point. [23] We consider these gains in market share to be justified because the newly expanded dealer network allows the Group to reach more customers who prefer "one-stop shop" solutions, further expands the compact equipment business, which has so far been less strongly represented locally, and strengthens its position in the light equipment segment due to its high-quality and lower competitive pressure compared to the compact equipment segment.

In view of the lower competition in the light equipment segment, we expect Wacker's high product quality, R&D expertise and strategic positioning to allow for pricing power. This corresponds to additional growth of 1 %, which is generated in addition to the organic growth based on market growth and market share gains.

On a consolidated basis, this translates into strong short-term growth of 9% for FY-19 to FY-23 and a long-term growth rate of approximately 4% for FY-24 to FY-28 and a terminal growth rate of 3.5% (see Figure 26).

Figure 26: Sales Americas



Source: Company Reports 2012-2018, Analysts Estimates

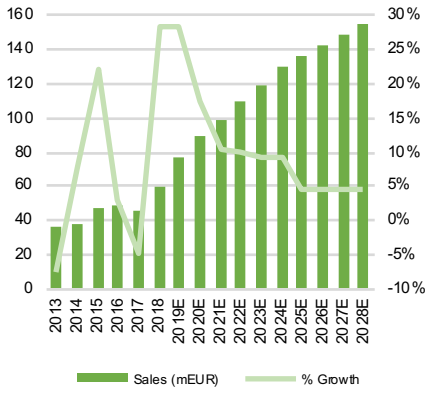
[19] Oxford Economics, Global Construction 2030 – A global forecast for the construction industry to 2030
[20] Oxford Economics, Global Construction 2030 – A global forecast for the construction industry to 2030
[21] Oxford Economics, Global Construction 2030 – A global forecast for the construction industry to 2030
[22] Economic Commission for Latin America and the Caribbean, Population estimates and projections updates for the Latin America and the Caribbean countries, 2019
[23] Historical market share growth figures based on approximate figures provided during a call with Wacker's Investor Relations.

Asian Pacific:

At 3.5%, the Asia-Pacific region made only a small contribution to group sales. However, after a transition year in FY-17 that led to a decline in sales, the region showed a strong sales growth performance of 28.3% in FY-18. The transition was in line with the expansion plans for the Chinese market announced in the group's Strategy 2022, which were accelerated with the opening of Wacker's first own plant in China, where the production of mini-excavators for the Chinese market already commenced.

The Asia-Pacific region comprises mainly China and, to a lesser extent, New Zealand and Australia, so that the forecast is based on the following growth data for construction output. Even though growth in China is not as rapid as in previous years, it is still more dynamic than in Europe or the US and represents a growth opportunity for Wacker. The growth of the Chinese construction market is driven in particular by government investment in rail, road and other infrastructure, which by 2030 will amount to USD 119 billion for rail investments and USD 268 billion for road and water transport projects.[24] In Australia and New Zealand, growth in construction output is also driven by government investment in transport infrastructure, which is expected to reach USD 58.9 billion by 2027-2028.[25] In addition, an increasing number of commercial and industrial projects, which are expected to grow at around 4% annually over the forecast period, are also contributing to growth.[26] In summary, this corresponds to a stable market growth rate of on average 4% for the forecast period (see Figure 27).

Figure 27: Sales Asian Pacific



Source: Company Reports 2012-2018, Analysts Estimates

Following the relocation of the production facility to China and through strategic alliances such as with John Deere, Wacker's market share is expected to grow by almost 40% over the next four years and remain stable thereafter.[27] Wacker's already low pricing power is expected to gradually decline over the forecast period due to increasing price pressure. Overall, this leads to strong short-term growth of 15% for FY-19 to FY-23 and a long-term growth rate of around 5% for FY-24 to FY-28 and the highest terminal growth rate of 4.4%. Although the Asia-Pacific region will achieve the highest growth rate of all regions, which is mainly attributable to the Chinese market, contribution to group sales will remain with 5% low in the short- to mid-term.

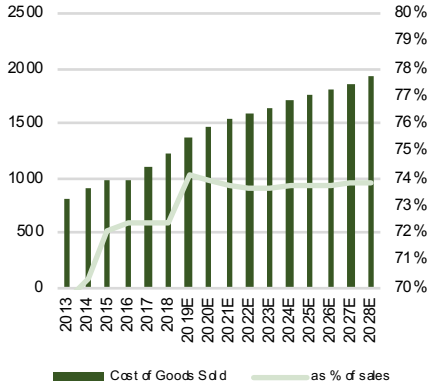
Costs:

In contrast to sales, costs are not broken down for the three different segments but reported on a consolidated basis. As of 2019, Wacker produces at seven different facilities: three in Germany, one in Austria, one in Serbia, one in USA and

[24] Off-Highway Research - Global Construction Equipment Markets 2019
[25] GlobalData Australia's construction industry set to regain growth momentum from 2020
[26] Comment Australian Constructors Association (ACA) Executive Director Lindsay Le Compte
[27] Historical market share growth figures based on approximate figures provided during a call with Wacker's Investor Relations.

one in China. During 2018, the company has merged one smaller plant in USA with the remaining large facility in Milwaukee and did the same in Asia, where the facility in Manila was closed and the production shifted to Pinghu, China. Another plant in Brazil which was only opened in 2016 was closed in 2019. The plant was supposed to assemble parts for the Southern American market but the management decided quickly to back out because they did not see a path to profitability. Goal of these actions is to streamline the production process and fight deteriorating gross profit margins. The gross profit margin decreased gradually since FY-13 from 30.4% to 27.8% in FY-18 (Figure 28). There are multiple reasons for that development. Firstly, the product mix has shifted over the years in favor of compact machinery which accounted for 53.4% of sales in FY-18 versus only 44.2% in FY-13. The compact equipment has a lower gross margin compared with light equipment and the service business. As the compact machinery still shows more dynamic growth, this trend will continue for the foreseeable future and will likely put pressure on the gross margin. Secondly, for the last four years ramp-up or ramp-down costs were always present. From 2015 they started to shift production of their skeed steers to the US, in 2016 they opened the Brazilian plant and 2017/18 they merged plants in the USA and in Asia and then they closed the Brazilian plant. We believe that the current setup can support the dynamic growth until 2025 when we estimate new investments will be needed to increase capacity. Thirdly, poor WC management has contributed to a weaker gross margin. While setting the future goal at 30% of sales, historic levels hovered around 40% of sales. For the future, we do not expect management to be able to reduce WC materially (38.8% in FY-25e). This weighs on gross margins as excess inventory needs to be sold on discounts. Lastly, fluctuations in raw materials can have impact on costs of sales in given periods. Metals prices for example increased in 2016/17 and the beginning of 2018. Wacker and other construction equipment manufacturers were not able to pass those additional costs fully on to customers, therefore it affected the gross margin of the companies. Going forward, we took guidance in futures prices for forecasting raw material cost inflation. The first nine months of 2019 showed that the gross margin remained weak and even dropped to 25.9%. As the pressure, most prominent the shift towards compact equipment, remains present for the upcoming years we do not expect the gross margin to bounce back towards 30%. As we look at competitors and comparables, we see a similar trend towards lower gross margins which indicates that Wacker's development was not simply idiosyncratic and reverseble. However, as some of the pain from restructuring and ramp-up fades, we expect that Wacker can recover 50bps of gross margin which comprises nearly only the saved costs in the Pinghu plant. As argued before, economies of scale are hard to achieve due to small batch sizes.

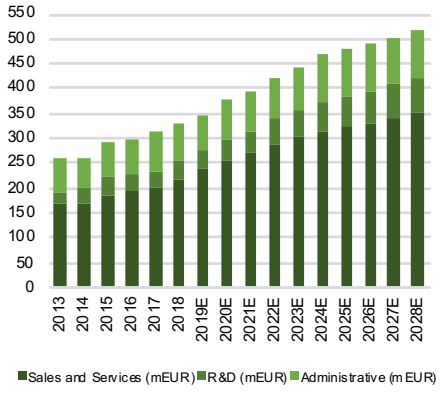
Figure 28: Cost of Goods Sold



Source: Company Reports 2012-2018, Analysts Estimates

Compared to cost of sales, management was able to keep sales, general and administrative (SG&A) costs under control (Figure 29). From FY-13 to FY-18 SG&A expenses decreased from 20.2% of revenue to 17.1% of revenue. This is a impressing achievement, given that the company grew strongly outside of Europe where the dealer and service network is already established and scaled up. However, it needs to be noted that especially for the expansion in the US, many sales related expenses where capitalized on the balance sheet. Only in FY-18, those US sales related assets increased by EUR 30.0 m to EUR 60.2 m. The EUR 30 m represent 1.8% of sales that have a cost-like character. With the Strategy 2022 which aims at pushing sales above EUR 2 bn and strong growth in Asia and the US, we expect that selling expenses will reflect the increased effort and go up to 13.5% from currently 12.7%. These numbers reflect some of Wacker's sales-related assets going back to the income statement. One example are volume-based bonuses to US dealers that were paid in advance in order to motivate them to include Wacker Neuson products in their stores. These made up c55 bps of revenue in 2018 and will become permanent expenses in the future when those dealers will generate actual revenues. General administrative scaled down a little bit as percentage of sales over the previous years but higher sales efforts in less developed regions for the company will put that trend on hold until FY-22. The reason is that Wacker will build up overhead positions in North America and Asia in line with its expansion strategy which have been primarily in Germany historically. Therefore, we expect that administrative costs grow in line with sales for the next 3 years. This means increasing administrative staff from 548 in 2018 to c700 in 2024 which is an extrapolation of the 2018 run-rate of 23 added employees. After that build-up period, we will see scale effects return with a decline in percentage of sales of c10 bps per year.

Figure 29: Development Operating Expenses



Source: Company Reports 2012-2018, Analysts Estimates

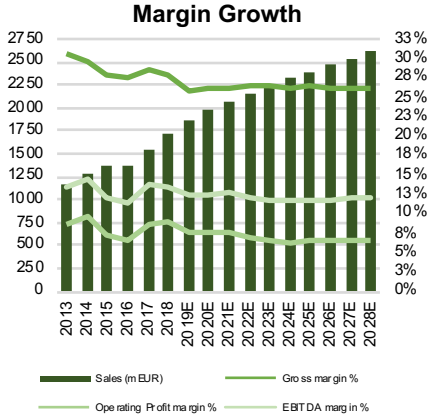
R&D expenses are fairly stable over time, slightly over 2%. As regulation is expected to develop further, we expect it to be a challenge for global OEMs. This is especially true because global harmonization is not becoming more likely in the current economic and political environment. Automotive is an industry which has seen similar trends over the last years. Looking at OEMs Volkswagen, BMW and Daimler which are located in Germany like Wacker, we saw an average increase of 20% in percent of sales between 2013 and 2018. We think construction equipment manufacturers have comparable challenges ahead that require higher research and development spendings. We expect them to grow to 2.6% of sales in FY-24, which is around 25% above FY-18 levels.

Profits and a Look into History Books:

Operating profit has been bumpy in the last years which is explained by the drop in gross margin in FY-15 and the decrease in sales in FY-16. Nonetheless,

operating profit showed a CAGR of 9.1% from FY-13 to FY-18. Wacker's margin peak within the last 5 years was achieved in FY-14 where the company was able to post a 9.6% operating profit margin (see Figure 30). In FY-16, when revenues fell 1% on the company level, Wacker's margin decreased to 6.4%. For FY-19, we expect operating profits to come in at EUR 140 m at a margin of 7.5% which is well below the 8.9% margin in FY-18. Reason for that is the gross margin that comes in 210 bps lower which is only mitigated by improvements in SG&A of 50 bps. Following the trends described in the costs part (section above), we do not think that Wacker will be able to go back to historic profitability levels of above 8%. Our long-term forecast for the operating profit margin is 6.6% which is more in line with Wacker's closest competitor Manitou from France than with its own historic values.

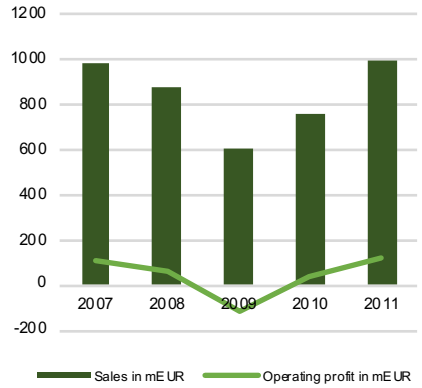
Figure 30: Sales and Profit Margin Growth



Source: Company Reports 2012-2018, Analysts Estimates

As pointed out earlier, management claims that Wacker's business is not cyclical which is surprising on the first look as it operates in the broad world of construction which is highly cyclical. Although the profile of Wacker has changed over the years, with less exposure to Oil & Gas and a higher share of rental companies as buyers of the products, we take a look at the company's performance during the Big Recession in 2008/9 (Figure 31). In FY-08, sales decreased by 10.8% but operating profit margin remained resilient and comfortably positive with 6.7%. However, in FY-09, when sales fell another 31.4%, operating profit turned negative and Wacker lost EUR 113.1 m. While regular economic cycles should be materially less severe than the downturn seen in 2008, we do not see Wacker completely ignoring cyclicality. Going forward, we do not model for a 2008/9 like crisis. However, a comparable scenario would have serious impact on Wacker's clients and eventually on the business.

Figure 31: Sales and Profit - Financial Crisis



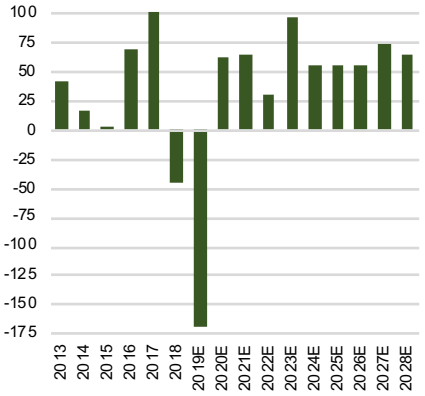
Source: Company Reports 2007-2011

Although Wacker discloses information on operating margins on a regional level, they do not give more information on line items for the segments. Americas and Asia-Pacific have not been able to generate a positive operating profit since 2015. In 2018, Americas lost EUR 8.7 m on sales of EUR 397.8 m and Asia-Pacific EUR 5.0 m with sales of EUR 59.8 m. As discussed above, both segments had to deal with restructuring charges and ramp-up/closing costs for the last years. In the after crisis years of 2011/12, operating margins have been equally strong in those regions as in Europe. Turning those segments around and bring them back to pre-2015 levels has tremendous potential for Wacker. However, in recent years management has not met their own goals on increasing profitabilty. For 2019 there has not been an explicit guidance for the Americas business but the management admitted in the Q3 press release that profitability improvements have not been realized within the anticipated timeframe. Unfortunately, specific information on the segment's income statement is not available and does not allow for robust forecasting. We expect the Americas business to break-even on

EBIT level in 2019 with just positive earnings. For the following years, Wacker should be able to increase EBIT slowly as costs for restructuring decrease. While the market in the US is comparable to Europe by size and demands, we do not believe that Wacker will be able to widen margins to European levels as local competition is fierce. For Asia, the break-even on EBIT levels need to wait until 2021. While in 2017 and 2018 restructuring charges weighed on profits, 2019 is characterized by strong price pressure, especially in China. As Asia is part of the medium and long-term growth story, we expect management to accept several more years of unprofitable growth in the region. However, we believe that Asia eventually will become profitable as the European competition shows that it is possible to operate proftably in the region. Nevertheless, even in the medium and long-term Wacker will still lack size and scale and will not be able to bring margins up to European or America levels.

Free Cash Flow - Working Capital & Capex:

Figure 32: FCF Development (mEUR)



Source: Company Reports 2012-2018, Analysts Estimates

FCF is mainly driven by the development of WC and capex, with the result that the increase in WC in particular had a significant impact on the historical FCF figures. After a decline in FCF from FY-13 to FY-15, FCF peaked in 2017 at EUR 101m, but then fell sharply in FY-18 by -145% yoy due to disproportionately high WC and higher capex. A further decline in FCF to -169.1 m (-268% yoy) is expected for FY-19, as WC has further deteriorated due to an increase of 211 m yoy due to extremely high inventory levels. Starting in FY-20, FCF is expected to gradually improve due to the only moderate increase in capex and a continuous progressive improvement in WC levels mainly due to reduced inventory levels resulting from short-term production cuts and the initial sale of machines meeting the EU Stage V emission standard[28], so that a stabilization of around EUR 70 million is expected for the forecast period (see Figure 32).

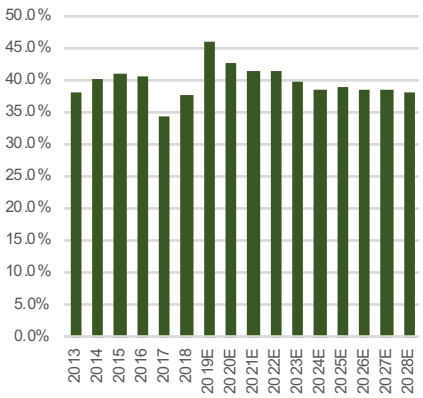
Working Capital:

Historically, Wacker's WC averaged 39% of sales, which is quite high compared to the industry average of around 10%[29]. The reasons for these high WC numbers are Wacker's own sales and dealer network, inefficiencies in the internal supply chain, its complex plant network, supra-regional production and the provision of longer payment periods for customers. High WC requirements were mainly caused by Wacker's exceptionally high inventories, which averaged 32% of sales and 81% of WC. Finished goods accounted for the lion's share of inventories, which peaked in 2016 at 77% of total inventories. In 2017, the group's management formulated a medium-term target for WC as part of its strategic roadmap "Strategy 2022", namely to bring net WC below 30% of sales.

[28] Entry into force in 2020
[29] NYU Stern, 2019. Key working capital numbers as a percent of sales – Construction Supplies Average Non-cash WC/Sales (Wacker's Non-Cash WC/Sales amounts to 37%

Nevertheless, WC in relation to sales rose again in FY-18 from 34.4% to 37.8% (see Figure 33). The increase is due to several factors, including a higher number of finished and unfinished machinery due to supply chain bottlenecks leading to production processes and delivery delays, a more conservative inventory strategy for raw materials and a significant increase in trade receivables due to the continued strategic expansion of the group's dealer network in North America. To comply with the new EU Stage V emissions standard for construction machinery, the Group has also made targeted efforts to increase its pre-sales engine inventories to the many different product parts and model variants it will require in the future.

Figure 33: WC as % of Sales

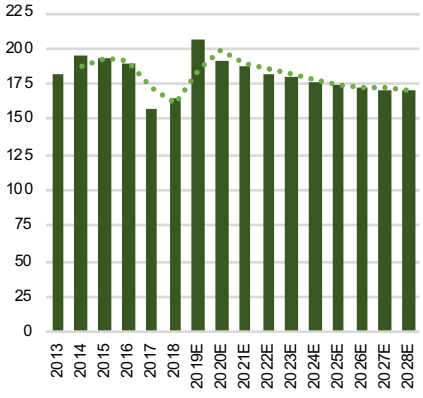


Source: Company Reports 2012-2018, Analysts Estimates

WC is forecasted on the basis of the respective development of the relevant indivual current assets and liabilities. Individual current assets and liabilities[30] were forecast on the basis of various WC key figures such as Days Sales Outstanding (DSO), Days of Inventory Outstanding (DIO) and Days Payables Outstanding (DPO), which were compiled by the analysts by comparing the targets defined by Wacker and the probability of achieving them, an examination of historical values and anticipated group-specific future developments.

Even though the group launched numerous initiatives in FY-18 to achieve a sustained reduction in net WC in relation to sales, such as a project to integrate the sales companies into a uniform IT platform and to include WC reduction in the incentive program for top management, net WC management does not yet appear to be under control. The WC cycle is still rising (see Figure 34). Based on the group figures published to date and our estimates, a further significant increase in WC of EUR 211m (+32% yoy) is expected for FY-19, which is expected to peak at around 46% of sales and a WC cycle of 206 days. The increase was again mainly due to high inventory levels (+16.5% yoy) caused by a still overly conservative inventory policy, an overreaction to the high demand in 2018 which could not be satisfied, and inadequate supply management, resulting in bottlenecks which delayed the production process. In addition, an increase in trade receivables (+31% yoy), still triggered by the expansion of the dealer network in North America and the related financing solutions as well as the reduction in trade payables (-21% yoy) are leading to an increase in working capital. Since the group plans to reduce production at several production sites, an approach that has been rejected in the past, inventories are expected to stabilize from FY-20 onwards, which is reflected in a decrease in DIO from 173 in FY-19 to 165 in FY-20. This stabilisation will continue to benefit from the start of sales of emission-compliant EU Stage V machines from the end of the FY-20 reducing DIO to a level around 163. For the coming years, however, we do not believe that the WC ratio of ≤ 30%

Figure 34: Working Capital Cycle (in days)



Source: Company Reports 2012-2018, Analysts Estimates

[30] Current assets: Cash and cash equivalents, Inventory, Advance payments, Trade receivables; Current Liabilities: Advance payments received, Other accruals/deferrals, Liabilities to customers, Other current liabilities, Sales tax liabilities, Trade payables

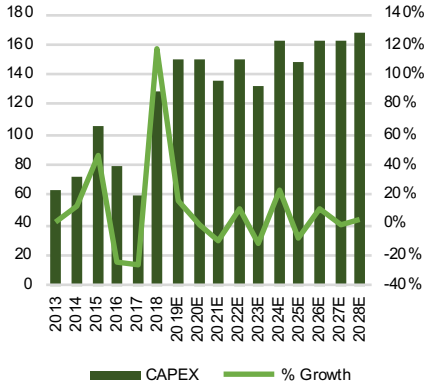
targeted by management will be achievable by FY-22 and estimate the level at 39%.

Capex:

Capex increased historically with a CAGR of 12% from FY-13 to FY-18 (Figure 35). The increase is mainly due to higher net investments in rental equipment due to the expansion of the rental fleet in Europe and higher investments in property, plant and equipment resulting from the implementation of restructuring and expansion measures in production and distribution facilities due to the group's new strategic objectives. In years without much capex we have seen baseline maintenance expenditures of ca EUR 50m. In addition to that, Wacker has expanded its rental fleet since 2015 which comprises the rest of capex.

For 2020 and the following years we do not see capex increasing materially. Wacker will focus on driving utilization higher in the existing plants before opening new ones. Especially, the bad experiences in Brazil will prevent management from being too generous with capital allocation. The rental fleet will see further growth in investments as the company plans to expand this business line. This will cause capex to stabilize on higher level but also elevates depreciation as the rental equipment has shorter time horizons (3-5 years) than machinery (7-10 years). Eventually, in the last years of the planning period, we expect to see capex increase again as the recently build or renovated plants will have more need for maintenance capex by then.

Figure 35: Capex Development



Source: Company Report 2012-2018, Analysts Estimates

Valuation

Our valuation is based on two approaches that are equally weighted in order to arrive at a price target for Wacker Neuson SE. Firstly, we look at a Discounted Cash Flow model that implies a fair value of EUR 20.9 per share. Secondly, we compare Wacker with a peer group of construction equipment companies and companies that have a similar profile as machinery manufacturers. The relative valuation is based on a blended price target on Price/Earnings and Enterprise Value/EBITDA on 2020 estimates that sets a target price of EUR 17.6 per share. Averaging both target prices yields a target of 19.25, implying upside of 11.3% from current levels.

Discounted Cash Flow Model

Our Discounted Cash Flow model is a two-stage model with an explicit planning period until 2028. From then on, we expect the company to be in a steady state. We estimate a terminal growth rate of 2.9% for Wacker's core business. We forecast the business to be stable from 2027 on when the steady state is reached. The growth rate is a blended rate of Wacker's three regions. Europe contributes a rate of 2.5% to the mix, which reflects a long-term real GDP expectation of

1.5% for the European Union (EU)[31] and an inflation forecast of approximately 1.0%. We attach a 3.5% terminal growth rate for the Americas business which reflects higher potential growth, especially in the dominant country of the region, USA. The smallest region by revenue, Asia-Pacific, is expected to be the most dynamic in the long term. Based on a blended GDP growth rate for China and Oceania[32], we arrive at a 4.4% long-term growth rate for the region. For the WACC calculation, we used a blended risk-free rate of different regions in line with Wacker's revenue split. As we have seen in October 2019, risk free rates can change quickly and with that would materially change fair value, we adopted a method that allows for a steadier rate. We used a 5-year average of risk-free rates which is less sensitive to short term volatility in rates. For the equity risk premium (ERM), we used Prof. Damodaran's[33] estimate of an implied ERM that is currently at 5.20% for Germany where most of Wacker's shareholders are located. For Cost of Debt, we used the average of four approaches to arrive at a robust rate for Wacker. We took the interest rate on a recently emitted Schuldschein (7y, 0.95%) into account as well as default spreads based on a Bundesbank rating of Wacker as the company is not rated by one of the major rating agencies. Additionally, we estimated an artificial rating based on the interest coverage ratio and we looked on ratings and credit spreads for comparable companies. Putting all inputs together, we estimate a long-term cost of debt of 2.31% for Wacker. As Wacker's share price development was mostly driven by idiosyncratic news and not by overall market development (especially the sharp decline in H1 2018), we decided to use a Beta of comparable companies to estimate the forward-looking sensitivity to market movements. The set of comparable companies is the same as in our relative valuation (Table 2). Wacker has some items on the balance sheet that are considered not relevant to running the business which are excluded from future cash-flows and accounted for at book value. This includes former offices that are rented out now and pension obligations that are partially unfunded. Additionally, there are tax assets and liabilities that were accrued in the past and are taken into account with their book values as they nearly cancel each other out.

All other key assumptions and results are shown in the following tables:

Table 1: DCF inputs & outputs

Model Outputs	2019E	2020E	2021E	Key Assumptions	
NOPAT	106	98	104	Terminal growth	2.90%
Op. Margin	7.5%	7.5%	7.6%	Terminal Op. Margin	6.58%
Depreciation & Amortization	93	101	105	Terminal RONIC	5.63%
∆ working capital	-211	7	-15	Risk-free rate	0.96%
Capex	-149	-149	-134	Beta	1.18
Unlevered Free Cash Flow	-169	63	66	Equity risk premium	5.20%
ROIC	6.0%	6.2%	6.3%	Cost of Debt	2.31%
				WACC	**5.30%**

[31] IMF Data, assessed on 19.12.2019, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/EU/EURO/EUQ
[32] IMF Data, assessed on 19.12.2019, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/EU/EURO/EUQ/APQ
[33] Prof. Damodaran from NYU Stern is one of the leading researchers in corporate finance and cost of capital.

Continuing Value Formula	
Sum of PVs	398
Continuing Value	1681
Core Business Value	2079
+ Non-Core (Book)	-16,2
Enterprise Value	2063
-Net Debt	595
Equity Value	1468
# Outstanding Shares	70,14
Value per Share	20,9

Sensitivity Analysis						
		WACC				
	1468	4,3%	4,8%	5,3%	5,8%	6,3%
TV Growth	2,4%	35,6	26,3	20,3	16,0	12,8
	2,6%	38,1	27,3	20,6	16,0	12,6
	2,9%	41,5	28,5	20,9	16,0	12,4
	3,1%	46,3	30,1	21,4	15,9	12,2
	3,4%	53,7	32,2	21,9	15,8	11,9

Source: Analyst estmates

The sensitivity analysis in Table 1 shows how sensitive the value of Wacker is to changes in WACC. Main reason for that is the terminal return on newly invested capital which is fairly close to the WACC. Therefore, growth can only add value as long as WACC remains below 5.63%. Deviating estimates of long-term growth rates have at current levels only little influence on valuation which means that Wacker is even an interesting pick for investors with doubts about long-term GDP potential. Especially, because lower than now expected growth will keep risk-free interest rates lower for longer.

Relative Valuation

We compare Wacker with a broad peer group in the construction equipment industry and to other machinery manufacturers. Additionally, we decided to look at two listed rental businesses from the US as the renting business has become a more prominent part at Wacker (see Table 2 for an overview on the peer group). We look at forward multiples for 2020, based on current market and enterprise values and average analyst estimates for EBITDA and net income.

Table 2: Relative Valuation

Peer Valuation Company Name	Weight	Market Capitalization in mEUR	EV/EBITDA 2019	EV/EBITDA 2020	P/E 2019	P/E 2020
Construction Equipment						
Wacker Neuson		**1196**	**7,7**	**7,2**	**12,2**	**11,5**
Atlas Copco	6%	3335	6,9	6,6	10,3	9,6
Caterpillar	6%	6684	16,2	15,5	24,7	23,6
Haulotte	6%	157	6,1	6,6	6,4	7,8
Komatsu	6%	20152	6,6	7,4	11,8	11,5
Kubota	6%	17125	11,0	10,7	14,8	14,3
Manitou	6%	681	5,1	5,2	7,5	7,3
Oshkosh	6%	4636	7,3	7,9	11,6	11,1
Terex	6%	1661	6,9	8,0	8,9	10,9
Volvo	6%	27165	6,6	8,2	9,1	12,1
Sandvik AB	6%	18282	10,1	9,9	16,7	15,8
Median				8,0		11,3
Other Equipment						
Deutz	6%	625	4,2	4,1	10,1	9,5
Jungheinrich	6%	2455	7,4	7,3	14,7	14,8
KION	6%	5857	6,3	6,4	13,9	13,9
Palfinger	6%	930	7,3	6,9	12,0	11,2
Deere & Company	6%	49239	13,6	12,6	17,7	15,8
Rental Companies						
Cramo	6%	418	4,8	4,9	12,1	11,6
Ramirent	6%	1002	6,3	5,8	12,6	12,5
Peer group average	100%		7,8	7,9	12,6	12,6
Median				7,3		11,6

	EV/EBITDA 2020	P/E 2020
Wacker Neuson SE	261,6	103,66
Fair EV	1920,0	
Net debt (cash)	595	
Pension provisons	52	
Minorities	-	
Adjustments	-	
Fair MV	1272,3	1202,8
# of shares	70,14	70,14
Per Share	**18,14**	**17,15**
Weight	50%	50%
Fair Value Share	**17,6**	

Source: Analyst estimates

We note that Wacker trades at a ca. 10% discount to the median valuations of its peer group. We do not think that the discount to the peers is justified. Even though, margins are slightly below the average of its peer group, Wacker makes up with a better growth outlook compared with consensus estimates of peers extracted from Bloomberg (see Table 3). We believe Wacker should trade in line with its peers and therefore, see potential for a re-rating of the stock in 2020. Management can accelerate the re-rating with positive news about the progress regarding the streamlining of production. News about ongoing restructuring charges in 2020 and continued subpar productivity would probably prevent the stock to close the gap to the peer group.

Table 3: Outlook Peer Group

Estimates Competitors						
Companies	Change in Sales			EBITDA margin		
	2019E	2020E	2021E	2018	2019E	2020E
Wacker Neuson	**9.2%**	**6.8%**	**4.4%**	**13.4%**	**12.5%**	**12.5%**
Atlas Copco	5,4%	4,2%	4,3%	13,9%	13,7%	14,1%
Caterpillar	1,3%	-2,7%	1,3%	26,1%	25,5%	25,7%
Haulotte	6,5%	-3,5%	3,1%	20,7%	19,9%	19,6%
Komatsu	16,0%	-1,4%	1,3%	9,2%	8,7%	8,3%
Kubota	10,8%	1,6%	3,5%	15,3%	19,4%	18,1%
Manitou	12,4%	-1,4%	1,4%	14,0%	13,4%	13,7%
Sandvik	-0,6%	1,8%	1,9%	23,4%	23,1%	23,5%
Deutz	6,6%	-3,0%	6,1%	9,7%	9,1%	9,5%
Jungheinrich	5,5%	0,5%	3,5%	15,5%	15,2%	14,8%
Kion	8,1%	1,3%	3,6%	18,8%	19,1%	18,7%
Palfinger	8,3%	1,6%	3,7%	12,2%	13,1%	13,7%
Deere & Co	4,4%	2,9%	3,4%	13,6%	13,1%	13,8%
Average	**7,1%**	**0,2%**	**3,1%**	**16,0%**	**16,1%**	**16,1%**

Source: Bloomberg, Analyst Estimates

Key Investment Risks:

Economic & Geopolitical Risk: Since Wacker's business model is to some extent subject to short-term cyclical and business-related fluctuations by its end customers, a sharp or sustained decline in the overall economic environment in one or both core regions of Europe and the USA would have a negative impact on sales and growth prospects. This would negatively impact Wacker's present valuation, since a stable increase in sales is an integral mechanism for Wacker's valuation, since there is little room for maneuver in reducing costs. The escalation of trade tensions between the US and China and the EU, as well a stronger slow-

down in growth in China, would also have a negative impact on the group's profit margin. Wacker's expansion efforts would be negatively impacted while the associated costs would still have to be borne, resulting in an imbalance negatively impacting Wacker's valuation.

Working Capital: Wacker's net WC further increased from an already substantial level due to persistently high level of inventories and trade receivables and a decline in trade payables, which the management has not yet been able to control. A continuous increase in WC would have a negative impact on Wacker's operating cash flow and could therefore have a significant negative impact on the company's present value and thus on the current valuation result. For instance, even assuming that WC as a percentage of sales remains at the current FY-19 level of 46%[34], the DCF guidance would be reduced to EUR 18.4.

Regulatory Risk: Stricter emission regulations, such as the EU Stage V standard for diesel engines, increase the Group's R&D expenditure and depress margins. If Wacker takes too long to adapt to the new standards, it runs the risk of losing market share and reputation as an innovator. This would have a negative impact on sales growth, increase WC due to excessive inventory levels resulting in write-downs reducing profits.

Raw Material: The dependence on changes in materials and raw materials, in particular steel, oil, aluminum and copper prices, could lead to an increase in input costs. As Wacker is unlikely to pass on most of these costs to its customers, this could increase the pressure on profit margins.

FX Risk: Wacker operates worldwide and is therefore exposed to a variety of currencies. The main exposure is the EUR/USD exchange rate, whose development can have a significant impact on the Group' s results. Currency fluctuations are not forecasted, meaning serve unfavorable developments such as those in 2018, which reduced sales growth in Americas by 5 %, would have a negative impact on the translated sales result and increase hedging costs, adversely affecting Wacker's current valuation.

Ramp-up Difficulties: The expected increase in profitability in the USA could not be achieved within the planned timeframe due to difficulties with the introduction of new processes initiated as part of restructuring measures and lower production output at the same time. These difficulties are expected to ease within the next financial year, but if they persist, the valuation result could be adversely affected.

[34] Actual level reported by Wacker in the third quarter results

Appendix

Financial Statements

Income Statement	Reported	Forecasting Period									
	FY 2018	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E
Core Business											
Sales	**1706,5**	**1863,6**	**1991,0**	**2078,6**	**2160,2**	**2236,7**	**2316,5**	**2394,2**	**2464,8**	**2535,8**	**2608,9**
yoy change %	*11,3%*	*9,2%*	*6,8%*	*4,4%*	*3,9%*	*3,5%*	*3,6%*	*3,4%*	*2,9%*	*2,9%*	*2,9%*
Segmentation (geographical segments)											
Europe	1248,9	1341,1	1403,5	1438,1	1473,1	1509,0	1550,0	1594,5	1634,6	1675,1	1716,6
yoy change %	10,54%	7,38%	4,65%	2,46%	2,43%	2,44%	2,72%	2,87%	2,52%	2,48%	2,48%
Americas	397,8	445,8	497,4	541,1	577,7	607,9	635,6	663,0	687,4	711,6	736,6
yoy change %	11%	12,06%	11,58%	8,78%	6,77%	5,22%	4,57%	4,31%	3,69%	3,52%	3,52%
Asia-Pacific	59,8	76,8	90,2	99,5	109,5	119,8	130,9	136,7	142,7	149,1	155,7
yoy change %	28%	28,35%	17,46%	10,38%	10,04%	9,44%	9,20%	4,44%	4,44%	4,44%	4,44%
Cost of Sales	**-1232,5**	**-1381,2**	**-1472,3**	**-1533,6**	**-1590,4**	**-1646,0**	**-1707,2**	**-1764,6**	**-1818,4**	**-1871,7**	**-1926,7**
Thereof D&A	*77,10*	*93,4*	*100,5*	*104,5*	*110,6*	*113,9*	*120,4*	*124,5*	*130,0*	*134,7*	*139,6*
Gross Profit	**474,0**	**482,5**	**518,7**	**545,0**	**569,9**	**590,7**	**609,3**	**629,6**	**646,4**	**664,0**	**682,2**
Gross margin	***27,8%***	***25,9%***	***26,1%***	***26,2%***	***26,4%***	***26,4%***	***26,3%***	***26,3%***	***26,2%***	***26,2%***	***26,1%***
Sales and Services expenses	**-219,7**	**-236,7**	**-256,8**	**-270,2**	**-287,3**	**-302,0**	**-312,7**	**-323,2**	**-332,7**	**-342,3**	**-352,2**
as % of sales	*12,9%*	*12,7%*	*12,9%*	*13,0%*	*13,3%*	*13,5%*	*13,5%*	*13,5%*	*13,5%*	*13,5%*	*13,5%*
Research & development expenses	**-35,9**	**-37,3**	**-41,8**	**-44,7**	**-51,8**	**-53,7**	**-60,2**	**-62,2**	**-64,1**	**-65,9**	**-67,8**
as % of sales	*2,1%*	*2,0%*	*2,1%*	*2,2%*	*2,4%*	*2,4%*	*2,6%*	*2,6%*	*2,6%*	*2,6%*	*2,6%*
General administrative expenses	**-72,8**	**-74,5**	**-77,6**	**-79,0**	**-84,2**	**-89,5**	**-95,0**	**-93,4**	**-93,7**	**-93,8**	**-96,5**
as % of sales	*4%*	*4,0%*	*3,9%*	*3,8%*	*3,9%*	*4,0%*	*4,1%*	*3,9%*	*3,8%*	*3,7%*	*3,7%*
Expenses for pensions	**5,9**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**	**6,0**
Total Operating Expenses	**-322,5**	**-342,5**	**-370,3**	**-387,9**	**-417,4**	**-439,1**	**-462,0**	**-472,9**	**-484,5**	**-496,1**	**-510,6**
Other Income	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Operating Profit before Tax	**151,8**	**140,0**	**148,4**	**157,1**	**152,4**	**151,5**	**147,3**	**156,8**	**161,9**	**167,9**	**171,6**
Operating Profit Margin	**8,9%**	**7,5%**	**7,5%**	**7,6%**	**7,1%**	**6,8%**	**6,4%**	**6,5%**	**6,6%**	**6,6%**	**6,6%**
Operating Cash Taxes	-45,4	-41,5	-44,0	-46,6	-45,3	-45,0	-43,7	-46,5	-48,1	-49,9	-50,9
NOPAT	**106,4**	**98,4**	**104,3**	**110,5**	**107,2**	**106,6**	**103,6**	**110,2**	**113,8**	**118,1**	**120,7**

Tax Schedule	Reported	Forecasting Period									
	FY 2018	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E
Tax: on Core Operations											
Statutory Tax Rate	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%	28,98%
Reported Taxes	-58,4										
Tax Shield on interest	4,2	2,9	3,1	3,1	2,1	1,7	1,8	1,8	2,4	2,6	2,8
Non-Core Taxes	-20,5	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3
Operating Taxes	-42,1	41,0	43,6	46,4	45,0	44,7	43,5	46,3	47,8	49,6	50,7
Decrease/Increase in deferred taxes	3,3	-0,5	-0,4	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2	-0,2	-0,2
Operating tax rate	29,90%	29,69%	29,69%	29,69%	29,69%	29,69%	29,69%	29,69%	29,69%	29,69%	29,69%
Operating Cash Taxes	-45,4	-41,5	-44,0	-46,6	-45,3	-45,0	-43,7	-46,5	-48,1	-49,9	-50,9

Balance Sheet (Reformulation)	Reported	Forecasted Period									
	FY 2018	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E
Operating Capital											
PPE	**295**	**373**	**393**	**400**	**410**	**408**	**423**	**431**	**444**	**456**	**470**
% of sales	*17,3%*	*20%*	*19,75%*	*19,3%*	*19,0%*	*18,3%*	*18,3%*	*18,0%*	*18,0%*	*18,0%*	*18,0%*
Rental Equipment	**149**	**177**	**194**	**208**	**227**	**240**	**255**	**263**	**277**	**285**	**294**
% of sales	8,8%	9,5%	9,8%	10,0%	10,5%	10,8%	11,0%	11,0%	11,3%	11,3%	11,3%
Goodwill	**238**	**238**	**238**	**238**	**238**	**238**	**238**	**238**	**238**	**238**	**238**
Trade Receivables	**303**	**398**	**398**	**399**	**391**	**398**	**381**	**394**	**405**	**417**	**429**
in days	65	78	73	70	66	65	60	60	60	60	60
Intangibles	**143,5**	**163**	**174**	**184**	**194**	**201**	**214**	**221**	**228**	**235**	**241**
% of sales	*8,4%*	*8,8%*	*8,8%*	*8,9%*	*9,0%*	*9,0%*	*9,3%*	*9,3%*	*9,3%*	*9,3%*	*9,3%*
Inventory	**553**	**654**	**665**	**695**	**710**	**735**	**762**	**781**	**797**	**813**	**836**
in days	164	173	165	165	163	163	163	161	160	159	158
Other non-current sales-related assets	**72,3**	**116**	**128**	**146**	**162**	**168**	**185**	**192**	**197**	**203**	**209**
% of sales	*4,2%*	*6,3%*	*6,5%*	*7,0%*	*7,5%*	*7,5%*	*8,0%*	*8,0%*	*8,0%*	*8,0%*	*8,0%*
Sales Tax	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**	**12,5**
Cash and cash equivalents	**43,8**	**23**	**25**	**26**	**65**	**29**	**39**	**48**	**54**	**51**	**52**
% of sales	*2,6%*	*1,3%*	*1,3%*	*1,3%*	*3,0%*	*1,3%*	*1,7%*	*2,0%*	*2,2%*	*2,0%*	*2,0%*
Other Assets	**19**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**27**	**28**	**29**
% of sales	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*	*1,1%*
Total Operating Assets	**1838**	**2185**	**2261**	**2341**	**2444**	**2471**	**2546**	**2618**	**2692**	**2751**	**2823**
Trade payables	**213**	**168**	**185**	**199**	**207**	**214**	**222**	**230**	**236**	**243**	**250**
in days	**63**	**45**	**46**	**47**	**48**	**48**	**47**	**47**	**47**	**47**	**47**
Tax related liabilites	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**
% of sales	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**	**0,8%**
Customer liabilities	**45**	**54**	**58**	**60**	**63**	**65**	**67**	**69**	**71**	**74**	**76**
% of sales	*2,64%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*	*2,90%*
Other Liabilities	**32**	**35**	**38**	**39**	**41**	**42**	**44**	**45**	**47**	**48**	**50**
% of sales	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%	1,9%
Other Current Liabilities	**3,8**	**4**	**4**	**5**	**5**	**5**	**5**	**5**	**5**	**6**	**6**
% of sales	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
Total Operating Liabilities	**341**	**309**	**332**	**351**	**362**	**374**	**385**	**397**	**407**	**417**	**428**
Core Invested Capital w/ Goodwill	**1489**	**1866**	**1919**	**1980**	**2071**	**2082**	**2150**	**2210**	**2273**	**2321**	**2382**
Core Invested Capital w/o Goodwill	**1251**	**1629**	**1681**	**1742**	**1833**	**1844**	**1912**	**1972**	**2035**	**2083**	**2144**
Non-Operating Capital											
Property held as financial investment	26	26	26	26	26	26	26	26	26	26	26
Deferred tax assets	40	44	47	49	51	53	55	56	58	60	61
% of Sales	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%	2,4%
Other Assets	19	17	16	16	55	1	5	5	8	8	7
Total Non-Operating Assets	**85**	**88**	**91**	**93**	**135**	**79**	**85**	**86**	**92**	**94**	**95**
Deferred tax liabilities	35	38	40	42	44	45	47	49	50	51	53
% of Sales	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%
Pension Obligations	52	52	52	52	52	52	52	52	52	52	52
Obligations towards employees	7	7	7	7	7	7	7	7	7	7	7
Other liabilities	5	5	5	5	5	5	5	5	5	5	5
Total Non-Operating Liabilities	**99**	**102**	**105**	**107**	**108**	**110**	**111**	**113**	**114**	**116**	**117**
Invested Non-core capital	**-14**	**-14**	**-13**	**-13**	**26**	**-30**	**-26**	**-27**	**-23**	**-22**	**-22**
Total Invested Capital w/ Goodwill	**1474**	**1851**	**1903**	**1964**	**2095**	**2052**	**2124**	**2184**	**2250**	**2298**	**2359**
Total Invested Capital w/o Goodwill	**1237**	**1613**	**1665**	**1726**	**1857**	**1814**	**1886**	**1946**	**2013**	**2060**	**2121**
Financing											
Subscribed capital	70	70	70	70	70	70	70	70	70	70	70
Other reserves	587	584	584	584	584	584	584	584	584	584	584
Net profit/loss	564	579	628	681	732	785	835	889	943	1000	1058
Minority interest	0	0	0	0	0	0	0	0	0	0	0
Total Financial Assets	**1221**	**1233**	**1282**	**1335**	**1386**	**1438**	**1489**	**1543**	**1597**	**1654**	**1712**
Financial Liabilities	**253**	**618**	**620**	**629**	**708**	**614**	**631**	**637**	**649**	**639**	**642**
Borrowing from Banks	*3*	*168*	*165*	*170*	*125*	*125*	*118*	*118*	*102*	*90*	*90*
Schuldschein Loans	*244*	*364*	*364*	*364*	*489*	*389*	*414*	*414*	*439*	*439*	*439*
Investment in Speedinvest	*2*	*2*	*2*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Liabilities from operating leases	*-*	*80,3*	*85,6*	*89,4*	*90,7*	*96,2*	*99,6*	*105,3*	*108,5*	*111,6*	*114,8*
-in % of Sales	*-*	*4,3%*	*4,3%*	*4,3%*	*4,2%*	*4,3%*	*4,3%*	*4,4%*	*4,4%*	*4,4%*	*4,4%*
Liabilities from finance leases	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Total Financial Liabilities	**252,9**	**618,32**	**620,31**	**629,08**	**708,33**	**613,78**	**631,21**	**636,94**	**649,05**	**639,17**	**642,39**
Total Financial Assets	**1474**	**1851**	**1903**	**1964**	**2095**	**2052**	**2124**	**2184**	**2250**	**2298**	**2359**

Statement of changes in equity	Reported	Forecasted Period									
	FY 2018	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E
Changes in Equity											
Subscribed Capital	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**
Change	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Capital Reserves	619	619	619	619	619	619	619	619	619	619	619
Change	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Exchange Differences	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12
Change	*7*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Other Neutral Changes	-20	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
Change	*-2*	*-4*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Other Reserves	**587**	**584**	**584**	**584**	**584**	**584**	**584**	**584**	**584**	**584**	**584**
Change	*5*	-4	0	0	0	0	0	0	0	0	0
Net Profit/Loss	**564**	**579**	**628**	**681**	**732**	**785**	**835**	**889**	**943**	**1000**	**1058**
Profit for the year	*145*	*92*	*98*	*104*	*103*	*103*	*100*	*107*	*109*	*112*	*115*
Dividends	*-42*	*-77*	*-49*	*-52*	*-51*	*-52*	*-50*	*-53*	*-54*	*-56*	*-57*
- in % of Profit	*0*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Equity attributable to Shareholder of Parent Company	**1221**	**1233**	**1282**	**1335**	**1386**	**1438**	**1489**	**1543**	**1597**	**1654**	**1712**
Minority Interest	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Equity	**1221**	**1233**	**1282**	**1335**	**1386**	**1438**	**1489**	**1543**	**1597**	**1654**	**1712**
Numbers of Shares	70	70	70	70	70	70	70	70	70	70	70

Cash Flows	Reported	Forecasted Period									
	FY 2018	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E
Operating Free Cash Flow											
NOPAT	**106**	**98**	**104**	**110**	**107**	**107**	**104**	**110**	**114**	**118**	**121**
Depreciation & Amortization	77	93	101	105	111	114	120	125	130	135	140
CAPEX	-111	-149	-149	-135	-150	-132	-162	-148	-163	-162	-168
CF from Δ Net Working Capital	-118	-211	7	-15	-36	12	-9	-31	-26	-15	-28
Operating Free Cash Flow	-46	-169	62	65	31	101	52	56	55	75	65

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Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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THE IMPACT OF WORKING CAPITAL MANAGEMENT ON WACKER NEUSON SE's PERFORMANCE

LISA PREUSSLER – 33888

A Project carried out on the Master in Finance Program, under the supervision of:

Nuno Vasconcellos e Sá

3rd JANUARY 2020

Abstract:

The following paper examines the impact of working capital management (WCM) on the development of Wacker Neuson SE share price performance by first briefly defining WCM and its relevance, highlighting key metrics and finally presenting a detailed analysis on the implications of the Wacker Neuson SE's WCM weaknesses and areas for improvement.

Keywords:

Working capital management, Wacker Neuson SE, construction market

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The Impact of Working Capital Management on Wacker Neuson SE's Performance

As part of this equity research project, Wacker's working capital management (WCM), which has a decisive negative impact on the Group's free cash flows (FCF) and therefore on the Group's shareholder value, will be analysed in more detail. Since our report indicates that this historic trend will continue in the foreseeable future, Wacker will probably underperform its industry peers without appropriate adjustments to its WCM. For this reason, after briefly defining WCM and discussing its relevance for companies, the concept of the Working Capital Cycle[1] (WCC) along with key operational metrics will be introduced and a detailed analysis of the impact of Wacker's WCM weaknesses is carried out and potential areas for improvement are presented.

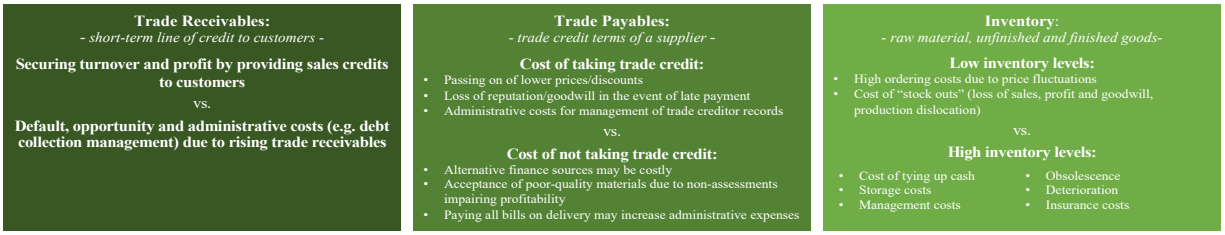
In general, WCM is defined as the maintenance of the optimal balance of working capital (WC) components, consisting of current assets and current liabilities such as receivables, inventories, payables as well as the use of cash. WC itself is defined as current assets[2] less current liabilities[3]. WCM is highly relevant because it focuses on maintaining a company's sufficient short-term capital requirements to conduct its day-to-day business effectively and efficiently, thereby securing and, if properly applied, improving liquidity, risk control capabilities, growth opportunities and shareholder value (cf. Shin & Soenen, 1998; Raheman & Nasr, 2007). However, inefficient WCM can have an adverse impact on operational efficiency and short-term financial stability. Therefore, WCM is essential for all companies, but even of greater importance for manufacturing companies with their typically large share of assets held in current assets, complex global supply chains and increasing pressure on margins, so that mismanagement can easily lead to a below-average return on investment and profitability (PWC, 2018; JP Morgan, 2016). As such, unlocking WC can be pivotal to release operational and financial resources, to maintain a competitive advantage, to finance investments and thus to achieve higher returns and growth.

[1] Also known as Cash Conversion Cycle
[2] Expected to be realized in cash, or either sold, or consumed, in the accounting cycle
[3] Short-term financial obligations payable within the accounting cycle

The WCC measures the number of days it takes a firm to convert resource inputs into cash flows and is calculated as:

$$WCC = Days\ inventory\ outstanding\ (DIO) + Days\ sales\ outstanding\ (DSO) - Days\ payables\ outstanding\ (DPO)$$

Every step of the *WCC* involves costs that can be distinguished between direct and opportunity costs (Berry & Jarvis 2006). Direct costs are the cost of capital invested in each part of the cycle, whereas opportunity costs are represented by the potential loss of return that may result from investments in WC rather than in alternative investment opportunities (ibid). Therefore, it is important to manage the trade-off of each *WCC* component in such a way as to minimise the overall risk of default and thus ensure sufficient liquidity, while avoiding the presence of excessive WC, which impairs growth (see Figure 1). Based on the individual trade-off decisions, a company implements a WC policy that defines the optimal WC level, achieving the desired trade-off between liquidity and profitability to maximize the value of the company (Hill et al., 2010). This represents a choice between risk and return.



Source: Modelled after Arnold, 2008, p. 545ff

Figure 1: Trade-Off Overview

Adequate metrics for verifying the effectiveness of a company's WCM are the above presented *WCC* and the *Working Capital to Sales Ratio*[4].

In order to analyse the effectiveness and efficiency of Wacker's WCM, it is necessary to take a closer look at relevant company specifics: First, Wacker's sales approach differs from its competitors' approaches since it sells its products in Europe through its own affiliates, sales and service stations and not through a dealer-only model. Therefore, Wacker has to keep a certain stock of machinery in order to ensure fast delivery which means that its finished goods inventories are kept on its own balance sheet, while those of its competitors are mainly shown in the balance sheets of their dealers. Secondly, Wacker pushed ahead with the strategic

[4] Measures the amount of working capital needed per dollar of sale; Formula: $\frac{Working\ Capital}{Sales}$

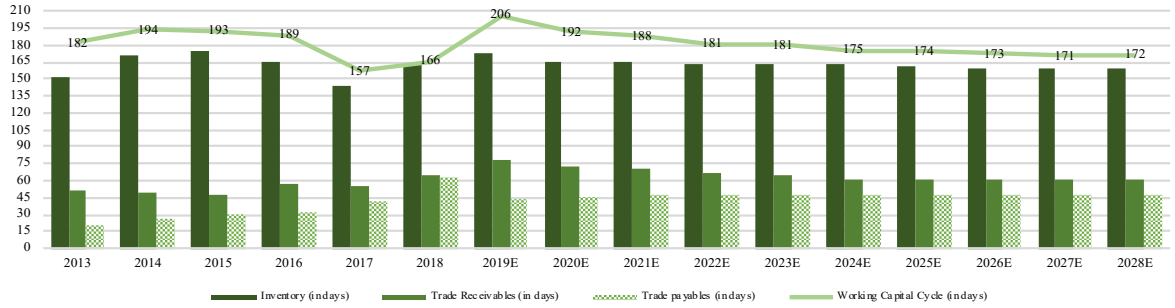
expansion of its business activities in North America through the use of anchor dealers, whom the Group supports with customized financing programs, thereby accumulating more WC. Taking these strategic and operational peculiarities into account, a deeper analysis of the individual components of Wacker's WCC[5] can be carried out.

Inventory: Efficient inventory management is of crucial importance for Wacker, as inventories absorb the majority of WC (86% in FY-18). Wacker (2018) has invested in inventory management optimization after the increase in the number of product variants, stricter regulatory requirements, the introduction of new systems and components, and the internationalization of procurement, production and spare parts processes increased the complexity of the supply chain. The optimization efforts included closing and reallocating production facilities to reduce the fixed cost base while increasing capacity utilization at the remaining plants, improving the efficiency of the internal supply chain through the elimination of the internal logistics company[6], and introducing a group-wide ERP system to align necessary production volumes more closely with actual customer demand. However, some of these efforts did not succeed, causing inventories and WC to rise further (see Figure 2). Among the main triggers are the too conservative inventory strategy for raw materials, consumables and supplies, which is partly attributable to the pending emission regulation, but also an overreaction to the high demand, which could not be met in the record year 2018. In addition, poor supplier management caused bottlenecks due to a lack of raw material and component availability in production processes and increased inventories of unfinished products, thereby leading to uncompleted customer orders. Finally, there was a poor product and customer mix for new equipment sales, which increased the level of finished goods. Therefore, it seems to be unrealistic that Wacker will achieve its DIO target of 125 days without easing its conservative approach, improving the quality of its inventory mix, making greater efforts to digitize the supply chain management that is still lagging behind, and increasing transparency and control over or under sourcing and production.

[5] Focus on the largest and most relevant WCC components in terms of impact on working capital level.
[6] Acted as an intermediary between Wacker's production and global sales organizations

Trade Receivables: Wacker's trade receivables are mainly attributable to longer payment periods for customers in comparison to competitors, increased business volumes in North America and the Group's targeted efforts to expand its dealer network in the region by offering financing solutions. This resulted in a significantly higher level of trade receivables than planned (+16.5% yoy) and higher administrative costs, which impacted both FCF and profit margins. Although the Group is committed to increasing its market share in North America, it must control the amount of its receivables until the realization of profit justifies it, which is presently not the case and is not expected based on our analysis.

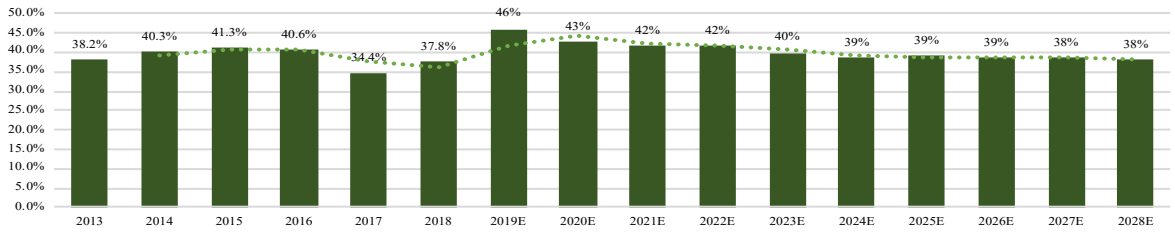
Trade Payables: Wacker's trade payables have been reduced after rising in recent years as a result of business expansion and the associated increase in inventories. The Group could reconsider the continuing low level of trade payables by taking advantage of the longer payment terms, as trade receivables are at a high level.



Source: Modelled after Wacker Neuson SE Company Reports and own Analyst estimates

Figure 2: Overview Working Capital Cycle Wacker Neuson SE

Finally, looking at the WCC (see Figure 2) and the WC to sales ratio (see Figure 3), it can be observed that at a WCC level of 206 days and a WC to sales ratio of 46% Wacker's current WCM is not effective, as the WC level continue to rise and is far from the 30% WC to sales target.



Source: Modelled after Wacker Neuson SE Company Reports and own Analyst estimates

Figure 3: Development Working Capital to Sales

It is therefore necessary for Wacker to further optimize its WCM in order to avoid a sustained negative impact on liquidity and investments in future growth. As shown above, the biggest

optimization potential lies in inventory optimization: Further effective investments in digital automation and streamlining of global production and supply chains worldwide, closer cooperation with suppliers and customers, and better coordination between functions and processes would be necessary. However, rising trade receivables should also be closely monitored, as strategic initiatives in North America do not only lead to higher profits, but also to higher WC and therefore do not appear to be target oriented. The expansion of trade payables would also reduce WC, but this decision must be weighed against the potential loss of suppliers and cash discounts.

Wacker's success in reducing its WC through the measures listed above could unleash further growth potential. This manifests in a considerably higher share price of EUR 23.9 (+38.8%), which would result from the DCF valuation if Wacker could reduce its WC to its 30% of sales target. However, if Wacker continues to fail to effectively control its WCM, thereby keeping the WC to sales ratio at the current high level of around 46%, the DCF guidance would be reduced to EUR 18.4 (+6.5%). A WC to sales ratio of more than 49% would change our DCF guidance into a sell recommendation. These brief numerical analyses illustrate the sensitivity of share price performance to WCM, thereby emphasizing once again its relevance for Wacker.

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